

HUDSON RIVER

ALBANY

COXSACKIE

SAUGERTIES

KINGSTON

RHINECLIFF

POUGHKEEPSIE

NEWBURGH

BEACON

PEEKSKILL

CROTON

NYACK

TARRYTOWN

YONKERS

QUEENS

BROOKLYN

STATEN ISLAND

2006 YEAR CLASS REPORT

**for the
Hudson River Estuary
Monitoring Program**

Prepared on behalf of

Dynegy Roseton L.L.C.
Entergy Nuclear Indian Point 2 L.L.C.
Entergy Nuclear Indian Point 3 L.L.C.
Mirant Bowline L.L.C.

Prepared by

ASA A SA Analysis & Communication
Solutions through Science

2006 Year Class Report for the Hudson River Estuary Monitoring Program

Prepared on behalf of

Dynegy Roseton L.L.C.
Entergy Nuclear Indian Point 2 L.L.C.
Entergy Nuclear Indian Point 3 L.L.C.
Mirant Bowline L.L.C.

Prepared for

Dynegy Roseton L.L.C.
992 – 994 River Road
Newburgh, New York 12550

Prepared by

ASA Analysis & Communication
5 Fairlawn Drive, Suite 207
Washingtonville, New York 10992

February 2008

CONTENTS

	<u>Page</u>
LIST OF FIGURES	iii
LIST OF TABLES	x
1. INTRODUCTION.....	1-1
2. MATERIALS AND METHODS	2-1
2.1 Sampling Design.....	2-1
2.2 Longitudinal River Ichthyoplankton Survey.....	2-2
2.2.1 Field Methods	2-2
2.2.2 Laboratory Methods	2-4
2.3 Fall Juvenile Survey.....	2-6
2.3.1 Field Methods	2-6
2.3.2 Laboratory Methods	2-8
2.4 Beach Seine Survey	2-8
2.4.1 Field Methods	2-8
2.4.2 Laboratory Methods	2-9
2.5 Analytical Methods.....	2-9
2.5.1 Physical/Chemical Parameters	2-9
2.5.2 Spatiotemporal Distribution Indices	2-11
3. PHYSICAL/CHEMICAL PARAMETERS	3-1
3.1 Green Island Dam Flows	3-1
3.2 Poughkeepsie's Water Treatment Facility Temperatures	3-1
3.3 Hudson River Surveys	3-2
3.3.1 Spatiotemporal Pattern in Temperature	3-2
3.3.2 Spatiotemporal Pattern in Salinity.....	3-2
3.3.3 Spatiotemporal Pattern in Dissolved Oxygen.....	3-3

CONTENTS (Continued)

	<u>Page</u>
4. SPATIOTEMPORAL DISTRIBUTION OF SELECTED SPECIES OF HUDSON RIVER ESTUARY FISHES	4-1
4.1 Fish Community	4-1
4.1.1 General Description of the Fish Community	4-1
4.1.2 Species Occurrence Through Time	4-2
4.1.3 Species Collected in 2006	4-4
4.2 Striped Bass	4-5
4.3 White Perch	4-7
4.4 Atlantic Tomcod	4-9
4.5 Bay Anchovy	4-10
4.6 American Shad	4-12
4.7 River Herrings	4-13
4.8 Alewife	4-14
4.9 Blueback Herring	4-15
4.10 Gizzard Shad	4-16
4.11 Rainbow Smelt	4-17
4.12 Hogchoker	4-18
4.13 Spottail Shiner	4-19
4.14 Atlantic Sturgeon	4-20
4.15 Shortnose Sturgeon	4-22
4.16 White Catfish	4-24
4.17 Weakfish	4-25
4.18 Bluefish	4-26
REFERENCES CITED AND PREVIOUS YEAR CLASS REPORTS	R-1
APPENDIX A: QUALITY CONTROL REPORT FOR THE 2006 HUDSON RIVER ICHTHYOPLANKTON LABORATORY PROGRAM AND 2006 FALL JUVENILE SURVEY	
APPENDIX B: PHYSICAL/CHEMICAL PARAMETERS	
APPENDIX C: NUMBERS OF FISH COLLECTED IN THE LONG RIVER (1988-2006), FALL SHOALS (1985-2006), AND BEACH SEINE (1985-2006) SURVEYS	
APPENDIX D: ANNUAL ABUNDANCE INDICES	
APPENDIX E: DENSITY AND STANDING CROP ESTIMATES	
APPENDIX F: LENGTH FREQUENCY DISTRIBUTION	
APPENDIX G: DENSITY ESTIMATES FOR ATLANTIC CROAKER	

LIST OF FIGURES

<u>Number</u>	<u>Title</u>
2-1	Location of 13 geographic regions (with river mile boundaries) sampled during the 2006 biological monitoring program in the Hudson River estuary.
2-2	Cross sections of the Hudson River estuary showing locations and typical proportional relationships of the shoal, bottom, and channel strata.
2-3	Completed sampling schedule for 2006.
2-4	Design and dimensions of 1.0-m ² Tucker trawl.
2-5	Design and dimensions of 1.0-m ² Tucker trawl mounted on an epibenthic sled.
2-6	Conceptual diagram of the splitting process.
2-7	Inspection plan for evaluation of splitting precision.
2-8	Design and dimensions of the 3.0-m beam trawl.
3-1	Hudson River daily average flow rate in 2006 and monthly average flow rates from 1947 to 2006, Green Island, New York.
3-2	Average annual Hudson River flow from 1947 to 2006, Green Island, New York.
3-3	Seasonal variations in water temperature from 1951 to 2006 as measured at Poughkeepsie's Water Treatment Facility.
3-4	Average annual water temperature from 1951 to 2006 as measured at Poughkeepsie's Water Treatment Facility.
3-5	Seasonal and annual variations in water temperature from the Long River/Fall Juvenile surveys, 1974-2006.
3-6	Seasonal and annual variations in water temperature from the Beach Seine surveys, 1974-2006.
3-7	Seasonal variations in average weekly salinity from the 2006 Long River/Fall Juvenile surveys.
3-8	Seasonal and annual variations in dissolved oxygen from the Long River/Fall Juvenile surveys, 1974-2006.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
3-9	Seasonal and annual variations in dissolved oxygen from the Beach Seine surveys, 1974-2006.
4-1	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval striped bass in the Hudson River estuary based on the 2006 Long River Survey.
4-2	Spatiotemporal distribution of young-of-year striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-3	Spatiotemporal distribution of yearling striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-4	Spatiotemporal distribution of older-than-yearling striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-5	Temporal distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-6	Geographical distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-7	Geographical distribution indices for striped bass collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-8	Weekly length statistics for young-of-year striped bass in the Hudson River estuary, 2006.
4-9	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval white perch in the Hudson River estuary based on the 2006 Long River Survey.
4-10	Spatiotemporal distribution of young-of-year white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-11	Spatiotemporal distribution of yearling white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-12	Spatiotemporal distribution of older-than-yearling white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-13	Temporal distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2006.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
4-14	Geographical distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-15	Geographical distribution indices for white perch collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-16	Weekly length statistics for young-of-year white perch in the Hudson River estuary, 2006.
4-17	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval Atlantic tomcod in the Hudson River estuary based on the 2006 Long River Survey.
4-18	Spatiotemporal distribution of young-of-year Atlantic tomcod in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-19	Spatiotemporal distribution of yearling and older Atlantic tomcod in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-20	Temporal distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-21	Geographical distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-22	Geographical distribution indices for Atlantic tomcod collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.
4-23	Weekly length statistics for young-of-year Atlantic tomcod in the Hudson River estuary, 2006.
4-24	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval bay anchovy in the Hudson River estuary based on the 2006 Long River Survey.
4-25	Spatiotemporal distribution of young-of-year bay anchovy in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-26	Spatiotemporal distribution of yearling and older bay anchovy in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-27	Temporal distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2006.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
4-28	Geographical distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2006.
4-29	Geographical distribution indices for bay anchovy collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-30	Weekly length statistics for young-of-year bay anchovy in the Hudson River estuary, 2006.
4-31	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval American shad in the Hudson River estuary based on the 2006 Long River Survey.
4-32	Spatiotemporal distribution of young-of-year American shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-33	Spatiotemporal distribution of yearling and older American shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-34	Temporal distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-35	Geographical distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-36	Geographical distribution indices for American shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-37	Weekly length statistics for young-of-year American shad in the Hudson River estuary, 2006.
4-38	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval <i>Alosa</i> spp. in the Hudson River estuary based on the 2006 Long River Survey.
4-39	Spatiotemporal distribution of young-of-year <i>Alosa</i> spp. in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-40	Temporal distribution indices for <i>Alosa</i> spp. collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-41	Geographical distribution indices for <i>Alosa</i> spp. collected during Long River surveys of the Hudson River estuary, 1974-2006.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
4-42	Geographical distribution indices for <i>Alosa</i> spp. collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-43	Spatiotemporal distribution of young-of-year alewife in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-44	Spatiotemporal distribution of yearling and older alewife in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-45	Geographical distribution indices for alewife collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-46	Weekly length statistics for young-of-year alewife in the Hudson River estuary, 2006.
4-47	Spatiotemporal distribution of young-of-year blueback herring in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-48	Spatiotemporal distribution of yearling and older blueback herring in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-49	Geographical distribution indices for blueback herring collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-50	Weekly length statistics for young-of-year blueback herring in the Hudson River estuary, 2006.
4-51	Spatiotemporal distribution of young-of-year gizzard shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-52	Spatiotemporal distribution of yearling and older gizzard shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-53	Geographical distribution indices for gizzard shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-54	Spatiotemporal distribution of post yolk-sac larval and yearling and older rainbow smelt in the Hudson River estuary based on the 2006 Long River Survey.
4-55	Temporal distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2006.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
4-56	Geographical distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2006.
4-57	Geographical distribution indices for rainbow smelt collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.
4-58	Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval hogchoker in the Hudson River estuary based on the 2006 Long River Survey.
4-59	Spatiotemporal distribution of young-of-year hogchoker in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-60	Spatiotemporal distribution of yearling and older hogchoker in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-61	Geographical distribution indices for hogchoker collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.
4-62	Spatiotemporal distribution of young-of-year spottail shiner in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-63	Spatiotemporal distribution of yearling and older spottail shiner in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-64	Geographical distribution indices for spottail shiner collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.
4-65	Weekly length statistics for young-of-year spottail shiner in the Hudson River estuary, 2006.
4-66	Spatiotemporal distribution of post yolk-sac larval and yearling and older Atlantic sturgeon in the Hudson River estuary based on the 2006 Long River and Fall Juvenile surveys.
4-67	Spatiotemporal distribution of yolk-sac and post yolk-sac larval shortnose sturgeon in the Hudson River estuary based on the 2006 Long River Survey.
4-68	Spatiotemporal distribution of yearling and older shortnose sturgeon in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-69	Spatiotemporal distribution of young-of-year white catfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>
4-70	Spatiotemporal distribution of yearling and older white catfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-71	Geographical distribution indices for white catfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.
4-72	Weekly length statistics for young-of-year white catfish in the Hudson River estuary, 2006.
4-73	Spatiotemporal distribution of young-of-year weakfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-74	Spatiotemporal distribution of yearling and older weakfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-75	Geographical distribution indices for weakfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.
4-76	Weekly length statistics for young-of-year weakfish in the Hudson River estuary, 2006.
4-77	Spatiotemporal distribution of young-of-year bluefish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.
4-78	Geographical distribution indices for bluefish collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

LIST OF TABLES

<u>Number</u>	<u>Title</u>
1-1	Fish species treated in depth in the 2006 Year Class Report.
2-1	Strata sampled within the 13 geographic regions of the Hudson River estuary during 2006.
2-2	Summary of 2006 Hudson River surveys.
2-3	Summary of 2006 sample collection information by river region and stratum for the Longitudinal River Ichthyoplankton Survey.
2-4	Specifications of sampling gear used during the 2006 Longitudinal River Ichthyoplankton Survey.
2-5	Water quality sampling locations during the 2006 Longitudinal River Ichthyoplankton and Fall Juvenile surveys.
2-6	Summary of 2006 sample analysis information by river region and stratum for the Longitudinal River Ichthyoplankton Survey.
2-7	Summary of 2006 sample collection by river region and stratum for the Fall Juvenile Survey.
2-8	Specifications of sampling gear used during the 2006 Fall Juvenile Survey.
2-9	Specifications of sampling gear used during the 2006 Beach Seine Survey.
2-10	Summary of 2006 sample collection by river region for the Beach Seine Survey.
2-11	Stratum and region volumes (m ³) and surface areas (m ²) used in analysis of 2006 Hudson River estuary data.
4-1	Species composition of fish collected during Hudson River studies from 1974 to 2006.
4-2	Species composition of fish collected in each of the Hudson River surveys during 2006.
4-3	Collections of Atlantic sturgeon during the 2006 Hudson River surveys.
4-4	Collections of shortnose sturgeon during the 2006 Hudson River surveys.

[Link to Chapter 1](#)

CHAPTER 1

INTRODUCTION

Since 1973, an annual Year Class Report has been prepared on behalf of the several electric utility companies (collectively, the “Utilities”) operating generating stations in the Hudson River estuary. This report, which is based on the 2006 Hudson River Biological Monitoring Program, has been prepared on behalf of Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C. The principal reporting objective has been to present and analyze data on the distribution and abundance of early life stages of selected fish species based on field surveys conducted throughout the Hudson River estuary. The content and scope of these reports have varied over time from estimating the environmental impact of five Hudson River generating stations to focusing on indices of year class strength to describing the spatiotemporal distribution of selected fish species. Since the early 1990’s, the annual Year Class Report has been standardized to describe the physical/chemical parameter patterns in the Hudson River estuary and the spatiotemporal distribution of 16 selected species of fish. These 16 species were identified by the New York State Department of Environmental Conservation (NYSDEC) of interest for discharge permitting purposes.

This report adds to the historical database by describing the results of the Longitudinal River Ichthyoplankton Survey, the Fall Juvenile Survey (formerly, the Fall Shoals Survey), and the Beach Seine Survey for 2006. The 2006 Year Class Report presents basic abundance and distribution data with the following objectives:

- Describe the patterns and variability of environmental parameters that may have affected fish distribution and abundance in the Hudson River estuary in 2006.
- Describe the distribution and abundance of 16 selected species of fish ([Table 1-1](#)) in the Hudson River estuary in 2006.
- Describe the fish community of the Hudson River estuary in 2006.
- Describe patterns in growth for the 2006 year class of key species.

This report is organized into four chapters with supporting appendixes. Data collection and analysis methods are described in [Chapter 2](#). Physical and chemical parameters are described in [Chapter 3](#) and fish community analysis and spatiotemporal distribution of selected fish species are presented in [Chapter 4](#). Detailed data tables supporting report analyses are contained within the appendix sections as follows:

- [Appendix A](#) – Quality Control Report for the 2006 Hudson River Ichthyoplankton Laboratory Program and 2006 Fall Juvenile Survey;
- [Appendix B](#) – Physical/Chemical Parameters;
- [Appendix C](#) – Numbers of Fish Collected in the Long River (1988-2006), Fall Juvenile (1985-2006), and Beach Seine (1985-2006) Surveys;
- [Appendix D](#) – Annual Abundance Indices;
- [Appendix E](#) – Density and Standing Crop Estimates;
- [Appendix F](#) – Length Frequency Distribution;

- [Appendix G](#) – Density Estimates for Atlantic Croaker.

[Link to Chapter 2](#)

Table 1-1 Fish Species Treated in Depth in the 2006 Year Class Report

Common Name	Scientific Name ¹
Alewife	<i>Alosa pseudoharengus</i>
American shad	<i>Alosa sapidissima</i>
Rainbow smelt	<i>Osmerus mordax</i>
Atlantic sturgeon	<i>Acipenser oxyrinchus</i>
Atlantic tomcod	<i>Microgadus tomcod</i>
Bay anchovy	<i>Anchoa mitchilli</i>
Blueback herring	<i>Alosa aestivalis</i>
Bluefish	<i>Pomatomus saltatrix</i>
Gizzard shad	<i>Dorosoma cepedianum</i>
Hogchoker	<i>Trinectes maculatus</i>
Shortnose sturgeon	<i>Acipenser brevirostrum</i>
Spottail shiner	<i>Notropis hudsonius</i>
Striped bass	<i>Morone saxatilis</i>
Weakfish	<i>Cynoscion regalis</i>
White catfish	<i>Ameiurus catus</i>
White perch	<i>Morone americana</i>

1. Names listed in Nelson et al. 2004.

CHAPTER 2

MATERIALS AND METHODS

2.1 SAMPLING DESIGN

Several fishery techniques were employed in three separate sampling surveys to obtain comprehensive information on the abundance and distribution of selected larval, juvenile or young-of-year (YOY), and adult fish species in the Hudson River estuary. Temporally, the monitoring program encompassed the spring through fall season, the period of greatest biological activity in northern U.S. temperate waters. The surveys were designed to sample the full range of Hudson River habitat toward a representative assessment of species-specific spatial distribution patterns. During 2006, survey-specific techniques were employed which were consistent with previous Hudson River Monitoring Programs.

The scope and objectives of the three sampling surveys comprising the overall monitoring program are summarized as follows.

1. **Longitudinal River Ichthyoplankton Survey** (LRS or Long River Survey)—Sampling encompassed the entire length of the Hudson River estuary, from River Mile (RM) 1 at the Battery in Manhattan to RM 152 at the Federal Dam in Troy. The LRS yielded ichthyoplankton data to support calculations of standing crop, temporal and geographic indices, and growth rates for selected Hudson River fish species. The primary species were Atlantic tomcod (*Microgadus tomcod*), American shad (*Alosa sapidissima*), striped bass (*Morone saxatilis*), white perch (*M. americana*) and bay anchovy (*Anchoa mitchilli*). LRS sampling was concentrated during the spring, summer, and early fall when eggs and larvae of the primary species have historically been abundant.
2. **Fall Juvenile Survey** (FJS or Fall Shoals Survey)—Samples were collected every other week from the Battery to the Troy Dam in mid-summer and fall. The objective was to provide data on YOY fish to support calculation of standing crop and temporal and geographic indices for selected Hudson River fish species. The target species were Atlantic tomcod, American shad, striped bass, and white perch.
3. **Beach Seine Survey** (BSS)—Beach seine samples were collected in alternate weeks relative to the FJS at stations ranging from the George Washington Bridge (RM 12) to the Troy Dam. The objective was to obtain distribution and relative abundance information on YOY American shad, Atlantic tomcod, striped bass, and white perch during periods when these species were concentrated primarily in the shallow, near-shore areas. The survey was conducted from mid-June through October, when YOY of these species were typically abundant in the shorezone nursery areas.

Sampling for all surveys was conducted according to a stratified random design in which the Hudson River estuary from the Battery (RM 1) to the Federal Dam at Troy (RM 152) was divided into 13 regions (Figure 2-1). Each region was further divided into "strata" on the basis of river depth. The strata, based on river depth, are graphically presented in Figure 2-2 and defined below:

- **Shore**—That portion of the Hudson River estuary extending from the shore to a depth of 10 ft (the stratum defined only for BSS).
- **Shoal**— That portion of the Hudson River estuary extending from the shore to a depth of 20 ft at mean low tide.
- **Bottom**—That portion of the Hudson River estuary extending from the bottom to 10 ft above the bottom where river depth is greater than 20 ft at mean low tide.
- **Channel**—That portion of the Hudson River estuary not considered bottom where river depth is greater than 20 ft at mean low tide.

The relative area and configuration of the shoal, bottom, and channel strata vary over the length of the Hudson River estuary but may be characterized using the three cross section views presented in [Figure 2-2](#). For example, the low relief sectional is characteristic of the Tappan Zee and Croton-Haverstraw regions, the high relief sectional is exemplified by the Yonkers and Poughkeepsie regions, and the fjord relief sectional represents the West Point region.

A minimum of two samples was assigned to each stratum in most regions for the LRS. However, no samples were allocated in the Poughkeepsie through Albany regions during the first three sampling weeks of the LRS (6 March – 31 March) nor in the Hyde Park through Albany regions during the final seven sampling weeks of the LRS (10 July – 6 October) because few organisms of the target species were historically present in these regions during these weeks. A minimum of two samples was assigned to each stratum in each region for the FJS except no channel samples were allocated during the final three sampling weeks (23 October – 1 December). A minimum of three samples was allocated in each region for the BSS. Shoal strata samples were not assigned in upriver regions nor were shoal or shore strata samples assigned in the Battery region. The strata actually sampled in each region during the 2006 survey period are presented in [Table 2-1](#).

A general summary of the three sampling surveys for the annual monitoring program is presented in [Table 2-2](#). The field and laboratory methods used for each survey are described in detail in the following sections.

2.2 LONGITUDINAL RIVER ICHTHYOPLANKTON SURVEY

2.2.1 Field Methods

The 2006 LRS was performed over a period of 30 weeks from 6 March to 6 October ([Table 2-2](#) and [Figure 2-3](#)). For the first three weeks, sampling was conducted between RM 1 and RM 61 with all samples collected during the day. For the next seven weeks beginning 3 April, weekly sampling encompassed RM 1 to RM 152 with samples continuing to be collected during the day. Beginning the week of 22 May for six consecutive weeks sampling was conducted at night between RM 1 and RM 152. In the final phase of sampling from 10 July through 6 October, sampling was conducted biweekly between RM 1 and RM 76 with all samples collected at night. Sampling was conducted for two additional weeks in 2006, one in November and one in December. These samples were collected systematically (every 5 river miles) from RM 0 to RM 60 during the day. Collection of additional trawl samples that were used for the aging of striped bass larvae was terminated in 2006.

The allocation of sampling effort among river regions and strata was temporally adjusted in response to the projected presence and distribution of target species and life stages. The 2006 LRS sampling program was scheduled as 6 separate multi-week efforts. The first sampling effort, performed in March, focused on the collection of Atlantic tomcod post yolk-sac larvae (PYSL). The second effort, performed during April, focused on the collection of American shad eggs. The third effort, from late April to mid-May, was designed to collect eggs of *Morone* spp. and American shad. The fourth effort, performed from mid-May through early June, targeted *Morone* spp. and American shad yolk-sac larvae (YSL). The fifth effort, in June, was designed to collect *Morone* spp. and American shad PYSL. The LRS sampling program concluded with a 13-week period, sampled biweekly, from the middle of July to early October. The final sampling effort was designed to collect all life stages of bay anchovy. The additional samples collected in November and December targeted the early life stages of Atlantic croaker.

The allocation of sampling effort among regions and strata is presented in [Table 2-3](#). Of the 3,522 ichthyoplankton samples scheduled for collection during 2006, 3,519 samples were collected, accounting for 99.9 percent of the scheduled total. All of the 84 scheduled samples in the Atlantic Croaker Ichthyoplankton Survey were collected.

Two distinct gear types were used for field collections during the 2006 LRS:

- 1.0-m² Tucker trawl ([Figure 2-4](#) and [Table 2-4](#)) to sample the shoal and channel strata (non-bottom), and
- 1.0-m² epibenthic sled ([Figure 2-5](#) and [Table 2-4](#)) to sample the bottom-only shoal and channel strata.

Both gear types were towed against the prevailing current for 5 minutes. The tow started with the remote opening of the net and terminated with its remote closing. If the river depth was 20 ft or less, an open set and retrieval of the net was performed. The tow speed for the Tucker trawl was adjusted to maintain a towing wire angle of approximately 45° averaging approximately 0.9 m/second. The tow speed for the epibenthic sled-mounted net was maintained at approximately 1.0 m/second. An electronic flowmeter mounted along the side of the research vessel and equipped with an on-deck readout display was used to establish and maintain tow speed. A calibrated digital flowmeter mounted in the center of the net mouth was used to calculate the volume of water filtered for each sample.

Following deployment and retrieval of the sampling gear, net washing was performed to concentrate the sample into the codend bucket. The samples were then examined for yearling and older fish which were identified, enumerated, and returned to the Hudson River estuary. Special care was taken to observe sturgeon species for physical condition and for the presence of marks and/or tags. All yearling and older sturgeon were measured to the nearest millimeter, weighed to the nearest gram, and, if alive, returned to the river or, if dead, frozen and saved for the NYSDEC. After yearling and older fish were removed, the remaining sample was placed in container(s) so that the sample occupied no more than 25 percent of the container volume. The containers were filled with a 10 percent aqueous formalin solution.

In situ measurements of water temperature (°C), dissolved oxygen (mg/L), and specific conductance (microsiemen/cm at 25°C) were taken with calibrated meters at fixed river mile and strata stations in conjunction with the biological sampling. The number of physical/chemical sampling locations, by river mile and strata, are presented in [Table 2-5](#) for the 2006 LRS. Physical/chemical measurements were recorded from surface, mid-depth, and bottom water depth at channel stations and from the surface and bottom water depth at shoal stations. During the 23 collection weeks of the 2006 LRS, 3,520 physical/chemical measurements were

scheduled and all measurements actually recorded, accounting for 100 percent of the scheduled total. During the additional sampling weeks in November and December, an additional 214 physical/chemical measurements were recorded.

Ichthyoplankton samples collected for striped bass otolith aging were handled in the same manner as regularly scheduled LRS samples except that a 95 percent ethanol preservative was substituted. Within 48 hours, the samples were drained and placed in fresh 95 percent ethanol.

2.2.2 Laboratory Methods

In 2006, approximately 70 percent of the regular LRS samples were selected for laboratory analysis. Selection of samples for laboratory analysis began with the grouping of samples according to river run (i.e., sampling week), region, and strata. Based on these groupings, samples were selected based on one of the following criteria:

1. If there were less than 6 samples in the group, then all were selected for analysis.
2. If there were between 6 and 12 samples in the group, then 50 percent of the samples were randomly selected for analysis.
3. If there were more than 12 samples in the group, then 20 percent of the samples were randomly selected for analysis.

The allocation of samples for laboratory analysis among regions, strata, and gear types based on these criteria is listed in [Table 2-6](#). The total number of analyzed samples for 2006 was 2,436, comprising 69.2 percent of the collected samples (excluding those collected for otolith analysis). All of the 84 samples collected during the Atlantic Croaker Ichthyoplankton Survey were analyzed.

In 2006, as in previous years, splitting (or subsampling) was permitted. A trained technician first determined, by visual inspection, if the sample needed splitting. Samples containing large numbers of eggs may have been split so that eggs were only sorted from one or more aliquots containing a total of at least 250 eggs (all species combined).

Two different sets of criteria were used for subsampling of larval stages, depending on the river run. Beginning with the river run in which striped bass PYSL first appeared, and for the next 8 river runs (a total of 9 consecutive river runs), a minimum of 500 *Morone* larvae (i.e., the combined total of YSL, PYSL, and YOY of striped bass, white perch, and unidentified *Morone*) was sorted from the entire sample and a minimum of 50 non-*Morone* larvae was also sorted. Because some of the more difficult distinctions between species (e.g., striped bass versus white perch) or between life stages could not be made reliably during sorting, samples from these 9 river runs were typically sorted in their entirety for larvae (i.e., YSL, PYSL, and YOY combined) of all species combined. An exception to this may have been made, at the discretion of the laboratory supervisor, under the following circumstances: when extremely large numbers of non-*Morone* larvae occurred in the sample and a qualified identifier had verified that sufficient numbers of both *Morone* larvae and non-*Morone* larvae were sorted to meet their respective subsampling quotas. The purpose of this exception was to allow splitting before sorting of taxa such as clupeids which could readily be distinguished from *Morone* by sorters.

The second set of criteria for subsampling larvae applied to the 13 other river runs not covered in the previous paragraph (before and after the period of striped bass abundance). Any sample

from these river runs may have been subsampled so that larvae were sorted from one or more splits containing at least 100 larvae (i.e., YSL, PYSL, and YOY combined) of all species combined.

To eliminate bias, some steps in the splitting procedure were performed by an assistant so that the sorter had no prior knowledge of which splits were to be used for the analysis. This procedure is explained in [Figure 2-6](#). Randomness of the splitting procedure was monitored and demonstrated by testing selected samples to determine whether splits from the same sample differed by more than random variation. Samples were selected to test for randomness by a continuous sampling plan, shown in [Figure 2-7](#) (CSP-V from MIL-STD-1235, AOQL = 10 percent).

For each split sample evaluated, three fractions of the same aliquot size were sorted and compared by the chi-square test according to the following procedure. The counts of the three splits (including any quality control [QC] finds) were averaged to obtain the expected value for the sample. Chi-square was calculated as:

$$chi\ square = \frac{(O_1 - E)^2}{E} + \frac{(O_2 - E)^2}{E} + \frac{(O_3 - E)^2}{E}$$

where

O_1 , O_2 , and O_3 = Observed counts for splits 1, 2, and 3.

E = Expected value for the sample (average of O_1 , O_2 , and O_3).

If the calculated value for chi-square was less than 5.99, then the splits of that sample were considered random, and the sample passed the split QC (5.99 was the critical value of chi-square with two degrees of freedom at an alpha level of 0.05). If a sample was split for both eggs and larvae, then both stages were tested separately. The sample passed the split QC only if chi-square was below the critical value for both life stages.

Eggs and larvae were separated from detrital material, sorted by major taxonomic group and life stage, counted, and placed in vials containing 5 percent formalin or in ethyl alcohol. Sorted samples were evaluated by a trained technician under magnification and all organisms were identified and enumerated. The following life stage designations were used in identification:

Life Stage	Description
Egg	Embryonic stage from spawning to hatching,
YSL	From hatching to development of a complete and functional digestive system,
PYSL	From development of a complete digestive system to transformation to juvenile form, and
YOY	From completed transformation to Age 1.

Whenever possible, a maximum of 30 striped bass, 30 white perch, 30 American shad, 30 Atlantic tomcod, and 30 bay anchovy per sample were measured. Organisms were chosen at random from each taxon regardless of life stage until the required numbers were obtained; life stages to be included were YSL, PYSL, and YOY. The total length of YSL and PYSL was measured to the nearest 0.1 mm and to the nearest 1 mm for YOY. Measurements were

recorded on the laboratory data sheet. Selection of specimens for measuring was randomized by spreading them uniformly in a gridded container, selecting a starting point in the grid by means of a random number table, and then measuring the first 30 measurable specimens encountered in a predetermined pattern commencing at the starting point. Every grid space had an equal probability of being selected as the starting point, so every specimen had an equal probability of being included in the subsample.

Continuous sampling inspection was employed during the sort and identification procedures to ensure an average outgoing quality limit of 10 percent or better. Two sampling modes were required in the continuous sampling plan (CSP-1):

Mode 1—The first eight samples sorted or analyzed for larval identification by an individual are subject to 100 percent QC reanalysis. If all eight pass the reanalysis, i.e., if ≤ 10 percent of the ichthyoplankton are missed or misidentified per sample, the individual is placed in CSP Mode 2. If any sample fails during Mode 1, then Mode 1 is continued until eight consecutive samples pass. For example, if a sample with QC No. 7 fails, then samples with QC Nos. 8 through 15 are subject to QC resorting.

Mode 2—Lots of seven consecutive samples per individual are assigned for identification QC and per laboratory facility for sort QC. One sample from each lot is randomly chosen for QC analysis. If a sample fails (>10 percent of organisms missed or misidentified) during Mode 2, the individual is placed back into Mode 1. For example, if a sample with QC No. 6 fails in a lot of seven samples, then samples with QC Nos. 7 through 14 are subject to QC reanalysis. If samples 7 through 14 pass, the individual is again placed in Mode 2.

Results of the 2006 CSP-1 Quality Control Program are contained in [Appendix A](#).

2.3 FALL JUVENILE SURVEY

2.3.1 Field Methods

The 2006 FJS biweekly sampling program extended from RM 1 to 152 and covered 22 weeks from 3 July to 1 December ([Figure 2-3](#)). Samples were collected at night for the first 8 river runs from 3 July through 13 October, and during the day for last 3 river runs from 23 October through 1 December. These last river runs, which were conducted with a modified sampling design, were intended to examine Atlantic tomcod distribution. [Table 2-7](#) presents the distribution of the FJS sampling effort among the 13 river regions by stratum. Of the 2,130 samples scheduled for collection, 2,129 were actually collected, yielding nearly 100 percent completion.

A 1.0-m² Tucker trawl and a 3.0-m beam trawl were used to collect YOY fish in the 2006 FJS. The Tucker trawl with 3.0-mm mesh was used to collect samples in the channel stratum, while the beam trawl ([Figure 2-8](#)) was used to sample the shoal and bottom strata. The latter gear was first used in this capacity in the 1985 FJS; prior to 1985, an epibenthic sled-mounted Tucker trawl was used. With the modified sampling design of the last 3 river runs from 23 October through 1 December, no channel samples or Tucker trawl samples were scheduled for collection. Only beam trawl samples in the shoal and bottom strata were taken during these river runs. Design specifications for FJS gear currently in use are listed in [Table 2-8](#).

Both gear types were towed against the prevailing current for approximately 5 minutes. For the Tucker trawl, vessel speed was adjusted as necessary to achieve and maintain a 45° wire angle; the resultant tow speed was recorded. The beam trawl was towed at a speed of approximately 1.5 m/second. Tow speed was established and maintained by use of an electronic flowmeter mounted along the side of the research vessel and equipped with an on-deck readout display. Tucker trawl samples taken in greater than 20 ft of river depth were remotely opened and closed at sampling depth. A calibrated digital flowmeter mounted in the center of the net mouth was used to calculate the volume of water filtered for each sample.

Calibrated water quality instruments were used to measure water temperature (°C), dissolved oxygen (mg/L), and specific conductance (microsieman/cm at 25°C) at fixed river mile and strata stations in conjunction with field sampling. Sampling locations were the same as those used for the 2006 LRS sampling program (Table 2-5). Measurements of physical/chemical parameters were recorded from surface, mid-, and bottom water depths at channel stations and from surface and bottom water depths at shoal stations. During the 2006 FJS, of the 2,002 samples scheduled for collection, 1,993 were actually collected, yielding 99.6 percent completion.

Because of the difficulty in differentiating some species, especially YOY *Morone* (striped bass, white perch) and *Alosa* (alewife, blueback herring), samples collected during the first three sampling periods (River Runs 1 through 3) for the 2006 FJS program were preserved with 10 percent formalin at the time of collection and returned to the laboratory for analysis. Before preservation, samples were examined for fish determined to be yearling or older, based on length categorization; live fish were returned to the river after count data were determined.

Beginning with the fourth biweekly sampling period, samples were evaluated in the field; only fish required to fill length measurement and food habit quotas were returned to the laboratory. The quota was to be 20 specimens of a selected species from each river region per river run; because of the necessity of returning fish to the river alive, the first 20 specimens of a selected species were brought to the laboratory for length measurements. The Hyde Park through Albany regions were considered one region for the purpose of filling length measurement quotas during the entire FJS and during River Runs 4 through 10 of the BSS. Also for the BSS during River Runs 1 through 3, the Yonkers through West Point regions were considered as one region for the same purpose. In river regions where fewer than 10 samples were collected per survey, no more than 10 specimens of each selected species from an individual sample were used to fill the length measurement quota. This criterion was used in the following surveys for the specified river regions:

<u>Sampling Program</u>	<u>Region</u>
BSS	YK, IP, WP, CW, PK
FJS	WP, PK

In all other regions, when the sample schedule resulted in 10 or more samples per survey, no more than 5 specimens per species in a sample were used to fill the length measurement quotas. If more specimens of a species were collected than needed, the individuals used to fill the quotas were randomly selected.

All fish not returned to the laboratory were identified and enumerated into length classes as described in the following section. All Atlantic sturgeon, shortnose sturgeon, and striped bass were examined for external and internal magnetic tags. All sturgeon were measured to the

nearest millimeter, weighed to the nearest gram, and, if alive, returned to the river or, if dead, frozen and saved for the NYSDEC. All striped bass with external streamer tags were measured and a scale sample was taken.

2.3.2 Laboratory Methods

Fish from the FJS in both the field and laboratory were identified and enumerated into the following length classes:

Length Class 1—Less than or equal to the YOY length limit ("Division 1"), which was determined by the field contractor on a weekly basis for each species.

Length Class 2—Greater than Division 1 and less than or equal to the yearling length limit ("Division 2"); set at 150 mm for most species, also determined weekly by the field contractor. From 1 January through 31 May, Division 2 represents the upper length limit for yearling fish for all species. From 1 June through 31 December, Division 2 is assigned a static value of 150 mm total length for all species except alewife, American shad, blueback herring, striped bass, Atlantic tomcod, and white perch. For these species, Division 2 is maintained as a dynamic upper length limit for yearling fish throughout the year.

Length Class 3—Greater than Division 2 and less than or equal to 250 mm.

Length Class 4—Greater than 250 mm.

Twenty specimens of the following selected species collected in each river region per river run were measured for total length (nearest millimeter) in the laboratory (except for sturgeon species which were measured in the field):

- | | |
|---------------------|----------------------|
| • Alewife | • Shortnose sturgeon |
| • American shad | • Spottail shiner |
| • Atlantic sturgeon | • Striped bass |
| • Atlantic tomcod | • Weakfish |
| • Bay anchovy | • White catfish |
| • Blueback herring | • White perch. |

2.4 BEACH SEINE SURVEY

2.4.1 Field Methods

The 2006 BSS utilized a 30.5-m (nominal 100ft) total length beach seine to collect YOY fish in the shorezone of each region, except the Battery region. [Table 2-9](#) presents specifications for the beach seine. One end of the net was held on shore and the other end was towed perpendicularly away from the shore by boat. The seine was then hauled, clockwise if possible, in a semicircular path toward shore. The complete beach seine deployment swept an area of approximately 450 m² (TI 1981). All BSS samples were collected on a diurnal schedule during alternate weeks of the FJS.

The 2006 BSS biweekly sampling program was conducted from 12 June through 20 October ([Figure 2-3](#)). Ten of the 19 weeks in this time period were collection weeks with 100 beach seine samples per week scheduled for collection. Allocation of the total number of samples by

river region collected for the 2006 BSS is presented in [Table 2-10](#). Of the 1,000 samples projected for collection in 2006, 1,000 were collected, yielding 100 percent completion.

Measurements of water temperature (°C), dissolved oxygen (mg/L), and specific conductance (microsiemen/cm at 25°C) were taken with each beach seine sample using *in-situ* water quality instrumentation. Physical/chemical measurements were taken 1 ft below the water surface and approximately 50 ft from the shoreline. During the 10 collection weeks of the 2006 BSS, all of the 1,000 scheduled water quality samples were collected.

YOY fishes collected during the first four beach seine river runs in 2006 were processed in the laboratory because of the difficulty in distinguishing species at the YOY life stage; adults were processed in the field. Beginning with River Run 5, all samples were field processed; 20 specimens of the selected species from each region per run were collected (as described in Section 2.3.1) for length determination in the laboratory. Samples maintained for laboratory analysis were preserved using 10 percent formalin. Fish from the BSS in both the field and laboratory were identified and enumerated into length classes as described in Section 2.3.2. Any sturgeon collected during the BSS were measured to the nearest 1 mm and weighed to the nearest 1 g. Fish that remained alive were returned to the Hudson River estuary; dead fish were frozen and held for NYSDEC. All sturgeon and striped bass were examined for external and internal magnetic tags. Striped bass with external tags were measured and a scale sample was taken.

2.4.2 Laboratory Methods

All fish returned to the laboratory were measured for total length to the nearest 1.0 mm. Laboratory analysis was conducted in the same manner as described for samples collected during the FJS.

2.5 ANALYTICAL METHODS

2.5.1 Physical/Chemical Parameters

To display the spatial and temporal patterns of temperature, salinity, and dissolved oxygen, a mean of each parameter for each sampling location and sampling week, weighted by stratum volume, was calculated. Equation 1 was used to compute these means for the standard physical/chemical stations sampled in conjunction with the LRS and FJS. Equation 2 was used for data collected in conjunction with the BSS. Salinity data were computed from conductivity data (microsiemen/cm at 25°C) using Equation 3 (TI 1976). This equation differs from that used in some of the previous Year Class reports in that pressure data are not required. The maximum deviation between this equation and the previous equation is 0.1 percent (TI 1976).

$$W_{lw} = \sum_{k=1}^{n_{lw}} P_{kr} \left[\frac{1}{n_{klw}} \sum_{d=1}^{n_{klw}} \left(\frac{1}{n_{dklw}} \sum_{i=1}^{n_{dklw}} W_{idklw} \right) \right] \quad (1)$$

where

W_{lw} = Weighted mean of a physical/chemical parameter at sampling location l during week w of the LRS and FJS.

W_{idklw} = Physical/chemical measurement for location i at depth d in stratum k at sampling location l during week w.

P_{kr} = Proportion of the river volume of region r containing sampling location l that is contained by stratum k (bottom and channel strata were combined for water quality analysis).

n_{dklw} = Number of sites at which measurements were made at depth d in stratum k at sampling location l during week w.

n_{klw} = Number of depths sampled in stratum k at sampling location l during week w.

n_{lw} = Number of strata sampled at sampling location l during week w.

$$W_{rw} = 1/n_{rw} \sum_{i=1}^{n_{rw}} W_{irw} \quad (2)$$

where

W_{rw} = Mean of a physical/chemical parameter at river mile r during biweek w of the BSS.

W_{irw} = Physical/chemical measurement for location i at river mile r during biweek w.

n_{rw} = Number of physical/chemical measurements taken at river mile r during biweek w.

$$\text{Salinity} = -100 \ln (1 - C_{25}/178.5) \quad (3)$$

where

C_{25} = Conductivity (millisiemen/cm at 25°C).

2.5.2 Spatiotemporal Distribution Indices

2.5.2.1 Density and Catch-Per-Unit-Effort Estimates

Estimates of population densities were made for the LRS and FJS. [Data collected during the Atlantic Croaker Ichthyoplankton Survey in November and December were excluded from population density estimates for the LRS because the sampling design differed (systematic versus stratified, random design).] For the LRS and FJS, the number of fish (by species and life stage) captured in individual samples was first converted to density (no./m³ of water sampled) using Equation 4. The mean density and the standard error of the mean were calculated for each stratum, region, and sampling week using Equations 5 and 6. To obtain a mean density and standard error for each region during each sampling week, the stratum densities were weighted by the proportion of the regional river volume found in the stratum (Equations 7 and 8). If a stratum was not sampled, its volume was added to the volume of an adjacent stratum that was sampled. Stratum volume adjustments were made according to the following rules:

<u>If This Stratum Was Not Sampled</u>	<u>Its Volume Was Added To This Stratum</u>
Shoal	Bottom
Bottom	Channel
Channel	Bottom

$$D_{ikrw} = \frac{C_{ikrw}}{V_{ikrw}} \quad (4)$$

where

- D_{ikrw} = Density (for a life stage and species)/m³ for sample i in stratum k in region r during week w.
- C_{ikrw} = Number of fish caught in sample i in stratum k in region r during week w.
- V_{ikrw} = Volume sampled (m³) by sample i in stratum k in region r during week w.

$$D_{krw} = \frac{1}{n_{krw}} \sum_{i=1}^{n_{krw}} D_{ikrw} \quad (5)$$

where

- D_{krw} = Average density in stratum k in region r during week w.
- D_{ikrw} = Sample density calculated in Equation 4.
- n_{krw} = Number of samples taken in stratum k in region r during week w.

$$SE(D_{krw}) = \sqrt{\frac{\sum_{i=1}^{n_{krw}} (D_{ikrw} - D_{krw})^2}{(n_{krw})(n_{krw} - 1)}} \quad (6)$$

where

$SE(D_{krw})$ = Standard error of the average density in stratum k in region r during week w.

D_{ikrw} = Sample density calculated in Equation 4.

D_{krw} = Average stratum density calculated in Equation 5.

$$D_{rw} = \sum_{k=1}^{n_{rw}} (D_{krw})(P_k) \quad (7)$$

where

D_{rw} = Average density in region r during week w.

D_{krw} = Average stratum density calculated in Equation 5.

P_k^* = Proportion of the regional river volume found in stratum k ([Table 2-11](#)).

n_{rw} = Number of strata sampled in region r during week w.

$$SE(D_{rw}) = \sqrt{\sum_{k=1}^{n_{rw}} [SE(D_{krw})^2 (P_k)^2]} \quad (8)$$

where

$SE(D_{rw})$ = Standard error of average density in region r during week w.

$SE(D_{krw})$ = Standard error of the average stratum density calculated in Equation 6.

Catches from the BSS were reported as number caught per seine haul (catch-per-unit-effort [CPUE]) by life stage and species. The average CPUE for a region and its standard error were calculated using Equations 9 and 10:

* When a stratum is missing, P_k for the sampled stratum is equal to the sum of the P_k for the sampled stratum and the P_k for the unsampled stratum.

$$C_{rw} = \frac{1}{n_{rw}} \sum_{i=1}^{n_{rw}} C_{irw} \quad (9)$$

where

- C_{rw} = Average CPUE in region r during week w.
- C_{irw} = CPUE for sample i in region r during week w.
- n_{rw} = Number of samples taken in region r during week w.

$$SE(C_{rw}) = \frac{\sum_{i=1}^{n_{rw}} (C_{irw} - C_{rw})^2}{n_{rw}(n_{rw} - 1)} \quad (10)$$

where

- $SE(C_{rw})$ = Standard error of average CPUE in region r during week w.
- C_{rw} = Average regional CPUE calculated in Equation 9.

2.5.2.2 Standing Crop Estimates

An index of standing crop (the number of fish in an area at a particular time) was estimated by life stage and species for each of the three surveys. [Again, data collected during the Atlantic Croaker Ichthyoplankton Survey in November and December were excluded from standing crop indices for the LRS because the sampling design differed (systematic versus stratified, random design).] Standing crop indices and the associated standard errors were calculated for each stratum in a region by taking the product of the average stratum density (or the standard error) and the volume of water contained in that stratum (Equations 11 and 12 for the LRS and FJS) (Table 2-11). The regional standing crop index was then estimated as the sum of the stratum index values (Equations 13 and 14). Similarly, an estimate of the standing crop index for the Hudson River estuary for each week was calculated by summing the standing crops for the 13 (12 for the BSS) river regions (Equations 15 and 16). This value is an index rather than an absolute standing crop value because no adjustment was applied for collection efficiency.

$$SC_{krw} = (V_{kr})(D_{krw}) \quad (11)$$

where

- SC_{krw} = Standing crop index for stratum k in region r during week w.
- V_{kr} = River volume contained by stratum k in region r.

D_{krw} = Average stratum density calculated in Equation 5.

$$SE(SC_{krw}) = (V_{kr})[SE(D_{krw})] \quad (12)$$

where

$SE(SC_{krw})$ = Standard error of the standing crop index for stratum k in region r during week w.

$SE(D_{krw})$ = Standard error of average stratum density calculated in Equation 6.

$$SC_{rw}^{**} = \sum_{k=1}^3 SC_{krw} \quad (13)$$

where

SC_{rw} = Standing crop index for region r during week w.

SC_{krw} = Stratum standing crop index calculated in Equation 11.

$$SE(SC_{rw}^{**}) = \sqrt{\sum_{k=1}^3 [SE(SC_{krw})]^2} \quad (14)$$

where

$SE(SC_{rw})$ = Standard error of standing crop index for region r during week w.

$SE(SC_{krw})$ = Standard error of stratum standing crop index calculated in Equation 12.

$$SC_w = \sum_{r=1}^{12} SC_{rw} \quad (15)$$

where

SC_w = Standing crop index for week w. For the LRS and FJS, regional standing crop indices include the Battery Region (r=0).

** Volumes of unsampled strata were added to the volumes of an adjacent stratum according to the rules for stratum volumes in Section 2.5.2.

SC_{rw} = Regional standing crop index calculated in Equations 13 or 17.

$$SE(SC_w) = \sqrt{\sum_{r=1}^{12} [SE(SC_{rw})]^2} \quad (16)$$

where

$SE(SC_w)$ = Standard error of standing crop index for week w. For the LRS and FJS, regional standing crop indices include the Battery Region ($r=0$).

$SE(SC_{rw})$ = Standard error of regional standing crop index calculated in Equations 14 or 18.

An index of regional standing crop (and standard error) for the BSS was obtained by multiplying CPUE and the surface area of the shorezone and dividing by the empirically derived estimate of the area sampled by the 30.5-m beach seine (Equations 17 and 18). The weekly index of standing crop for the shorezone was calculated as the sum of the 12 regional standing crops (Equations 15 and 16).

$$SC_{rw} = (C_{rw} A_r) / A \quad (17)$$

where

SC_{rw} = Standing crop index for the shorezone in region r during week w.

C_{rw} = Average regional CPUE calculated in Equation 9.

A_r = Surface area (m^2) of the shorezone in region r.

A = Surface area (m^2) sampled by the beach seine ($450 m^2$) (TI 1981).

$$SE(SC_{rw}) = \frac{[SE(C_{rw})] (A_r)}{A} \quad (18)$$

where

$SE(SC_{rw})$ = Standard error of standing crop index for the shorezone in region r during week w.

$SE(C_{rw})$ = Standard error of average regional CPUE calculated in Equation 10.

2.5.2.3 Temporal and Geographic Distribution Indices

Distribution indices were computed to facilitate presentation of changes in distribution of selected species and life stages through time and space. To allow comparisons of 2006 data with historical data, only data from samples collected from Weeks 18 to 26 (where Week 1 begins with the first Monday in January) were used for LRS (except for bay anchovy which used Weeks 18-40); data from Weeks 33 to 40 were used for the FJS and BSS. In all cases, data were used only when Regions 1-12 were sampled (except for bay anchovy which included Region 0).

The LRS was used for calculating the temporal and geographic indices for early life stages of striped bass, white perch, Atlantic tomcod, bay anchovy, American shad, *Alosa* spp., and rainbow smelt. The FJS was used to calculate geographical distribution indices for hogchoker, white catfish, and weakfish. The BSS was used to calculate geographical distribution indices for striped bass, white perch, bay anchovy, American shad, alewife, blueback herring, gizzard shad, spottail shiner, and bluefish.

The periods used for the LRS and BSS spanned 1974-2006, whereas the time period for the FJS extended from 1979 (when the FJS sampled the river from RM 12 to RM 152) through 2006. Temporal and geographic indices for bay anchovy from the LRS used the period from 1988 to 2006, when the sampling design included the Battery region.

A geographic index that collapses data over weeks was calculated for LRS, FJS, and BSS data as the relative standing crop in each region. This geographic index was calculated as follows:

$$G_{ry} = \frac{\sum_{w=1}^{n_y} SC_{rwy}}{\sum_{r=1}^{12} \sum_{w=1}^{n_y} SC_{rwy}} \quad (19)$$

where

G_{ry} = Geographic index for region r in year y .

SC_{rwy} = Regional standing crop index for region r in week w in year y calculated in Equations 13 or 17.

n_y = Number of weeks sampled in year y .

A temporal index that collapses data for the entire Hudson River estuary was computed for early life stages from LRS standing crop indices (Equation 20):

$$T_{wy} = \frac{SC_{wy}}{\sum_{w=1}^{n_y} SC_{wy}} \quad (20)$$

where

T_{wy} = Temporal index for week w in year y.

SC_{wy} = Weekly standing crop index in year y calculated in Equation 15.

n_y = Number of weeks sampled in year y.

[Link to Chapter 3](#)

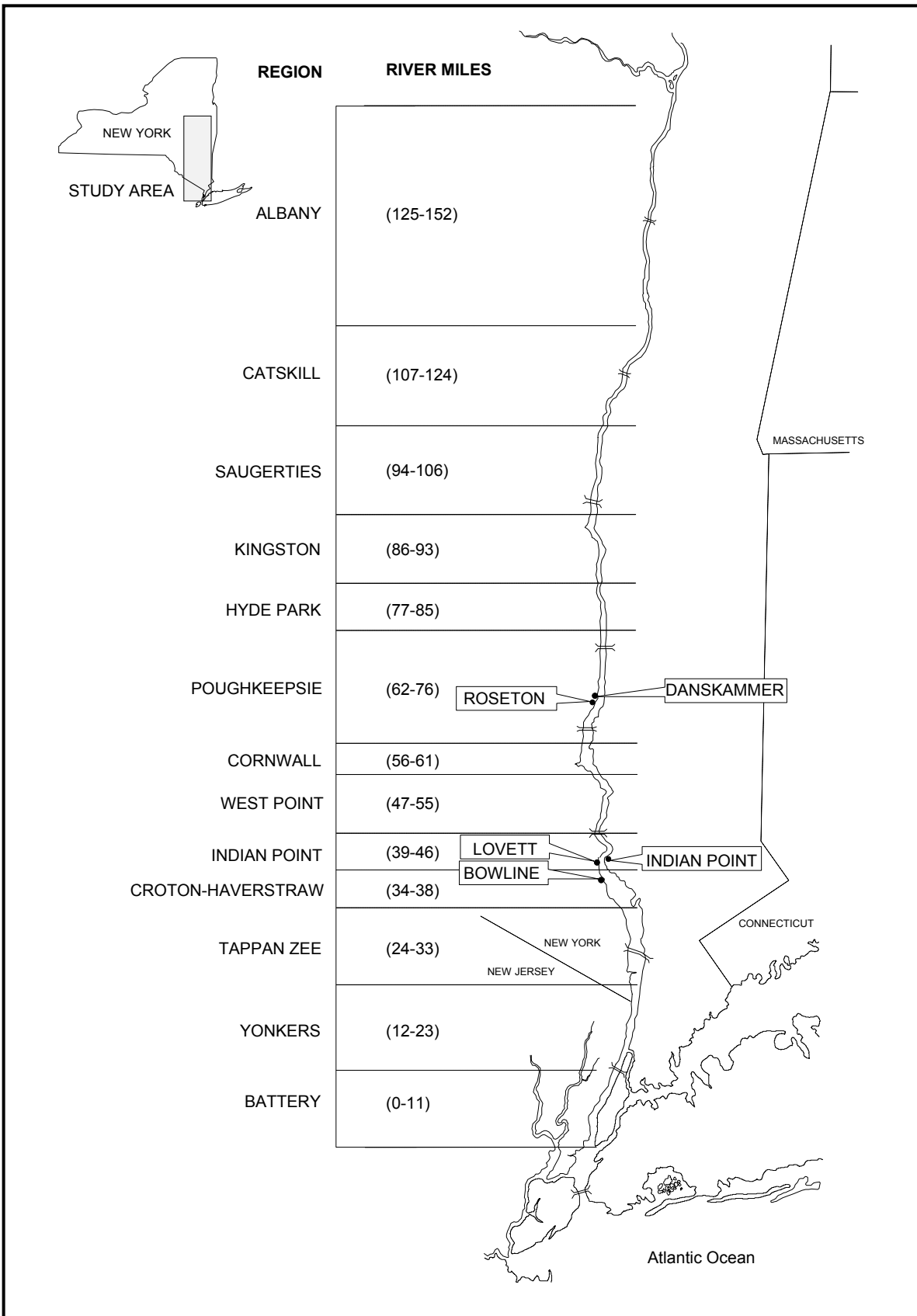


Figure 2-1. Location of 13 geographic regions (with river mile boundaries) sampled during the 2006 biological monitoring program in the Hudson River estuary.

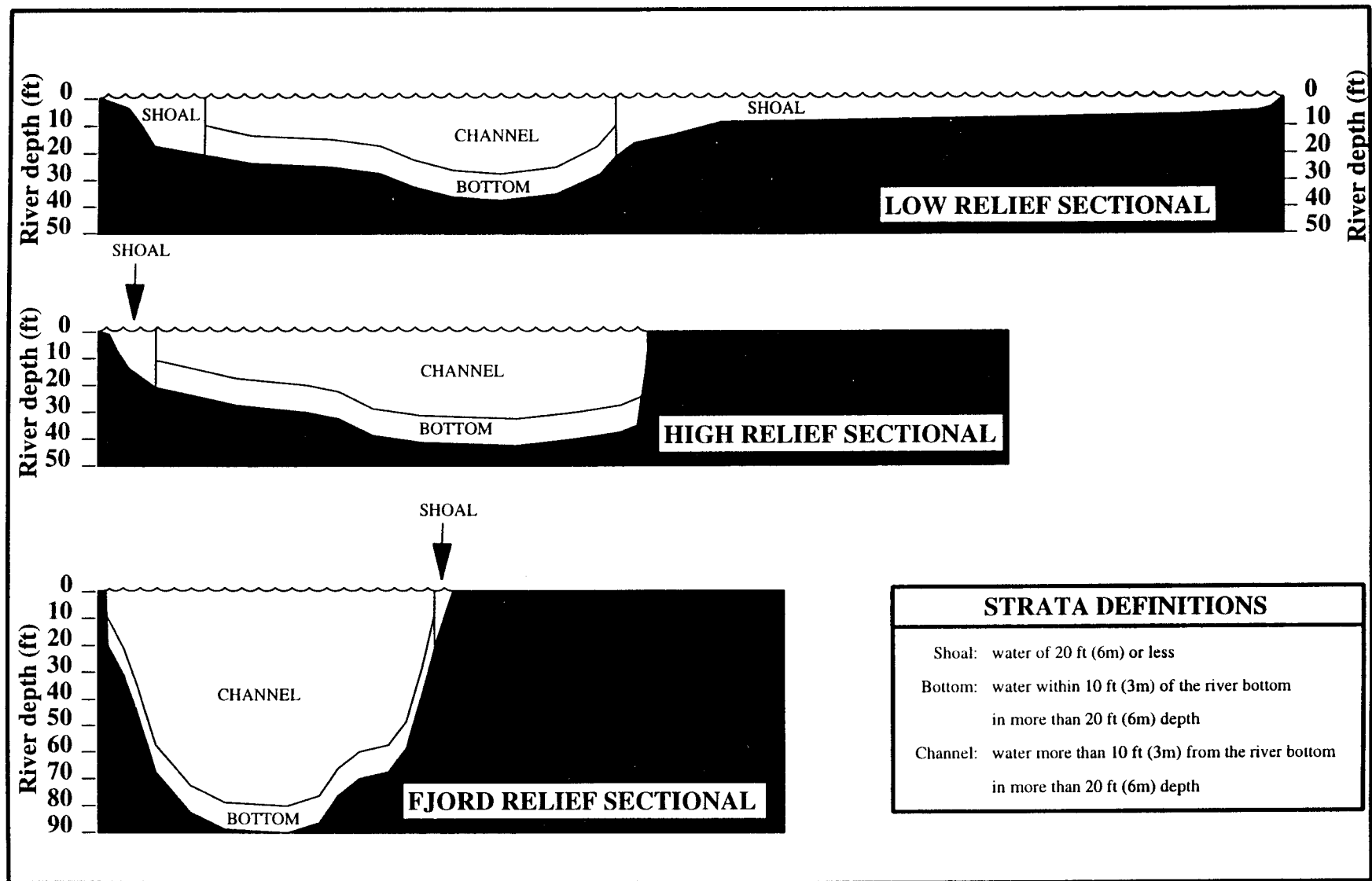


Figure 2-2. Cross sections of the Hudson River estuary showing locations and typical proportional relationships of the shoal, bottom, and channel strata.

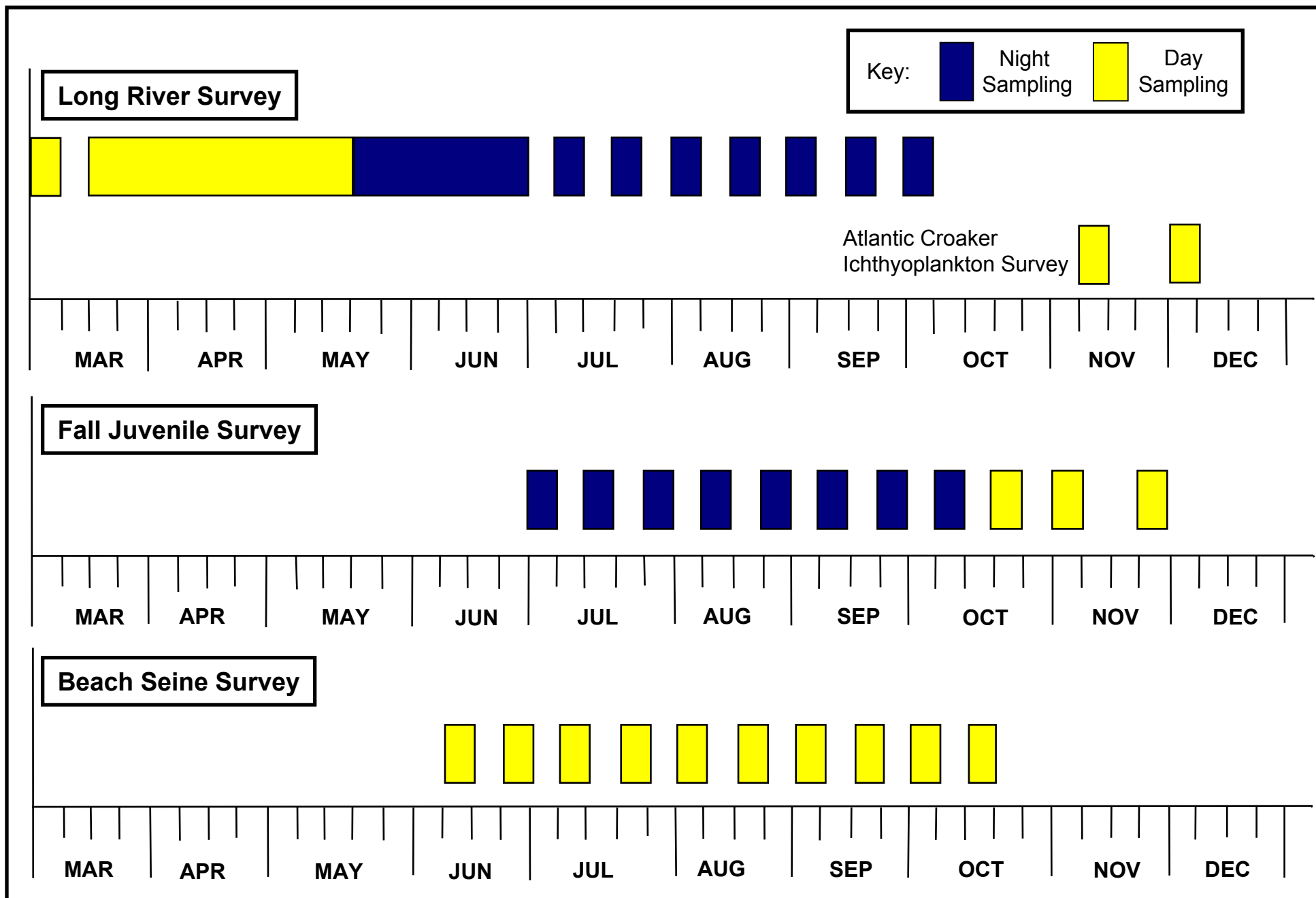


Figure 2-3. Completed sampling schedule for 2006.

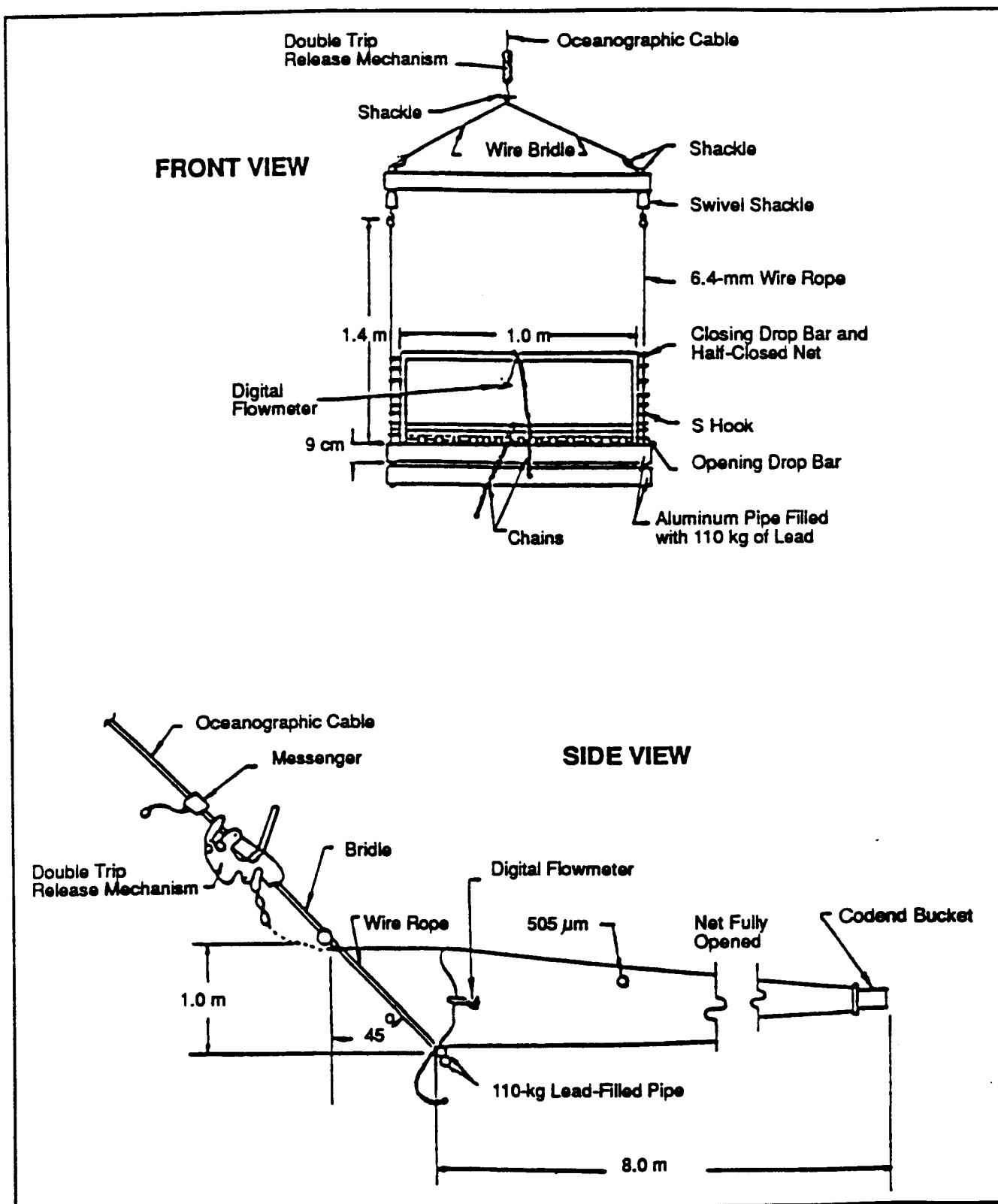


Figure 2-4. Design and dimensions of 1.0-m² Tucker trawl.

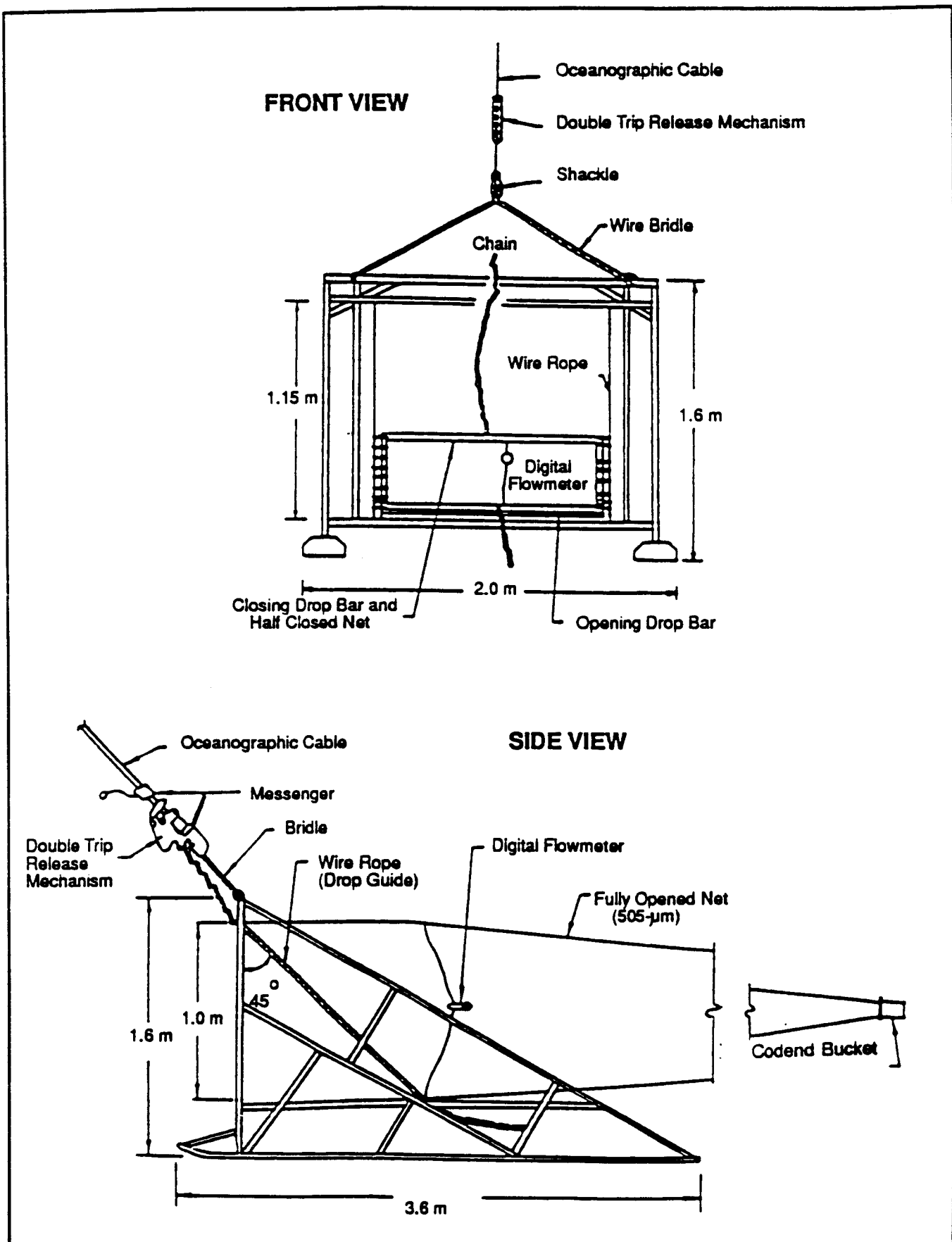


Figure 2-5. Design and dimensions of 1.0-m² Tucker trawl mounted on an epibenthic sled.

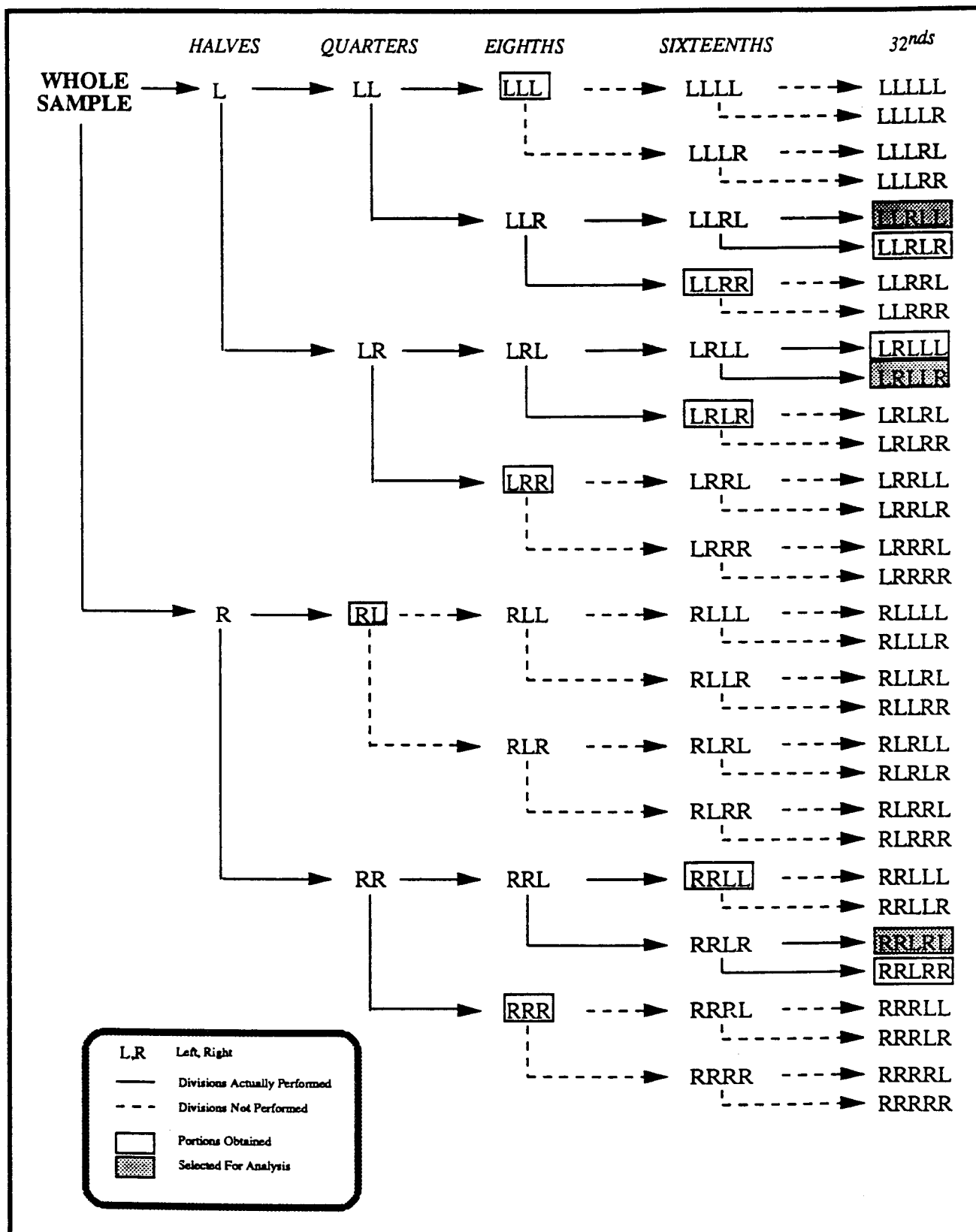


Figure 2-6. Conceptual diagram of the splitting process.

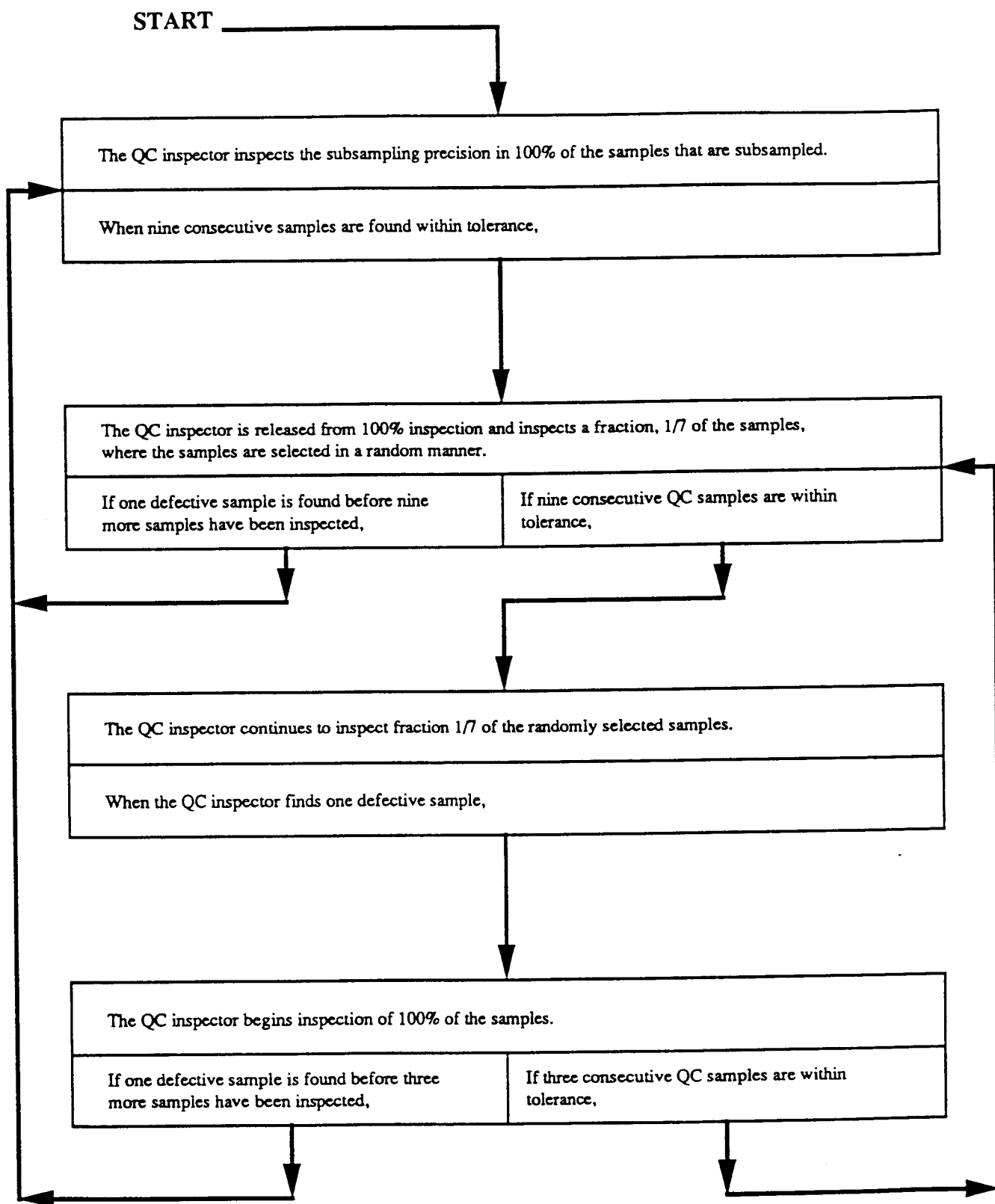


Figure 2-7. Inspection plan for evaluation of splitting precision.

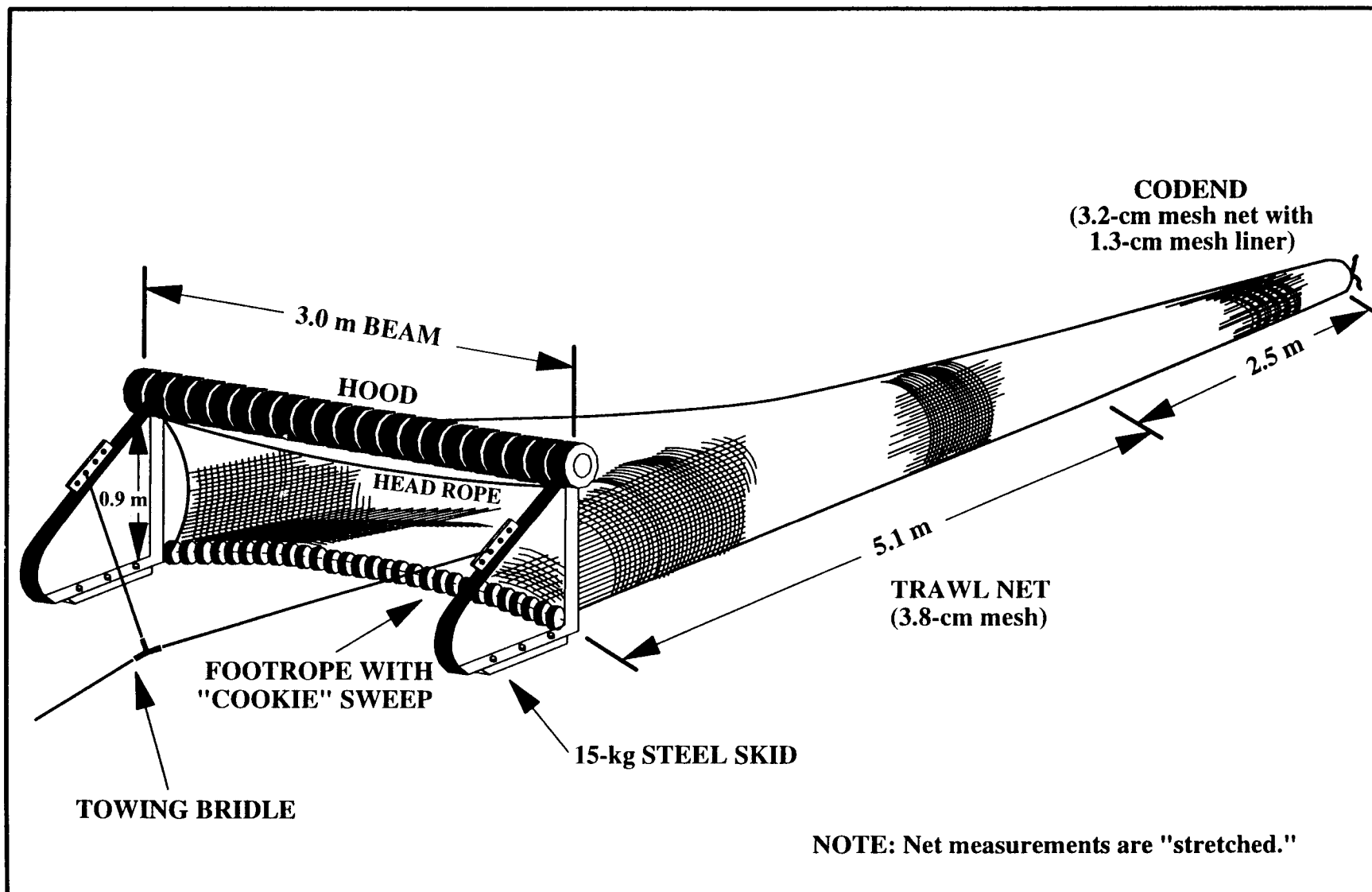


Figure 2-8. Design and dimensions of the 3.0-m beam trawl.

Table 2-1 Strata Sampled within the 13 Geographic Regions of the Hudson River Estuary During 2006

<u>Region</u>	<u>Abbreviation</u>	<u>River Miles</u>	<u>River Kilometers</u>	<u>2006 Surveys</u>			
				<u>Shore</u>	<u>Shoal</u>	<u>Channel</u>	<u>Bottom</u>
Battery	BT	1-11	1-19	--	--	X	X
Yonkers	YK	12-23	19-39	X	X	X	X
Tappan Zee	TZ	24-33	39-55	X	X	X	X
Croton-Haverstraw	CH	34-38	55-63	X	X	X	X
Indian Point	IP	39-46	63-76	X	X	X	X
West Point	WP	47-55	76-90	X	--	X	X
Cornwall	CW	56-61	90-100	X	X	X	X
Poughkeepsie	PK	62-76	100-124	X	--	X	X
Hyde Park	HP	77-85	124-138	X	--	X	X
Kingston	KG	86-93	138-151	X	--	X	X
Saugerties	SG	94-106	151-172	X	--	X	X
Catskill	CS	107-124	172-201	X	--	X	X
Albany	AL	125-152	201-246	X	--	X	X

NOTE: Dashes (--) indicate no sampling scheduled.

Table 2-2 Summary of 2006 Hudson River Surveys

<u>Program Phase</u>	<u>Sampling Schedule</u>		<u>Number of River Runs</u>	<u>Sampling Frequency</u>	<u>Strata Sampled</u>	<u>Sample Number Collection</u>		<u>Lab Analysis</u>	<u>Sampling Gear</u>
	<u>Start Week</u>	<u>End Week</u>				<u>Projected</u>	<u>Actual</u>		
Longitudinal River Ichthyoplankton Survey	6 MAR	2 OCT	23	Weekly/ Biweekly	Shoal	588	590	555	1.0-m ² net on epibenthic sled, or 1.0-m ² Tucker trawl
					Channel	1,545	1,545	957	1.0-m ² Tucker trawl
					Bottom	1,389	1,384	924	1.0-m ² net on epibenthic sled
Atlantic Croaker Ichthyoplankton Survey	13 NOV	4 DEC	2	Monthly	Shoal	32	32	32	1.0-m ² net on epibenthic sled, or 1.0-m ² Tucker trawl
					Channel	26	26	26	1.0-m ² Tucker trawl
					Bottom	26	26	26	1.0-m ² net on epibenthic sled
Fall Juvenile Survey	3 JUL	27 NOV	11	Biweekly	Shoal	427	428		3.0-m beam trawl, or 1.0-m ² Tucker trawl
					Channel	648	646		1.0-m ² Tucker trawl
					Bottom	1,055	1,055		3.0-m beam trawl
Beach Seine Survey	12 JUN	16 OCT	10	Biweekly	Shore	1,000	1,000		30.5-m beach seine

Table 2-3 Summary of 2006 Sample Collection Information by River Region and Stratum for the Longitudinal River Ichthyoplankton Survey

Region	4-Week Period from 6 MAR to 31 MAR					3-Week Period from 3 APR to 21 APR					3-Week Period from 24 APR to 12 MAY				
	Shoal		Bottom		Channel	Shoal		Bottom		Channel	Shoal		Bottom		Channel
	Sled	Trawl	Sled	Trawl		Sled	Trawl	Sled	Trawl		Sled	Trawl	Sled	Trawl	
Battery	--	--	15	15	30	--	--	24	18	42	--	--	18	18	36
Yonkers	6	6	18	18	48	6	6	21	15	48	6	6	21	15	48
Tappan Zee	9	6	18	18	51	18	12	12	12	54	18	14	12	12	56
Croton-Haverstraw	9	6	18	18	51	12	9	12	12	45	12	9	12	12	45
Indian Point	6	6	18	18	48	6	6	12	12	36	6	6	18	30	60
West Point	--	--	15	15	30	--	--	15	15	30	--	--	18	45	63
Cornwall	6	6	12	12	36	9	6	9	9	33	9	6	24	15	54
Poughkeepsie	--	--	--	--	--	--	--	9	9	18	--	--	30	30	60
Hyde Park	--	--	--	--	--	--	--	9	21	30	--	--	27	33	60
Kingston	--	--	--	--	--	--	--	24	18	42	--	--	18	21	39
Saugerties	--	--	--	--	--	--	--	24	18	42	--	--	9	15	24
Catskill	--	--	--	--	--	--	--	48	21	69	--	--	9	15	24
Albany	--	--	--	--	--	--	--	60	30	90	--	--	10	15	25
Total	36	30	114	114	294	51	39	279	210	579	51	41	226	276	594

Region	3-Week Period from 15 MAY to 2 JUN					4-Week Period from 5 JUN to 30 JUN					13-Week Period from 10 JUL to 6 OCT				
	Shoal		Bottom		Channel	Shoal		Bottom		Channel	Shoal		Bottom		Channel
	Sled	Trawl	Sled	Trawl		Sled	Trawl	Sled	Trawl		Sled	Trawl	Sled	Trawl	
Battery	--	--	23	12	35	--	--	24	16	44	--	--	42	42	84
Yonkers	6	3	20	12	41	8	8	24	28	72	14	14	42	28	98
Tappan Zee	12	6	12	12	42	8	8	20	20	60	21	21	28	28	98
Croton-Haverstraw	12	6	12	12	42	12	8	23	24	72	21	21	28	28	98
Indian Point	6	6	18	36	66	12	8	20	64	108	21	21	28	28	98
West Point	--	--	21	45	66	--	--	32	96	136	--	--	28	28	56
Cornwall	9	6	24	15	54	8	8	48	48	116	14	14	21	21	70
Poughkeepsie	--	--	36	54	90	--	--	28	60	92	--	--	21	21	42
Hyde Park	--	--	21	30	51	--	--	20	36	60	--	--	--	--	--
Kingston	--	--	12	18	30	--	--	16	24	40	--	--	--	--	--
Saugerties	--	--	15	9	24	--	--	16	8	24	--	--	--	--	--
Catskill	--	--	9	9	18	--	--	12	12	24	--	--	--	--	--
Albany	--	--	9	9	18	--	--	12	12	24	--	--	--	--	--
Total	45	27	232	273	577	48	40	295	448	872	91	91	238	224	644

NOTE: Dashes (--) indicate no sampling scheduled.

(Continued)

Table 2-3 (Continued) Summary of 2006 Sample Collection Information by River Region and Stratum for the Atlantic Croaker Ichthyoplankton Survey

Region	4-Week Period from 13 NOV to 8 DEC				
	Shoal		Bottom Channel		Total
	Sled	Trawl	Sled	Trawl	
Battery	--	--	6	6	12
Yonkers	4	4	4	4	16
Tappan Zee	4	4	4	4	16
Croton-Haverstraw	2	2	2	2	8
Indian Point	4	4	4	4	16
West Point	--	--	4	4	8
Cornwall	2	2	2	2	8
Poughkeepsie	--	--	--	--	--
Hyde Park	--	--	--	--	--
Kingston	--	--	--	--	--
Saugerties	--	--	--	--	--
Catskill	--	--	--	--	--
Albany	--	--	--	--	--
Total	16	16	26	26	84

NOTE: Dashes (--) indicate no sampling scheduled.

Table 2-4 Specifications of Sampling Gear Used During the 2006 Longitudinal River Ichthyoplankton Survey

1.0-m ² Tucker Trawl	
Length	8.0 m
Mouth (width)	1.0 m
Mouth (height)	1.4 m
Mesh size	500 μ m
Net material	Nytex (monofilament nylon)
Collection cup	
Length	30 cm
Length with net-retaining ring	37 cm
Mesh size	500 μ m
Net material	Nytex (monofilament nylon)
1.0-m ² Net Mounted on Epibenthic Sled	
Length	8.0 m
Mouth (width)	1.0 m
Mouth (height)	1.4 m
Mesh size	500 μ m
Net material	Nytex (monofilament nylon)
Collection cup	
Length	30 cm
Length with net-retaining ring	37 cm
Mesh size	500 μ m
Net material	Nytex (monofilament nylon)

Table 2-5 Water Quality Sampling Locations During the 2006 Longitudinal River Ichthyoplankton, Atlantic Croaker Ichthyoplankton, and Fall Juvenile Surveys

River Region	Scheduled Sampling Locations (RM)		Number of Water Quality Samples Scheduled Per Region Per River Run				
	Shoals ¹	Channel	LRS River Runs 1-3	LRS River Runs 4-16	LRS River Runs 17-23	ACIS River Runs 24-25	FJS River Runs 1-11
Battery	--	1, 3, 6, 9	12	12	12	12	12
Yonkers	19	12, 14, 17, 19, 22	19	19	19	20	19
Tappan Zee	29	25, 27, 29, 32	16	16	16	16	16
Croton-Haverstraw	36	35, 36, 37, 38	16	16	16	16	16
Indian Point	43	40, 42, 43, 46	16	16	16	16	16
West Point	--	49, 51, 53, 55	12	12	12	12	12
Cornwall	59	56, 57, 59, 61	16	16	16	15	16
Poughkeepsie	--	63, 67, 71, 75	--	12	12	--	12
Hyde Park	--	78, 80, 82, 84	--	12	--	--	12
Kingston	--	87, 89, 91, 93	--	12	--	--	12
Saugerties	--	96, 99, 102, 105	--	12	--	--	12
Catskill	--	109, 114, 118, 122	--	12	--	--	12
Albany	--	126, 131, 135, 138, 142	--	15	--	--	15
Total per River Run			107	182	119	107	182

NOTE: Dashes (--) indicate no sampling scheduled.

¹ Sample collected from east and west shoals at designated river mile.

Table 2-6 Summary of 2006 Sample Analysis Information by River Region and Stratum for the Longitudinal River Ichthyoplankton Survey

Region	4-Week Period from 6 MAR to 31MAR					3-Week Period from 3 APR to 21 APR					3-Week Period from 24 APR to 12 MAY				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total
Battery	--	--	15	15	30	--	--	12	9	21	--	--	9	9	18
Yonkers	6	6	9	9	30	6	6	12	15	39	6	6	12	15	39
Tappan Zee	9	6	9	9	33	9	12	12	12	45	9	12	12	12	45
Croton-Haverstraw	9	6	9	9	33	12	9	12	12	45	12	9	12	12	45
Indian Point	6	6	9	9	30	6	6	12	12	36	6	6	9	15	36
West Point	--	--	15	15	30	--	--	15	15	30	--	--	9	9	18
Cornwall	6	5	12	12	35	9	6	9	9	33	9	6	12	15	42
Poughkeepsie	--	--	--	--	--	--	--	9	9	18	--	--	15	15	30
Hyde Park	--	--	--	--	--	--	--	9	12	21	--	--	15	18	33
Kingston	--	--	--	--	--	--	--	12	9	21	--	--	9	12	21
Saugerties	--	--	--	--	--	--	--	12	9	21	--	--	9	15	24
Catskill	--	--	--	--	--	--	--	9	12	21	--	--	9	15	24
Albany	--	--	--	--	--	--	--	12	15	27	--	--	10	15	25
Total	36	29	78	78	221	42	39	147	150	378	42	39	142	177	400

Region	3-Week Period from 15 MAY to 2 JUN					4-Week Period from 5 JUN to 30JUN					13-Week Period from 10 JUL to 6 OCT				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total
Battery	--	--	12	12	24	--	--	12	16	28	--	--	21	21	42
Yonkers	6	3	9	12	30	8	8	12	16	44	14	14	21	28	77
Tappan Zee	12	6	12	12	42	8	8	20	20	56	14	21	28	28	91
Croton-Haverstraw	12	6	12	12	42	12	8	12	12	44	21	21	28	28	98
Indian Point	6	6	9	18	39	12	8	20	12	52	14	21	28	28	91
West Point	--	--	12	9	21	--	--	16	20	36	--	--	28	28	56
Cornwall	9	6	12	15	42	8	8	24	24	64	14	14	21	21	70
Poughkeepsie	--	--	18	12	30	--	--	16	12	28	--	--	21	21	42
Hyde Park	--	--	12	15	27	--	--	20	20	40	--	--	--	--	--
Kingston	--	--	12	9	21	--	--	16	12	28	--	--	--	--	--
Saugerties	--	--	15	9	24	--	--	16	8	24	--	--	--	--	--
Catskill	--	--	9	9	18	--	--	12	12	24	--	--	--	--	--
Albany	--	--	9	9	18	--	--	12	12	24	--	--	--	--	--
Total	45	27	153	153	378	48	40	208	196	492	77	91	196	203	567

NOTE: Dashes (--) indicate no sampling scheduled.

(Continued)

Table 2-6 (Continued) Summary of 2006 Sample Analysis Information by River Region and Stratum for the Atlantic Croaker Ichthyoplankton Survey

Region	4-Week Period from 13 NOV to 8 DEC				
	Shoal		Bottom Channel		Total
	Sled	Trawl	Sled	Trawl	
Battery	--	--	6	6	12
Yonkers	4	4	4	4	16
Tappan Zee	4	4	4	4	16
Croton-Haverstraw	2	2	2	2	8
Indian Point	4	4	4	4	16
West Point	--	--	4	4	8
Cornwall	2	2	2	2	8
Poughkeepsie	--	--	--	--	--
Hyde Park	--	--	--	--	--
Kingston	--	--	--	--	--
Saugerties	--	--	--	--	--
Catskill	--	--	--	--	--
Albany	--	--	--	--	--
Total	16	16	26	26	84

NOTE: Dashes (--) indicate no sampling scheduled.

Table 2-7 Summary of 2006 Sample Collection by River Region and Stratum for the Fall Juvenile Survey

Region	15-Week Period from 3 JUL to 13 OCT					6-Week Period from 23 OCT to 1 DEC				
	Shoal		Bottom	Channel	Total	Shoal		Bottom	Channel	Total
	Beam	Tucker	Beam	Tucker		Beam	Tucker	Beam	Tucker	
Battery	--	--	64	48	112	--	--	36	--	36
Yonkers	16	16	64	48	144	15	--	33	--	48
Tappan Zee	48	48	48	48	192	15	--	24	--	39
Croton-Haverstraw	40	40	48	48	176	15	--	18	--	33
Indian Point	32	33	56	56	177	15	--	30	--	45
West Point	--	--	80	94	174	--	--	36	--	36
Cornwall	40	40	48	48	176	15	--	30	--	45
Poughkeepsie	--	--	88	88	176	--	--	30	--	30
Hyde Park	--	--	64	48	112	--	--	30	--	30
Kingston	--	--	33	48	81	--	--	24	--	24
Saugerties	--	--	31	16	47	--	--	30	--	30
Catskill	--	--	24	24	48	--	--	30	--	30
Albany	--	--	32	32	64	--	--	24	--	24
Total	176	177	680	646	1679	75	--	375	--	450

NOTE: Dashes (--) indicate no sampling scheduled.

Table 2-8 Specifications of Sampling Gear Used During the 2006 Fall Juvenile Survey

1.0-m ² Tucker Trawl	
Length	8.0 m
Mouth (width)	1.0 m
Mesh size	3.0 mm
Collection cage (codend)	
Length	81 cm
Diameter	41 cm
Mesh size	3.0 mm
3.0-m Beam Trawl	
Length	7.6 m
Beam width	3.0 m
Net body	3.8-cm mesh (stretch)
Codend	3.2-cm mesh (stretch) net with 1.3-cm mesh (stretch) liner
Hood	3.8-cm mesh (stretch)
Footrope	Equipped with 5.1-cm rollers
Headrope	Equipped with three floats
Mouth area	2.7 m ²

Table 2-9 Specifications of Sampling Gear Used During the 2006 Beach Seine Survey

30.5-m Beach Seine	
Number of wings	2
Length of wings	12.0 m
Depth of wings	2.4 m
Wing mesh (bar)	1.0 cm
Length of bag	6.1 m
Depth of bag	3.0 m
Bag mesh (bar)	0.5 cm
Sampling area	450 m ²

Table 2-10 Summary of 2006 Sample Collection by River Region for the Beach Seine Survey

<u>Region</u>	<u>5-Week Period from 12 JUN to 14 JUL</u>	<u>13-Week Period from 24 JUL to 20 OCT</u>	<u>Total</u>
Yonkers	9	35	44
Tappan Zee	33	168	201
Croton-Haverstraw	21	98	119
Indian Point	9	35	44
West Point	9	35	44
Cornwall	9	42	51
Poughkeepsie	24	35	59
Hyde Park	24	35	59
Kingston	24	35	59
Saugerties	45	63	108
Catskill	57	70	127
Albany	36	49	85
Total	300	700	1000

Table 2-11 Stratum and Region Volumes (m³) and Surface Areas (m²) Used in Analysis of 2006 Hudson River Estuary Data

<u>Geographic Region</u>	<u>Channel Volume</u>	<u>Bottom Volume</u>	<u>Shoal Volume</u>	<u>Region Volume</u>	<u>Shorezone Surface Area</u>
Battery	141,809,822	48,455,129	18,747,833	209,012,784	(a)
Yonkers	143,452,543	59,312,978	26,654,767	229,420,288	3,389,000
Tappan Zee	138,000,768	62,125,705	121,684,992	321,811,465	20,446,000
Croton-Haverstraw	61,309,016	32,517,633	53,910,105	147,736,754	12,101,000
Indian Point	162,269,471	33,418,632	12,648,163	208,336,266	4,147,000
West Point	178,830,022	25,977,862	2,647,885	207,455,769	1,186,000
Cornwall	94,882,267	36,768,629	8,140,123	139,791,019	4,793,000
Poughkeepsie	228,975,052	63,168,132	5,990,260	298,133,444	3,193,000
Hyde Park	131,165,041	32,012,000	2,307,625	165,484,666	558,000
Kingston	93,657,021	35,479,990	12,332,868	141,469,879	3,874,000
Saugerties	113,143,296	42,845,077	20,307,338	176,295,711	7,900,000
Catskill	83,924,081	42,281,206	34,526,456	160,731,743	8,854,000
Albany	32,025,080	13,517,183	25,606,842	71,149,105	6,114,000
Total	1,603,443,480	527,880,156	345,505,257	2,476,828,893	76,555,000

a. Shorezone surface area is unknown and not used in data analysis as no beach seine sampling is performed in the Battery region.

CHAPTER 3

PHYSICAL/CHEMICAL PARAMETERS

This chapter provides information on the parameters of temperature, salinity, and dissolved oxygen as measured during the 2006 surveys. Although parameters were measured with the BSS, emphasis will be placed on data from the LRS/FJS because these surveys encompassed the entire fish sampling period. In addition, freshwater flow data obtained from the U.S. Geological Survey for the Green Island Dam near Troy, New York, and daily water temperature data from the Poughkeepsie's Water Treatment Facility are discussed. Physical and chemical parameters are presented in [Appendix B](#).

3.1 GREEN ISLAND DAM FLOWS

During 2006, daily freshwater flow for Green Island, New York was estimated from discharge data provided by the U.S. Geological Survey for the Hudson River above Lock 1, the Mohawk River at Cohoes, and the Mohawk River diversion at Crescent Dam. At the time of publication, the data from October through December 2006 were provisional. The daily flow in 2006 ranged from 115 to 3,644 m³/sec/day ([Figure 3-1](#), [Appendix Table B-1](#)). The primary peak in daily flow occurred in late June with flows over 3,000 m³/sec/day and secondary peaks occurred in January and April with flows about 2,000 m³/sec/day. Periods of daily flow less than 200 m³/sec/day occurred in August and September ([Figure 3-1](#), [Appendix Table B-1](#)).

The 2006 monthly freshwater flow rates differed from the long-term (1947-2005) monthly average flow rates, in that the highest flows were observed in June and July instead of during the early spring months ([Figure 3-1](#), [Appendix Table B-2](#)). The monthly average flows during June and July of 2006 were the highest since 1947. For the rest of 2006, monthly average flows were lower than average in the spring, near average in the summer, and higher than average in the winter and fall. When compared to monthly average flow rates since the Hudson River surveys began in 1974 ([Appendix Table B-3](#)), the 2006 monthly flows were similar to the long-term average flows for most of the year, but were higher than average during the winter and early summer.

Average annual freshwater flow for the Hudson River as estimated at Green Island during 1947 to 2006 has varied from a minimum of 219 m³/sec/day in 1965 to a maximum of 604 m³/sec/day in 1976 ([Figure 3-2](#), [Appendix Table B-4](#)). For 2006, the provisional average annual flow of 548 m³/sec/day was the 5th highest flow in the 60 years of data.

3.2 POUGHKEEPSIE'S WATER TREATMENT FACILITY TEMPERATURES

Long-term (1951-2006) daily temperature records are available from the Poughkeepsie's Water Treatment Facility, located just north of the City of Poughkeepsie, New York, at RM 76. The lowest recorded temperature in 2006 was 0.9°C occurring in early March ([Appendix Table B-5](#)). Water temperatures in 2006 remained relatively low (<3°C) through mid-March, increased steadily during the spring and early summer, and reached a high of 27.7°C in early August. Temperatures started to decline in early September and cooled rapidly until the end of October ([Figure 3-3](#)).

The 2006 mean water temperature profile was similar to the long-term (1951-2005) average temperatures for most of the year except for four periods when temperatures were warmer than average: mid-January to mid-February, April to mid-May, mid-July to late August, and mid-

November through December ([Figure 3-3](#)). During these periods, 2006 temperatures were near long-term maximum temperatures and even exceeded the long-term maximum on 26 days. Average annual water temperature for the Hudson River as measured at Poughkeepsie's Water Treatment Facility during 1951 to 2006 has varied from a minimum of 11.29°C in 1960 to a maximum of 13.96°C in 1998 ([Figure 3-4, Appendix Table B-6](#)). For 2006, the average annual temperature of 13.09°C was the 7th highest temperature in the 56 years of data.

3.3 HUDSON RIVER SURVEYS

3.3.1 Spatiotemporal Pattern in Temperature

Average weekly water temperature measured during the 2006 LRS/FJS increased from the beginning of sampling in March to late July and then began decreasing until the end of the sampling program in December ([Figure 3-5](#)). This temporal pattern observed throughout the Hudson River estuary closely reflected that recorded at Poughkeepsie's Water Treatment Facility. Average weekly temperatures measured during the LRS/FSS were similar to concurrent Poughkeepsie's Water Treatment Facility temperatures. Peak river temperatures occurred during late July when the river-wide mean temperature, as measured from Battery to Albany, was 27.2°C and regional mean values were between 24.6 and 29.0°C ([Appendix Table B-7](#)) (Poughkeepsie's Water Treatment Facility daily temperatures averaged 27.3°C for this period). Lowest values occurred during early March when the mean temperature in the lower river was 2.7°C and regional mean temperatures from Battery to Cornwall ranged from 1.2 to 3.7°C (Poughkeepsie's Water Treatment Facility daily temperatures averaged 1.5°C for this period).

Average weekly water temperatures in 2006 were fairly consistent with the long-term (1974-2005) average temperatures observed in previous Hudson River surveys ([Figure 3-5](#)). Average temperatures in the spring of 2006 were slightly lower than weekly mean temperatures for the 33-year period, but temperatures in the early summer of 2006 were slightly higher than average.

Average annual water temperature measured during the LRS/FSS from 1974 through 2006 has varied from 19.1°C in 1983 to 23.6°C in 1991 ([Figure 3-5, Appendix Table B-8](#)). For 2006, the average annual temperature of 21.1°C was the 19th highest temperature in the 33 years of data.

Temporal patterns in the 2006 BSS temperature data resembled the pattern observed in LRS/FJS measurements with summer peak temperatures around 27.4°C achieved in early August ([Figure 3-6](#)). Mean weekly regional temperatures at the peak were 26.4 to 28.6°C ([Appendix Table B-9](#)). Minimum mean temperatures of 13-20°C were recorded during the last week of sampling that began on 16 October.

Average weekly temperatures during the 2006 BSS were comparable to the average temperatures observed in the long-term (1974-2005) record for most of the sampling season except they were less than the long-term mean temperatures in the early spring and greater than the long-term mean temperatures in the mid-summer ([Figure 3-6](#)). Average annual water temperature measured during the BSS from 1974 through 2006 has varied from 21.3°C in 1974 to 25.7°C in 2005 ([Figure 3-6, Appendix Table B-10](#)). For 2006, the average annual temperature of 23.3°C was the 17th highest temperature in the 33 years of data.

3.3.2 Spatiotemporal Pattern in Salinity

Seasonal variations in salinity occur in response to freshwater inputs to the Hudson River estuary: increasing freshwater flows lead to decreasing salinity and, likewise, decreasing flows

will increase salinity. The overall pattern of salinity, as measured during the 2006 LRS/FJS, showed fluctuating levels in spring and early summer during periods of varying freshwater inputs, increasing values in late summer, and declining values in fall ([Figure 3-7](#)). Salinity was lowest in late June (following several days of very high freshwater inputs) when the river-wide mean value was 0.8 parts per thousand (ppt) and regional values were as low as 7.4 ppt in the Battery region ([Appendix Table B-11](#)). Maximum salinity was observed in late summer when regional values were above 19 ppt in the Battery region and extended to 1.4 ppt in the Cornwall region.

The spatiotemporal pattern of salinity observed during the BSS typically resembles that observed during the LRS/FJS: increasing salinity during the summer and decreasing levels in the fall. Actual salinity measured during the BSS was lower than during the LRS/FJS because of the tendency for the denser, saline water to follow the deeper channel rather than the shorezone area. In the 2006 BSS, the salinity pattern was typical with low salinity in the late spring, increasing values during the summer, and declining values in the fall ([Appendix Table B-12](#)). Maximum salinity of 9.0 ppt in the Yonkers region in early September decreased to 6.0 ppt in mid-October, but the lowest value was observed in late June when salinity averaged 0.6 ppt in the Yonkers region ([Appendix Table B-12](#)). Mean weekly regional salinity was highest in the Yonkers region and decreased upstream.

3.3.3 Spatiotemporal Pattern in Dissolved Oxygen

Dissolved oxygen concentration varies inversely with temperature and salinity. The seasonal pattern of dissolved oxygen typically observed during the Hudson River surveys consists of high concentrations in the spring, declining to minimum values in the summer, and increasing levels in the fall. As temperatures rose in the spring and summer of 2006, dissolved oxygen, as recorded in the LRS/FJS, declined from peak mean weekly regional values of 11-14 mg/L in early March to minimum mean levels of 5-6 mg/L in late July ([Figure 3-8](#), [Appendix Table B-13](#)).

Average weekly dissolved oxygen concentrations in 2006 were lower than the long-term (1974-2005) average values except during the fall when concentrations were slightly above average ([Figure 3-8](#)). High summer temperatures in 2006 contributed to summer dissolved oxygen values in 2006 that were near or exceeded the low weekly mean for the long-term record. Average annual dissolved oxygen measured during the LRS/FSS from 1974 through 2006 has varied from 7.0 mg/L in 2005 to 8.6 mg/L in 1984 ([Figure 3-8](#), [Appendix Table B-14](#)). For 2006, the average annual dissolved oxygen concentration of 7.1°C was the 4th lowest concentration in the 33 years of data.

Percent oxygen saturation relates the theoretical limit of oxygen saturation (adjusted for temperature and salinity influences) to the observed dissolved oxygen concentrations. Mean weekly regional percent saturation based on measurements taken during the 2006 LRS/FJS were usually above 70 percent for most of the sampling season with occasional dips below 70 percent in the summer especially in the downriver regions ([Appendix Table B-17](#)). Individual mean weekly regional values were never lower than 54 percent, the minimum recorded during mid-July from the Battery region.

Data collected in the 2006 BSS ([Appendix Tables B-15](#) and [B-18](#)) indicated similar mean regional dissolved oxygen and percent oxygen saturation to that recorded in the LRS/FJS. When compared to the long-term (1974-2005) average weekly dissolved oxygen, 2006 values were well below average for the sampling season and were below historic minimum values

during some weeks ([Figure 3-9](#)), but percent oxygen saturation levels did not drop below 64 percent and were usually in the 70 to 85 percent range.

Average annual dissolved oxygen measured during the BSS from 1974 through 2006 has varied from 6.4 mg/L in 2005 to 8.8 mg/L in 1991 ([Figure 3-9](#), [Appendix Table B-16](#)). For 2006, the average annual dissolved oxygen concentration of 7.3°C was the 7th lowest concentration in the 33 years of data.

[Link to Chapter 4](#)

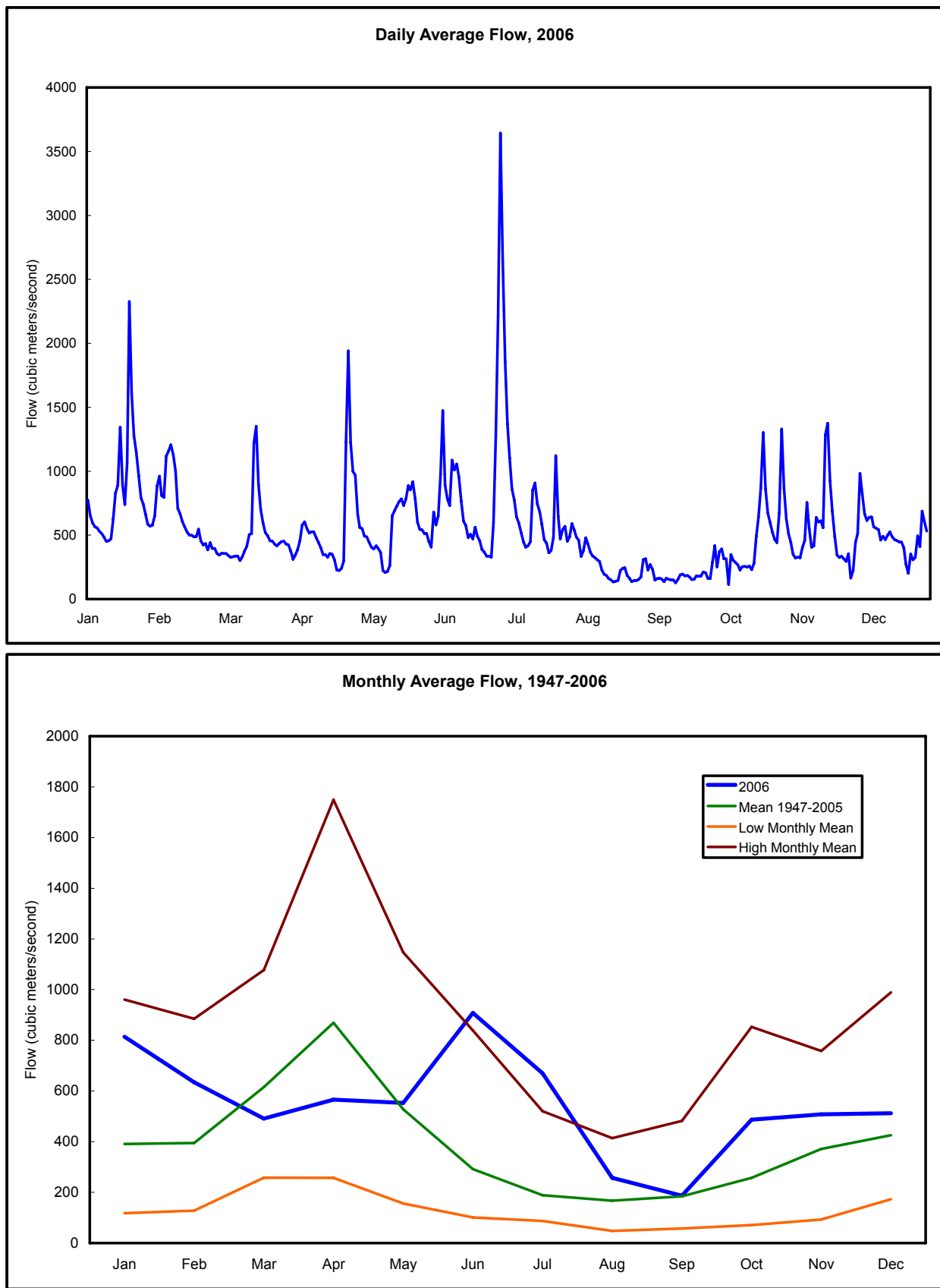


Figure 3-1. Hudson River daily average flow rate in 2006 and monthly average flow rates from 1947 to 2006, Green Island, New York. (Note: Data for October through December 2006 are provisional.)

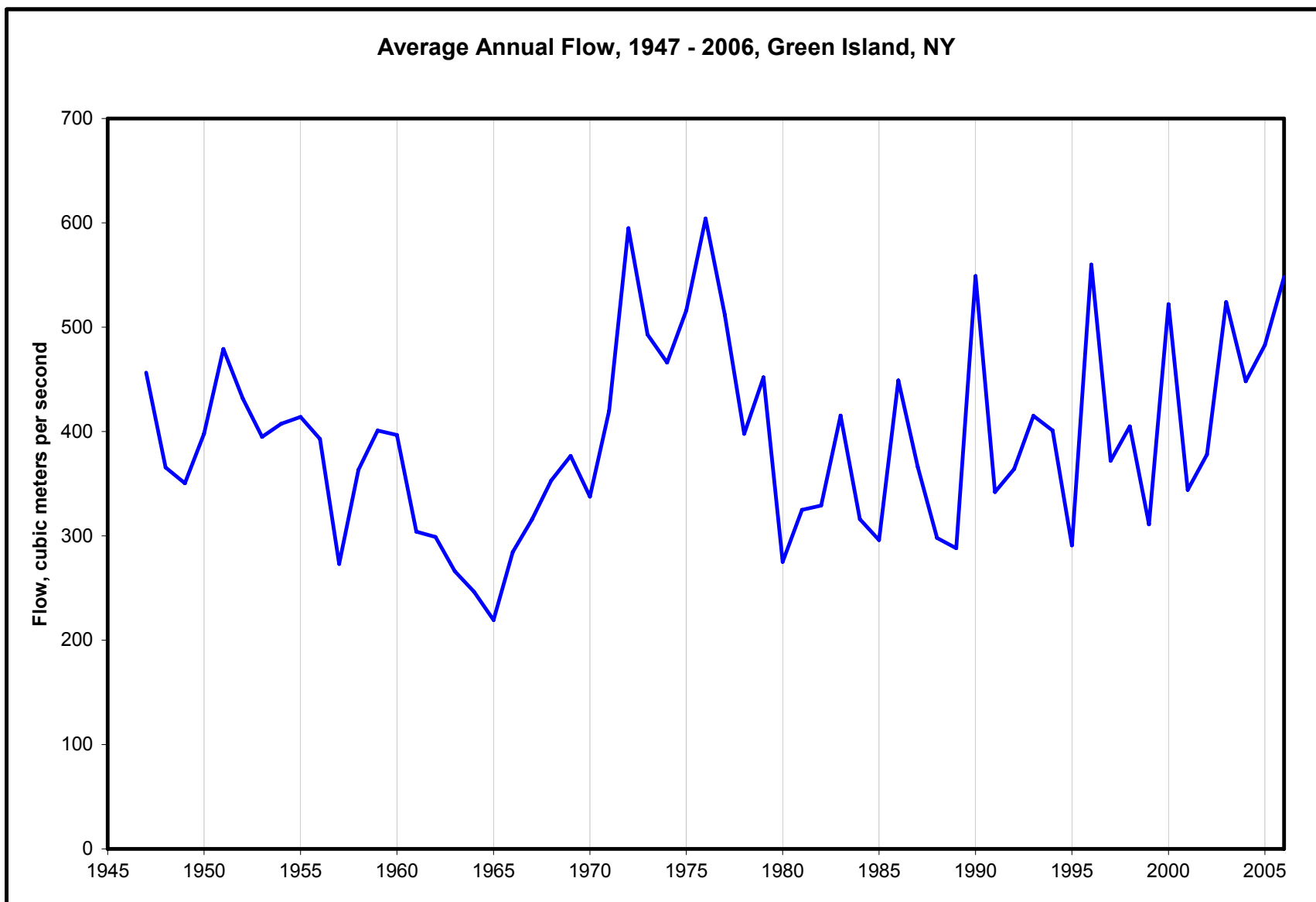


Figure 3-2. Average annual Hudson River flow from 1947 to 2006, Green Island, New York. (Note: Data for 2006 are provisional.)

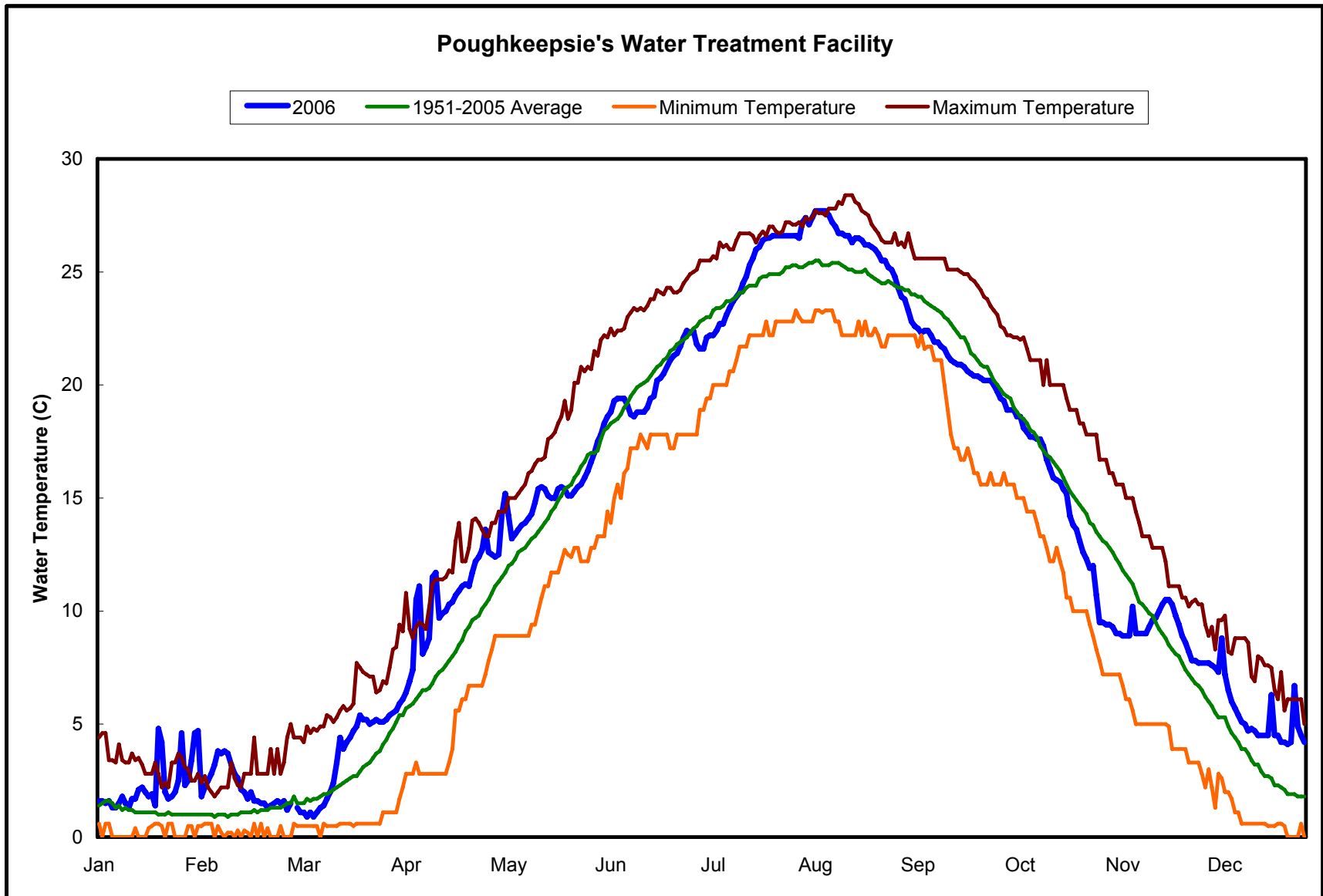


Figure 3-3. Seasonal variations in water temperature from 1951 to 2006 as measured at Poughkeepsie's Water Treatment Facility.

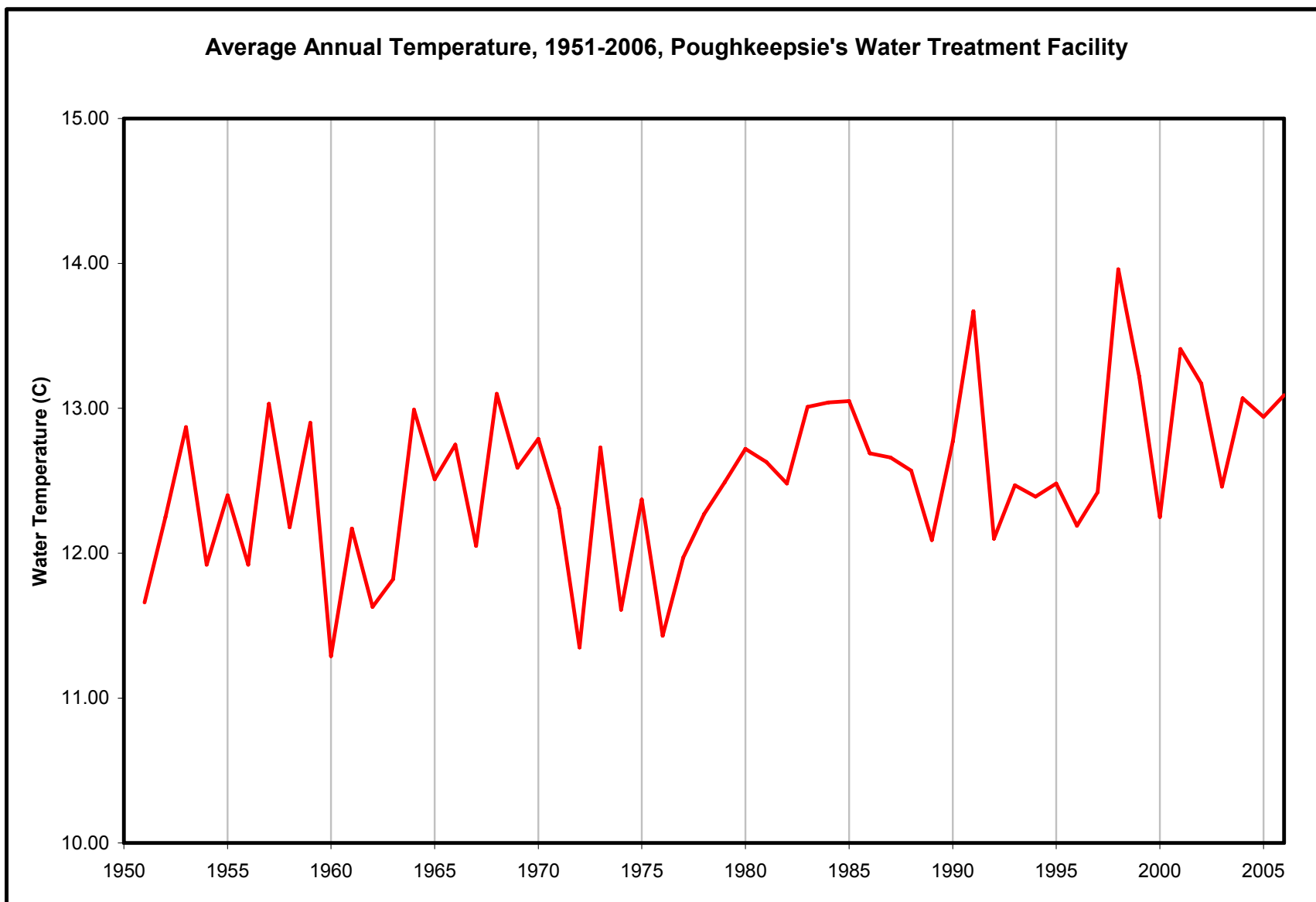


Figure 3-4. Average annual water temperature from 1951 to 2006 as measured at Poughkeepsie's Water Treatment Facility.

Long River/Fall Juvenile Survey

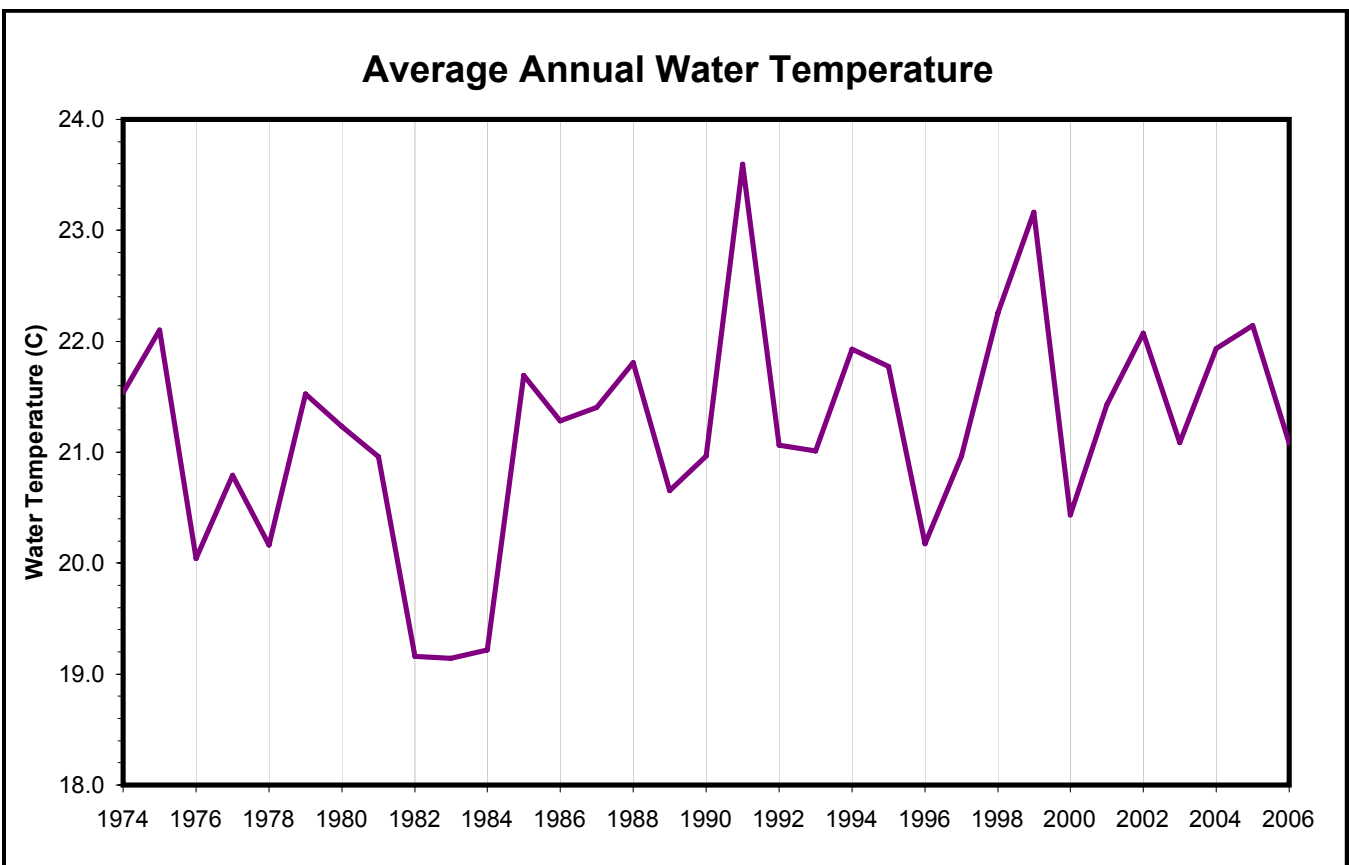
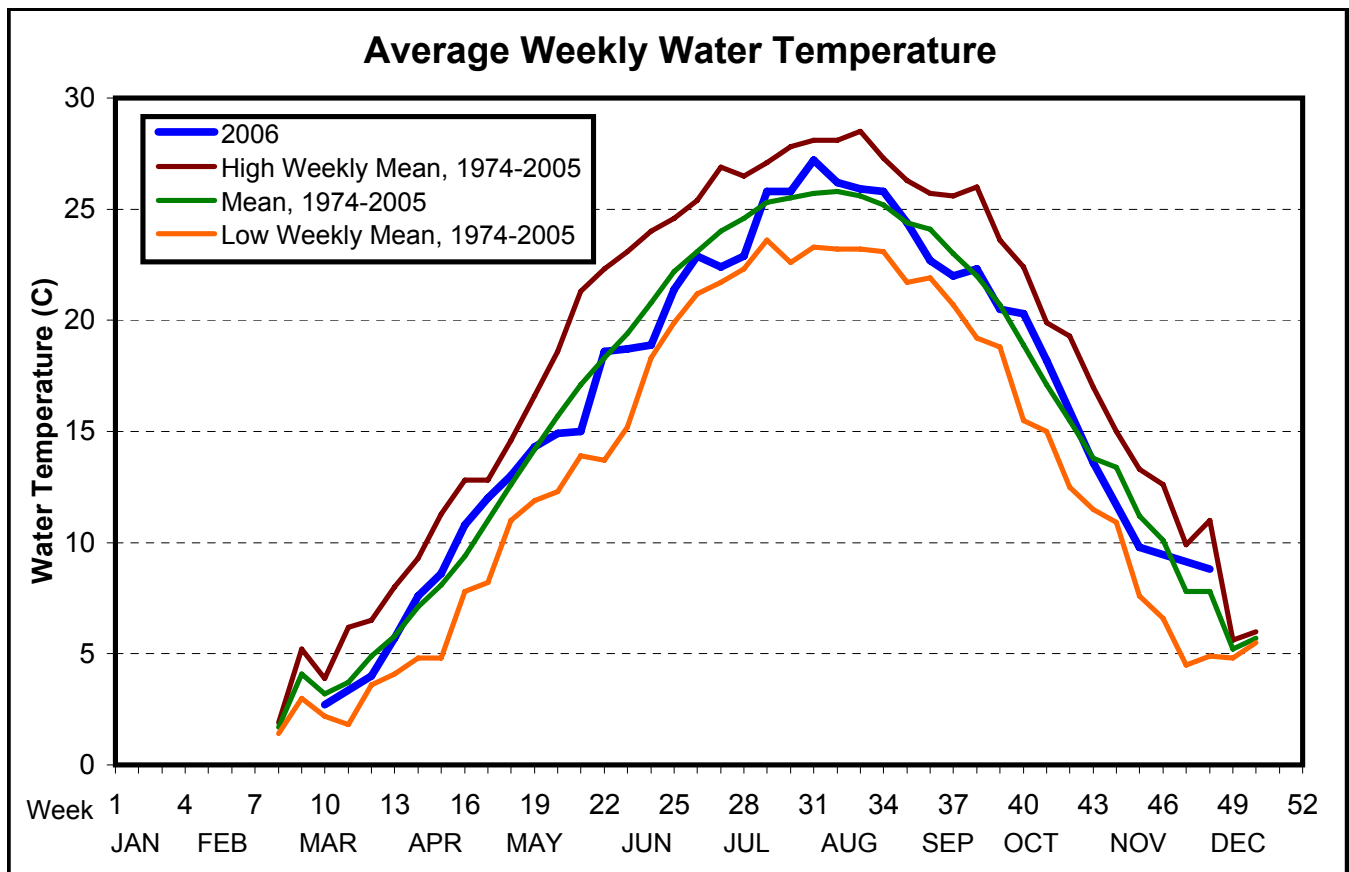


Figure 3-5. Seasonal and annual variations in water temperature from the Long River/Fall Juvenile surveys, 1974 - 2006.

Beach Seine Survey

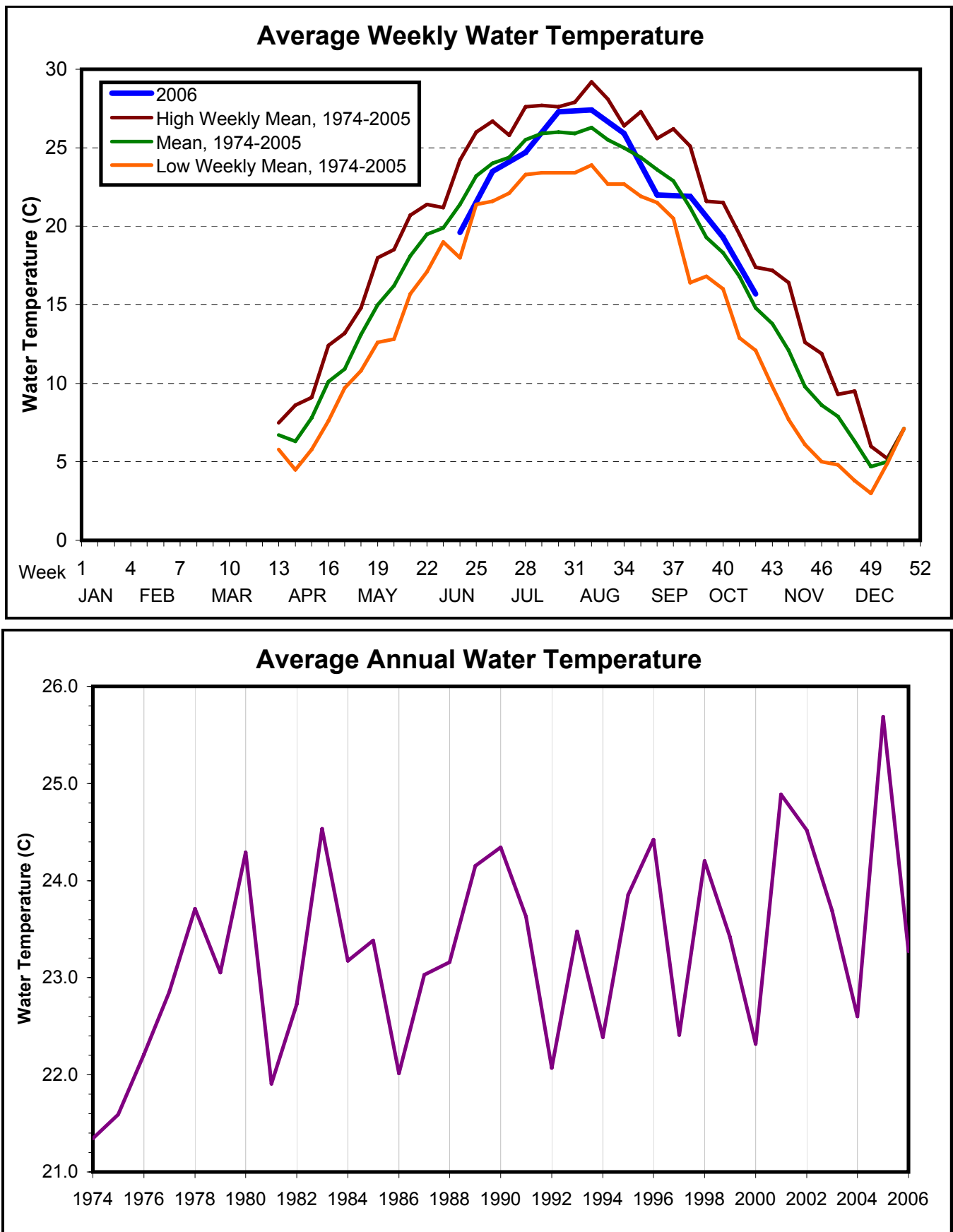


Figure 3-6. Seasonal and annual variations in water temperature from the Beach Seine surveys, 1974 - 2006.

Average Weekly Salinity 2006 Long River/Fall Juvenile Surveys

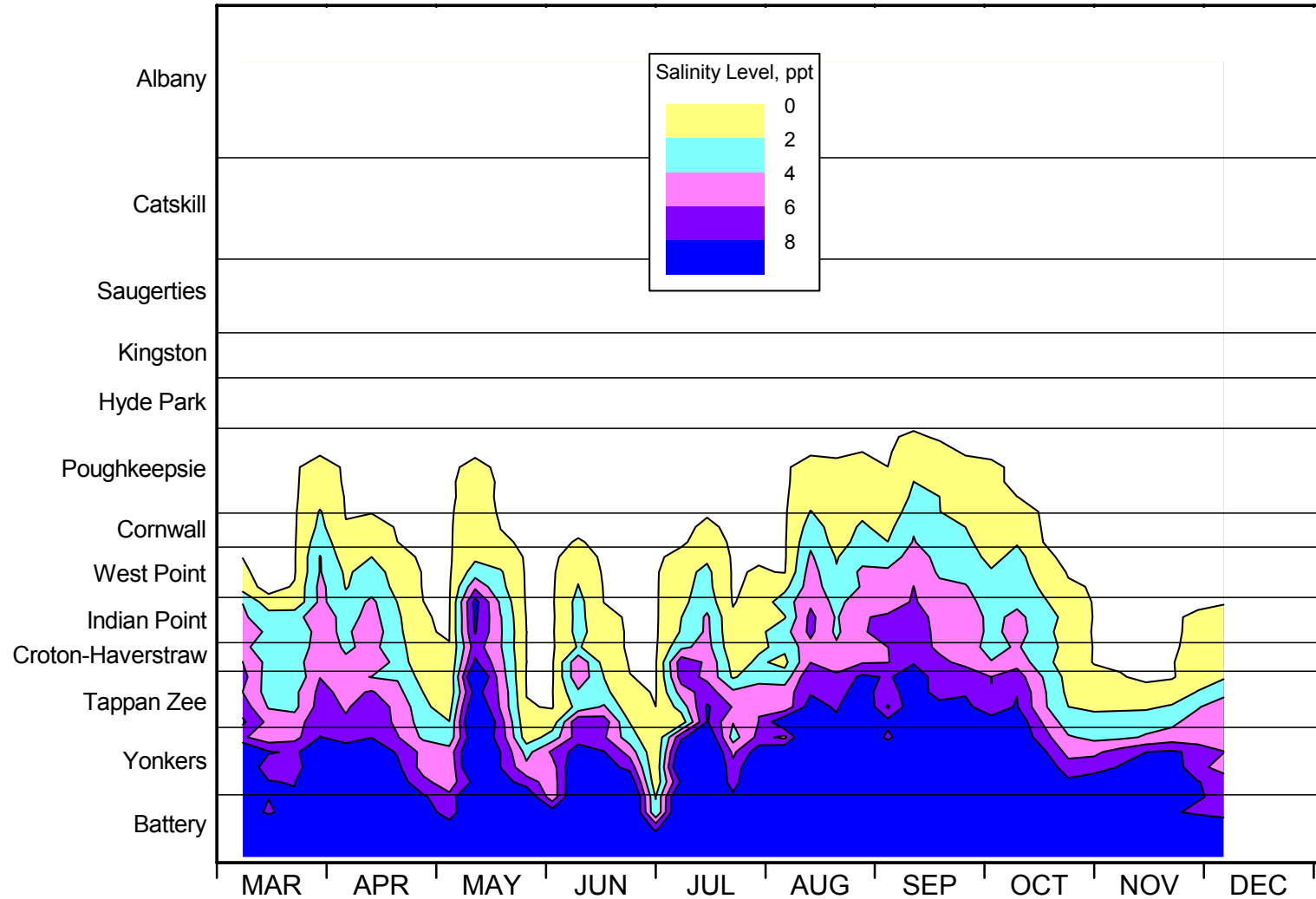


Figure 3-7. Seasonal variations in average weekly salinity from the 2006 Long River/Fall Juvenile surveys.

Long River/Fall Juvenile Survey

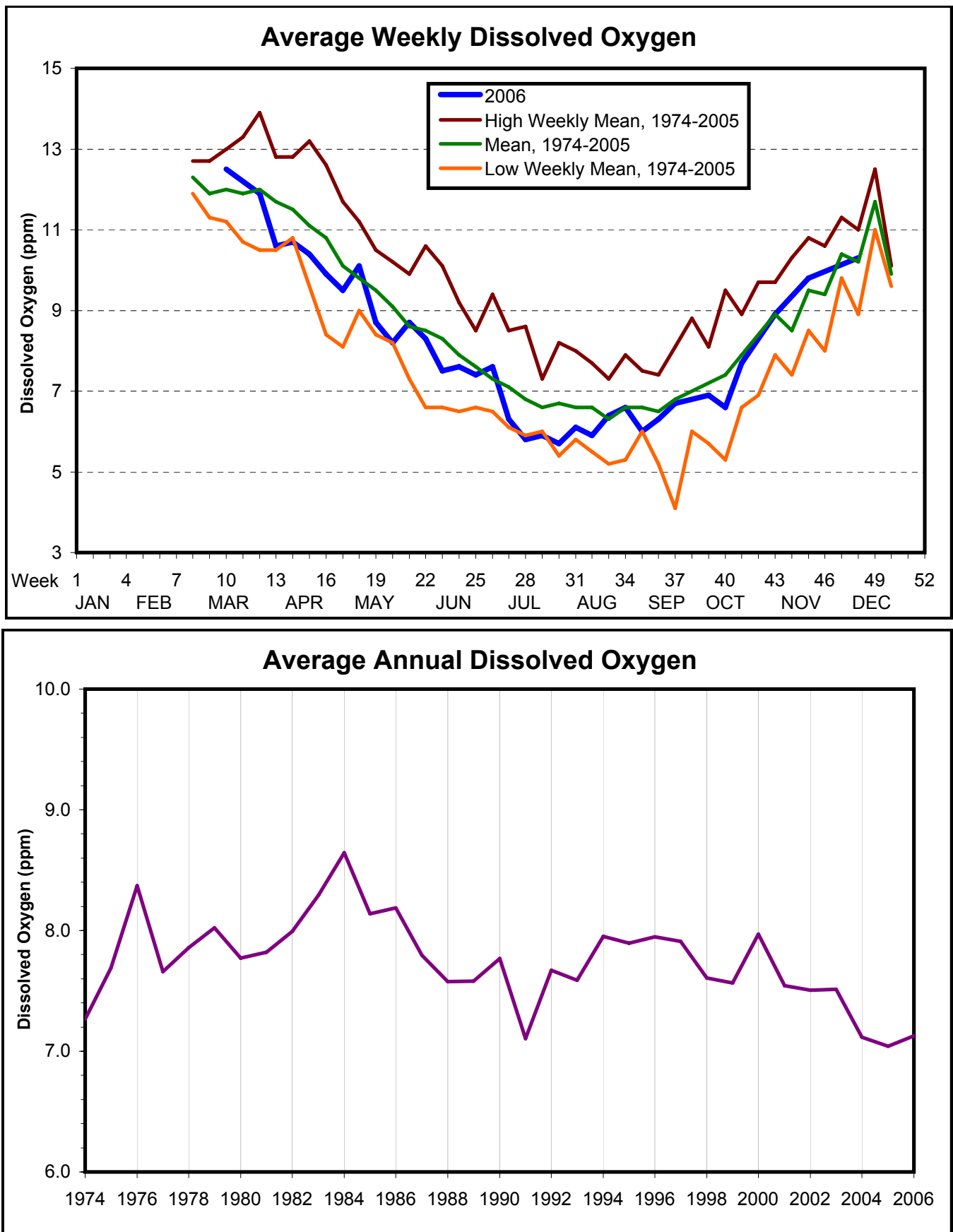


Figure 3-8. Seasonal and annual variations in dissolved oxygen from the Long River/Fall Juvenile surveys, 1974 - 2006.

Beach Seine Survey

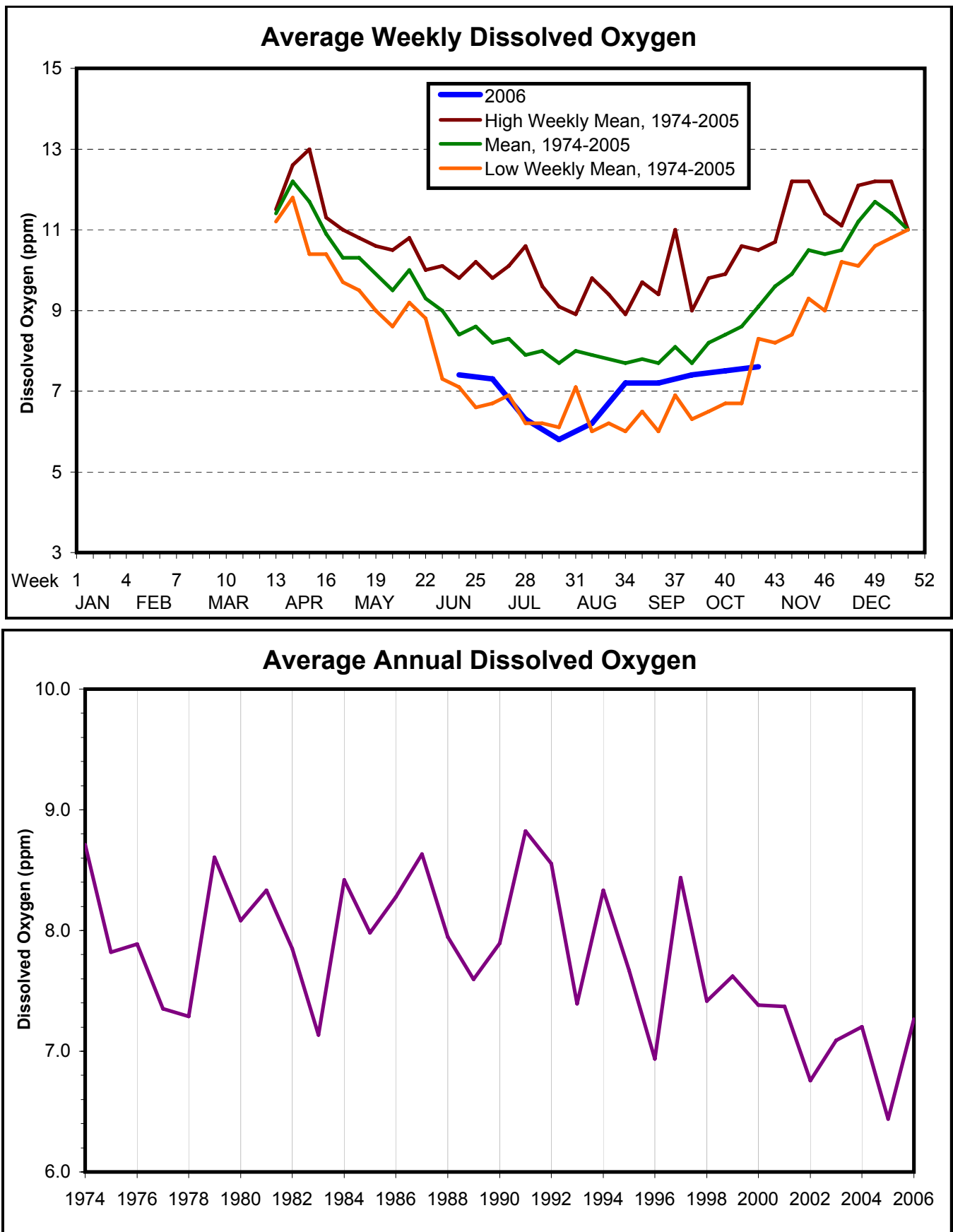


Figure 3-9. Seasonal and annual variations in dissolved oxygen from the Beach Seine surveys, 1974 - 2006.

CHAPTER 4

SPATIOTEMPORAL DISTRIBUTION OF SELECTED SPECIES OF HUDSON RIVER ESTUARY FISHES

4.1 FISH COMMUNITY

4.1.1 General Description of the Fish Community

The fish community of the Hudson River estuary reflects the convergence of the two primary fish habitats: fresh water and salt water. Fish are generally confined to one or the other habitat, but a relatively small number of estuarine and migratory species can pass from one to the other, or live in the narrow zone where there is a gradient between fresh and salt water. As a result of this convergence of different habitats in estuaries such as the Hudson, many species can be found in a relatively small area. The Hudson River estuary's species diversity is enhanced by its mid-latitude location on the Atlantic Coast. Southern tropical marine forms enter the Hudson River during the summer, and a number of northern fishes are near their southern limit.

Smith and Lake (1990) documented the Hudson River fish fauna, including the river upstream of the dam at Green Island and the Mohawk River subsystem. They report 201 species, including 3 known from contiguous waters but not yet reported from the Hudson. Beebe and Savidge (1988), based on sampling through 1980, reported 140 fish species in the Hudson south of the dam at Green Island. Smith and Lake (1990) classified the probable origin of each species, showing that the fish community, particularly in the estuarine reach, is a mixture of both temperate and tropical marine forms, freshwater forms, and intentional and accidental introductions.

The estuary and its tributary streams provide a wide range of chemical, physical, and biological habitat conditions. This diversity is reflected in the range of migratory and movement patterns, reproductive strategies, and food preferences among the members of the fish community. Daniels and Lawrence (1991) grouped 71 Hudson River estuary fish species collected in a variety of sampling programs from 1936 through 1991 into 8 trophic categories (feeding behavior) developed by Grossman et al. (1982): surface feeders, water column feeders, soft-bottom benthic feeders, rocky-bottom feeders, ooze feeders, algae feeders, macrocarnivores, and omnivores. Although this analysis did not include all recorded fish species from the estuary, it illustrates the broad range of feeding behaviors among the members of the Hudson River estuary fish community. Such an array of feeding behaviors reflects a diversity of habitat conditions.

Carlson (1986) identified assemblages of fish species based on 6 habitat types for the freshwater portion of the Hudson River estuary: vegetated backwaters, tributaries, rock pile, shore, offshore shoals and channel, and tailwater. Carlson's assemblages illustrate the diversity of physical habitats in the estuary. A similar analysis for the middle and lower regions of the estuary would show additional physical habitat types, including man-made habitats such as riprap shoreline, bulk-heading, and piling clusters associated with piers and docking facilities.

Because many fish species are tolerant of a wide range of habitat conditions and because there are no well-defined boundaries between habitat types, it is useful to classify the fish community into assemblages based on migratory behavior (anadromous and catadromous) and salinity preference (freshwater, estuarine, and marine). In the Hudson River, only the American eel is catadromous; thus discussion is focused on the other four assemblages.

4.1.2 Species Occurrence Through Time

The Hudson River estuary's fish community is species rich. The total number of fish species collected in the Utilities' monitoring program in the Hudson River estuary has varied from 64 to 104 between 1974 and 2006 ([Table 4-1](#)). Such high levels of species richness are often used as an indicator of a healthy ecosystem in which habitat and other water quality conditions allow a wide variety of species to occupy the habitat.

Despite the large number of species which can occasionally be found in the estuary, most of the fish are from a limited number of species. In fact, only 10 – 15 percent of the species collected typically account for more than 99 percent of the catch. In an environmentally stable system, low species diversity is often associated with environmental stress. However in highly dynamic and unstable systems like the Hudson River estuary, the biological communities are typically dominated by a few species well adapted to such naturally dynamic systems. Most of the energy in estuaries is directed towards production of a few species, many of which have considerable commercial and recreational importance to man.

In each of the four major fish assemblages (anadromous, freshwater, estuarine, and marine), the persistence of most of the species over long periods of time shows broad-scale suitability of the environment for each assemblage. The fish community in brackish areas of the estuary is dominated by marine species whereas in tidal freshwater areas the fish community is dominated by anadromous species as larvae and young of year and by freshwater and estuarine species as yearling and older. Marine species appear largely limited to areas with salinities greater than 1 ppt, which in the Hudson River typically includes areas downstream from Region 6, the Cornwall region. Most of the fish production in low salinity brackish and freshwater areas of the estuary during spring and summer is directed towards anadromous species including river herring (alewife and blueback herring), striped bass, and American shad. These anadromous fish leave the estuary in fall of their first year of life leaving the community of older individuals consisting primarily of resident species.

Although the estuarine and anadromous assemblages have fluctuated very little over time, there have been some minor changes in the freshwater and marine assemblages. The disappearance or appearance of species may indicate some change has taken place, such as degradation or improvement of environmental conditions, introduction of competing or exotic species, and overexploitation or proper fisheries management. In the Hudson River estuary, significant changes in habitat (expansion of water chestnut beds), water quality (improvement in New York City wastewater treatment), and fisheries management practices (striped bass) may have contributed to changes in fish assemblages.

The freshwater assemblage has shown fewer species in recent years compared to the years from 1974 to 1980 ([Table 4-1](#)). However, the fewest species in this assemblage occurred in 1982 and 1983, and numbers have increased slowly since then. When the individual species in the freshwater assemblage are examined, there are several species that occurred consistently in the early years and not in the later years, such as cutlips minnow, common shiner, blacknose dace, redbfin pickerel, longnose dace, and trout perch. Conversely, there are several species that were not present in the early years but have been recorded recently, such as brook silverside, channel catfish, and freshwater drum. The cause for the decline in the number of freshwater species sampled in the estuary since the 1970s is not clear, and in fact may be due to changes in the temporal extent of the sampling. In the 1970s, the BSS program began in April and continued through November. In the early 1980s, the shortened program typically ran

from July or August to October. Beginning in the late 1980s and continuing to the present, the BSS program covered the period from mid-June through October. Alternatively, the expansion of water chestnut beds following cessation of herbicide treatments in the 1970s may have changed the availability of preferred habitat for some species in shallow freshwater areas of the estuary, which may have been a contributing factor to the apparent decline in species richness.

The dominant freshwater species collected in the Utilities' monitoring program were spottail shiner and tessellated darter, but freshwater drum and channel catfish are becoming increasingly dominant ([Appendix Tables C-1 through C-3](#)). These first two species also dominated the freshwater assemblages of near-shore collections in fisheries surveys conducted in 1936 and 1990 (Daniels and Lawrence 1991), but ranked density for these species especially from upper regions of the Hudson River has been lower in recent years than in the earlier years of the monitoring program (Pace et al. 1993). However, further analysis of the abundance levels of seven species from the Utilities' monitoring data concluded that there was no general pattern of abundance over time, suggesting that there has been no river wide fish decline (Pace et al. 1993).

The number of species in the marine assemblage shows more year-to-year variation, but overall there is a trend toward more marine species ([Table 4-1](#)). As expected, the largest increase in marine species occurred in the downstream sampling regions. Among the recent recruits to the marine assemblage are Atlantic croaker, Atlantic mackerel, fourbeard rockling, grubby, naked goby, rock gunnel, spotted hake, and yellowtail flounder. The opposing trends in the number of freshwater and marine species could be related to the shift in annual freshwater inflow. During the 1970s, when the number of freshwater species was relatively high, freshwater flow was higher than normal. In the 1980s and 1990s, freshwater flow was typically below normal, and freshwater species declined while the number of marine species increased. Additionally, due to increased treatment of sewage in New York City, dissolved oxygen levels have increased at the mouth of the Hudson, increasing the potential for movement of marine fish into the estuary. Extension of the LRS sampling program in 1988 and the FJS sampling program in 1996 into the more saline portion of the Hudson River estuary, the Battery region, also increased the possibility of collecting more marine species.

The dominant marine species collected in the Utilities' monitoring program was bay anchovy ([Appendix Tables C-1 through C-3](#)). Likewise, in 1968, bay anchovy was the principal species in trawl collections south of the Indian Point region (RM 40) (Carlson and McCann 1969). Overall abundance has increased in brackish areas of the estuary since the monitoring program began in 1974, largely as a result of recent increases in the abundance of bay anchovy and Atlantic silverside, both important prey species in inshore marine systems. Reasons for these apparent changes are unknown. However, much of the change appears to have occurred since 1990, a date which coincides with completion of major wastewater treatment facility upgrades in New York City. Perhaps improvements in water quality contributed to increased overall abundance of these two species.

Estuarine species are generally euryhaline, year-round residents of the Hudson River fish community. Dominant species in the estuarine assemblage as collected in the Utilities' monitoring program included white perch, banded killifish, Atlantic silverside, and hogchoker ([Appendix Tables C-1 through C-3](#)). White perch and banded killifish were also dominant in near-shore collections in 1936 and 1990 (Daniels and Lawrence 1991) as well as 1966 (Carlson and McCann 1969). Abundance of Atlantic silverside, as noted above, has been increasing in recent years, whereas banded killifish have been found in lower abundance in recent years (Pace et al. 1993).

Perhaps the most important fish assemblage in the Hudson River estuary is composed of the anadromous species, which use the estuary as spawning and nursery grounds. Adult fish enter the estuary in the spring and migrate upstream to low salinity brackish and freshwater areas to spawn. The young fish then use the near-shore shoal areas for food and habitat as they make their way downstream and generally leave the estuary in the fall. Most of the energy in the Hudson River estuary is directed towards the production of these anadromous species: striped bass, blueback herring, alewife, American shad, and Atlantic tomcod. The early life stages of these species have dominated catches in the Utilities' monitoring program ([Appendix Tables C-1 through C-3](#)). Other investigators have noted that these ubiquitous species, especially blueback herring, comprise the numerically most important species in their study areas (MRL 1970; Heller et al. 1969; Carlson and McCann 1969; Daniels and Lawrence 1991). Curiously, Daniels (undated), in summarizing a 1936 fisheries survey in the Hudson River, noted the near absence of blueback herring from the sampling sites. In the last three decades, blueback herring have been the numerical dominant in most of the summer catches at near-shore sites.

Other species of the anadromous assemblage have shown fluctuations in abundance over the years. Striped bass and perhaps American shad appear to have increased over the period 1974-1989, especially at the larval stage (Pace et al. 1993). Despite their numerical dominance in catches, the overall abundance of blueback herring has declined since the early years of the monitoring program. Declines in the abundance of this anadromous species appear to have occurred to all stocks throughout their geographic range and appear a result of factors outside of the Hudson River, including overfishing in open ocean waters.

In all, it appears that the Hudson River estuary has a healthy and robust fish population. Species richness is high for all life stages as a result of the estuary serving as an interface between fresh and saltwater and between warmer and temperate climatic conditions. On the other hand, species diversity is relatively low reflecting the fact that the individual members of this community are comprised primarily of a limited number of species which are well adapted to the highly dynamic estuarine conditions. Spatially, the composition and abundance of the fish community is largely influenced by salinity with the interface between a marine-dominated and a freshwater-dominated fish community occurring in the reach of the estuary through the Hudson Highlands. However, considerable overlap in the spatial distribution of individual species occurs. There is no evidence of any substantial long-term changes in composition or abundance of the fish community over the 33-year period, 1974-2006.

4.1.3 Species Collected in 2006

Of the 89 species of fish collected in 2006, 28 were freshwater species, which is consistent with the number of freshwater species collected since the late 1980s ([Table 4-1](#)). The marine species in 2006 numbered 40, continuing the trend begun in the early 1990s of greater numbers of marine species than freshwater species. The diadromous and estuarine assemblages in 2006 were nearly identical to similar assemblages collected since 1974, with 9 to 12 species, respectively. No new species were collected in 2006.

Each of the surveys sampled a different habitat within the Hudson River estuary and, therefore, collected different assemblages of fish. More freshwater taxa were collected in the BSS than in the other two surveys and more marine species were captured in the LRS ([Table 4-2](#)). Of the 89 species recorded during 2006, 30 were collected in all three sampling surveys, while 37 of the remaining 59 species were collected in only one of the surveys. Of the 28 freshwater

species, 10 (36 percent) of them were collected only in the BSS. Likewise, 12 (30 percent) of the 40 marine species were only collected in the LRS.

The dominant species in the monitoring program since the mid-1980s, when the spatial and temporal extent of the surveys has been relatively uniform, have remained relatively stable ([Appendix Tables C-1 through C-3](#)). The early life stages of bay anchovy, striped bass, *Alosa* spp., and white perch dominated the 2006 LRS, as they have in previous years ([Appendix Table C-1](#)). Carp were more abundant in the 2006 LRS than in most previous years whereas American shad, Atlantic tomcod, blueback herring, and striped bass were less abundant. The 2006 FJS was dominated by bay anchovy and hogchoker ([Appendix Table C-2](#)). Compared to most previous years, Atlantic croaker and channel catfish were more abundant in the 2006 FJS, but American shad, blueback herring, and weakfish were less abundant than in the past. Catches of several species, namely rainbow smelt, summer flounder, and winter flounder have been markedly reduced since the mid-1990s than in earlier years of the FJS whereas catches of Atlantic croaker, Atlantic menhaden, and channel catfish have increased in the last decade. In the 2006 BSS, white perch was the dominant species, followed by bay anchovy, Atlantic menhaden, spottail shiner, and striped bass ([Appendix Table C-3](#)). Compared to most previous years, Atlantic croaker was more abundant in the 2006 BSS than in the past, but American shad and blueback herring were less abundant than in the past.

Annual abundance indices ([Appendix Figures D-1 through D-13 and Tables D-2 through D-14](#)) for selected species compare the year-to-year variation in abundance since the beginning of the monitoring program in 1974 (or 1979 for the FJS when sampling included the upper Hudson River). The predominant life stages for each selected species were chosen for comparison. In 2006, there were no species/life stage combinations that had abundance indices that were among the highest since 1974 or 1979. Species with low abundance indices in 2006 were alewife (juveniles), Atlantic tomcod (PYSL/juveniles), blueback herring (juveniles), white perch (juveniles), and weakfish (juveniles). Species with the lowest abundance indices since 1974 were American shad (eggs, YSL, PYSL and juveniles) and white perch (PYSL).

4.2 STRIPED BASS

Striped bass (*Morone saxatilis*) are anadromous (i.e., they spend most of their life in the marine environment but return to fresh water to reproduce) members of the temperate bass family (the Moronidae). They are native to North America and range along the Atlantic Coast from the St. Lawrence River in Canada to the St. Johns River in northern Florida and from western Florida to Louisiana along the coast of the Gulf of Mexico. They were introduced in the Sacramento-San Joaquin River system in 1879 and are now found from British Columbia to Ensalada, Mexico. Striped bass have also been successfully introduced into the inland waters of at least 24 states. The U.S. East Coast rivers and bays that support the principal spawning populations are the Hudson River; Delaware Bay and Delaware River; Chesapeake Bay and tributaries; the Roanoke and Chowan rivers and Albermarle Sound, North Carolina; the Santee River, South Carolina; and the St. Johns River, Florida. Small spawning populations also occur in several river systems in eastern Canada. From 1983 to 1995, the Utilities' striped bass hatchery provided larvae for rearing and stocking by the State of Maine in its efforts to establish striped bass in the Kennebec River.

On the Atlantic Coast adult striped bass, which commonly reach 30 lb and can weigh over 50 lb, feed in nearshore waters from summer through late winter. During the warmer months fish typically travel north and return south as the coastal waters cool in the fall. Northward migration of Hudson River fish extends as far north as the Bay of Fundy, Nova Scotia, and older fish tend

to travel farther north. Over the winter adult striped bass tend to aggregate near the mouths of their natal rivers. Once water temperatures rise in the spring, native adults (ages 4 and older) begin moving upriver to spawning areas in the freshwater portions of the estuaries.

Spawning begins in the spring when water temperatures are rising rapidly and reach about 57°F. Peak spawning occurs at about 60-65 °F in freshwater areas where currents are moderate to swift (Albrecht 1964; Setzler et al. 1980). In the Hudson River spawning occurs primarily between mid-May and mid-June in the middle portion of the Hudson River estuary. Depending on their age and size, females produce up to several million semibuoyant eggs that are suspended by currents. The eggs are relatively large (average 1/10 in. in diameter after water hardening), but vary with the size of the female. Older, larger females tend to have larger eggs.

In 1-4 days, depending on temperature, YSL hatch from the eggs. Typically 1/8 in. long, they initially drift with the current but can swim for short bursts. During the YSL stage the eyes become pigmented, the jaws and digestive tract form, fin buds appear, and they at least partially absorb the yolk-sac and oil globule. Older YSL are mobile and exhibit a positive phototaxis, or movement toward light (Doroshev 1970). The end of the yolk-sac stage is marked by the completion of the digestive tract, although some of the yolk-sac and oil globule may still remain.

During 2006, striped bass eggs and YSL were most abundant in mid-river, with greatest YSL abundance slightly downriver of greatest egg abundance ([Figure 4-1](#); supporting density and standing crop tables for striped bass are presented in [Appendix Tables E-1 through E-24](#)). In some years in the Hudson River, the peak in yolk-sac abundance was often further upriver than the peak in eggs. The difference in distribution may mean that YSL migrate upriver using tidal currents, although other explanations have been proposed (Polgar et al. 1976; Fay et al. 1983).

Transformation to the PYSL stage occurs from 4 to 9 days after hatching, when the larvae are 1/4 in. long. The remainder of the yolk-sac and oil globule is absorbed, body pigmentation becomes noticeable, fins begin to form, the gas bladder is inflated, and larvae begin to feed actively on zooplankton. This stage lasts approximately one month or longer, ending when the fin rays are fully developed, which occurs when the fish are just over 1/2 in. long. During 2006, striped bass PYSL were present throughout the middle and lower estuary and were most abundant in the Croton-Haverstraw region ([Figure 4-1](#)).

Toward the end of the PYSL stage, young striped bass begin moving out of the middle estuary into the lower estuary, which is broader, shallower, and may be more productive, and they feed on copepods and amphipods. This downriver movement of juvenile, or YOY, striped bass is evident in the 2006 spatiotemporal distribution pattern seen in the FJS and BSS, as YOY striped bass were found in the middle estuary regions during the summer, but were increasingly found in lower estuary regions during the fall ([Figure 4-2](#)). Larger juveniles, over 2-1/2 in. long, feed on insect larvae, worms, opossum shrimps, crabs, and small fish (Gardinier and Hoff 1982). Low numbers of yearling and older-than-yearling striped bass were collected in the LRS, FJS, and BSS throughout the estuary during 2006 ([Figures 4-3 and 4-4](#)) with many of the yearling and older-than-yearling from the LRS collected in the lower estuary during the early spring.

Comparing the temporal distribution of early life stages of striped bass in 2006 with previous years (1974-2005), peak egg and YSL density in 2006 occurred in mid-May which was similar to the historical pattern of peak occurrence ([Figure 4-5](#)). Peak PYSL abundance in 2006 occurred in late June, which was slightly later than the historical peak from late May to mid-June. Most

YOY were collected later in 2006 than the temporal limits (Weeks 18-26 which is early May through June) of this comparison.

Striped bass eggs in the 2006 LRS were most abundant from the Poughkeepsie to Hyde Park regions, downriver of the historical peak in Kingston (Figure 4-6). The YSL distribution in 2006 was similar to the long-term distribution pattern with greatest abundance in the middle estuary, especially in the Poughkeepsie region. PYSL were most abundant in the lower estuary in 2006 with less abundance in the middle estuary than in the past.

The 2006 geographical distribution of YOY striped bass in the BSS was consistent with the long-term trend (based on data from 1974 to 2005) with the main distribution centered in the Tappan Zee and Croton-Haverstraw regions (Figure 4-7). At the end of their first summer, many of the juvenile striped bass move to the southern extreme of the estuary and are found in New York Harbor, western Long Island Sound, and along the south shore of Long Island (McKown 1992). Most yearling striped bass in the 2006 BSS were collected in the upper estuary or the lower estuary with few collected in the middle estuary, but older-than-yearling striped bass were collected primarily in the lower estuary (Figure 4-7).

Weekly length statistics for young-of-year striped bass collected in 2006 show the most growth during July and August with slower rates of growth later in the summer (Figure 4-8, supporting length frequency tables for striped bass are presented in Appendix Tables F-1 through F-3). The slight variances in the growth curve may reflect the size selectivity of the FJS gear over that of the BSS gear. As striped bass grow, fish become an increasingly important component of their diet. Juvenile striped bass are also preyed upon by some marine and estuarine predator species.

At age 2 or 3, striped bass leave Atlantic Coast estuaries and begin the typical seasonal migration, northward during the spring and summer and southward during the fall. Adult striped bass are at the top of the food chain and have few natural enemies other than man. Since they rarely go more than 10 mi offshore, they are typically available to sport and commercial fishermen all along their migration route.

4.3 WHITE PERCH

White perch (*Morone americana*) resemble the closely related striped bass in general form and structure but are deeper bodied, more laterally compressed, and have no stripes. Adult white perch are much smaller than adult striped bass, averaging less than 10 in. in length and less than 3 lb in weight. Coloration ranges from dark olive to dark gray on the dorsal surface, shading to silvery white on the belly.

The natural range of this species extends along the Atlantic Coast of North America from the southern Maritime Provinces of Canada and the St. Lawrence River to South Carolina in brackish and freshwater areas near the Coast. White perch are essentially estuarine, but landlocked populations exist in fresh water throughout their range (Mansueti 1964). Freshwater populations predominate in the northern part of the range and white perch are uncommon in salt water north of Cape Cod (Rounsefell 1975). Probably as a result of dispersal through canals, they are now found in Lakes Ontario and Erie (Hubbs and Lagler 1958). They have also been introduced accidentally into the Missouri River drainage (Hergenrader and Bliss 1971).

Coastal populations overwinter in the deeper waters of middle and lower estuaries (Mansueti 1957; Markle 1976). White perch spawn in shallow water following upstream migrations to

areas of fresh or slightly brackish waters during the spring and early summer. Spawning also occurs in tributary streams. After spawning, adult white perch generally return to the lower reaches of estuaries. In the Hudson River estuary, spawning occurs from early May to early July, primarily north of Croton Bay. After spawning, many adults move downriver to areas of higher salinity in Haverstraw Bay and the Tappan Zee region.

Female Hudson River white perch produce from 16,000 to 161,000 eggs (Bath and O'Connor 1982). White perch eggs do not contain an oil globule and are small, 1/16 in. in diameter. They sink to the bottom and, because they are very adhesive, stick to each other and to anything else they contact (Mansueti 1964). In the Hudson River during 2006, white perch eggs were most abundant in the upper estuary from Hyde Park to Albany during May ([Figure 4-9](#), [Appendix Tables E-25 through E-48](#)).

Hatching occurs in 1.5 to 6 days, with development occurring faster at higher temperatures. Newly hatched YSL are from 1/16 to 1/8 in. long. They remain on or near the bottom for 3-5 days and do not move about actively until the yolk-sac is absorbed (Mansueti 1964). White perch YSL were abundant in the upper and middle estuary during 2006, in the same areas that eggs were most abundant but also extending downriver to the Cornwall region ([Figure 4-9](#)). The yolk-sac is completely absorbed when the larvae are a little over 1/8 in. long; the end of the PYSL stage occurs when the adult fin complement develops, usually about one month after hatching and when the young white perch are about 1 in. in length. During 2006, white perch PYSL were most abundant in the middle estuary in June ([Figure 4-9](#)) where they co-occur extensively with striped bass PYSL.

White perch reach the juvenile stage beginning in mid-June; and during 2006, YOY fish were found in the middle estuary by mid-July and throughout the entire estuary by early August ([Figure 4-10](#)). Juvenile white perch are about 3 in. long by the end of their first summer (Klauda et al. 1988a). They are prey for larger predators (including adult white perch and striped bass). Yearling and older-than-yearling white perch were also distributed throughout the Hudson River based on the 2006 monitoring program with the greatest concentration of yearling white perch in the middle estuary in early spring and older-than-yearling white perch in the lower estuary during fall ([Figures 4-11](#) and [4-12](#)). In the Hudson River estuary some white perch of both sexes become sexually mature at age 2, but all males and females are mature by ages 4 and 5, respectively (Klauda et al. 1988a).

Comparing the temporal distribution of early life stages of white perch in 2006 with previous years (1974-2005), the 2006 distribution was very similar to the long-term record. Egg abundance occurred throughout May as in the historical pattern ([Figure 4-13](#)). YSL were present from May to mid-June, but peak abundance was slightly later occurring in early June. PYSL occurrence extended from mid-May into July with peak abundance also slightly later than the long-term pattern, occurring in late June 2006. All of the YOY white perch collected in the 2006 LRS occurred beyond the temporal limits of this comparison.

White perch eggs in the 2006 LRS were primarily in the Kingston through Albany regions which agrees with the historical trend ([Figure 4-14](#)). YSL were distributed mainly in the middle and upper regions of the estuary in 2006 as in the long term pattern with peak distribution in the Saugerties region. Also similar to the long-term trend, PYSL were well distributed throughout estuary in 2006.

Historically, as well as in 2006, the geographical distribution of YOY, yearling, and older-than-yearling white perch in the BSS has shown two main distribution centers, the larger one in the

Tappan Zee and Croton-Haverstraw regions and the other in the upriver regions of Saugerties and Catskill (Figure 4-15). Lesser numbers of white perch in these age groups have been collected from the middle estuary.

Weekly length statistics for young-of-year white perch collected in 2006 show increasing growth from July through August with only a slight increase through the fall months (Figure 4-16, Appendix Tables F-4 through F-6). The zigzag pattern in the growth curve may reflect size selectivity of the various sampling gears used in the surveys.

4.4 ATLANTIC TOMCOD

Nineteen members of the codfish family (Gadidae) are found along the Atlantic Coast of Canada and the United States, but only the Atlantic tomcod (*Microgadus tomcod*), an inshore species that ranges from Labrador to the Chesapeake Bay, is anadromous; the southern limit of its spawning range is the Hudson River (Grabe 1978). In Canada, the Atlantic tomcod occurs in the mid- to lower St. Lawrence River and is landlocked in at least two freshwater lakes (Scott and Crossman 1973).

Atlantic tomcod enter coastal estuaries and rivers to spawn in shallow fresh or brackish water during mid-winter. In the Hudson River estuary, adult Atlantic tomcod occur at least as far north as the Saugerties region during spawning runs; the largest concentrations, however, are consistently found in the middle estuary between West Point and Poughkeepsie. After spawning in late December or early January, Atlantic tomcod return to coastal waters.

The Hudson River population is the southernmost major breeding population (Dew and Hecht 1976). No spawning has been documented in either the Connecticut River (Marcy 1976) or Long Island Sound (Richards 1959), and limited spawning may occur in the Raritan River and/or Raritan Bay (IA 1977). Unlike more northern populations, age 1 fish constitute most of the Hudson River spawning stock.

Atlantic tomcod eggs are about 1/16 in. in diameter and non-adhesive. The average number of eggs per female in the Hudson River population has ranged from 12,400 to 22,500 eggs at age 1 and from 32,500 to 53,100 eggs at age 2 (NAI 1992). In the Hudson River water temperatures are generally less than 37°F when spawning occurs, and the eggs take at least a month to hatch.

Atlantic tomcod larvae are about 1/5 in. long at hatching. YSL are pelagic and move downstream as they develop. The yolk-sac is absorbed by 1/4 in., and onset of feeding by PYSL may depend on water temperatures. In the Hudson River, the abundance of YSL peaks in March. YSL are found throughout the lower half of the estuary, whereas PYSL are concentrated in the Yonkers and Tappan Zee regions.

March sampling in the 2006 LRS collected YSL mainly in the middle estuary regions from West Point to Croton-Haverstraw (Figure 4-17, Appendix Tables E-49 through E-66). PYSL were collected in March and April predominantly in the lower estuary to the West Point region (Figure 4-17). Juvenile Atlantic tomcod collected in the 2006 LRS were most abundant in May in the lower estuary regions (Figure 4-18). Although some juvenile tomcod remain in the Hudson River throughout the summer, some proportion of the population may move out of the lower estuary into New York Bay and Raritan Bay when water temperatures rise during late May and June. The 2006 FJS collected juvenile Atlantic tomcod primarily in middle and lower estuary during July and the few juvenile Atlantic tomcod collected in the 2006 BSS were found in the

lower estuary in June (Figure 4-18). The few yearling and older Atlantic tomcod collected in the 2006 monitoring program were found in the lower estuary in fall (Figure 4-19).

Comparing the temporal distribution of early life stages of Atlantic tomcod in 2006 with the long-term database (beginning in early May) available from previous years (1974-2005), the 2006 distribution for PYSL was consistent with the long-term record showing that most were collected in May (Figure 4-20). However, in 2006 YOY distribution was later than the historic pattern with more YOY collected in June rather than May.

The geographical distribution of early life stages of Atlantic tomcod in the 2006 LRS was primarily in the lower estuary, similar to the long-term pattern (Figure 4-21). Peak PYSL and YOY abundance was in the Tappan Zee region in 2006 instead of Yonkers as in the historic pattern, with YOY Atlantic tomcod distribution extending into the middle estuary. The historical geographical distribution index based on the FJS for YOY and yearling-and-older Atlantic tomcod showed two distribution peaks, one in the Yonkers and Tappan Zee regions and the other further upriver in the West Point region (Figure 4-22). In 2006, the distribution pattern for YOY Atlantic tomcod was similar to the long-term pattern, except the upriver peak was even further upriver in the Poughkeepsie region. No yearling-and-older Atlantic tomcod were collected within the temporal limits (mid-August to early October) of this index in 2006.

Juvenile growth slows or ceases in summer (Grabe 1978; Klauda et al. 1988b). Growth slows at temperatures above 66°F and essentially stops in early July when temperatures exceed 71°F. It begins again when water temperatures fall below 77°F during late August and early September (TI 1978). During 2006, the weekly length statistics obtained from the monitoring program exemplified this pattern, showing more rapid growth in the spring and fall than during the summer (Figure 4-23, Appendix Tables F-7 through F-9). Juvenile tomcod generally double their summer length by December to a mean total length approximately 6 in. Most of the juvenile Atlantic tomcod in the Hudson River are sexually mature by the end of December and reproduce in early January. Following the period of rapid growth during the fall, mature YOY migrate upriver to spawn.

4.5 BAY ANCHOVY

Bay anchovy (*Anchoa mitchilli*) is a small, slender fish, from 1.5- to 4-in. long, that is ubiquitous in shallow coastal waters of North America from southern Maine to the Yucatan Peninsula. They have a wide salinity tolerance from fresh water to more than twice the salinity of normal sea water, but they prefer salinities found at seaward ends of estuaries. Where temperatures do not drop below 41°F during the winter, bay anchovy remain in the estuaries throughout the year (Wang and Kernehan 1979).

However, north of Delaware Bay, where water temperatures go below 41°F during the winter, National Marine Fisheries Service trawl data indicate a movement of bay anchovy out of coastal estuaries and southward during the fall, resulting in an overwintering distribution ranging from Cape Hatteras to Delaware Bay and the virtual absence of bay anchovy from the inshore continental shelf of New York and New Jersey during the winter months (Voughlitois et al. 1987).

Bay anchovy school in large numbers and feed on plankton as they swim. Their mouths are large relative to their small size, which enables them to pass relatively large quantities of water through their gill rakers (long, slender projections on their gills) and filter out their prey. They feed throughout the water column and primarily eat invertebrates. Larval bay anchovy feed on a variety of microzooplankton, including the larval stages of crustaceans and mollusks. Juvenile

and adult bay anchovy feed on larger macro-zooplankton, including copepods, cladocerans, amphipods, and mysids.

Bay anchovy rarely survive more than 2 years. They grow rapidly and mature at a size of 1-2 inches. In warm waters, they may mature within 3 months of hatching, but in cooler, northern waters they usually mature in their second summer, 11-14 months after hatching. They are also very prolific; individual females may spawn 50 or more times per year, averaging about 1,100 eggs per spawn (Houde and Zastrow 1991). Partially as a result of this early maturity and high fecundity, bay anchovy may be the most abundant fish species in the western north Atlantic (McHugh 1967).

Bay anchovy spawn in lower estuarine and inshore coastal waters throughout the warmer months of the year. In the New York Bight spawning occurs from May through September, with peak egg abundance occurring in late June or early July when water temperatures exceed 70°F. Adults spawn in areas where the salinity is greater than 10 ppt. Egg abundance is typically highest in waters with salinities greater than 20 ppt, and egg viability apparently declines at salinities lower than 8 ppt. Spawning occurs throughout all areas of the Hudson-Raritan Bay complex, including Raritan and Newark bays, Arthur Kill, Kill Van Kull, and the Upper and Lower New York bays as well as throughout Long Island Sound.

Within the Hudson River, bay anchovy eggs are most abundant in the Battery through Tappan Zee regions from June through July (Figure 4-24, Appendix Tables E-67 through E-84). The eggs, which are about 1/16 in. long, are transparent and initially buoyant, but sink after 12-16 hours of floating. Hatching occurs approximately 24 hours after spawning. Newly hatched YSL are approximately 1/16-1/8 in. long, transparent, and drift along the bottom with the tidal currents. The YSL stage is very brief, and typically lasts less than 1 day. Due to their small size, short duration, and epibenthic nature, few YSL are collected in the Utilities' ichthyoplankton samples. The PYSL stage is longer and lasts about a month. In the Hudson River the peak abundance of PYSL occurs during the summer and the center of their distribution shifts upriver compared to that of eggs and YSL (Figure 4-24).

Bay anchovy are about 1/2 in. long at the beginning of the juvenile stage. Juvenile bay anchovy are found in the Hudson River estuary from mid-August through October and as far upriver as Albany (Schmidt 1992). During 2006, most of the YOY population was located downstream of the Cornwall region and were collected from August into October (Figure 4-25). Yearling and older bay anchovy were much less abundant in collections than YOY and they were caught more frequently in the summer than during fall in the lower estuary (Figure 4-26).

Comparing the temporal distribution of early life stages of bay anchovy in 2006 with the years when LRS sampling included the Battery region (1988-2005), the 2006 egg distribution, which began in early June, extended later than the long-term trend, peaking in early August (Figure 4-27). A few YSL bay anchovy were collected in mid-July 2006. PYSL distribution in 2006 was also later than the long-term pattern, peaking in late August. YOY distribution in 2006 was similar to the historic trend, extending from mid-August into October (Figure 4-27).

The geographical distribution of bay anchovy early life stages in 2006 was very consistent with the distribution pattern seen over the 1988-2005 period with greatest egg abundance in the lower estuary and PYSL abundance distributed from the Battery to Indian Point regions (Figure 4-28). The 2006 YOY geographical distribution from the LRS was similar to the historic pattern with peak abundance in the Tappan Zee region. The 2006 geographical distribution of YOY bay anchovy in the BSS differed from the 1974-2005 long-term pattern, in that YOY were

collected throughout the estuary with peak distribution in the Poughkeepsie region instead of the Tappan Zee region as in the historic pattern (Figure 4-29). Yearling and older bay anchovy were predominantly collected in the Tappan Zee region in 2006, whereas in the past, most were found in the Yonkers region.

Weekly length statistics for bay anchovy juvenile life stage collected in 2006 showed an increase in growth during early summer, lesser growth during August as later spawned fish were recruited to the sampling gear, a return to steady growth in September, and finally a leveling off of growth in the fall as the fish were recruited to the adult stage (Figure 4-30, Appendix Tables F-10 through F-12). The wide range in size (up to 2 in.) during a collection period reflects the protracted spawning period of bay anchovy.

4.6 AMERICAN SHAD

American shad (*Alosa sapidissima*) are the largest of the North American species of anadromous herrings. They range from Newfoundland to northern Florida along the Atlantic Coast and over the continental shelf. They may live to 13 years, attain a length of 30 in., and weigh up to 12 lb. American shad usually become sexually mature after 3-6 years at sea, although some males may mature within 2 years. Most females mature by their fourth or fifth year.

American shad, like many anadromous herrings, have well-developed homing abilities and are capable of returning to their natal rivers and tributaries from far off the Coast. After spawning, the adults soon return to the ocean. They can repeat their annual spawning sequence up to eight times. In more southerly rivers along the Atlantic Coast, increasing percentages of the adult population die after spawning; south of Cape Fear, North Carolina, all spawners die on their first run.

In the spring, American shad migrate north, and by summer they are feeding in the Gulf of Maine, the Bay of Fundy, Georges Bank, and the Gulf of the St. Lawrence (Neves and Depres 1979; Dadswell et al. 1987). In fall they move south again along the perimeter of the Gulf of Maine and Georges Bank at depths greater than 60 m (Neves and Depres 1979); by winter they may congregate along the edge of the continental shelf. Based on tagging experiments conducted in 1950 and 1951, Talbot (1954) reported that American shad of Hudson River origin were recaptured from Maine to North Carolina. Most recaptured fish were from the fishery along the New Jersey Coast in spring. Pre-spawning adults move along the Coast in the spring to their natal rivers (Dadswell et al. 1987), which they enter as river temperatures reach 50-60 °F.

Peak spawning activity for American shad in the Hudson River occurs during May in the upper estuary. Shad have been reported to spawn on dark afternoons or evening hours over shallow, broad flats washed by moderate currents in the main body of coastal rivers (Leggett 1976). At present shad are not known to utilize Hudson River tributaries, the Mohawk River, or the upper Hudson River for spawning (Schmidt et al. 1988), although historically the Mohawk and upper Hudson may have been part of the shad spawning and nursery range. During 2006, most American shad eggs were collected from Albany to Kingston from late April to late May (Figure 4-31, Appendix Tables E-85 through E-102).

American shad produce 116,000-468,000 eggs per female. The eggs are 1/16-1/8 in. in diameter, semibuoyant, and non-adhesive. They hatch in 3-12 days, depending upon water temperature. Newly hatched YSL are approximately 1/4 in. long and grow very rapidly. They

absorb the yolk-sac within 1 week and are approximately 1/2 in. long at the beginning of the PYSL stage. Larval shad alternately swim toward the surface and passively sink (Chittenden 1969), but behavior has not been completely described. The downriver dispersal was apparent during 2006, with YSL American shad found primarily in the upper estuary between Kingston and Albany during May and PYSL found further downriver from late May into June (Figure 4-31).

During 2006, YOY shad appeared to have been fully recruited to the beach seine gear by June with equally high abundance in the upper and middle estuary, but primarily in the upper estuary for the LRS and FJS gear (Figure 4-32). Very few yearling and older American shad were collected in 2006 (Figure 4-33), since adult spawning fish (3- to 6-year-old fish) effectively avoid the juvenile gear.

Comparing the temporal distribution of early life stages of American shad in 2006 with previous years (1974-2005), the 2006 distribution for eggs was similar to the historic pattern with peak abundance in mid-May (Figure 4-34). YSL abundance in 2006 was similar to the historic occurrence trend from mid-May to early June, but more were collected in early June than in the past. PYSL abundance peaked in late June 2006, also slightly later than the long-term pattern. YOY were collected beginning in late June. The geographical distribution of American shad early life stages in 2006 was generally consistent with the long-term record with greatest distribution in the upper estuary, although peak distributions were further downriver than in the past (Figure 4-35). YOY American shad collected in the 2006 LRS were predominately found in the Catskill region rather than distributed throughout the upper and lower estuary.

The long-term geographical distribution of YOY American shad in the BSS showed tri-modal peaks, one in the lower estuary (Tappan Zee and Croton-Haverstraw), one in the mid-estuary (Cornwall and Poughkeepsie), and one in the upper estuary (Saugerties, Catskill, and Albany) (Figure 4-36). The 2006 geographical distribution data supported the existence of the middle and upper estuary peaks, but few YOY were found in the lower estuary in 2006.

Weekly length statistics for YOY American shad collected in 2006 showed slow growth during the early summer, faster growth during August, and a return to slower growth in the fall (Figure 4-37, Appendix Tables F-13 through F-15). At the time they emigrate from the Hudson River at the end of the summer, juvenile shad range from 3 to 4 in. long. This emigration is triggered by declining water temperatures and may be related to size (Schmidt et al. 1988); larger juveniles may tend to emigrate earlier. The shad emigration is a gradual movement of the population seaward over several months. Shad emigrate from the estuary earlier than either of the other two anadromous herrings commonly found in the Hudson River, alewife and blueback herring; and Schmidt et al. (1988) speculated that the earlier migration might be a behavioral adaptation that reduces competition with juveniles of the other two herring species.

4.7 RIVER HERRINGS (*Alosa* spp.)

Blueback herring (*Alosa aestivalis*) and its congener, alewife (*A. pseudoharengus*), are similar in general form to American shad, but are much smaller and not as deep bodied when adult. Blueback herring and alewife are very much alike in external appearance, especially as larvae, but older alewife have proportionately larger eyes and deeper bodies than blueback herring. In Hudson River sampling, eggs and larvae of alewife and blueback herring are not differentiated because of the similarity in appearance. Any references in this document to eggs and larvae pertain to the combined numbers from both species, referred to as *Alosa* spp. When juveniles of these two species reach sufficient size, they are differentiated by the size of the eyes and the

mouth morphology. The differentiated juveniles are discussed separately below. Occasionally other members of the Clupeidae family, such as Atlantic menhaden, which are also difficult to distinguish during the early life stages may be included in this *Alosa* spp. grouping.

Of the three anadromous herring species that spawn in the Hudson River estuary, blueback herring are the last to begin their spring spawning run, preferring warmer water than American shad or alewife. Alewife spawning activity is most intense when water temperatures are 51-71°F, which results in slightly earlier spawning than that of blueback herring. Blueback herring peak spawning activity occurs near the end of May. Spawning activity occurs within the river, but preferred spawning habitat for blueback herring is in fast-flowing tributaries, where eggs are released over hard substrates (Loesch and Lund 1977). In the Hudson River, blueback herring travel through the locks and spawning occurs within the Mohawk River and upper Hudson River. Alewife prefer ponds and slow-moving streams for their spawning habitat.

Alewife eggs are semidemersal, slightly adhesive, but easily torn free and carried by currents. The egg diameter is about 1/16 in. Hatching takes 2-15 days depending upon temperature (Smith 1985). Blueback herring produce 45,000-350,000 eggs per female. The eggs are 1/16 in. in diameter and adhesive upon release, but they may later become dislodged and be pelagic. Development proceeds rapidly and hatching occurs in 2-3 days. Newly hatched blueback herring are 1/8 in. long and the yolk-sac is absorbed in about 4 days. At the beginning of the PYSL stage, the larvae are about 3/16 in. long.

In the Hudson River during 2006, peak abundance of *Alosa* spp. eggs occurred in the upper estuary at Albany in mid-May (Figure 4-38, Appendix Tables E-103 through E-114). YSL and PYSL were also most abundant in the upper estuary with PYSL found throughout the middle estuary by late May. YOY *Alosa* spp. were found mainly in the upper and middle estuary in July (Figure 4-39).

Comparing the temporal distribution of early life stages of *Alosa* spp. in 2006 with previous years (1974-2005), the 2006 peak abundance for eggs occurred in mid-May, which was similar to the historical pattern, but more concentrated in that one week. YSL and PYSL occurrence were within the historical range but peak abundance was later, peaking in late May for YSL and early June for PYSL (Figure 4-40). All of the YOY *Alosa* spp. in the 2006 LRS were collected in late May.

The geographical distribution of *Alosa* spp. early life stages in previous years (1974-2005) showed that most of the *Alosa* spp. eggs are found in the Catskill and Albany regions and the larvae gradually disperse downriver throughout the estuary (Figure 4-41). The 2006 distribution is consistent with this long-term record. *Alosa* spp. present in the lower estuary were probably Atlantic menhaden. Geographic distribution of YOY *Alosa* spp. from the BSS in the historic record indicated abundance in the upper estuary and a secondary peak in Cornwall (Figure 4-42). In 2006, all YOY in the BSS were collected before the temporal limits (mid-August to October) of this index and were found primarily in the upper and middle estuary.

4.8 ALEWIFE

Alewife are usually anadromous and inhabit coastal waters from Newfoundland to South Carolina but they have also been introduced into the upper Great Lakes and inland lakes in Rhode Island, Maine, New Hampshire, Virginia, Ontario, and New York, where they provide forage for large predatory species. Anadromous alewife spend most of their lives in salt water and return to fresh water to spawn in lakes and quiet stretches of rivers (Scott and Crossman

1973). They are capable of homing to their natal rivers after they mature at ages 3 or 4, even though substantial numbers may not return and considerable mixing of river stocks may occur (reviewed in Fay et al. 1983). Adults are typically about 10- to 12 in. long and have a maximum life span of about 9 years.

Alewife is chiefly a plankton feeder; copepods, amphipods, shrimps, and appendicularians are the chief diet. However, they also take small fish, such as herring, eels, lance, cunners, and their own species, as well as fish eggs. Upon returning to the lower estuary after spawning, alewife feed heavily on shrimp (Bigelow and Schroeder 1953).

Alewife assume adult characteristics at about one month of age and about 0.5 in. long. At this stage they tend to move inshore during the day and offshore into deeper waters at night. They remain in estuaries until water temperatures begin declining in the fall, when they move into coastal waters. Their emigration pattern is prolonged, like that of American shad. Timing of migration may also be related to size, and larger juveniles migrate earlier (Schmidt et al. 1988). Little is known about the migration patterns at sea. The presence of alewife and blueback herring in the Bay of Fundy has led to speculation that these species have an oceanic migratory pattern similar to American shad, although that has not been confirmed (Harris and Rulifson 1989).

YOY alewife began appearing in the 2006 LRS in late June mainly in the upper estuary ([Figure 4-43](#), [Appendix Tables E-115 through E-126](#)). YOY alewife were most abundant in the upper and middle estuary in the 2006 FJS during the early summer and throughout the estuary in the 2006 BSS during the summer and early fall. The few yearling and older alewife collected in the 2006 monitoring program were found throughout the estuary during the spring and summer. Those found in the spring were presumably on their spawning migration ([Figure 4-44](#)). Very few yearling and older alewife were collected in the estuary by fall 2006.

Comparing the geographical distribution of YOY alewife based on the 2006 BSS with previous years (1974-2005), the 2006 distribution of juveniles was concentrated in the Croton-Haverstraw region with a secondary peak in the Albany region ([Figure 4-45](#)). The historic pattern suggested a more even distribution throughout the estuary, with tri-modal peaks in the Tappan Zee/Croton-Haverstraw, Cornwall, and Saugerties/Catskill regions.

Weekly length statistics for YOY alewife collected in 2006 showed slow growth in early summer, steady growth during the summer, and a leveling off of growth beginning in October ([Figure 4-46](#), [Appendix Tables F-16 and F-17](#)). The zigzag pattern in the growth curve may reflect size selectivity of the various gears used in the surveys.

4.9 BLUEBACK HERRING

Blueback herring range from southern New Brunswick and Nova Scotia southward to northern Florida. Although they are caught as far as 70-80 miles offshore, little is known about the oceanic migration patterns. The presence of blueback herring and alewife in the Bay of Fundy has led to speculation that these species have an oceanic migratory pattern similar to that of American shad, although that has not been confirmed (Harris and Rulifson 1989). The degree to which river herring of Hudson River origin return to the Hudson River is not known nor is the degree to which spawning stocks from different river systems mix. Blueback herring grow to a maximum length of 15 in. and a weight of about 1 lb and live for up to 8 or 9 years (Scott and Crossman 1973).

Within a month of hatching the young blueback herring assume adult characteristics and are about 0.5 in. long. Juvenile blueback herring remain in upper estuaries throughout the summer. During this period they are about 10 times more abundant than juvenile alewife. Juvenile blueback herring grow more slowly than juvenile alewife and begin their downriver migration later than the other herring species. It has been reported that blueback herring exhibit a tendency to spend their first year or two in the lower reaches of estuaries (Hildebrand 1963).

In the Hudson River during 2006, early juveniles collected in the LRS were found in the middle estuary beginning in July (Figure 4-47, Appendix Tables E-127 through E-138). YOY blueback herring began appearing in the 2006 FJS and 2006 BSS in late July and early August. They were present in the upper and middle estuary to early October when collections increased in downriver regions, reflecting the downriver migration. A few yearling and older blueback herring were collected mainly in the upper estuary in 2006 during the spring spawning run (Figure 4-48).

Comparing the geographical distribution of juvenile blueback herring based on the 2006 BSS with previous years (1974-2005), the 2006 distribution of YOY differed from the long-term record in that most of the population was located in the upper estuary region of Albany, instead of a more even distribution throughout the upper and middle estuary (Figure 4-49).

Weekly length statistics for juvenile blueback herring collected in 2006 showed slow increase in growth during the early summer, faster growth during the late summer, and slow growth again in the fall (Figure 4-50, Appendix Tables F-18 and F-19).

4.10 GIZZARD SHAD

Gizzard shad (*Dorosoma cepedianum*) is a freshwater herring that sometimes ranges into brackish water and seawater along the Coast. It is an open-water species, usually living at or near the surface, and is found in large rivers, reservoirs, lakes, swamps, bays, borrow pits, bayous, estuaries, temporary floodwater pools along large river courses, sloughs, and similar quiet open waters. The geographic range of the gizzard shad includes the Great Lakes, except Lake Superior; the Hudson River south to the U.S. Gulf Coast and west to the Dakotas, Texas, and New Mexico; and along the Gulf Coast south to Rio Panuco in eastern Mexico. The northern extent of the range along the Atlantic Coast is Sandy Hook, the Hudson River, and Long Island (Smith 1985). Gizzard shad can grow to a length of 19 in., but the usual adult size is 10-14 in. and 1-3 lb in weight (Miller 1960).

Gizzard shad spawn when the water temperature reaches 50-70°F (April-June, depending upon the location). Adults mill near the surface and spawning sometimes takes place in water less than a foot deep. The eggs sink slowly and adhere to the bottom. The eggs are less than 1/16 in. in diameter and the number of eggs produced by adult females ranges from 59,000 to almost 400,000. Hatching occurs from 1-1/2 to 7 days, depending upon the temperature. Gizzard shad larvae are generally pelagic and widely distributed in many types of habitat. They begin to eat by the fifth day after hatching and feed on microzooplankton until they are about 1 in. long. At that point the digestive system begins to change and the young shad become herbivorous and eat phytoplankton, algae, and microscopic bottom plants (Scott and Crossman 1973).

Growth during the first 5 or 6 weeks is typically rapid, but then slows. By the end of the first summer, gizzard shad are generally between 4 and 5 in. long. Young gizzard shad tend to school and prefer clear, slow-moving water. They sometimes move into small streams and can tolerate high turbidity. However, they do not usually move into brackish waters.

Gizzard shad typically mature at age 2 or 3, and the life span is about 7 years in northern populations and less in southern ones. In estuarine populations gizzard shad move into waters of higher salinities as they age; spring spawning runs have been reported in some instances (Miller 1960). Young gizzard shad are eaten by most predatory fish, but adults are generally too large to be eaten easily.

Gizzard shad occur primarily in the Mohawk River drainage. The early life stages of this species have been caught only occasionally in the Utilities' river surveys. A few YOY gizzard shad were collected in the 2006 BSS predominantly in the middle estuary in the fall (Figure 4-51, Appendix Tables E-139 through E-146). However, adult gizzard shad appear regularly in winter impingement samples at all of the power plants on the Hudson River. These fish may be emigrants from established populations located in the Mohawk River (Smith 1985) or there may be a small resident population in the lower Hudson River. The few yearling and older gizzard shad recorded in river surveys in 2006 were collected in beach seines in the upper and middle estuary primarily in the summer (Figure 4-52).

Comparing the geographic distribution of gizzard shad during the 2006 BSS with the long-term record (1974-2005), peak 2006 distribution for YOY differed from the historic trend in that most were found in the Poughkeepsie region and fewer in the upper estuary (Figure 4-53). Abundance of yearling and older gizzard shad in 2006 also differed from the long-term pattern with greatest abundance in the upper estuary and fewer collected from the middle and lower estuary.

4.11 RAINBOW SMELT

Rainbow smelt (*Osmerus mordax*) are greenish, slender, salmon-like fish with deeply forked tails. They occur along the Atlantic Coast from Labrador to the Delaware River, along the Arctic Coast, and along the coasts of Alaska and British Columbia. They are landlocked naturally in many lakes and ponds in Canada, Maine and New Hampshire and have been introduced to other landlocked fresh waters. Within New York State rainbow smelt are found in the Hudson River, Long Island streams, several Adirondack lakes, and the Great Lakes (Smith 1985).

Anadromous rainbow smelt may spend the whole year in or near estuaries. In the fall they move into the bays and estuaries. Rainbow smelt spawn in tributaries in spring when the water temperature reaches 48°F. Even landlocked populations continue to migrate from their lake habitats to tributary streams to spawn. Spawners move into the lower reaches of streams in the evening, spawn at night, and move out in the day. Adult rainbow smelt leave the tributaries immediately after spawning. They spawn where water velocities are high, and larval survival decreases where water velocities are low (Buckley 1989). In the summer adults move to deeper, cooler water just outside bays and estuaries.

Adult smelt usually average 7-8 in. in total length, but occasionally reach lengths of 13-14 in. Female smelt grow faster than males and may reach maturity as early as age 1 along the southern edge of their range. However, maturity occurs more commonly at ages 2 through 5. The number of eggs produced by an adult smelt may range from 7,000 to 70,000.

The eggs are approximately 1/16 in. or less in diameter and sink to the bottom, where they stick in clusters to pebbles or whatever they happen to touch (Bigelow and Schroeder 1953). Rainbow smelt eggs hatch in about a week to almost a month, depending on temperature and, historically, eggs have been present in the Hudson River ichthyoplankton catches for about two

weeks, which suggests a short spawning period. No rainbow smelt eggs were collected in 2006.

Newly hatched larvae are about 1/5 in. long. These larvae are carried downstream and out of the tributaries by current flows. In the Hudson River, YSL have been found in late April throughout the upper half of the Hudson River estuary but none were collected in 2006. The yolk-sac is absorbed when the fish are about 1/4 in. in length. PYSL in the Hudson River were commonly found in the upper and middle estuary and were abundant from late April through June but only one was collected in 2006 from the middle estuary in June (Figure 4-54). As rainbow smelt larvae grow, they move closer to the bottom during the day and move back toward the surface at night, probably to feed on zooplankton, which exhibit similar vertical migrations in the water column.

Juvenile rainbow smelt were historically found in the Hudson River from mid-June to August in the middle and lower estuary but, again, none were collected in 2006. Juvenile smelt are exceedingly slender and nearly transparent. At about 3/4 in. they begin to school. Juvenile rainbow smelt move into shallow water at night and back to deep channels during the day (Buckley 1989). These movement patterns have been reflected in BSS and FJS collections in the past where beach seines conducted during the day collected no rainbow smelt and fall shoals sampling conducted at night collected juveniles primarily in the middle estuary regions in the early summer. By late summer the young smelt leave the estuary. No yearling and older rainbow smelt were collected in the Hudson River in 2006 (Appendix Tables E-147 through E-154). Historically they were found mainly in the Indian Point through Hyde Park regions.

The long-term temporal distribution record (1974-2005) of the early life stages of rainbow smelt in the Hudson River shows a short occurrence of eggs and YSL in early May and a protected occurrence of PYSL throughout May and June (Figure 4-55). The one PYSL collected in 2006 was collected in mid-June. The historical geographic distribution (1974-2005) of the early life stages of rainbow smelt demonstrate a downriver migration from peak egg abundance in Saugerties to middle and lower estuary presence of YOY (Figure 4-56). The long-term distribution record (1979-2005) from the FJS indicated that most YOY and yearling and older smelt were found in the middle estuary (Figure 4-57).

4.12 HOGCHOKER

Hogchoker (*Trinectes maculatus*) inhabit estuaries and nearshore coastal waters and range from Massachusetts Bay to the Atlantic Coast of Panama. They can tolerate a wide range of salinities and are found from marine waters up into fresh water, although older individuals tend to be found in more saline waters. Hogchoker reach a length of 2-3 in. in their first year, mature at about 4.5 in., and obtain a maximum size of about 8 in. (Bigelow and Schroeder 1953). This small flatfish is very abundant in the Hudson River estuary and its adjacent bays and coastal waters.

Adult hogchoker overwinter in low salinity regions of estuaries (Koski 1973) and spawn in the lower regions of estuaries and offshore from estuary mouths during the spring and summer. In some areas (eastern Chesapeake Bay) spawning appears to be restricted to sandy substrates. Dovel et al. (1969) reported that the hogchoker population in the Patuxent River was a resident population confined for the most part to that estuary in the Chesapeake Bay complex and concluded that the hogchoker population in the Chesapeake Bay system was probably composed of subpopulations that were generally confined to the bay and various tributaries. The relationship of Hudson River hogchoker to Atlantic coastal populations is unknown.

Individual hogchoker produce from 11,000 to 54,000 eggs, depending upon the size of the female. In the Hudson River estuary hogchoker spawning occurs from May to October, although eggs are more commonly collected from the last week in May through July in the more saline areas of the lower estuary, such as the Battery and Yonkers regions. During 2006 hogchoker eggs were collected primarily in the Yonkers region in July ([Figure 4-58](#), [Appendix Tables E-155 through E-172](#)).

After hatching, the YSL move upstream from the spawning areas and may use the net upstream flows in the deeper saline waters of the estuary. In 2006, YSL were also collected from the Yonkers region in July, but PYSL were collected further upriver in middle estuary regions in August ([Figure 4-58](#)). YOY hogchoker in 2006 were found primarily in the middle and lower estuary during late summer and fall ([Figure 4-59](#)). Yearling and older hogchoker were collected throughout the Hudson River in 2006 but were most abundant in the lower estuary ([Figure 4-60](#)).

The 2006 geographical distribution of YOY hogchoker in the FJS was similar to the long-term trend (1979-2005) which showed a presence in most regions of the estuary, but in 2006 more YOY were collected in the middle estuary regions of Poughkeepsie and Cornwall than in the past ([Figure 4-61](#)). Yearling and older hogchoker were also found throughout the estuary with peak abundance also in the Poughkeepsie and Cornwall regions, rather than the Tappan Zee region as in the historic pattern.

In the Hudson River, hogchoker generally reached sexual maturity at age 2, although some males were mature at age 1 (about 3 in. long). The oldest males in the Hudson River were age 4 while the oldest females were age 6. Hogchoker feed near the bottom on a variety of benthic invertebrates, including annelid worms and smaller crustaceans.

4.13 SPOTTAIL SHINER

Spottail shiner (*Notropis hudsonius*) is a small, silvery, freshwater minnow that reaches a maximum total length of over 5 in. in the Hudson River. It is usually recognizable by a large oval spot at the base of the tail, but in large individuals the spot is sometimes small and somewhat masked by silvery pigment. It occurs in a variety of freshwater habitats from large lakes and rivers to small streams and is widely distributed in Canada and the United States (Smith 1985). Spottail shiner is a freshwater species and does not enter marine coastal waters. Thus, the Hudson River population is probably isolated from those in other coastal rivers along the East Coast of the United States.

Adult spottail shiner may form large spawning aggregations over sand or gravel substrates in shallow water or at the mouths of tributaries. In the Hudson River adult spottail shiner appear in the ichthyoplankton samples from the upper, freshwater regions of the estuary during April. Spottail shiner produce from 100 to 2,600 eggs, depending upon the age and size of the female. Very few eggs and larvae have been collected during the LRS, which is probably a reflection of the fact that this species spawns in shallow-water habitats that are not sampled efficiently during the ichthyoplankton surveys.

Juvenile spottail shiner first appeared in the 2006 BSS during June and were most abundant in August in the shorezone above the Cornwall region ([Figure 4-62](#), [Appendix Tables E-173 through E-184](#)), which is also the portion of the estuary with the greatest number of tributaries.

Yearling and older spottail shiner were also found throughout the middle and upper Hudson River generally above Cornwall in 2006 (Figure 4-63).

Comparing the geographical distribution of YOY and yearling and older spottail shiner based on the BSS in 2006 with previous years (1974-2005), the 2006 distribution of these life stages was consistent with the long-term record of major distribution in the upper estuary with lesser concentrations in the middle estuary, except that more spottail shiner were found in the Saugerties region in 2006 than in the long-term record (Figure 4-64).

Weekly length statistics for juvenile spottail shiner collected in 2006 show a rapid increase in length from June to September and a leveling off of growth in the fall as the fish were recruited to the adult stage (Figure 4-65, Appendix Tables F-20 and F-21). The erratic growth pattern for some weeks can be attributed to a few individuals collected during the FJS sampling weeks.

In general, spottail shiner are opportunistic predators that feed on aquatic insect larvae, zooplankton, benthic invertebrates, and the eggs and larvae of fish, including their own species. The smaller fish eat the smaller organisms and zooplankton (Scott and Crossman 1973).

4.14 ATLANTIC STURGEON

Atlantic sturgeon, *Acipenser oxyrinchus*, has two recognized subspecies, *A. o. oxyrinchus* and *A. o. desotoi*. The former ranges from Hamilton River, Labrador, and George River, Ungava Bay, to northeastern Florida, while the latter is confined to the northeastern Gulf of Mexico (Gruchy and Parker 1980a). Atlantic sturgeon are anadromous with spawning occurring in freshwater, but most of their life is spent in marine waters, often undertaking long distance migrations along the Atlantic Coast (Bain 1997). Tagging studies reported by Dovel and Berggren (1983) indicate that Atlantic sturgeon disperse over great distances and spend at least part of their lives in other estuary systems. Atlantic sturgeon tagged in the Hudson River have been recaptured as far north as Marblehead, Massachusetts, and as far south as Ocracoke, North Carolina. Many of the tags were returned by Delaware Bay and Chesapeake Bay commercial fisherman. Presumably, Atlantic sturgeon that spawned in other rivers and estuaries find their way into the Hudson River.

Atlantic sturgeon are long-lived, slow-maturing, large fishes. Dovel and Berggren (1983) reported that by age 29, Atlantic sturgeon averaged 7.8 ft. The largest known Atlantic sturgeon was a 14-ft specimen weighing 811 lb from Saint John River, New Brunswick (Van Den Avyle 1984). While in the Hudson River the maximum reported age is 36 (Van Eenennaam et al. 1996), the oldest known Atlantic sturgeon is a 60-year-old individual from the St. Lawrence River (Gilbert 1989). Adults are large fishes with barbels extending across most of the width of the snout, heavy bony plates (called scutes) covering the body, and an extended upper lobe of the tail fin.

Male Atlantic sturgeon reach maturity at about 12 years and females at 18-19 years (Dovel and Berggren 1983), although some females may reach maturity at 15 years (Van Eenennaam et al. 1996). They are believed to spawn at intervals ranging from 1 to 5 years (Bain 1997); however, males may possibly have an annual spermatogenic cycle (Van Eenennaam et al. 1996). Mature male Atlantic sturgeon enter the Hudson estuary by early April, before water temperatures rise above 43°F while mature females do not arrive until several weeks later (Dovel and Berggren 1983). Spawning occurs from May through July. Telemetry studies in 1994 and 1995 suggest that spawning occurs in concentration areas near Hyde Park (RM 80) and Clinton Point (RM 70) (Nack and Bain 1996). Other studies have identified an additional concentration area near

Catskill (RM 113) (Van Eenennaam et al. 1996). After spawning, males and females were tracked to a congregation site at Con Hook (RM 48) where the estuary is deep (up to 120 ft). Post-spawning adults were joined at this site by marine-migrant juveniles and this large population of Atlantic sturgeon remained at Con Hook throughout most of the summer. A gradual emigration of adults to marine waters began in August and was completed by October (Nack and Bain 1996).

Atlantic sturgeon produce large numbers of eggs. Fecundity estimates derived from a number of river systems indicate that Atlantic sturgeon produce between 0.8 and 3.75 million eggs per female and that the number of eggs is closely related to the weight of the fish. During spawning, eggs are presumably broadcast into flowing water, becoming widely dispersed after fertilization. There is no evidence of parental care. The eggs are demersal and become strongly adhesive after about 20 minutes and attach to rocks, weeds, and other submerged objects (Gilbert 1989). Hatching time ranges from about 4 days at about 20 C (Dean 1895) to 7 days at 17.8 C (Vladykov and Greeley 1963).

Larvae of Atlantic sturgeon, as all life stages, are oriented on the bottom of deep channel habitats (Bain 1997). Based on capture locations of larval and juvenile sturgeon from early Hudson River studies, the nursery region for sturgeon is believed to be located between RM 43 and RM 118 from May through mid-July (Hoff et al. 1977, in Hoff et al. 1988). More recent data collected during the LRS from 1974 through 1994 show a concentration area (RM 43-100) of larvae and early juveniles between mid-May and mid-July that may correspond to the distribution of Atlantic sturgeon early life stages (Con Edison 1997a).

Juvenile Atlantic sturgeon remain in the Hudson estuary for 2-6 years before migrating to marine waters. During the first 3 years of life, they quickly grow to over 2 ft (Bain 1997). From July through September, juvenile Atlantic sturgeon are distributed over much of the Hudson estuary (Bain 1997), but one section of the estuary (RM 43-48) contained high numbers of juveniles (Haley et al. 1996). As water temperatures drop in the fall, juveniles form an overwintering congregation in deep waters (>25 ft) between the Bear Mountain Bridge and the George Washington Bridge (Dovel and Berggren 1983).

Sturgeon feed by rooting along the bottom and "vacuuming" with their protrusible mouths. This leads to a large amount of non-food matter, mostly mud, in the stomach. Actual food items include mollusks, polychaete worms, gastropods, shrimp, isopods, amphipods, and small benthic fishes.

The Atlantic sturgeon has been an important commercial species in the Hudson estuary, prized for its flesh and caviar. Commercial landings peaked at 7 million pounds at the turn of the 19th century, but the fishery crashed within a 10-year period due to over-exploitation of a slow-growing, slow-maturing fish (Field 1996). Since then, coast-wide landings hovered around 200,000 lb. In 1990, the Atlantic States Marine Fisheries Commission adopted a management plan for Atlantic sturgeon establishing a minimum size limit for the commercial fishery. Recent annual landings in New York State have ranged from 17,000 to 36,000 lb (McKown 1996). However, in 1996, the Atlantic States Marine Fisheries Commission recommended a 2-year fishery moratorium based on recent scientific analyses of the Hudson River Atlantic sturgeon which indicated a collapsing population (Field 1996).

Evidence of a decline in the Hudson River estuary stock of Atlantic sturgeon in recent years comes from two population estimates. The population of immature Atlantic sturgeon in the Hudson River estuary was estimated at 14,500 to 36,000 fish for the 1976 year class at age one

(Dovel and Berggren 1983). Kahnle and Hattala (1998) estimated that there were 4,600 age zero Atlantic sturgeon in the estuary in 1994, a substantial decline from the abundance of the 1976 year class.

The Utilities' monitoring program in 2006 collected 15 Atlantic sturgeon. One PYSL was collected in the LRS in the Cornwall region in June and 14 yearling and older Atlantic sturgeon were caught in the FJS between Indian Point and Hyde Park (RM 43 to 81) from July to November (Figure 4-66, Table 4-3, and Appendix Tables E-185 through E-192).

4.15 SHORTRNOSE STURGEON

Shortnose sturgeon, *Acipenser brevirostrum*, are less widespread than the Atlantic sturgeon, ranging from the St. John River, New Brunswick, to the St. Johns River, Florida (Gruchy and Parker 1980b). Nineteen distinct stocks of shortnose sturgeon are recognized, ranging in size from less than about 100 adults in the Merrimack River, Massachusetts to greater than about 38,000 (now 60,000 [Bain et al. 1998]) adults in the Hudson River, New York (NMFS 1998). Shortnose sturgeon are amphidromous, using mainly fresh and brackish waters, and only occasionally marine waters, during its life cycle (Bain 1997). Shortnose sturgeon presumably from the Hudson River have been caught in Sandy Hook Bay, New Jersey just off the mouth of the Hudson (Dovel et al. 1992), but most seem to remain within the Hudson estuary. Forty-four shortnose sturgeon tagged in the Hudson River between 1979 and 1980 were recaptured in the Hudson River by researchers from 1993 to 1995, from 14 to 17 years after tagging (Bain et al. 1996).

Like Atlantic sturgeon, shortnose sturgeon are long-lived, slow-maturing fishes. In the Hudson River the maximum reported age for shortnose sturgeon is 37 years, however, the oldest known shortnose sturgeon is a 67-year-old female from St. John River, Canada (Gilbert 1989). The largest shortnose sturgeon reported for the Hudson River was almost 4 ft long (Geoghegan et al. 1992), considerably smaller than that reported for Atlantic sturgeon. However, both the Atlantic and the shortnose sturgeons are similar in appearance. As adults, shortnose sturgeon can be distinguished from the Atlantic sturgeon by a shorter and blunter snout, wider mouth, and smaller size of the anal fin.

Male shortnose sturgeon in the Hudson River do not reach sexual maturity until age 3-5 and females at age 6-7 (Dadswell et al. 1984). The first spawning, however, may follow maturation in males by 1-2 years, while in females spawning may be delayed for up to 5 years (Dadswell 1979). Spawning appears to be a non-annual event. Based on the percentage of fish examined from August to March that were developing sexually, Dadswell (1979) suggested that females spawn once every third year and males every other year. Other evidence (annuli of the pectoral ray) suggests a 5- to 11-year interval between spawnings (Dadswell 1979). However, annual spawning has been suggested by tagging studies on the Hudson River that tracked shortnose sturgeon to the spawning grounds in successive years (Dovel et al. 1992).

During their spawning migrations, shortnose sturgeon move upriver as far as accessible habitat permits (Dovel et al. 1992). In the Hudson River, adult shortnose sturgeon reach the spawning grounds between Coeymans and Troy (RM 124-153) as early as the first week of April and spawning occurs from late April to early May (Bain 1997). After spawning, adults move downriver to feed and disperse over the tidal portion of the Hudson estuary, but are primarily south of Kingston (Bain 1997). From October through March, pre-spawning adults concentrate near Esopus Meadows (RM 87) (Dovel et al. 1992). Non-spawning adults may inhabit another

winter concentration area located near Croton Point (RM 34) (Geoghegan et al. 1992; Bain 1997).

Shortnose sturgeon are broadcast spawners with external fertilization of eggs (NMFS 1987). Similar to Atlantic sturgeon, the eggs are demersal and adhere to objects on the river bottom within minutes of fertilization. Between 8 and 12 C, eggs hatch 13 days after fertilization. At 17 C, hatching occurs in 8 days (Buckley and Kynard 1981).

Research on shortnose sturgeon larval behavior indicates that hatchlings are photonegative and vigorously seek cover under any available structure immediately after hatching (Richmond and Kynard 1995). During the first 1-2 days following hatch, larvae denied or dislodged from cover will exhibit "swim-up and drift" behavior, which in the wild allows them to move short distances to seek available cover. At 9-12 days post hatch, larvae are 15 mm long (TL), the yolk sac is completely absorbed, and the fry are feeding on zooplankton (Buckley and Kynard 1981; Washburn and Gillis Associates 1981). By about 14-17 mm TL, shortnose sturgeon, resembling miniature adults, become photopositive and leave cover to swim in the water column, although remaining bottom oriented. In the wild, larvae of this size probably migrate downstream (Richmond and Kynard 1995).

Little information is available on the actual distribution of the early life stages of Hudson River sturgeon during their first growth season because of the infrequency of their capture and the difficulty in distinguishing between the two species of sturgeon. Data from 21 years of the LRS (1974-1994) document the collection of 186 larvae and early juveniles of both species (Con Edison 1997a). These data show two concentration areas of sturgeon larvae and early juveniles in the Hudson River estuary. Based on spawning ground identification by Dovel et al. (1992), the concentration area from RM 120 to RM 150 during May may correspond to the distribution of shortnose sturgeon larvae and early juveniles in the Hudson River.

Early growth is rapid. For shortnose sturgeon, larvae are approximately 0.7 in. in total length at the end of May and from 4.9 to 5.1 in. by the end of July. By the end of their second summer, they average approximately 11.5 in. (Dovel et al. 1992). After about the third year of life, growth slows considerably. Greeley (1937) reported a maximum size of about 34 in. at 15 years for shortnose sturgeon, while Dadswell et al. (1984) reported a maximum of approximately 35 in. at age 40, but shortnose sturgeon over 39 in. have been captured in the Hudson River (Hoff and Klauda 1979).

Juvenile shortnose sturgeon use a large portion of the Hudson estuary as nursery ground (Bain 1997). During the summer, more juvenile shortnose sturgeon were found in the relatively shallow, freshwater zone of the estuary around Poughkeepsie (RM 67-86) than in the deeper, more saline zone near West Point (RM 42-56) (Haley et al. 1996). By late fall and early winter, most juveniles occupy the broad region of the Hudson River near Haverstraw (RM 34-39) (Bain 1997). Juvenile shortnose sturgeon typically prey on benthic crustaceans and insect larvae, whereas adults will feed on larger items with mollusks being a major component of their diet (Bain 1997).

Although numerous studies summarized the life history of Atlantic sturgeon since the late 1800s, little attention was paid to shortnose sturgeon, likely because of its limited commercial importance. With the listing of shortnose sturgeon as an endangered species in the United States and its classification as rare in Canada (Gorham and McAllister 1974), more effort has been directed toward understanding this species. Current research efforts have focused on the ecology of juveniles and on the population status of shortnose sturgeon in the Hudson River.

Trends in the relative abundance of shortnose and Atlantic sturgeon have shown an increase in shortnose sturgeon and a decline in Atlantic sturgeon (Bain 1996). Dovel et al. (1992) observed that in 1984 equal numbers of juvenile Atlantic and shortnose sturgeon were collected; while during earlier years (1975-1980), the ratio of Atlantic to shortnose sturgeon was 10:1 in the Hudson River. Other evidence of an increasing population of shortnose sturgeon over its range is that the National Marine Fisheries Service has recommended that the status of the Connecticut, Delaware, and Hudson rivers' populations of shortnose sturgeon be changed from endangered to threatened (NMFS 1998).

The Hudson River estuary appears presently to contain the largest stock of shortnose sturgeon that has been reported anywhere. In the late 1970's, Dovel (1979) estimated the shortnose sturgeon population in the Hudson River estuary at 13,000 fish. Bain et al. (1995) estimated the adult population size to be 38,024, with lower and upper 95% confidence intervals of 26,427 and 55,072, respectively. This latter population estimate suggests a 2- to 4-fold increase in abundance since the late 1970's (NMFS 1998). Further refined analytical techniques indicate that the most appropriate population estimate based on this most recent study is 61,057 fish, 1-year-old and older (Bain et al. 1998). These estimates reflect those fish in the overwintering and spawning concentration areas and, thus are likely just a subset of the total adult population. Additionally, because shortnose sturgeon do not appear to spawn every year, the majority of the population may be non-spawners and, thus, not included in this population estimate.

The Utilities' monitoring program conducted during 2006 resulted in a total of 34 shortnose sturgeon (which includes 2 YSL and 2 PYSL) collected in the LRS and FJS from Battery to Albany (RM 8 to 133) from April to November ([Figures 4-67 and 4-68](#), [Table 4-4](#), and [Appendix Tables E-193 through E-202](#)).

4.16 WHITE CATFISH

White catfish (*Ameiurus catus*) occur in freshwater lakes and ponds and have been introduced widely on the West Coast and into the Northeast. The natural distribution was originally from the Chesapeake Bay region in coastal streams southward to Texas. They are found in estuaries all along the Atlantic Coast from the Hudson River to Florida and west along the Gulf of Mexico to Mobile Bay. White catfish prefer fresh and slightly brackish waters and moderate water currents, however, they do not tolerate high salinity, and so estuarine populations generally remain in their natal systems.

In southern waters young white catfish are about 3 in. long at the end of the first growing season. White catfish generally do not mature until they are 3-4 years old and 7-8 in. long. They continue to grow slowly, attaining lengths of 17 in. at age 8 and 22 in. at age 11. This species seldom exceeds 3 lb in weight.

White catfish move upstream to spawn. In spring white catfish have been reported in tidal creeks and shallow marsh habitats. Like the other members of the catfish family, the white catfish is a nest builder, and the male guards the young for some time after they hatch. Both parents participate in the construction of a nest up to 3 ft in diameter on sand and gravel bars. White catfish spawn when water temperatures reach about 70°F, i.e., in late June and early July in the Hudson River. An 11- to 12-in. female carries only 3,200-3,500 eggs, but the eggs are large, approximately 1/4 in. in diameter. The male (or less often both parents) protects and fans water over the eggs in the nest.

White catfish eggs and larvae were rarely collected during the Utilities' ichthyoplankton surveys. However, the 2006 LRS and FJS captured low numbers of YOY white catfish primarily in the upper and middle estuary during the summer, then after migration, in the middle estuary by fall (Figure 4-69, Appendix Tables E-203 through E-214). Yearling and older white catfish were captured in low numbers during the 2006 surveys throughout the estuary (Figure 4-70).

The 2006 geographical distribution of YOY white catfish in the FJS resembled the 1979-2005 long-term trend of juveniles in the mid- to upper Hudson River but the 2006 peak occurred further downriver in the Saugerties and Poughkeepsie regions (Figure 4-71). In the historical pattern, yearling and older white catfish were found throughout the estuary, as was the case in 2006 except fewer yearling and older white catfish were found in the lower estuary and more were found in the Kingston region (Figure 4-71). After moving into the deeper river strata during September and October, yearling and older white catfish migrate downstream to overwinter in the lower estuary when temperatures in the upper estuary drop below 59°F (NAI 1985a).

Small white catfish feed on midge larvae until they become large enough to eat fish. Larger white catfish have a diverse diet that includes midge larvae, crustaceans, algae, fish eggs, and a variety of fish (Smith 1985).

Weekly length statistics for juvenile white catfish collected in 2006 showed rapid growth from July to September with a leveling off in size during the fall as larger fish were able to avoid the sampling gear (Figure 4-72, Appendix Tables F-22 and F-23).

4.17 WEAKFISH

Weakfish (*Cynoscion regalis*) is a member of the drum family commonly inhabiting nearshore waters from North Carolina to New York and occasionally straying as far as Nova Scotia or the eastern Gulf of Mexico. Weakfish overwinter in deeper waters of the continental shelf, generally between Chesapeake Bay and Cape Fear, North Carolina. When inshore waters begin to warm each spring, older weakfish begin to move toward shore and then head north along the Coast. These older individuals are followed by successively younger groups of adult weakfish. During warmer months of the year, weakfish are found throughout inshore waters in their geographic range, with larger individuals the most abundant in northern areas. As water temperatures decline in the fall, weakfish begin to migrate southward and return to offshore overwintering areas.

Spawning occurs in nearshore coastal and marine waters in spring and summer, depending upon geographic location. Extensive spawning occurs in the south and in the New York Bight. Weakfish eggs are buoyant and hatch in about 2 days. The newly hatched larvae, which are less than 1/8 in. long, are weak swimmers and move shoreward up into the bays and estuaries. Duration of the larval stage appears to depend partially on prey density. In the nursery areas young weakfish feed on invertebrates and grow rapidly. They reach a length of 3-6 in. by the end of the first summer. Young weakfish can be found throughout the saline and brackish areas of estuaries but tend to be most common in areas where salinities are over 10 ppt. As water temperatures decline in fall, juvenile weakfish begin to leave these nursery areas and move toward southern overwintering areas.

In the New York Bight spawning typically occurs from May to mid-July, and there are two spawning peaks. Weakfish larvae are rarely encountered north of the George Washington Bridge, preferring more saline waters. Weakfish juveniles typically first enter the areas north of the George Washington Bridge during July and most have emigrated from the estuary by mid-

August. During the 2006 LRS, YOY weakfish were present from July through October from the Battery to West Point regions with greatest abundance in August (Figure 4-73, Appendix Tables E-215 through E-226). In the 2006 FJS, YOY weakfish were found beginning in July with abundance peaking in October when they gradually emigrated from the Hudson estuary. A few yearling and older weakfish were collected in the 2006 monitoring program in the lower estuary (Figure 4-74).

The 2006 geographical distribution of YOY weakfish in the FJS is similar to the 1979-2005 long-term trend in which the majority of weakfish were found in the lower estuary regions of Yonkers and Tappan Zee, but in 2006 more YOY were found in the Indian Point region than in the past (Figure 4-75). No yearling and older weakfish were collected within the temporal limits (mid-August to October) of this index in 2006.

Weekly length statistics for juvenile weakfish collected in 2006 showed an overall increase in growth from July through October (Figure 4-76, Appendix Tables F-24 and F-25). Decreasing lengths in November reflected entry of late-spawned fish to the year class. The zigzag pattern in growth resulted from the size-selectivity of the sampling gears.

4.18 BLUEFISH

Bluefish (*Pomatomus saltatrix*) is a predaceous oceanic fish species; in the western Atlantic Ocean its range is from Argentina to Maine and occasionally to Nova Scotia. In the New York Bight bluefish is a common inshore inhabitant that arrives in May and usually departs by November. North Atlantic bluefish migrate from New England to Cape Hatteras, North Carolina in summer and to the Florida area and the southern Gulf Stream in winter, but migration patterns have not been positively identified. During migrations, smaller fish migrate closer to shore than larger fish.

There are two major spawning aggregations in the mid-Atlantic: a spring spawning stock and a summer spawning stock. The degree to which the stocks are isolated is not known, but consistent morphological differences suggest some isolation of the stocks (Pottern et al. 1989). Most of the bluefish population in the New York Bight probably originates from the spring-spawning stock (Chiarella and Conover 1990). The spring spawners move into the waters where the Gulf Stream and the continental shelf water meet between northern Florida and Cape Hatteras. Bluefish spawn as they migrate northward. North of Cape Hatteras the adults move shoreward. The smaller spent bluefish may spend summers in the Chesapeake and Delaware bays and Albemarle Sound. Larger fish move north longer than the smaller bluefish and migrate farther. Some move into Long Island Sound and more northern areas. In autumn, bluefish migrate back to the wintering areas off south Florida and the south Atlantic (Pottern et al. 1989).

The juvenile bluefish produced in the spring travel north with the Gulf Stream and migrate across the continental shelf to the mid-Atlantic bays and estuaries, which act as productive nursery areas. Spring-spawned juveniles spend most of their first summer in estuaries (Kendall and Walford 1979). In fall they migrate southward along the Coast to winter off south Florida. The following spring, yearlings migrate north along the Coast and return to the mid-Atlantic bays and estuaries and, to a lesser extent, the sounds of North Carolina (Pottern et al. 1989). The spring-spawning bluefish stock that contributes most to Hudson River fish ranges along most of the Atlantic Coast.

Some summer-spawned larvae have also been reported in the more saline parts of estuaries in the mid-Atlantic Bight. Summer-spawned juveniles may spend only about a month in estuaries, but most are found along the shore (Kendall and Walford 1979). The summer-spawning adults start from the southern wintering areas, but they migrate north to the outer half of the continental shelf between Cape Hatteras and Cape Cod and spawn there. Spent spawners then move west, and show up in coastal waters, particularly along Long Island. Most of the juveniles from the summer spawn remain offshore during the summer. In fall the adults and juveniles migrate south. Juveniles from the summer spawn may spend the winter farther out to sea than juveniles from the spring spawning. Juveniles from the summer spawn migrate north the next spring and most of these juveniles may spend the summer in the sounds of North Carolina and may not return to their original nursery areas (Pottern et al. 1989).

Bluefish eggs are buoyant and pelagic and hatch in about 2 days. The newly hatched larvae are also pelagic and remain in offshore waters for 1-2 months before migrating shoreward toward shallow-water nursery areas. In the New York Bight, YOY bluefish enter the shallow-water nursery areas as two groups. The first, from the spring spawning in the south Atlantic, are about 1-2 in. long when they enter the nursery areas in June or early July to feed and grow rapidly. The second, from the summer spawning in the mid-Atlantic Bight, are larger when they arrive in September.

YOY bluefish typically first enter areas north of the George Washington Bridge in early June and remain at least until early October. They are most common in shallow, more saline areas of the estuary, including the Tappan Zee and Haverstraw Bay, but typically range as far upriver as the Cornwall region. During 2006, YOY bluefish were collected predominantly in the lower and middle estuary in July, but most had emigrated from the Hudson River above the George Washington Bridge by October ([Figure 4-77](#), [Appendix Tables E-227 through E-232](#)). Salinity intrusions into the estuary appear to be a major determinant of geographic distribution within the estuary. YOY bluefish are also abundant in areas of the estuary south of the George Washington Bridge and adjacent waterways, which are part of the larger, coastal distribution.

The 2006 geographical distribution of YOY bluefish in the BSS is consistent with the 1974-2005 long-term trend with the majority of fish collected in the lower estuary, especially in the shallow areas of the Tappan Zee and Croton-Haverstraw regions ([Figure 4-78](#)).

In the Hudson River YOY bluefish aggressively feed on a variety of macroinvertebrates and fish and grow rapidly to a size of 3-6 in. by the time they begin to leave the estuary in late summer. Older bluefish, including adults, occasionally enter the lower estuary during summer and feed on available forage fish such as bay anchovy, Atlantic silverside, and young menhaden and river herrings. Bluefish reach sexual maturity during their second year of life. Annual fecundities range from 600,000 to 1,400,000 eggs per female, depending upon size. The maximum size of bluefish has been reported to be 45 in. and 30 lb. All ages of bluefish often travel in schools and are voracious feeders that commonly destroy more than they can eat.

[Link to References](#)

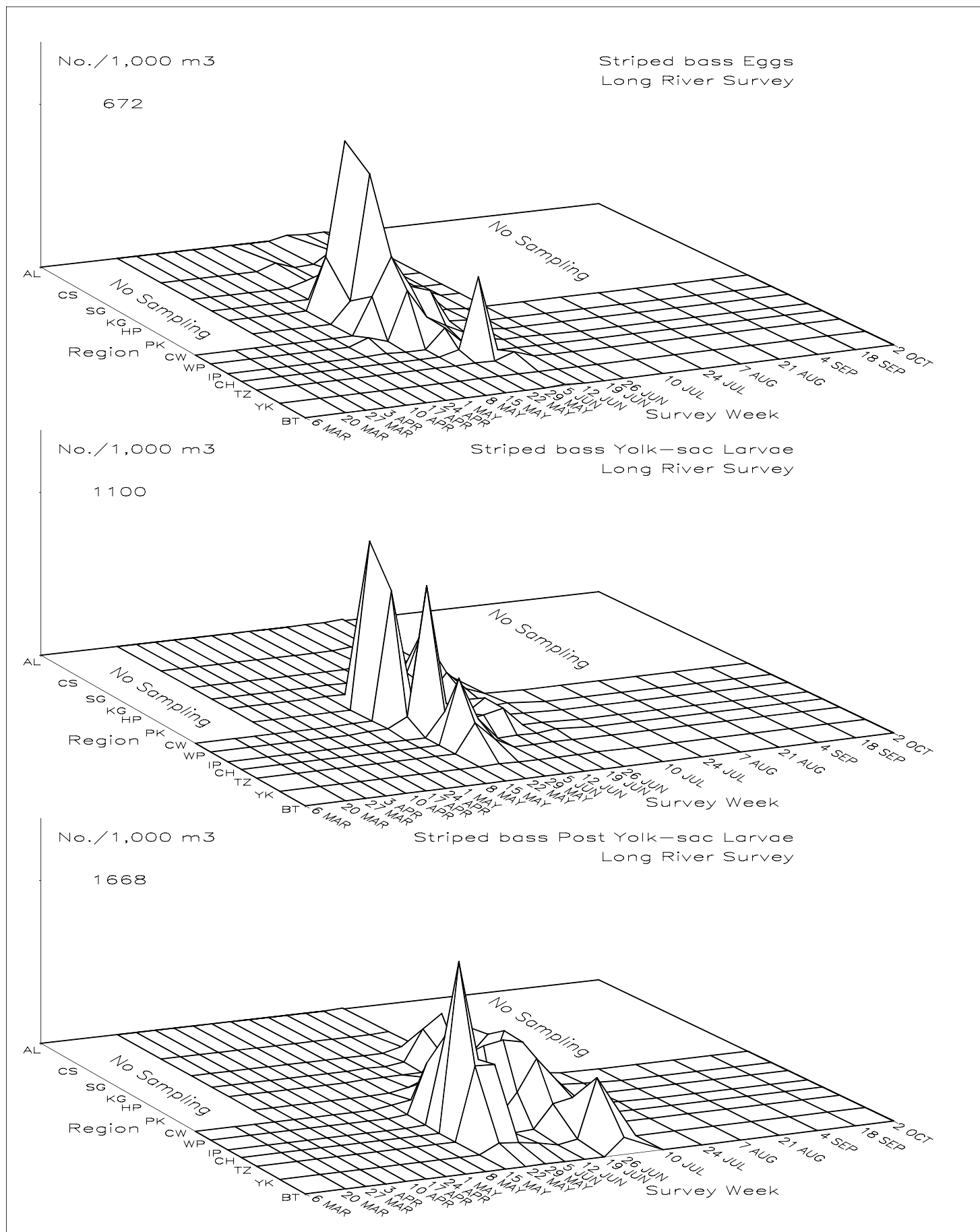


Figure 4-1. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval striped bass in the Hudson River estuary based on the 2006 Long River Survey.

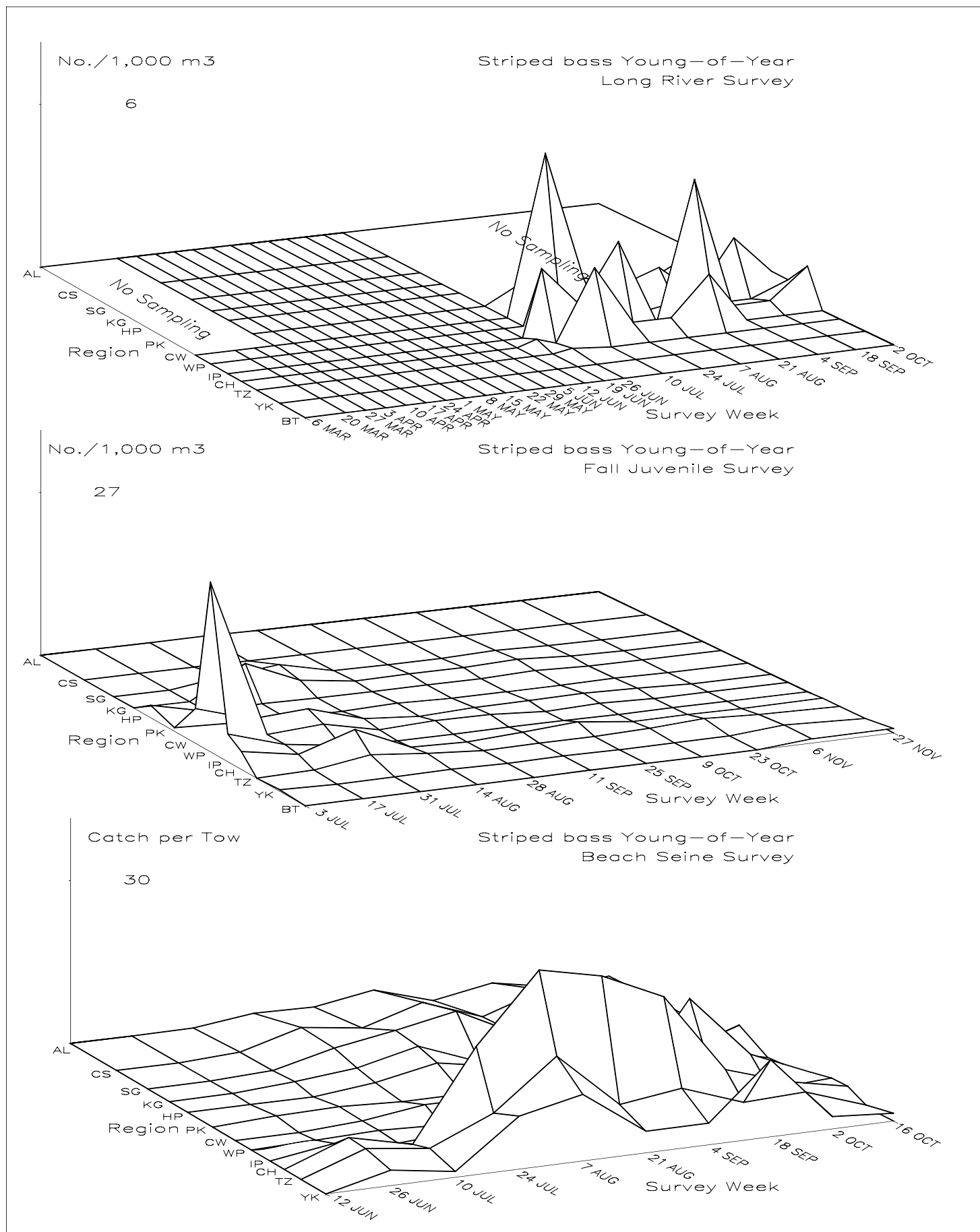


Figure 4-2. Spatiotemporal distribution of young-of-year striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

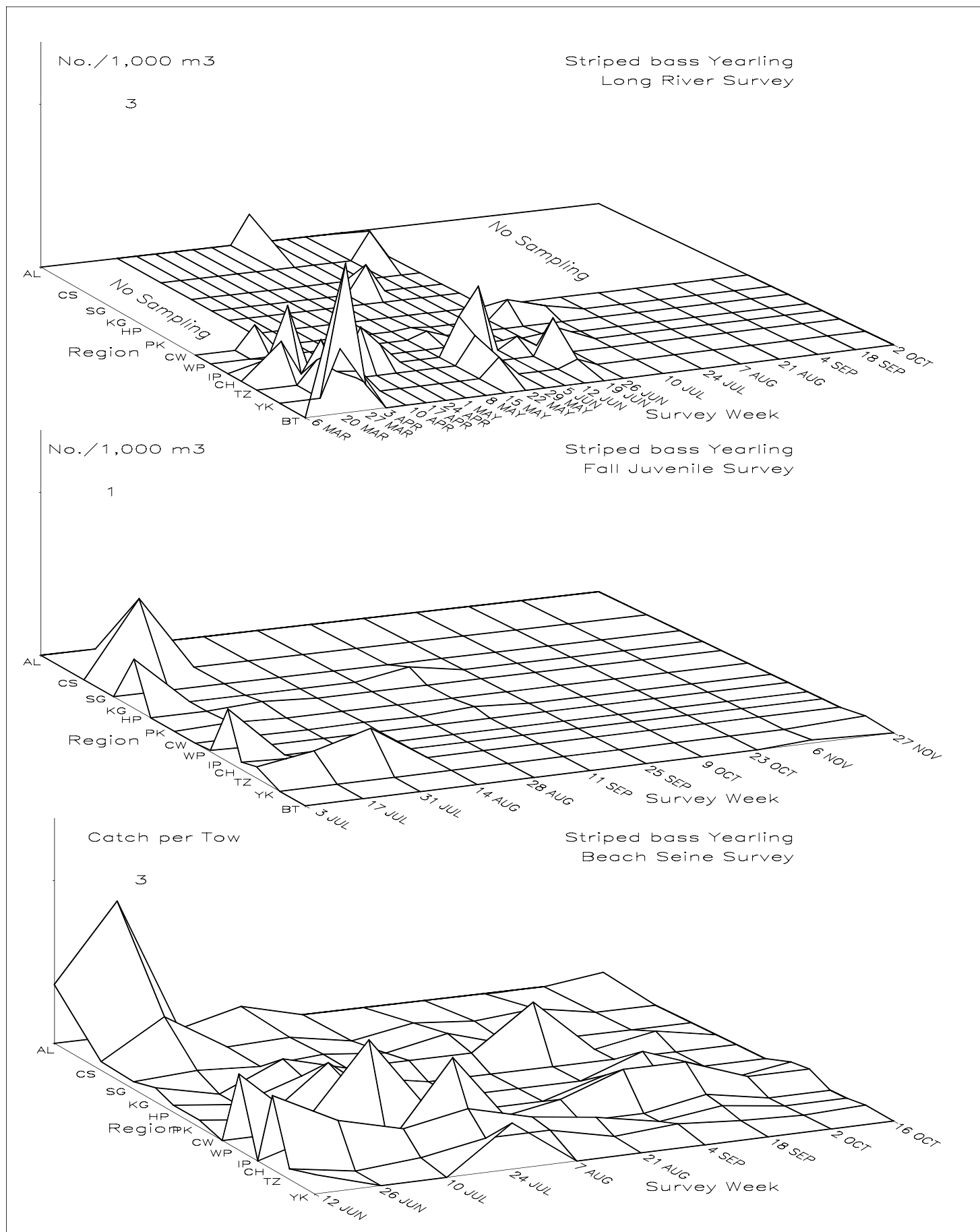


Figure 4–3. Spatiotemporal distribution of yearling striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

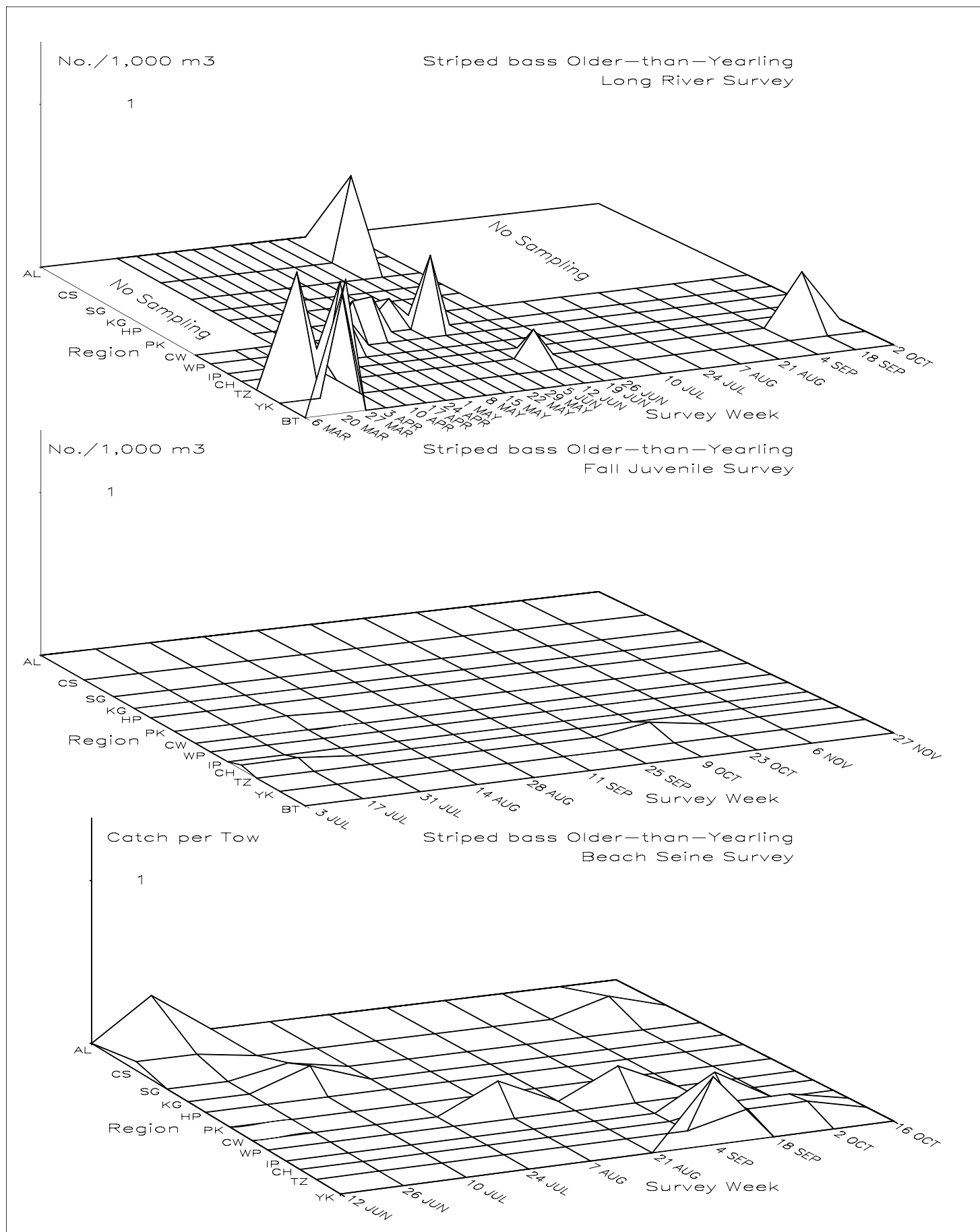


Figure 4-4. Spatiotemporal distribution of older-than-yearling striped bass in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

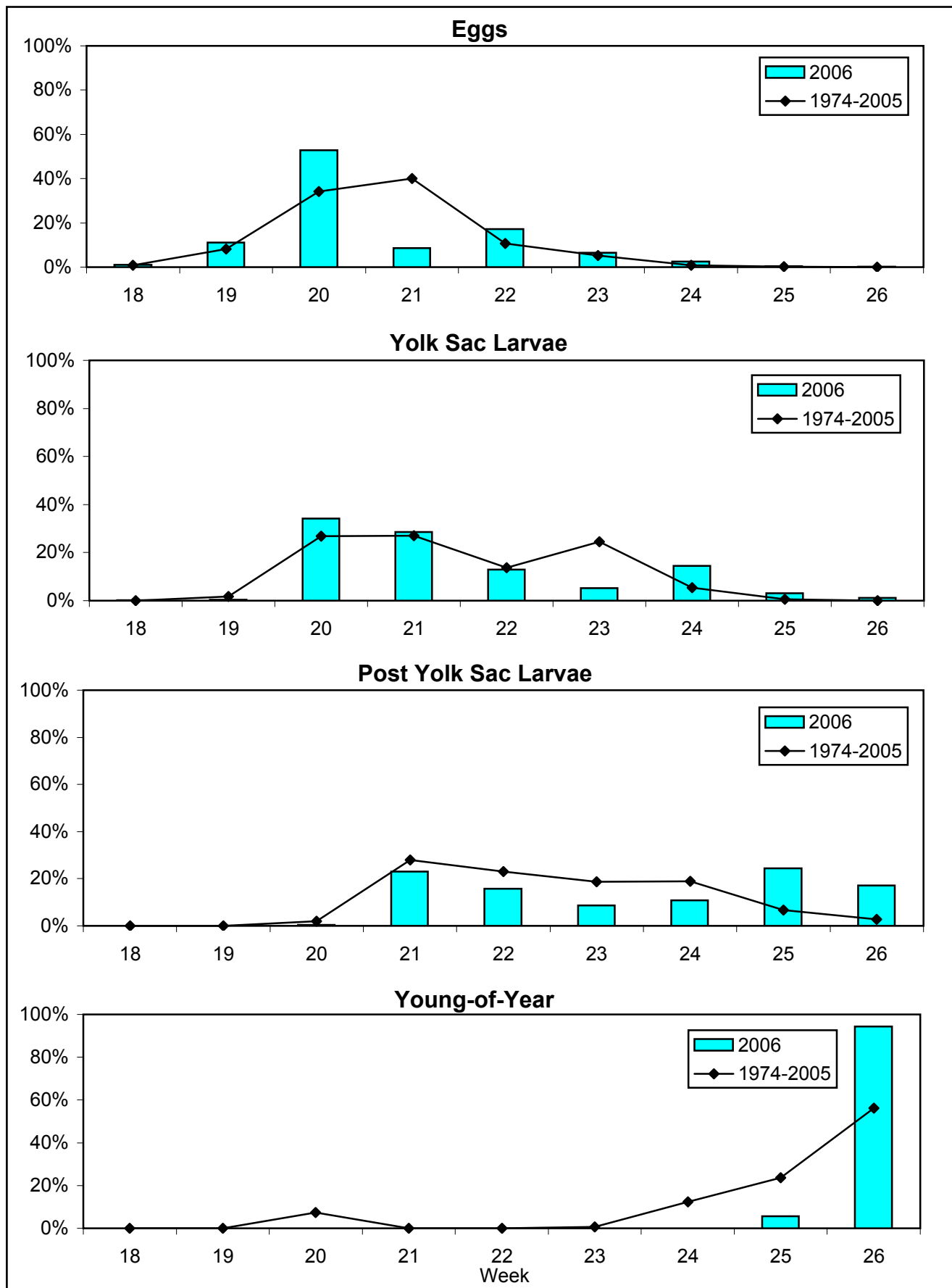


Figure 4-5. Temporal distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2006.

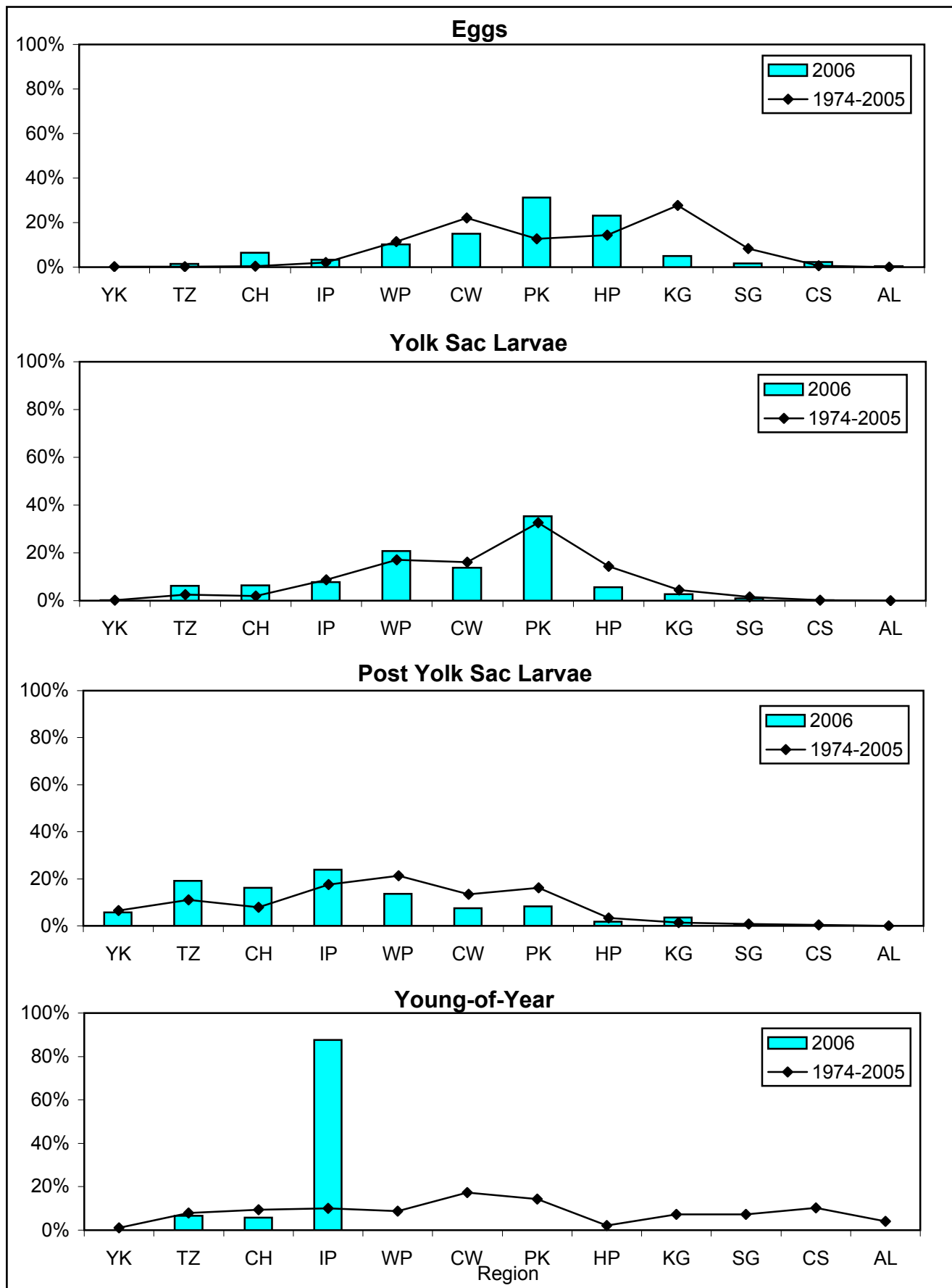


Figure 4-6. Geographic distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2006.

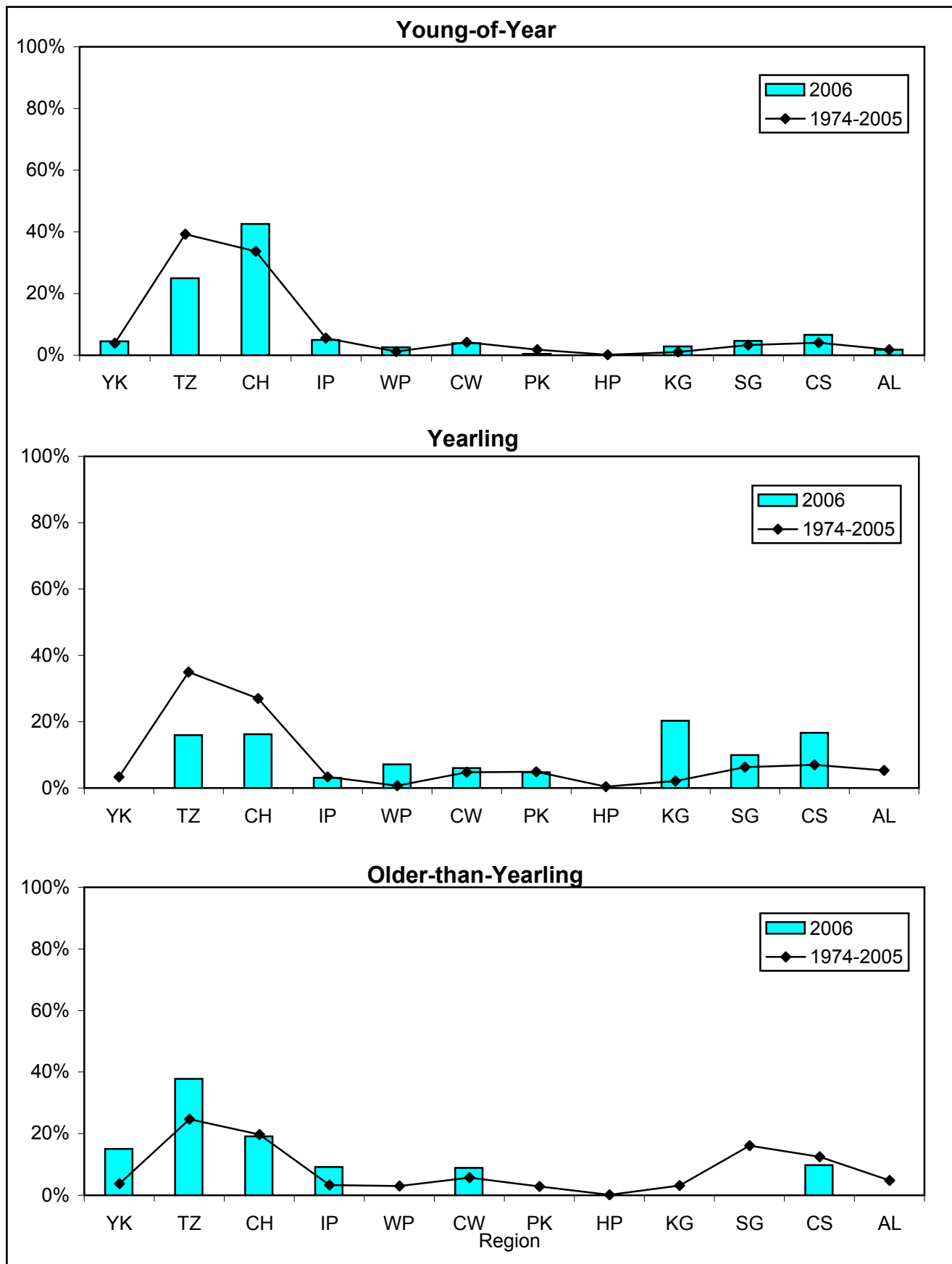


Figure 4-7. Geographic distribution indices for striped bass collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

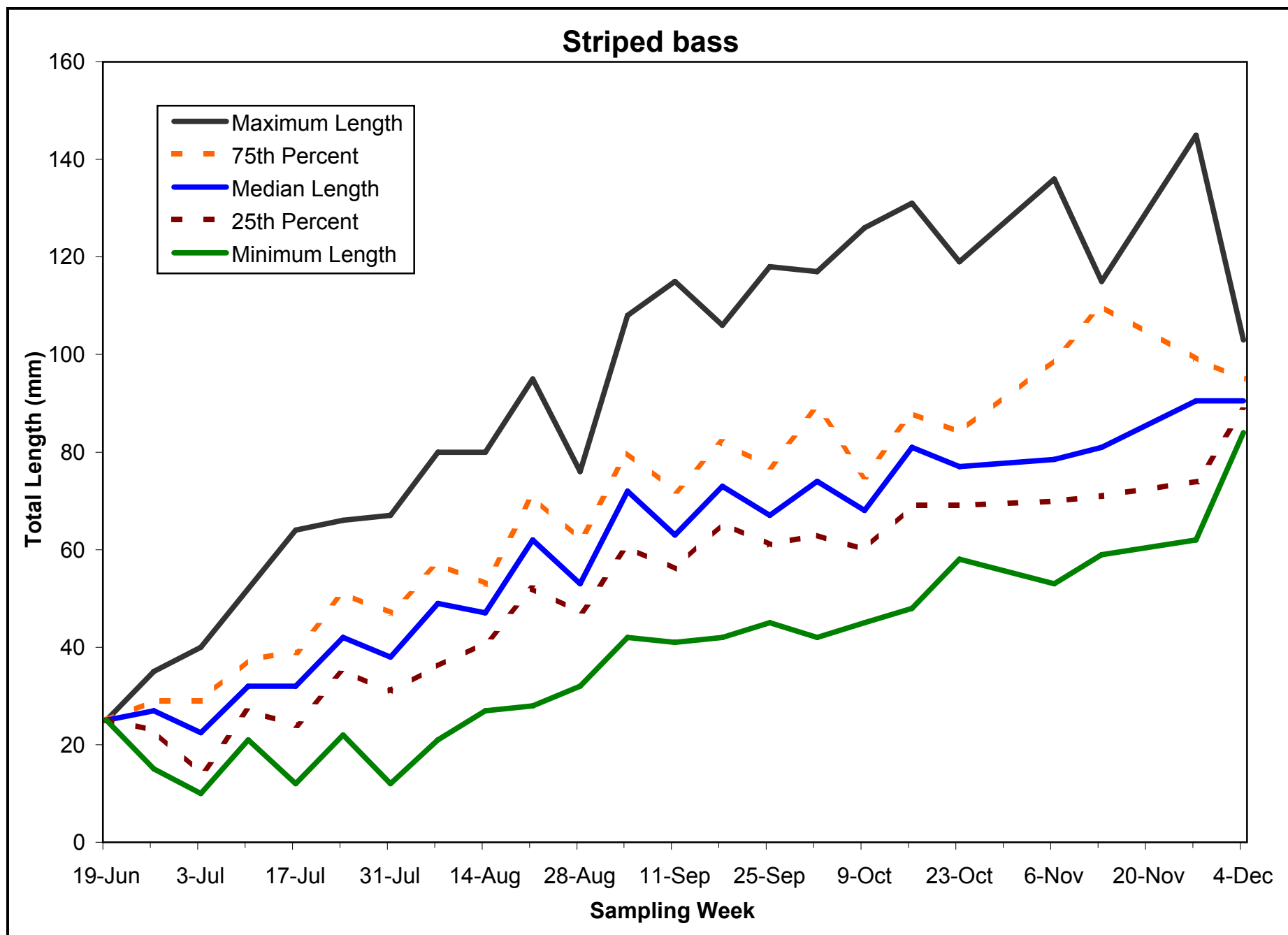


Figure 4-8. Weekly length statistics for young-of-year striped bass in the Hudson River estuary, 2006.

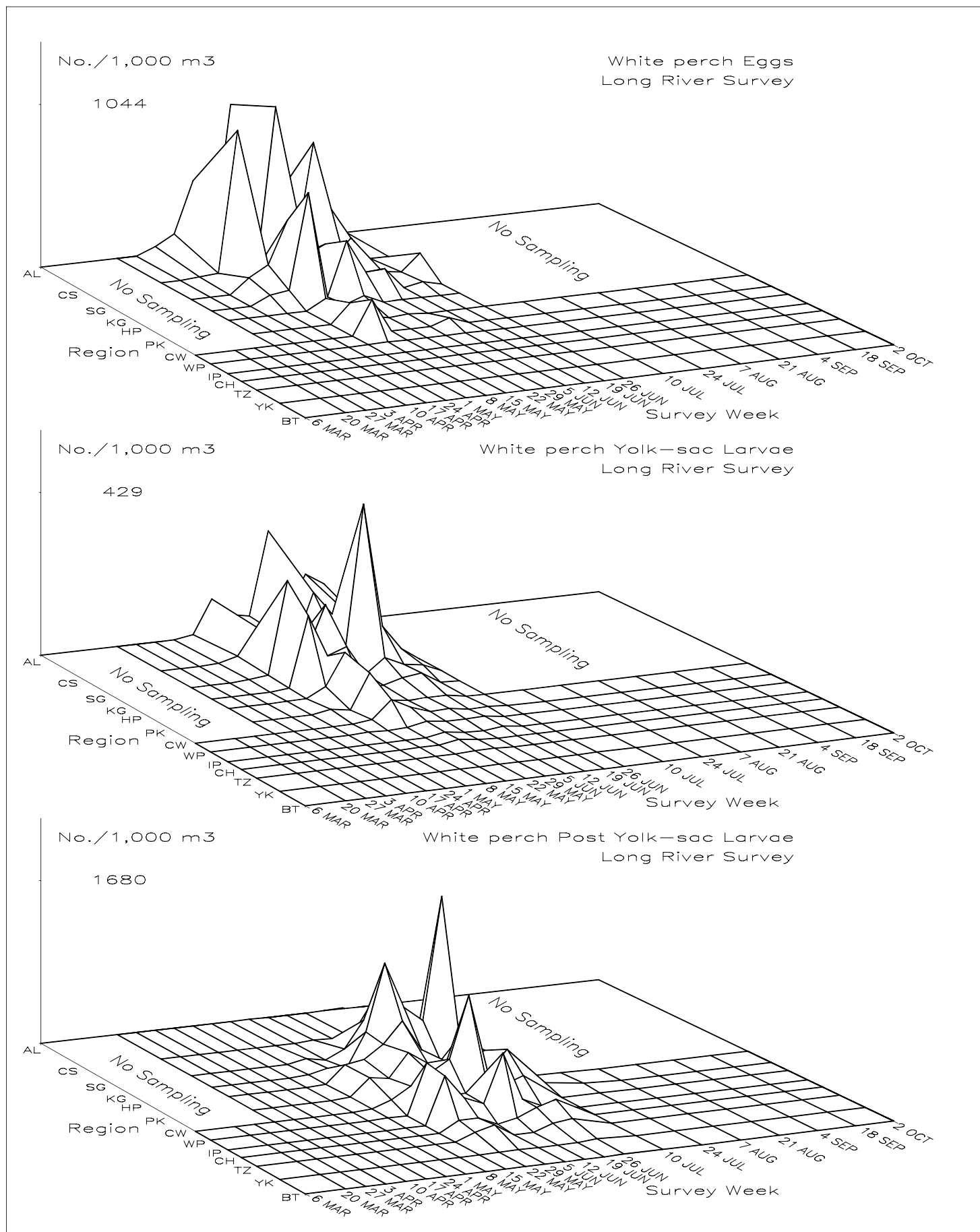


Figure 4–9. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval white perch in the Hudson River estuary based on the 2006 Long River Survey.

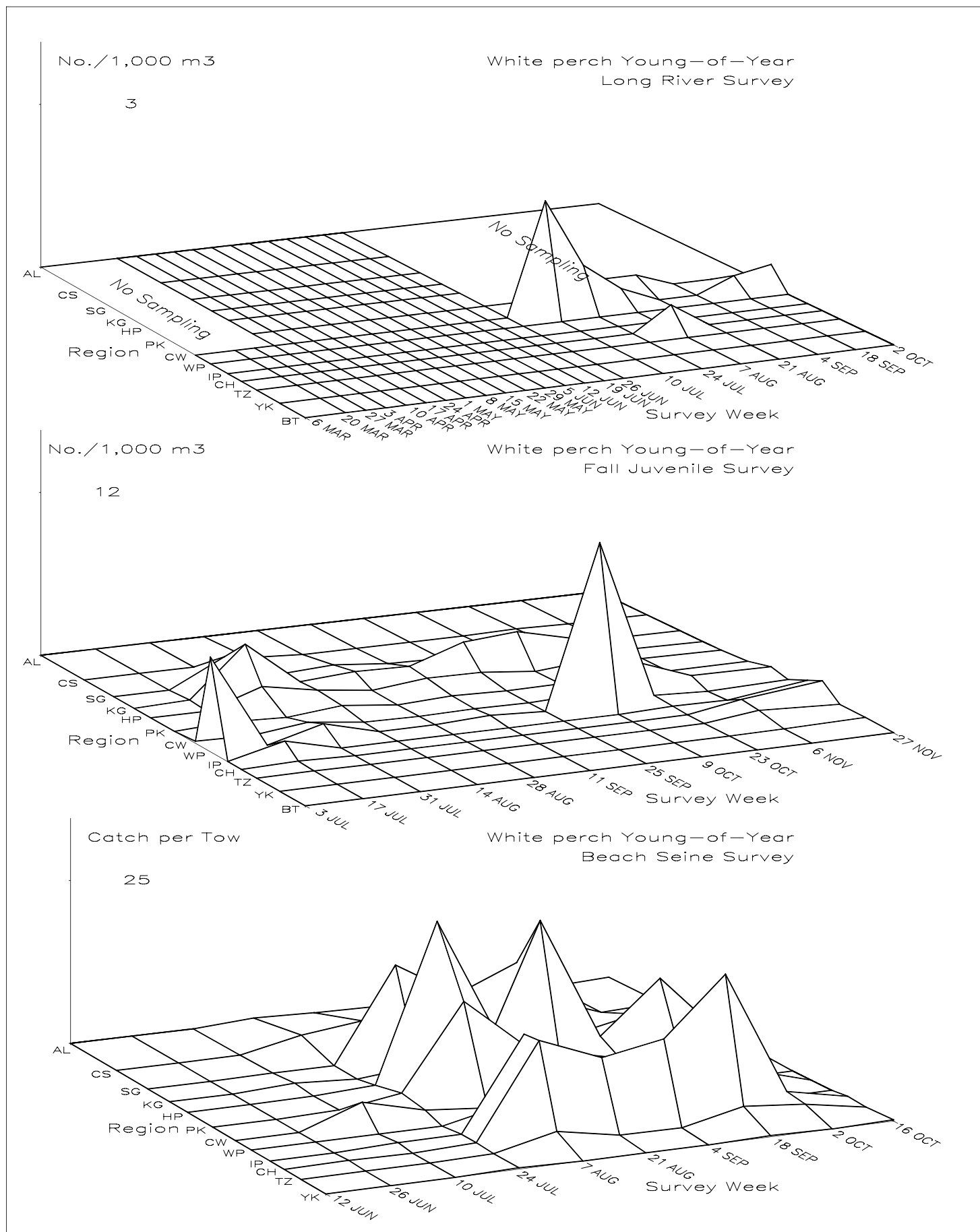


Figure 4–10. Spatiotemporal distribution of young-of-year white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

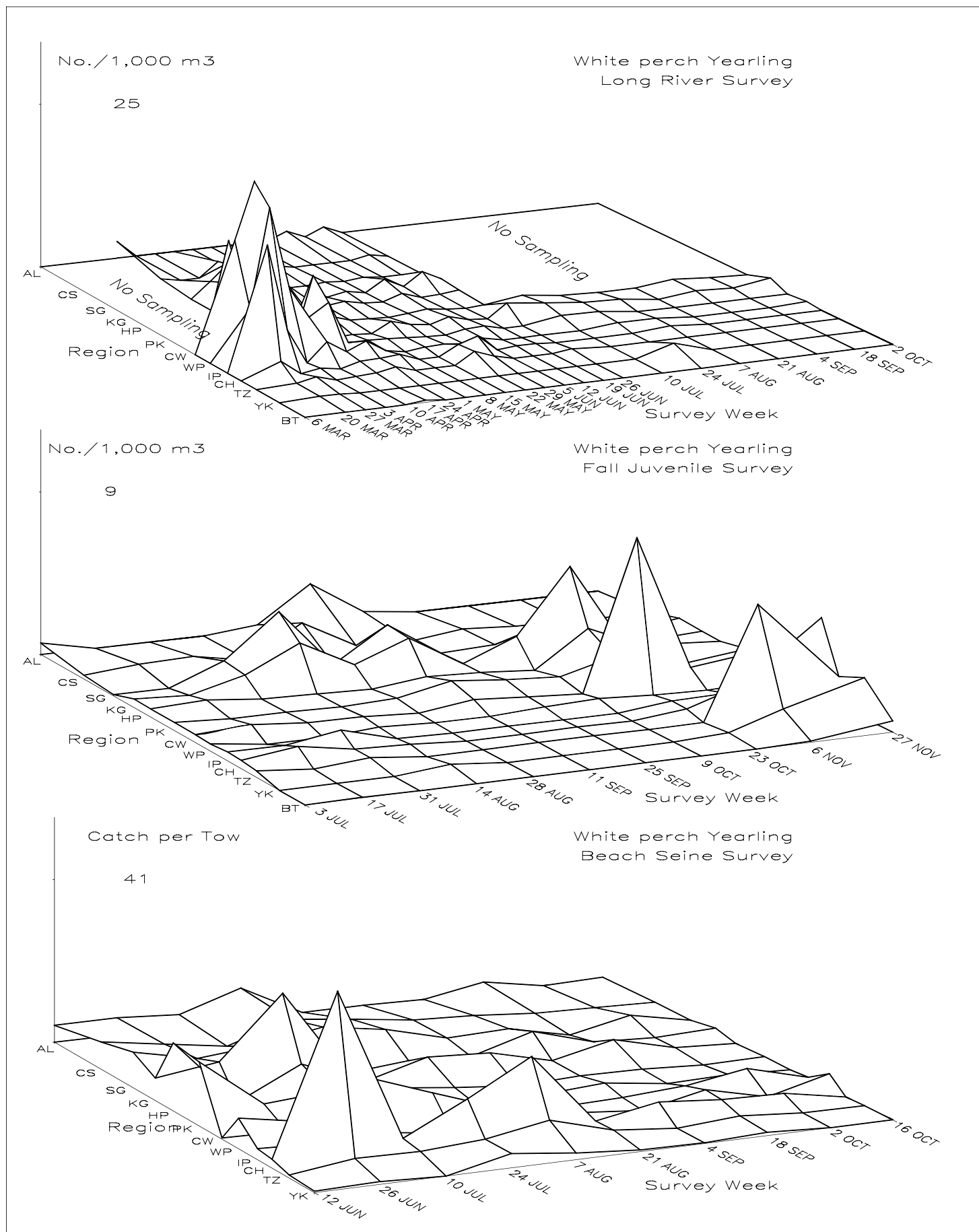


Figure 4–11. Spatiotemporal distribution of yearling white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

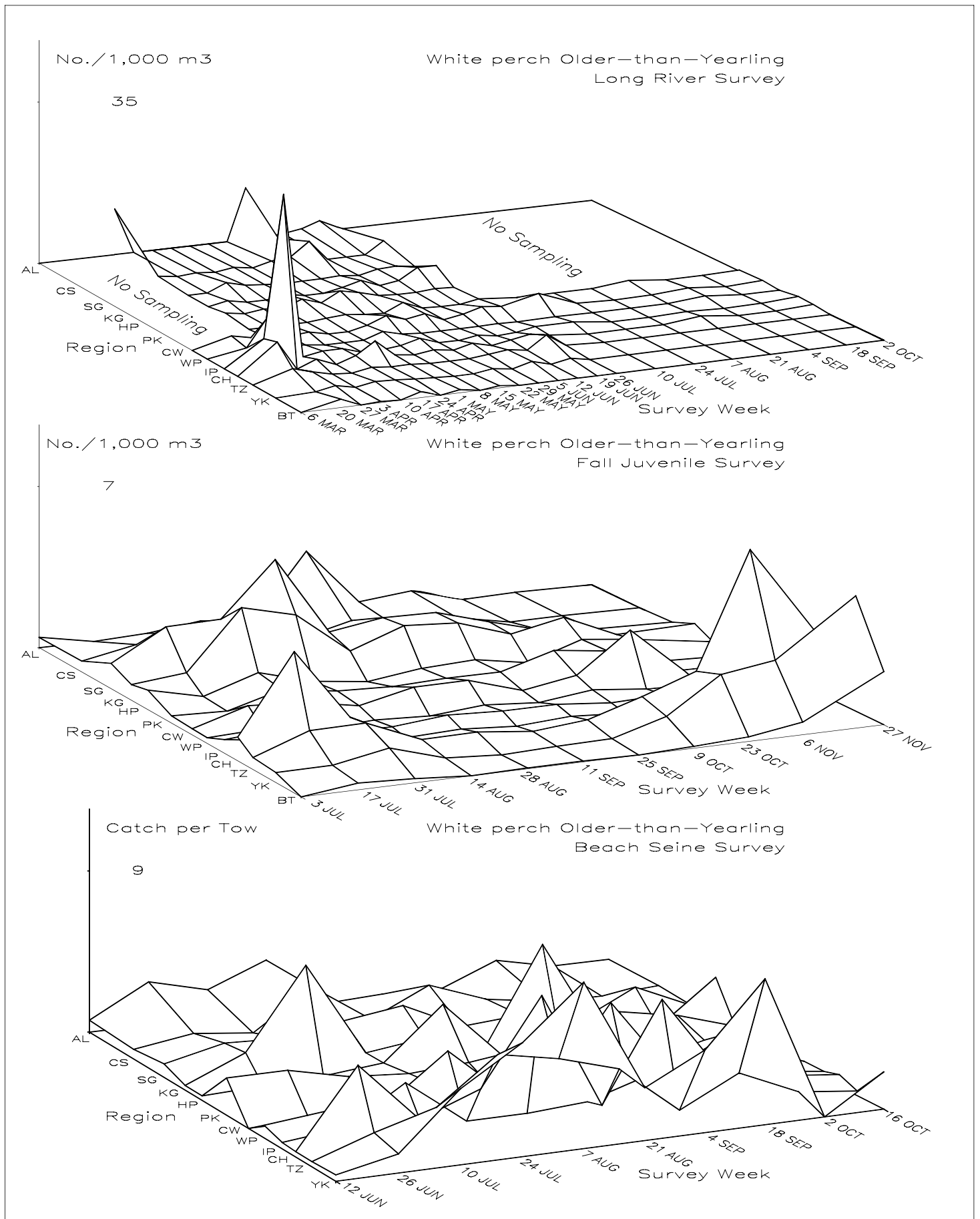


Figure 4–12. Spatiotemporal distribution of older-than-yearling white perch in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

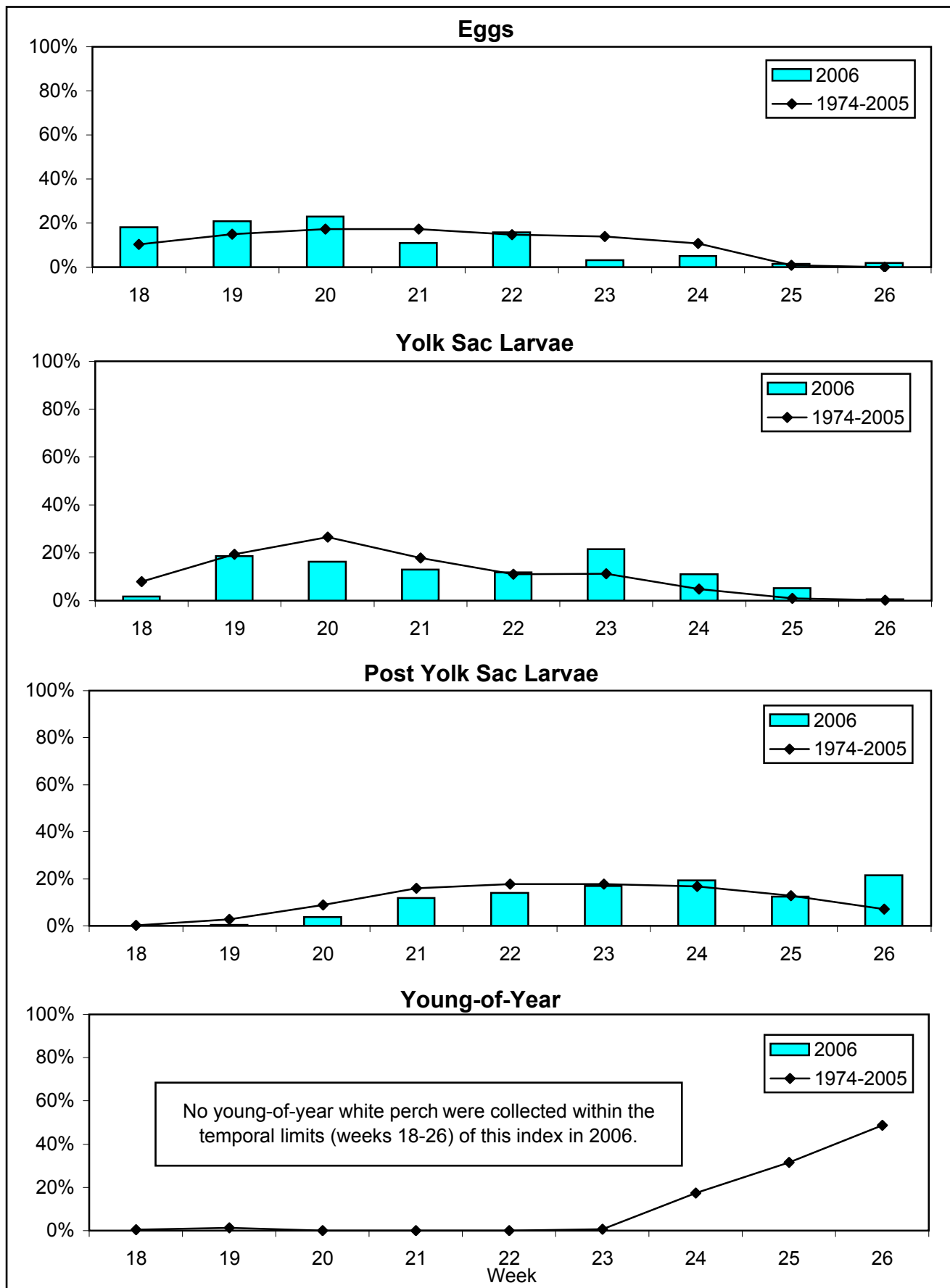


Figure 4-13. Temporal distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2006.

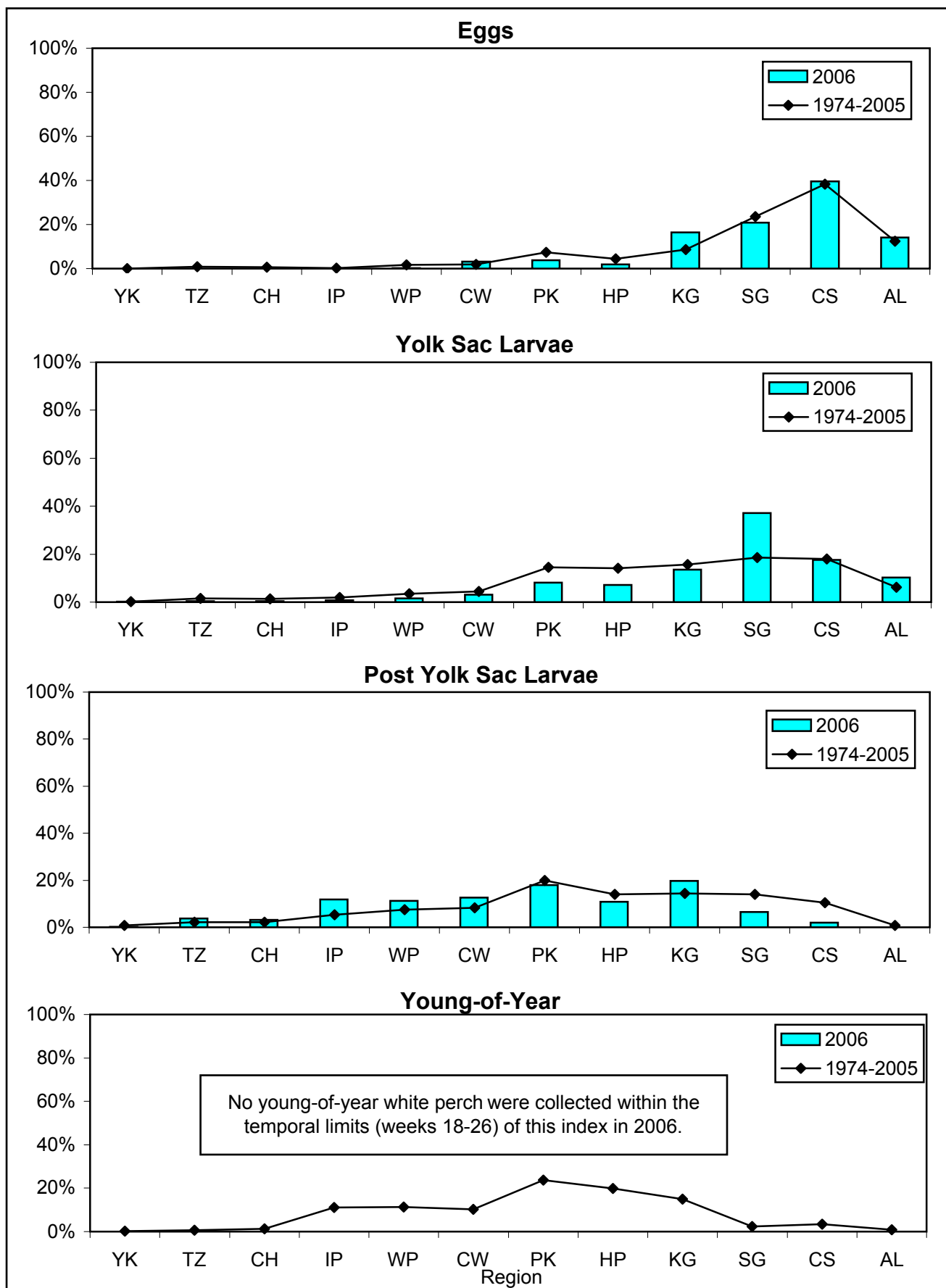


Figure 4-14. Geographic distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2006.

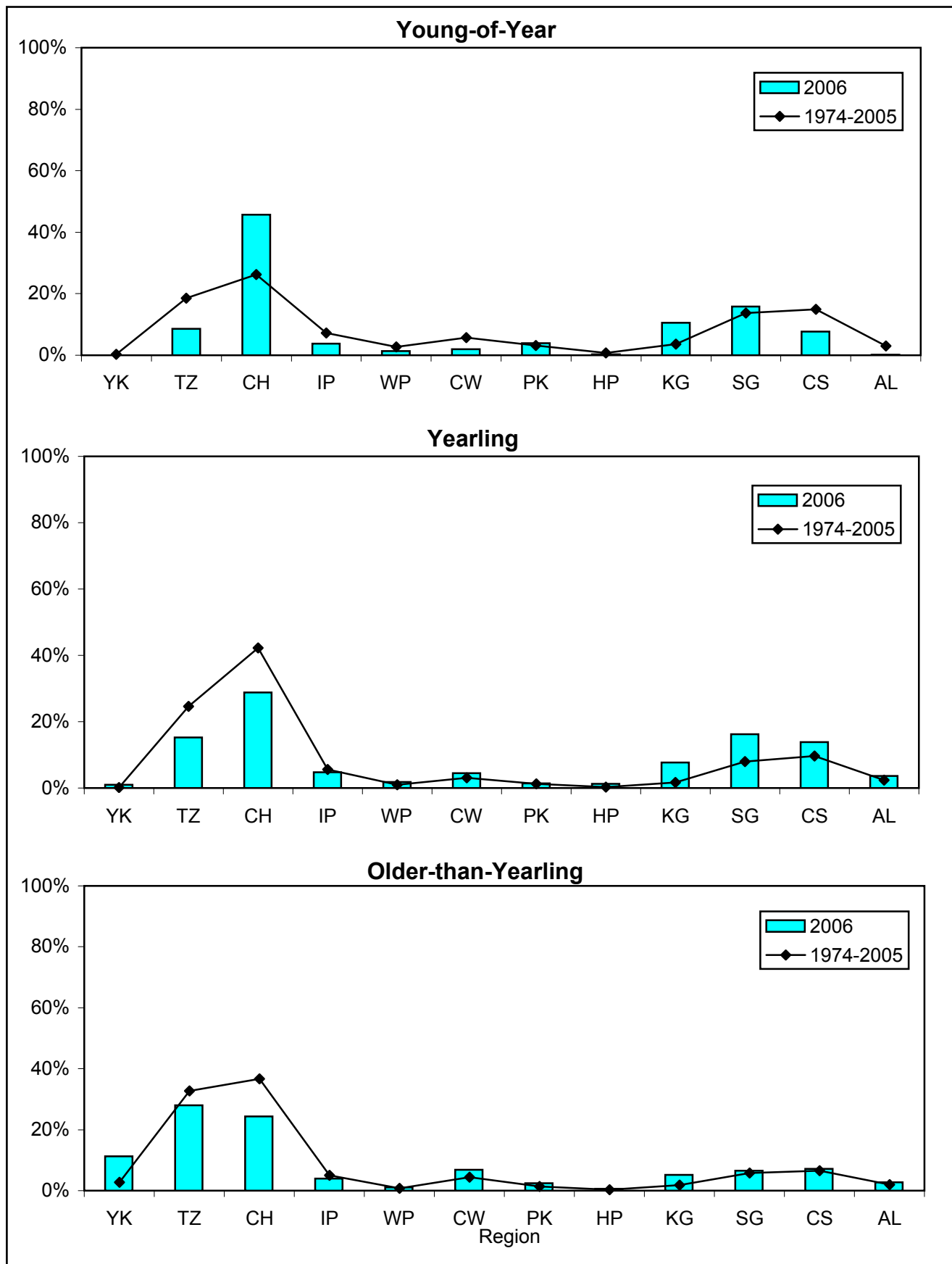


Figure 4-15. Geographic distribution indices for white perch collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

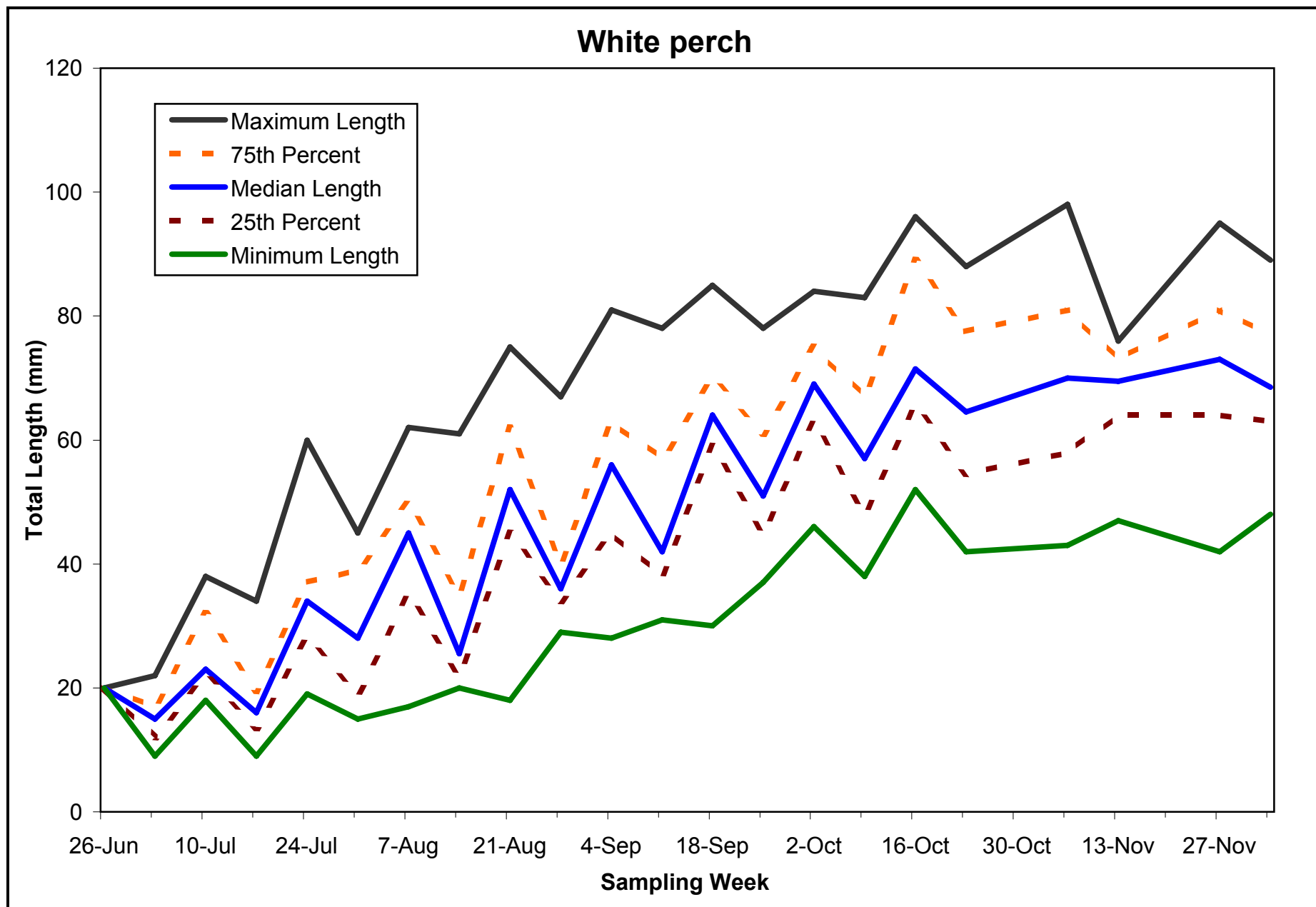


Figure 4-16. Weekly length statistics for young-of-year white perch in the Hudson River estuary, 2006.

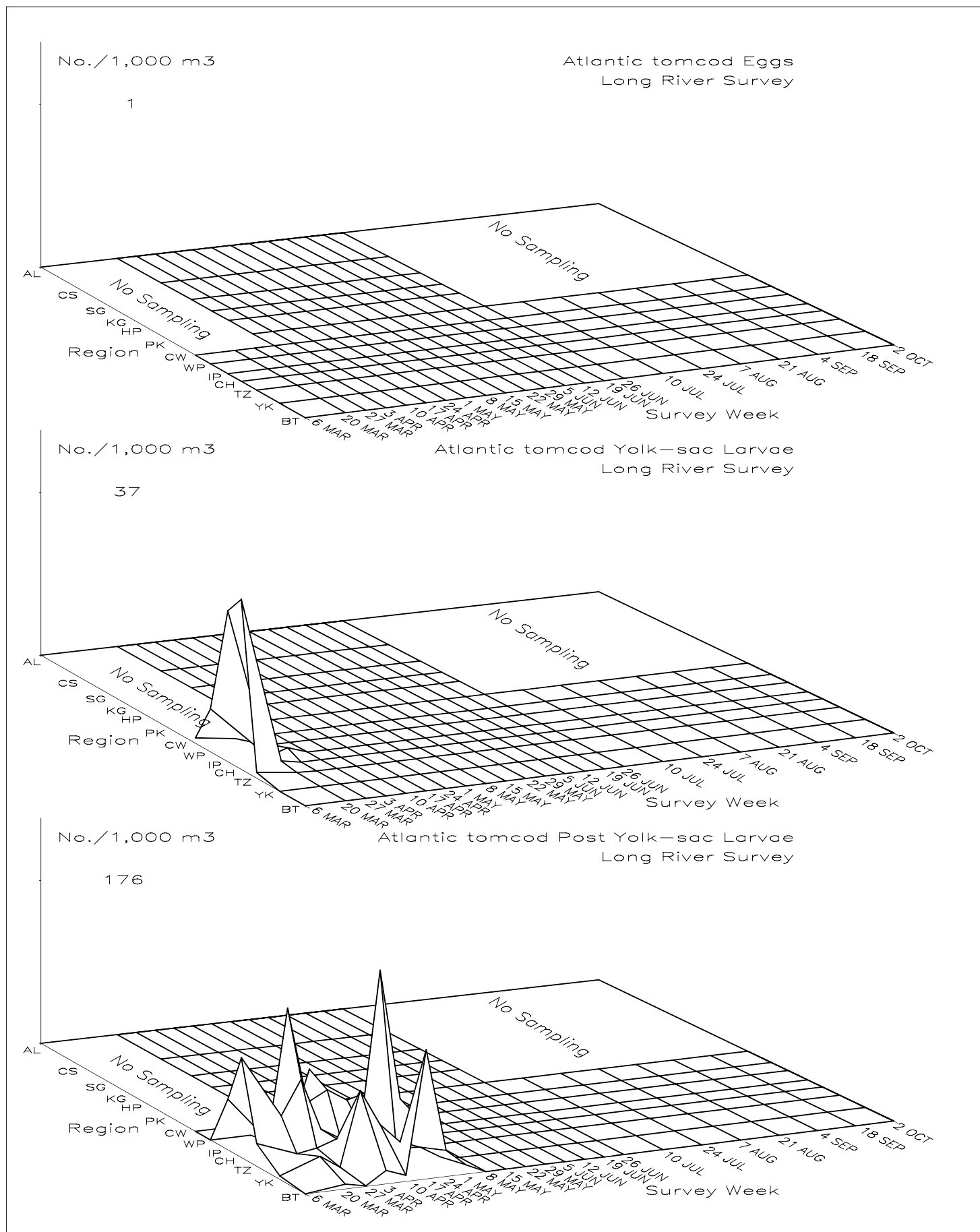


Figure 4-17. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval Atlantic tomcod in the Hudson River estuary based on the 2006 Long River Survey.

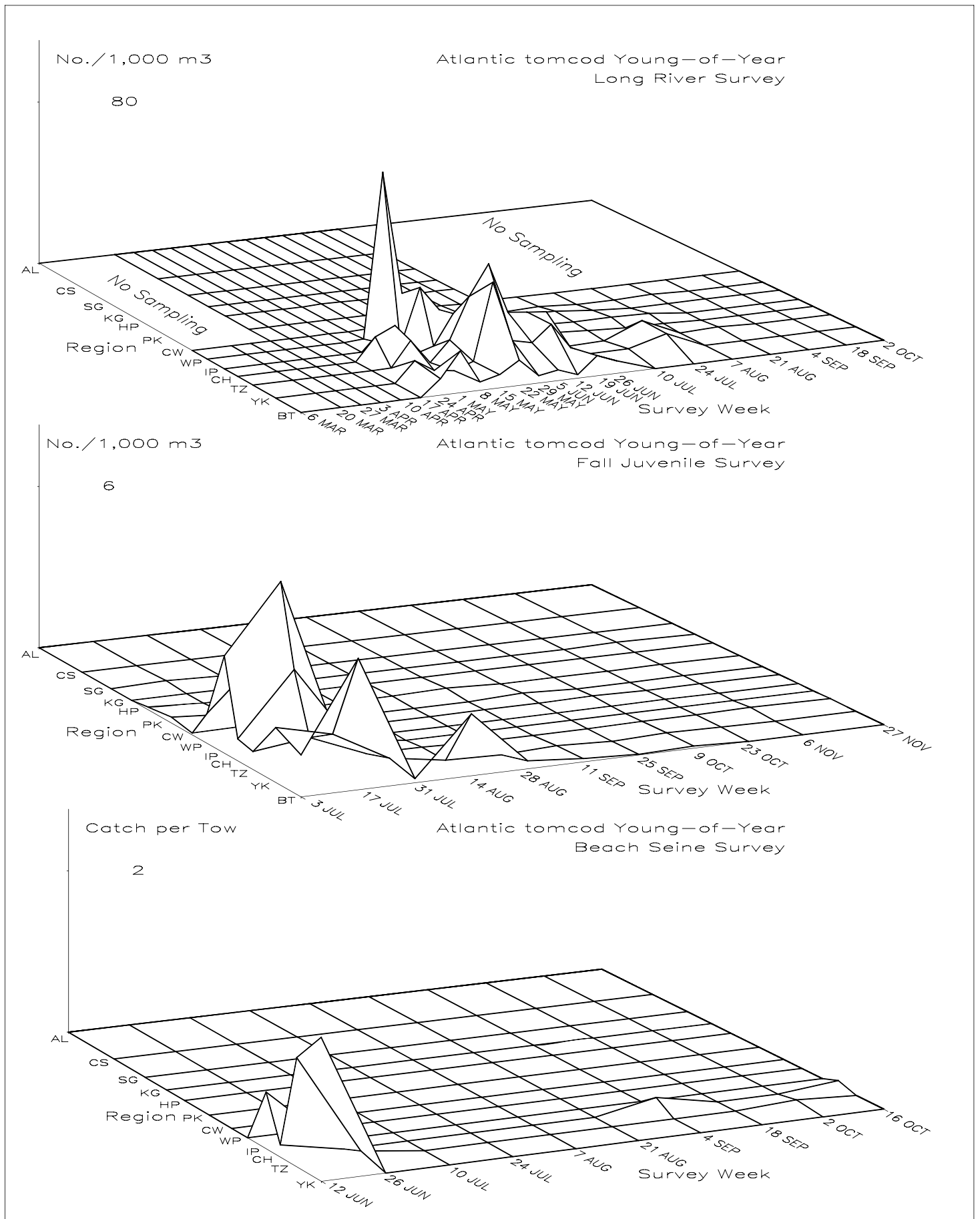


Figure 4–18. Spatiotemporal distribution of young-of-year Atlantic tomcod in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

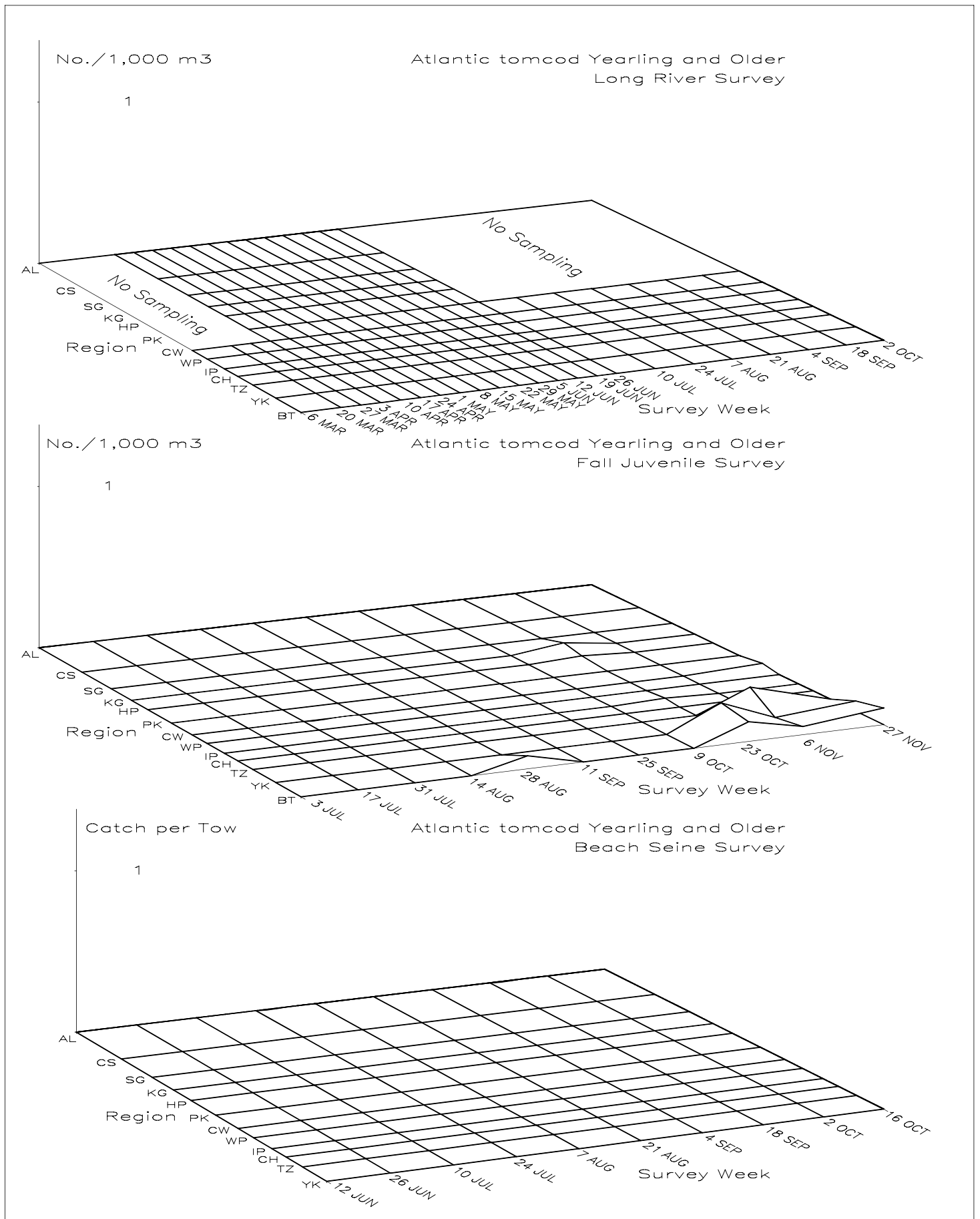


Figure 4-19. Spatiotemporal distribution of yearling and older Atlantic tomcod in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

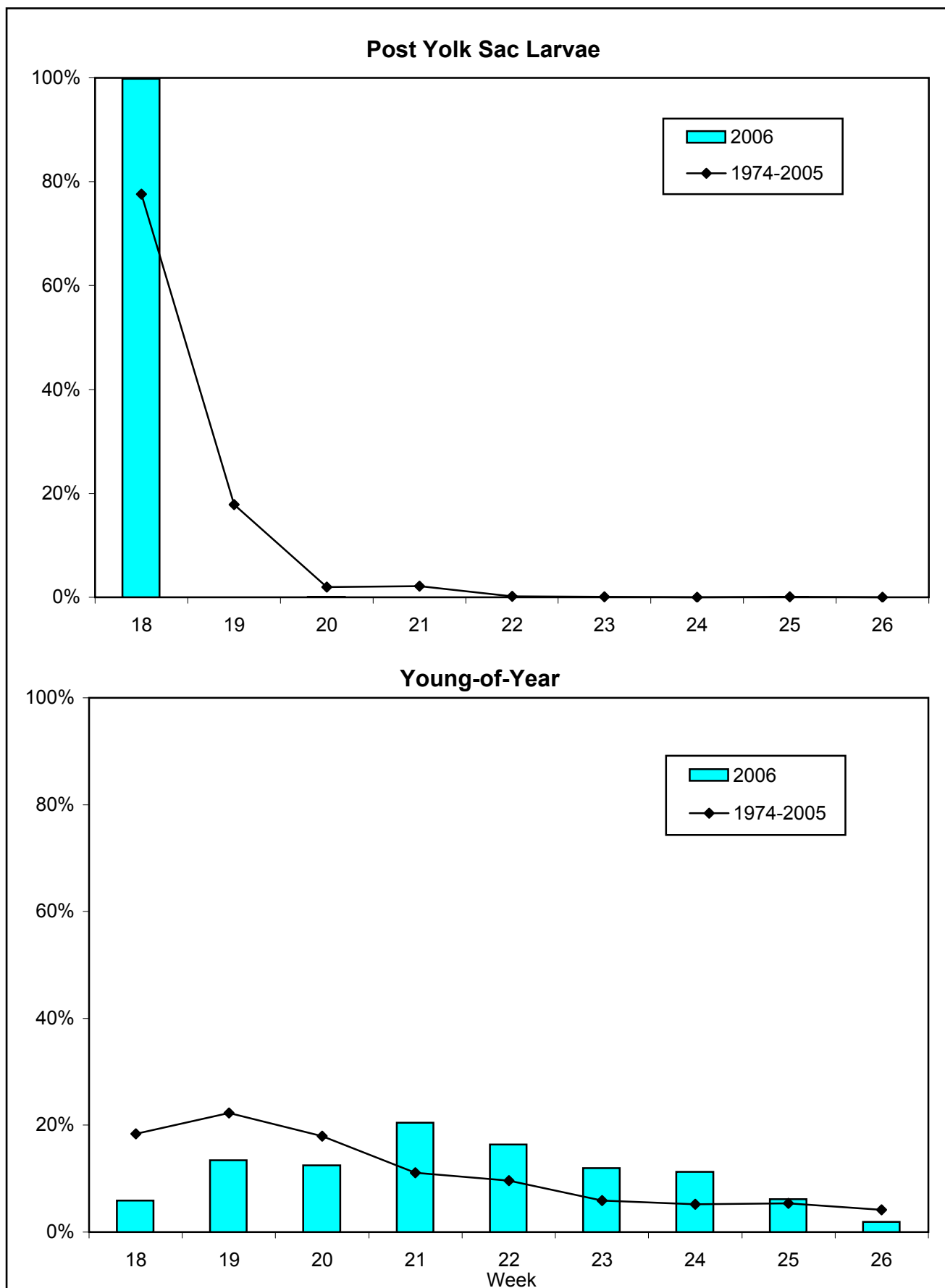


Figure 4-20. Temporal distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2006.

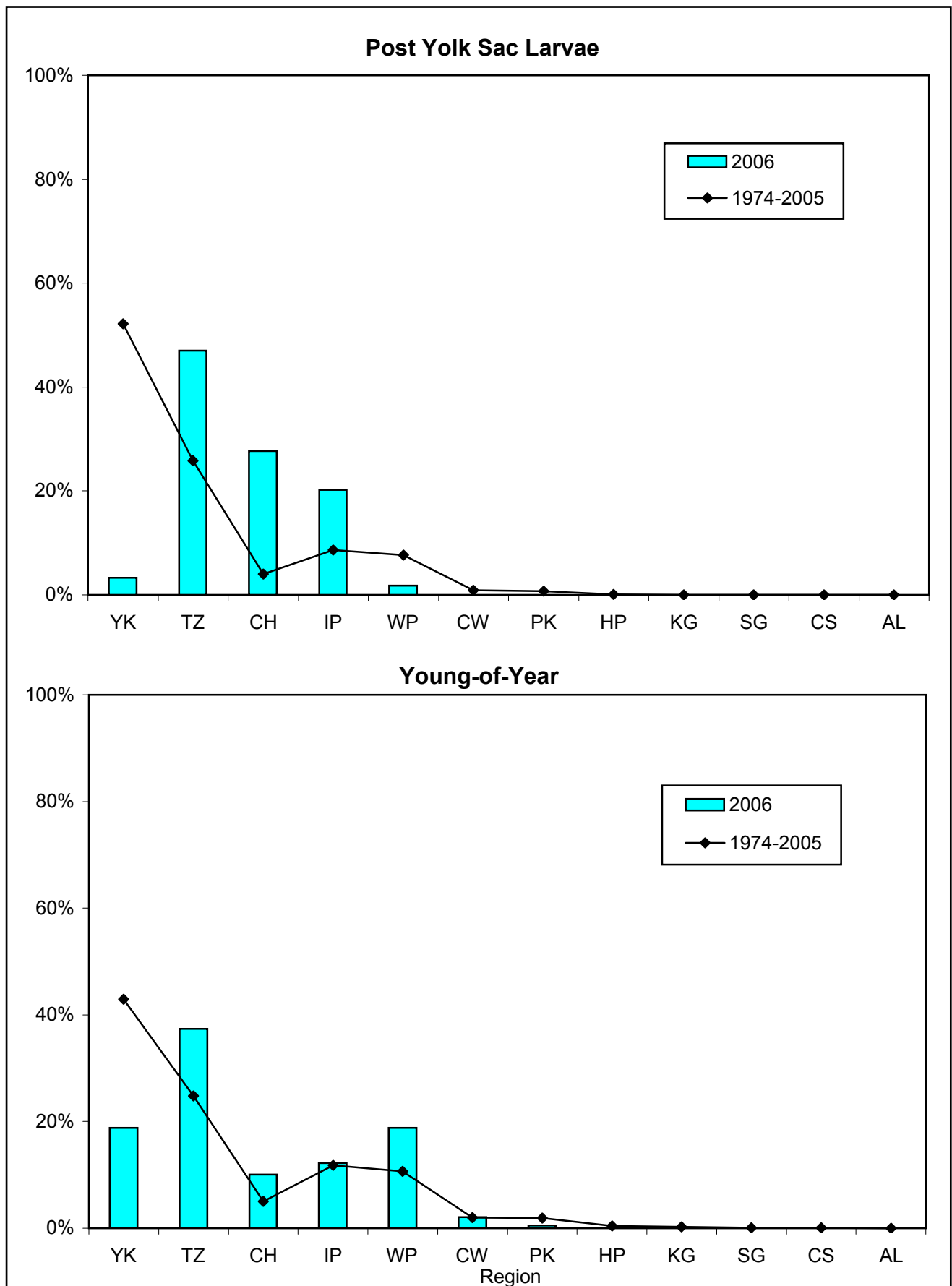


Figure 4-21. Geographic distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2006.

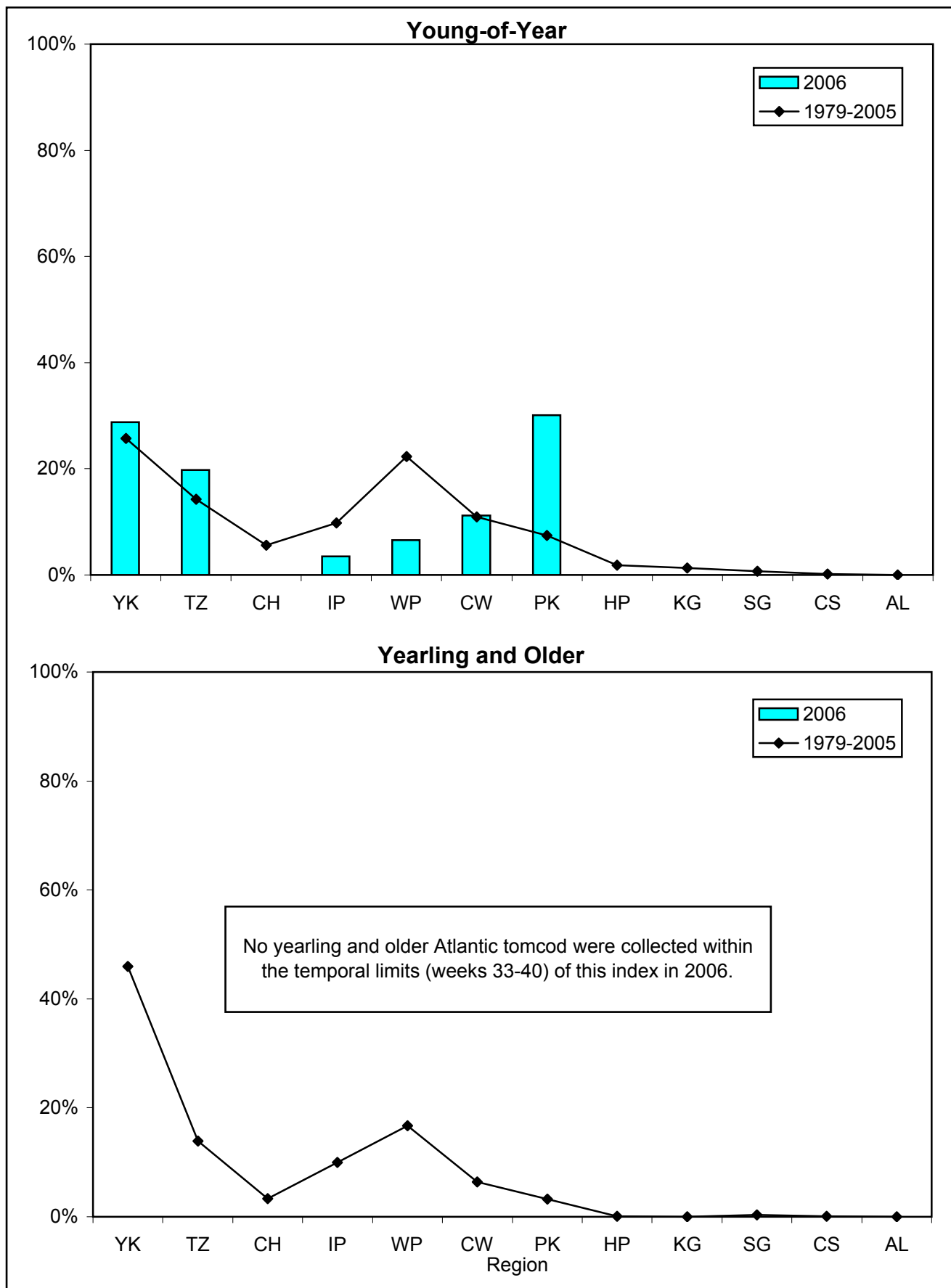


Figure 4-22. Geographic distribution indices for Atlantic tomcod collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.

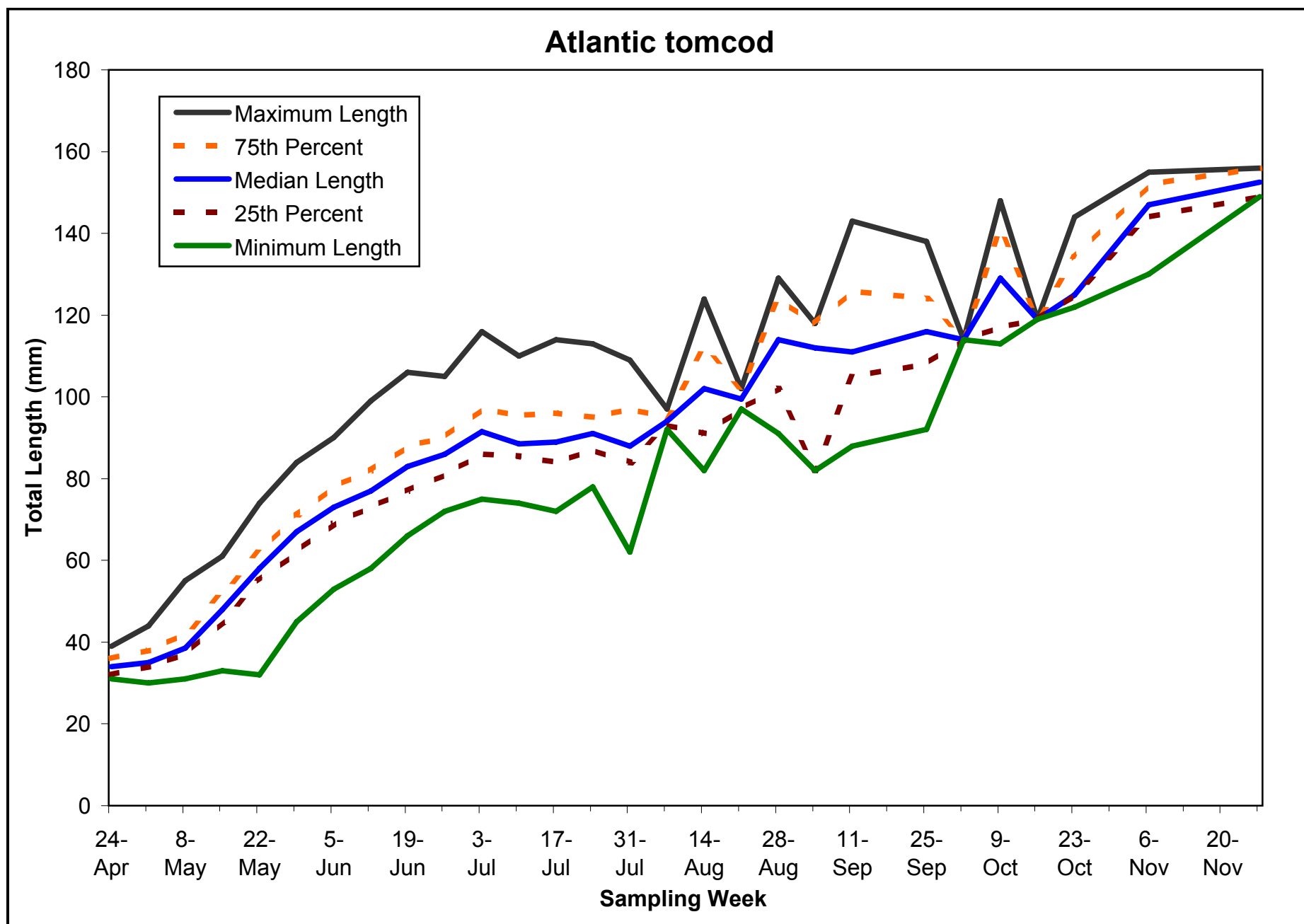


Figure 4-23. Weekly length statistics for young-of-year Atlantic tomcod in the Hudson River estuary, 2006.

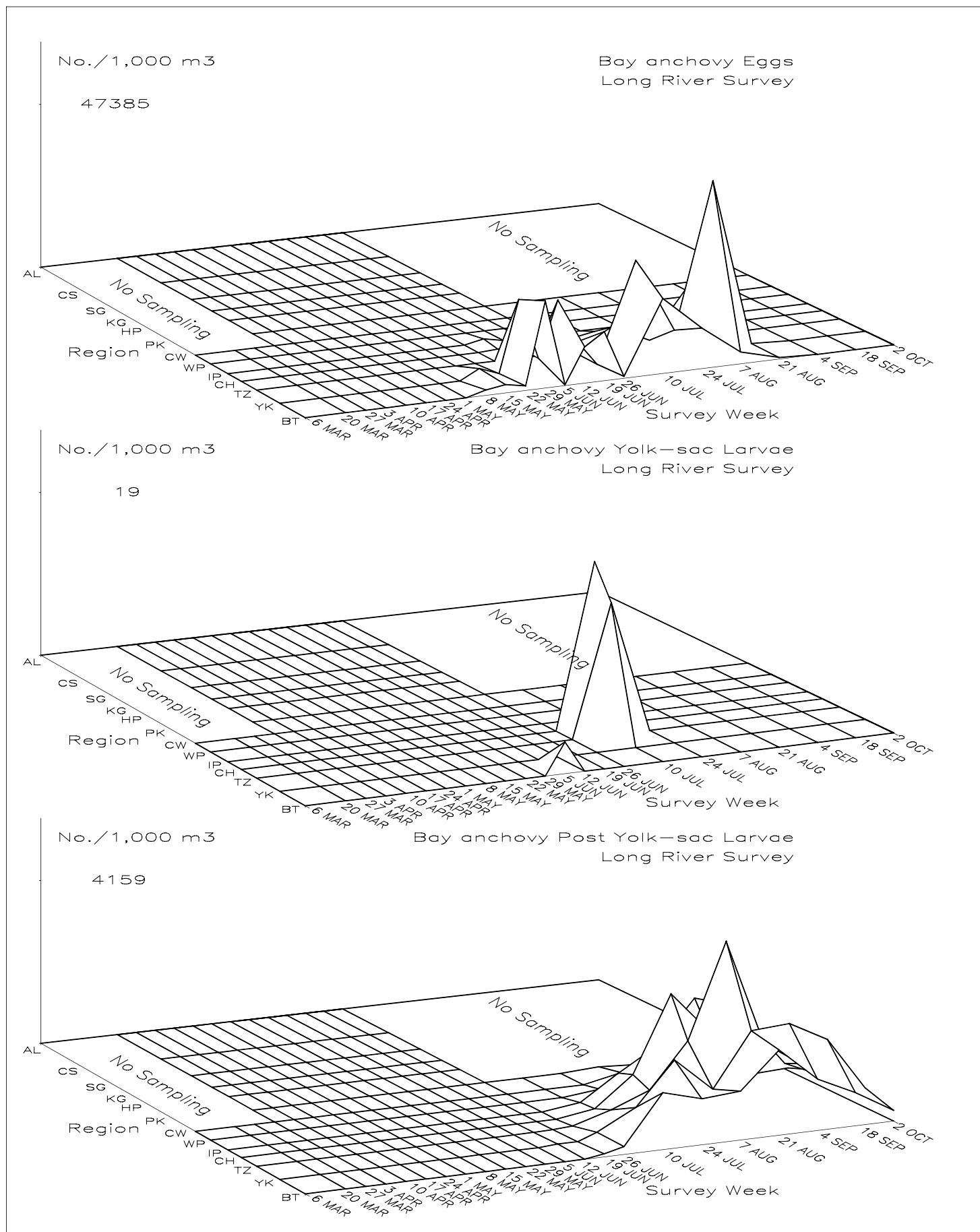


Figure 4-24. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval bay anchovy in the Hudson River estuary based on the 2006 Long River Survey.

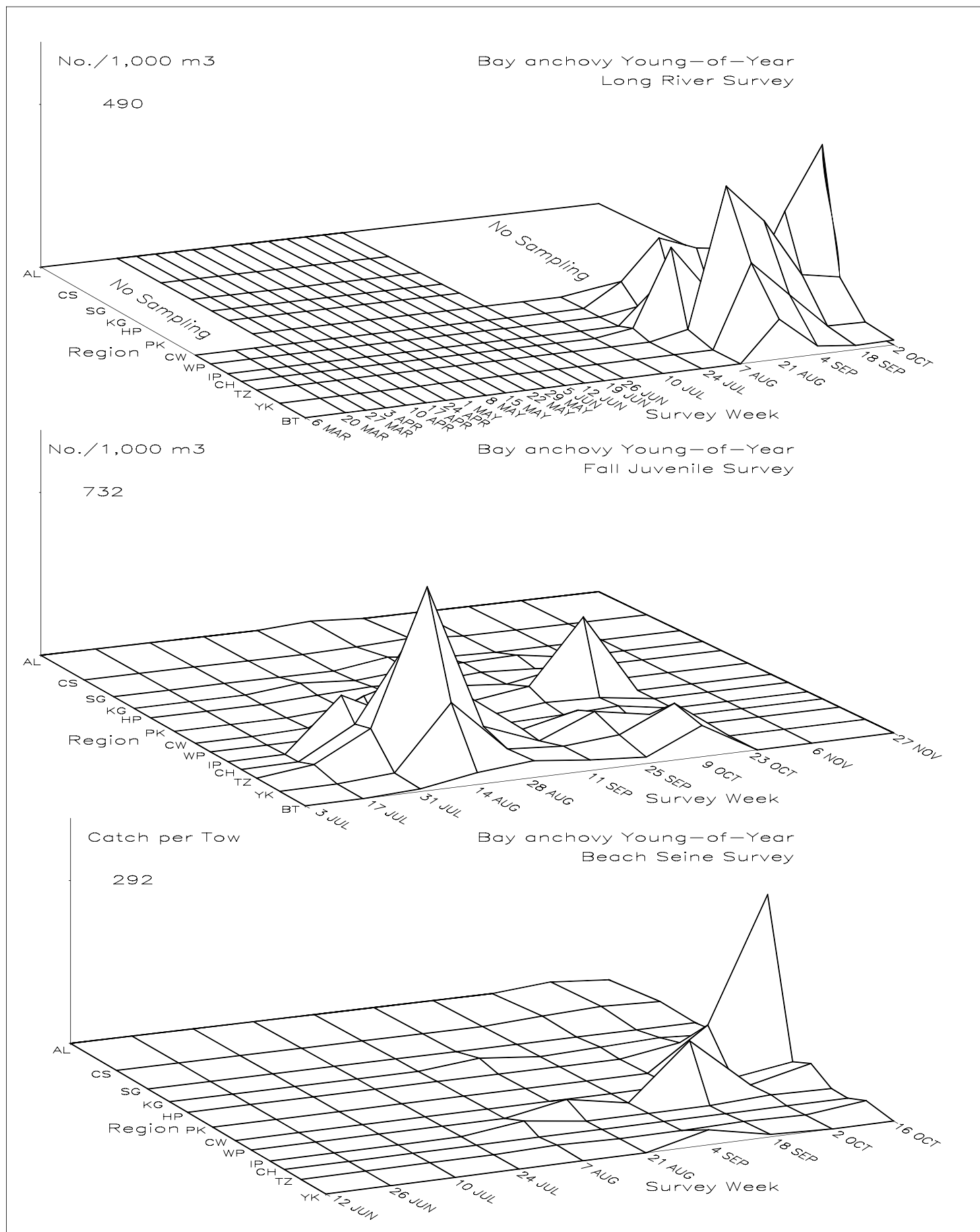


Figure 4–25. Spatiotemporal distribution of young-of-year bay anchovy in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

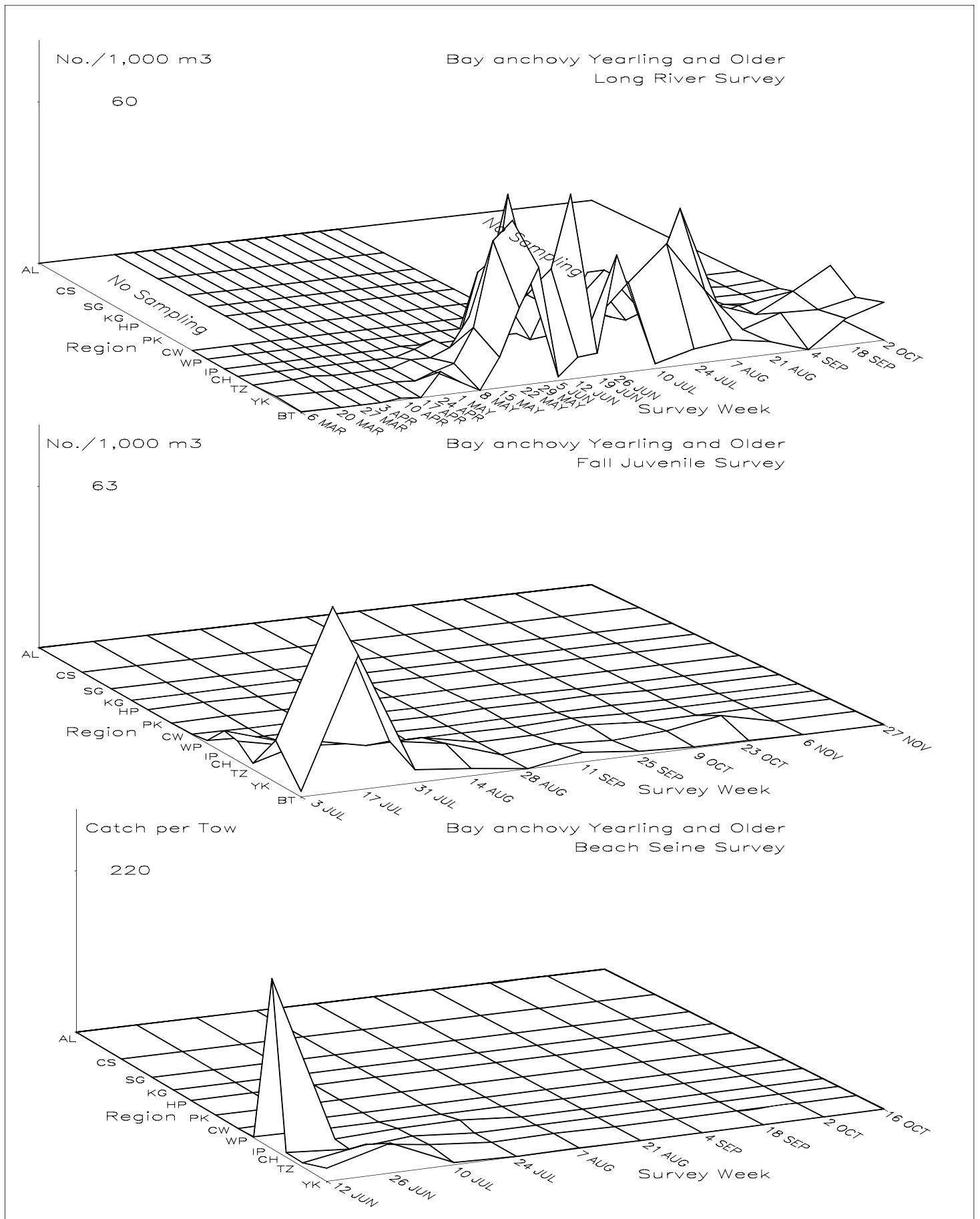


Figure 4–26. Spatiotemporal distribution of yearling and older bay anchovy in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

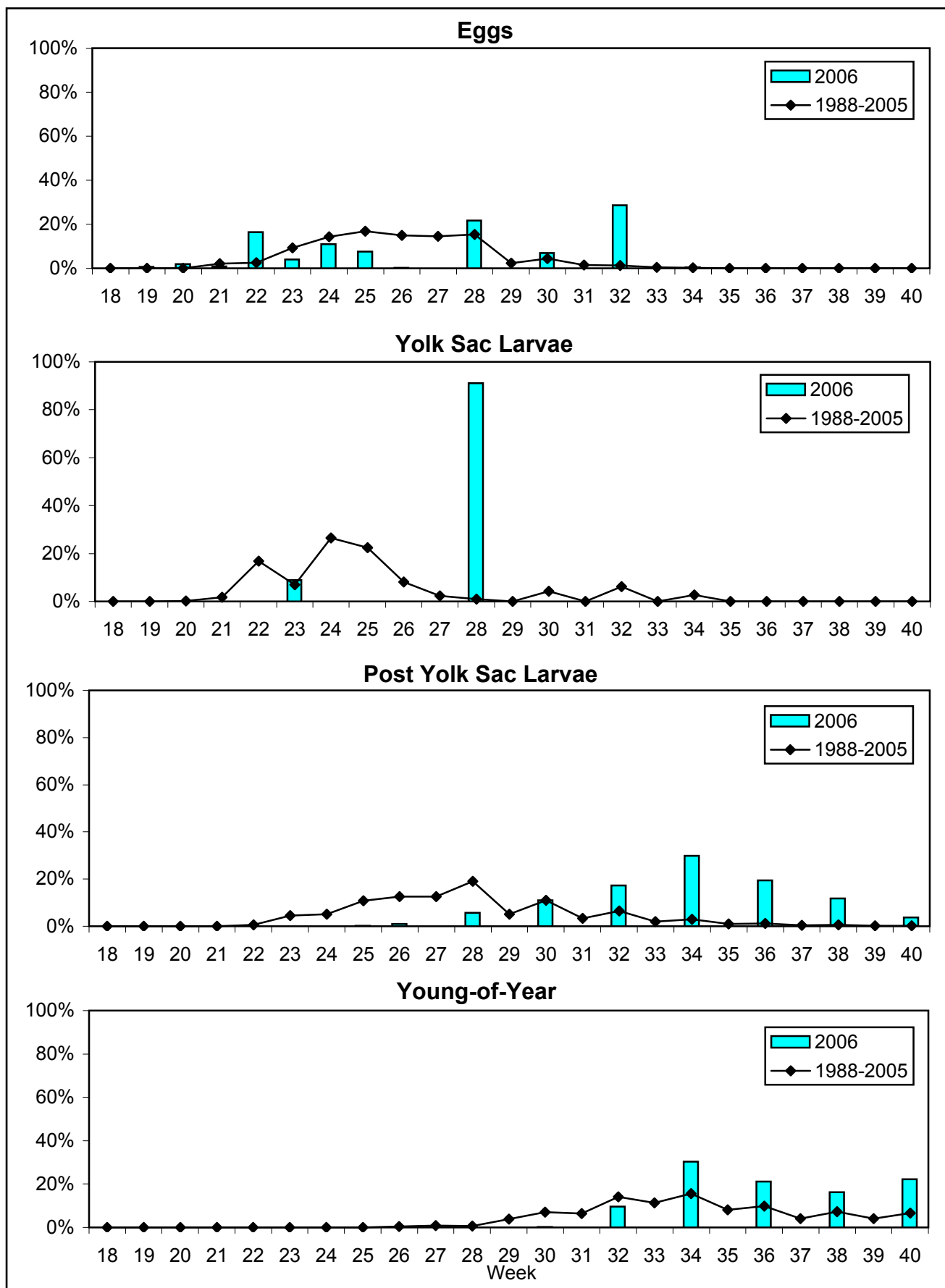


Figure 4-27. Temporal distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2006.

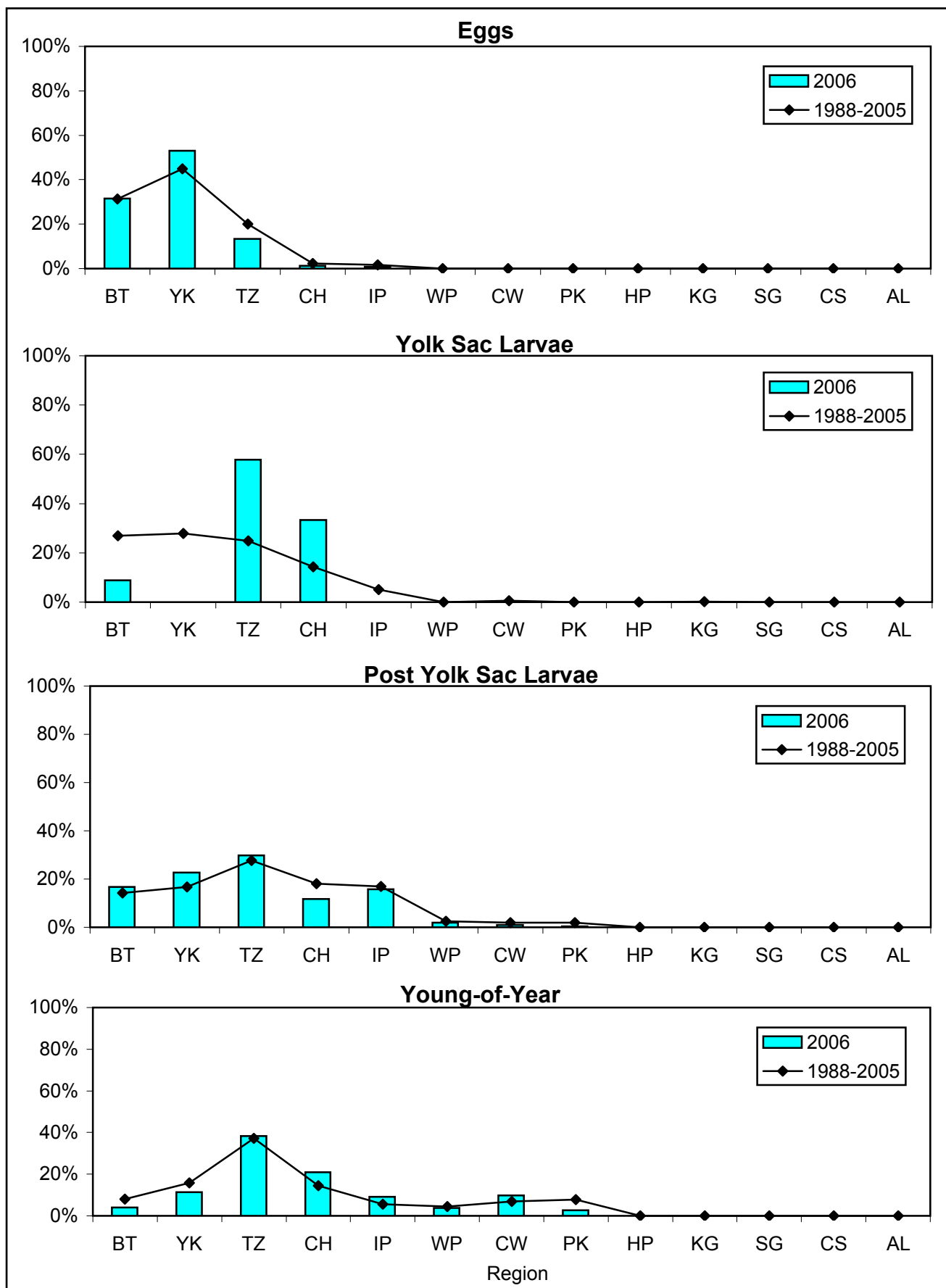


Figure 4-28. Geographic distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2006.

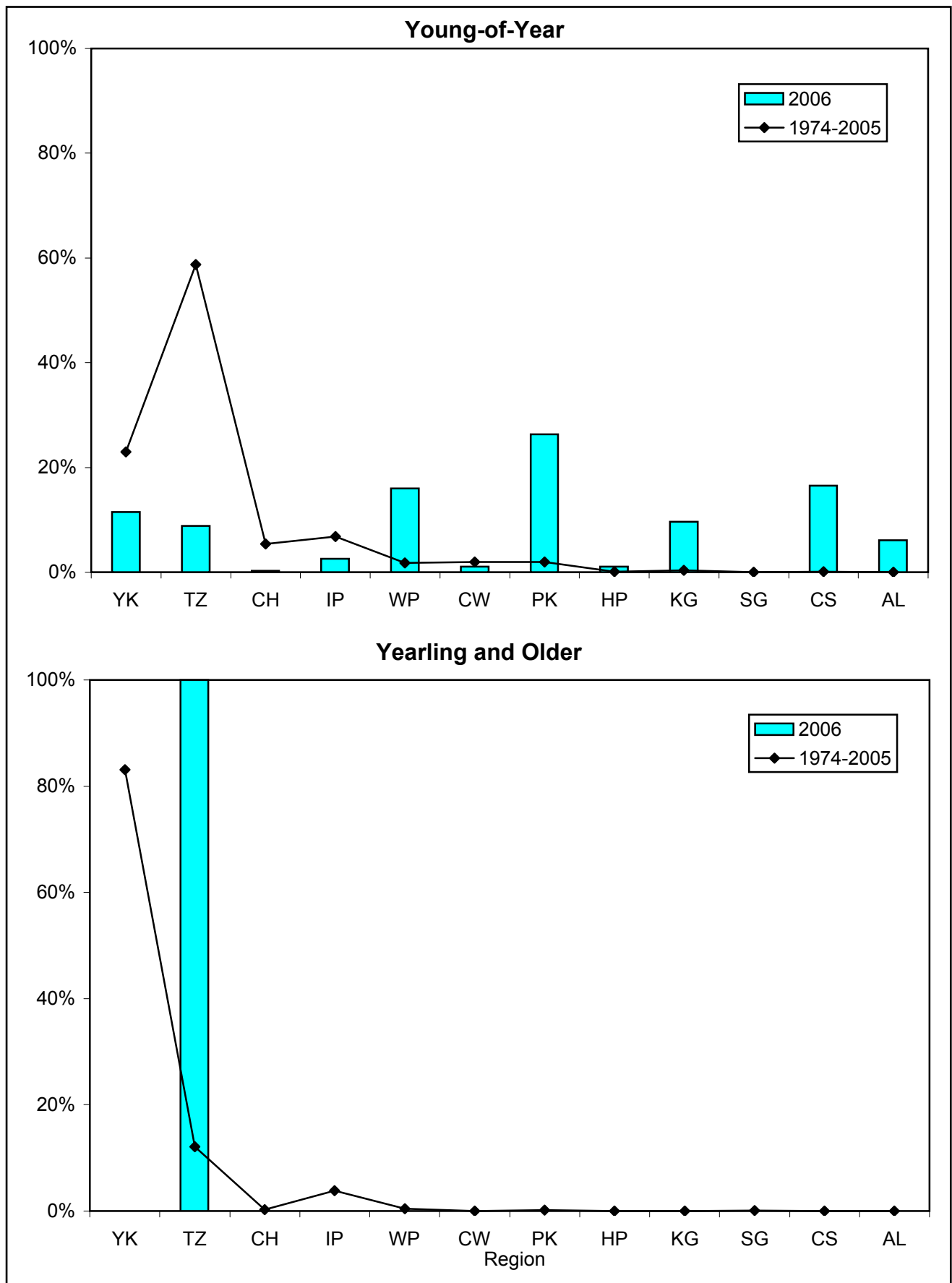


Figure 4-29. Geographic distribution indices for bay anchovy collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

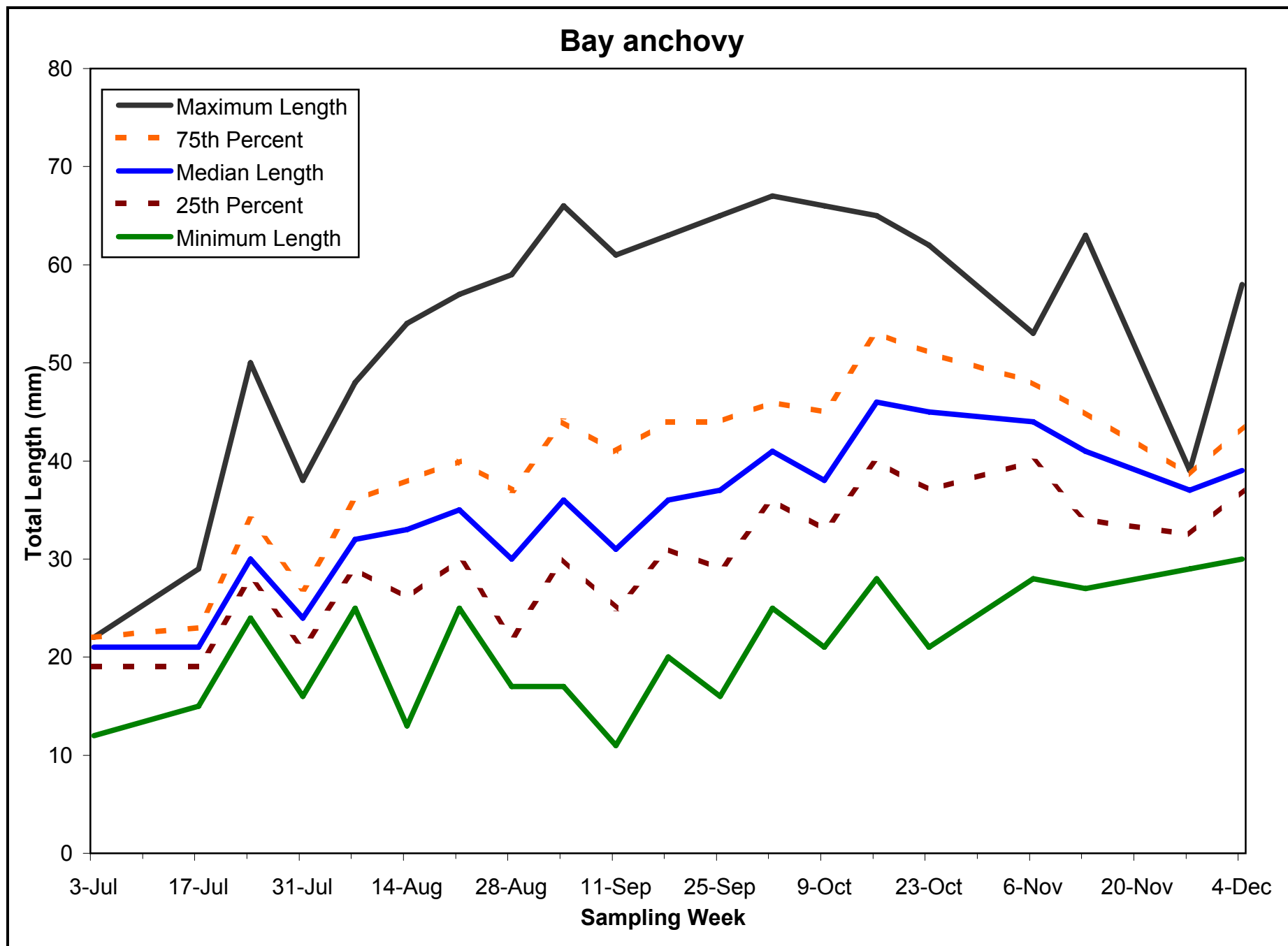


Figure 4-30. Weekly length statistics for young-of-year bay anchovy in the Hudson River estuary, 2006.

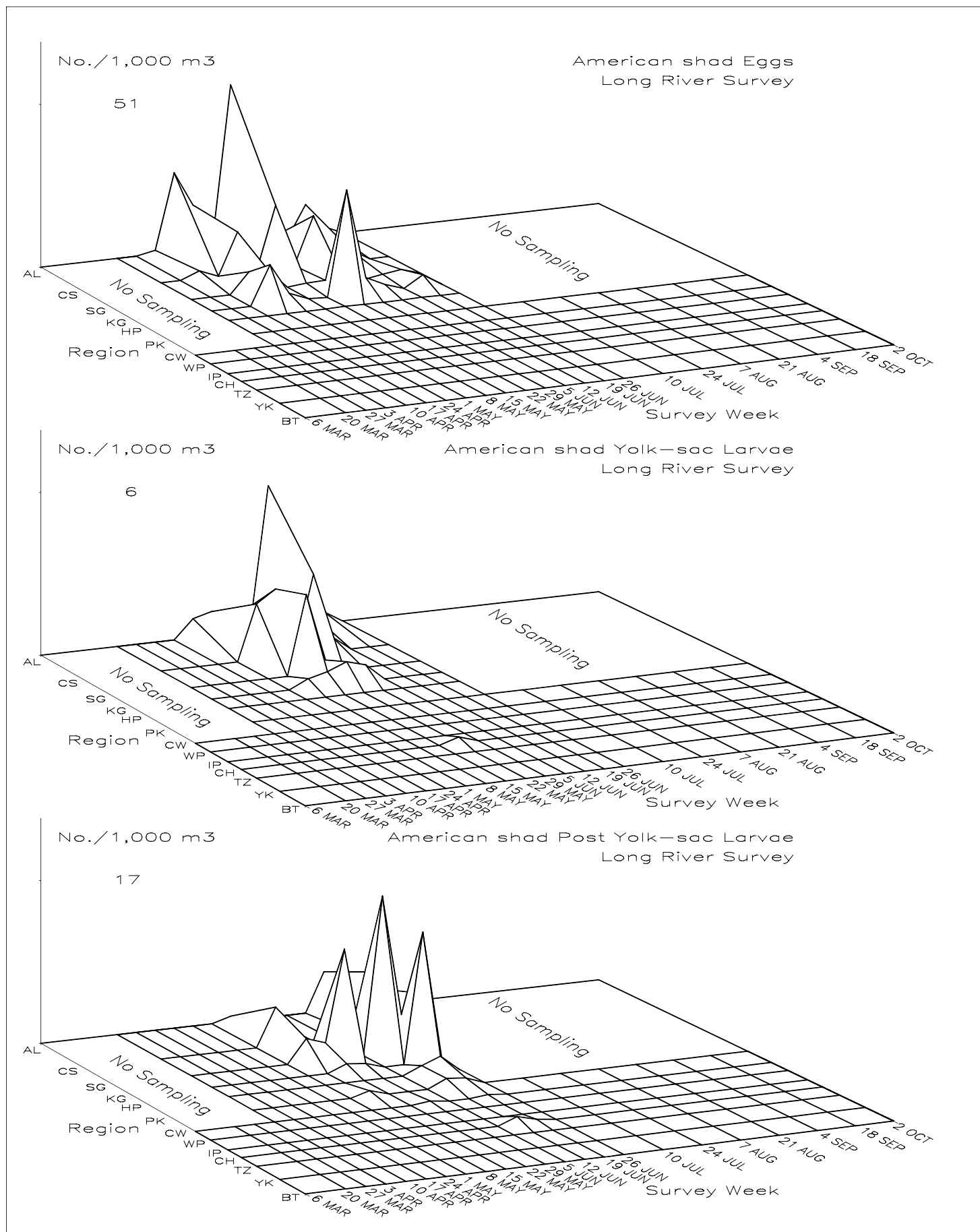


Figure 4–31. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval American shad in the Hudson River estuary based on the 2006 Long River Survey.

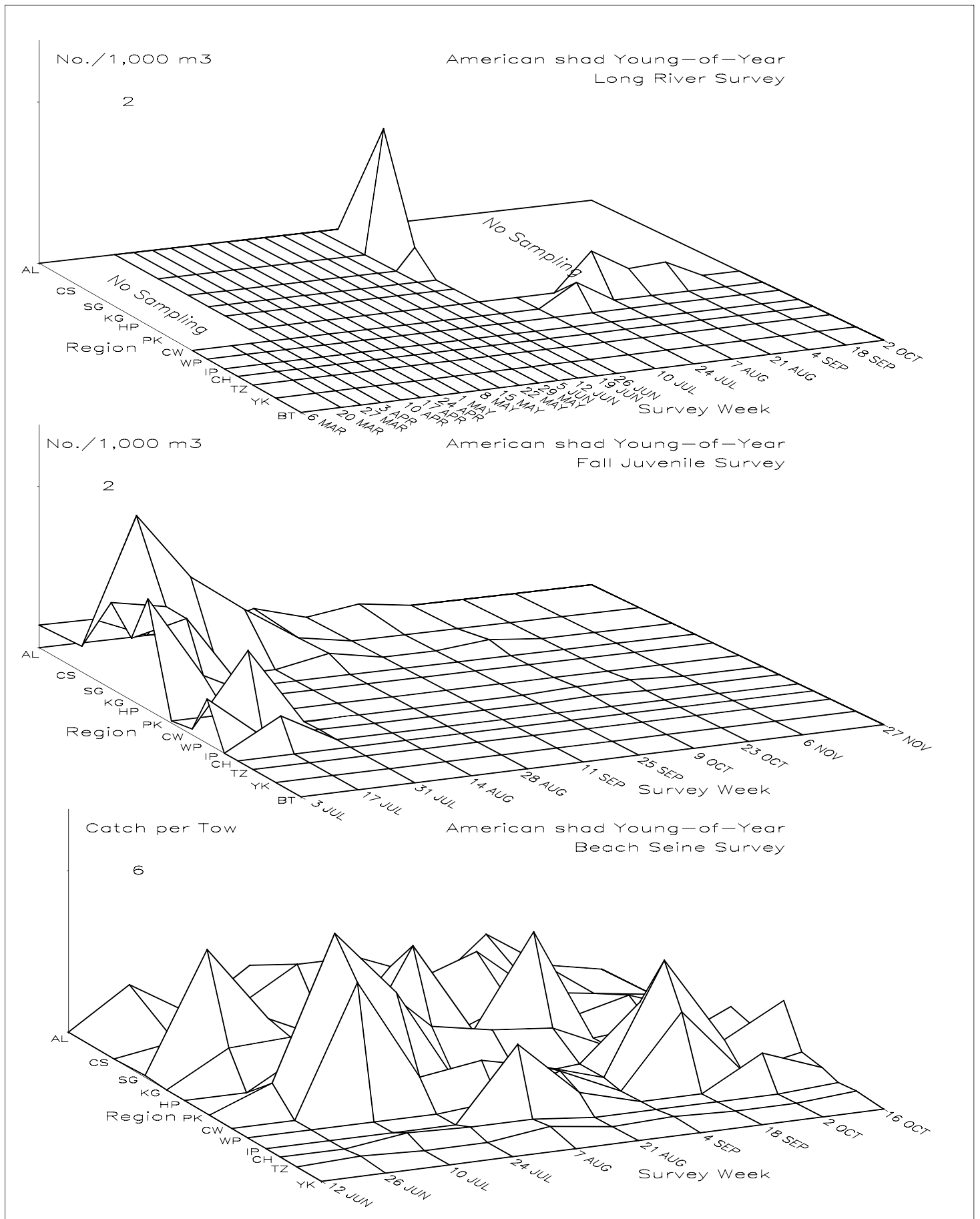


Figure 4–32. Spatiotemporal distribution of young-of-year American shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

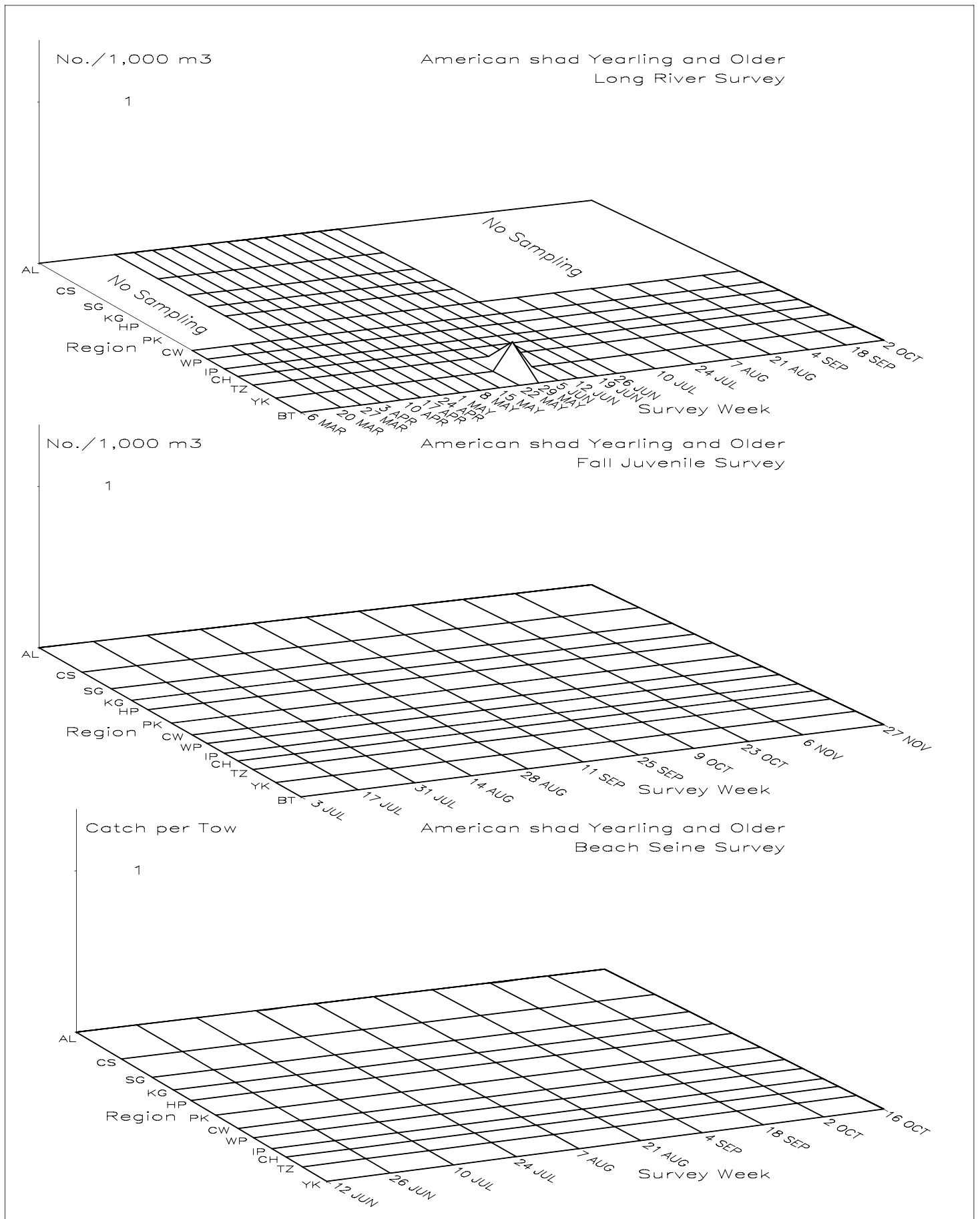


Figure 4–33. Spatiotemporal distribution of yearling and older American shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

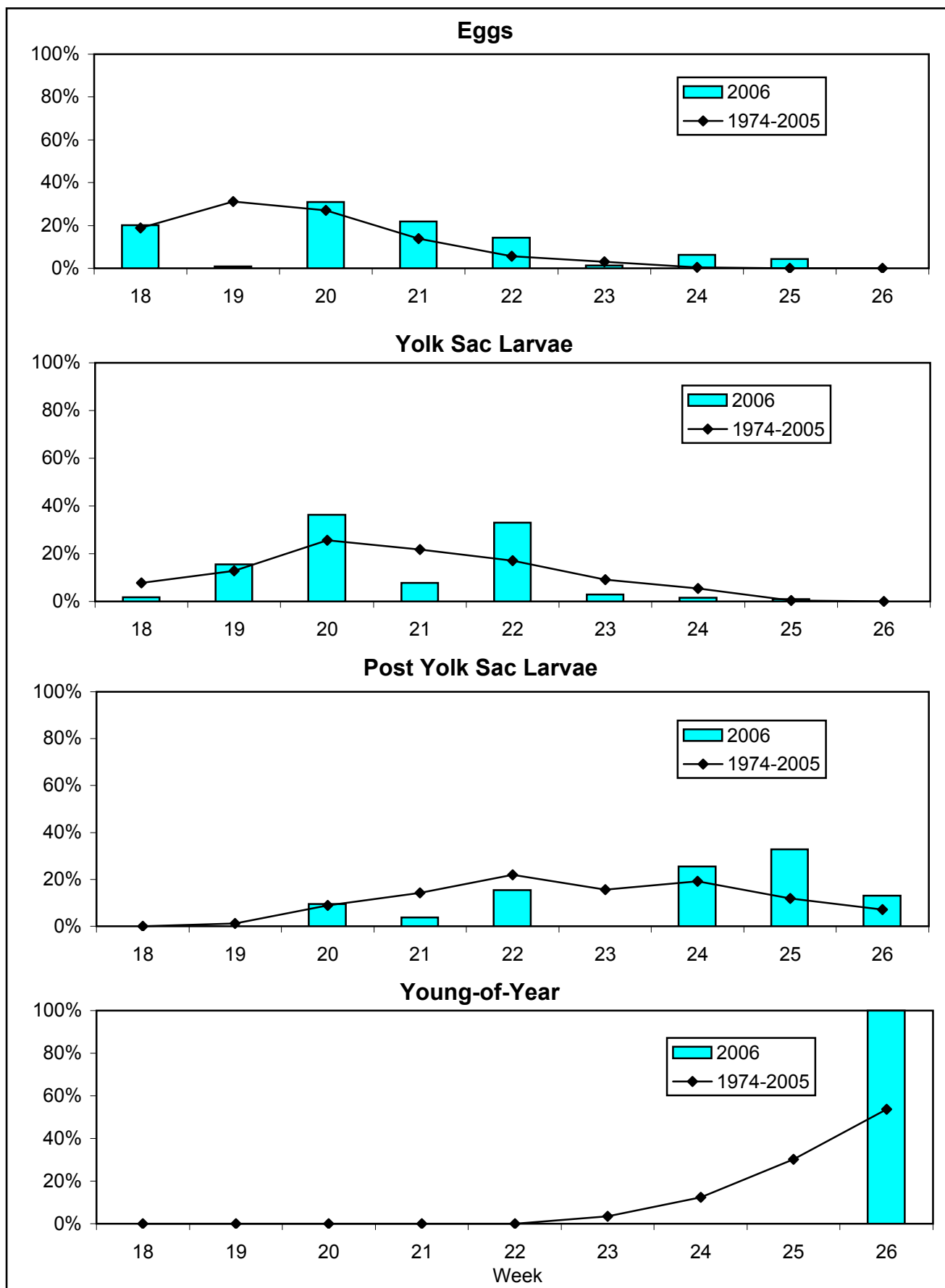


Figure 4-34. Temporal distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2006.

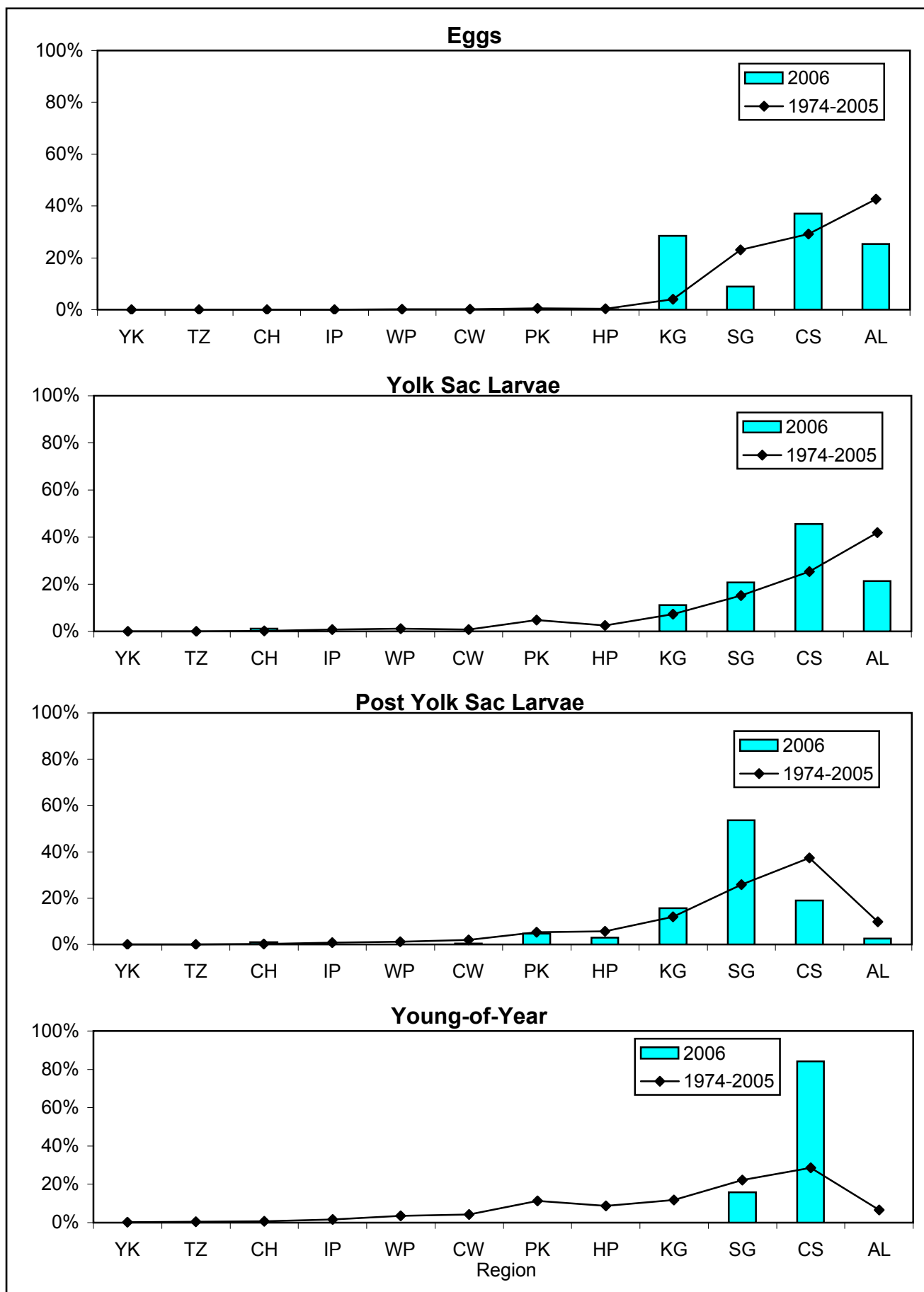


Figure 4-35. Geographic distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2006.

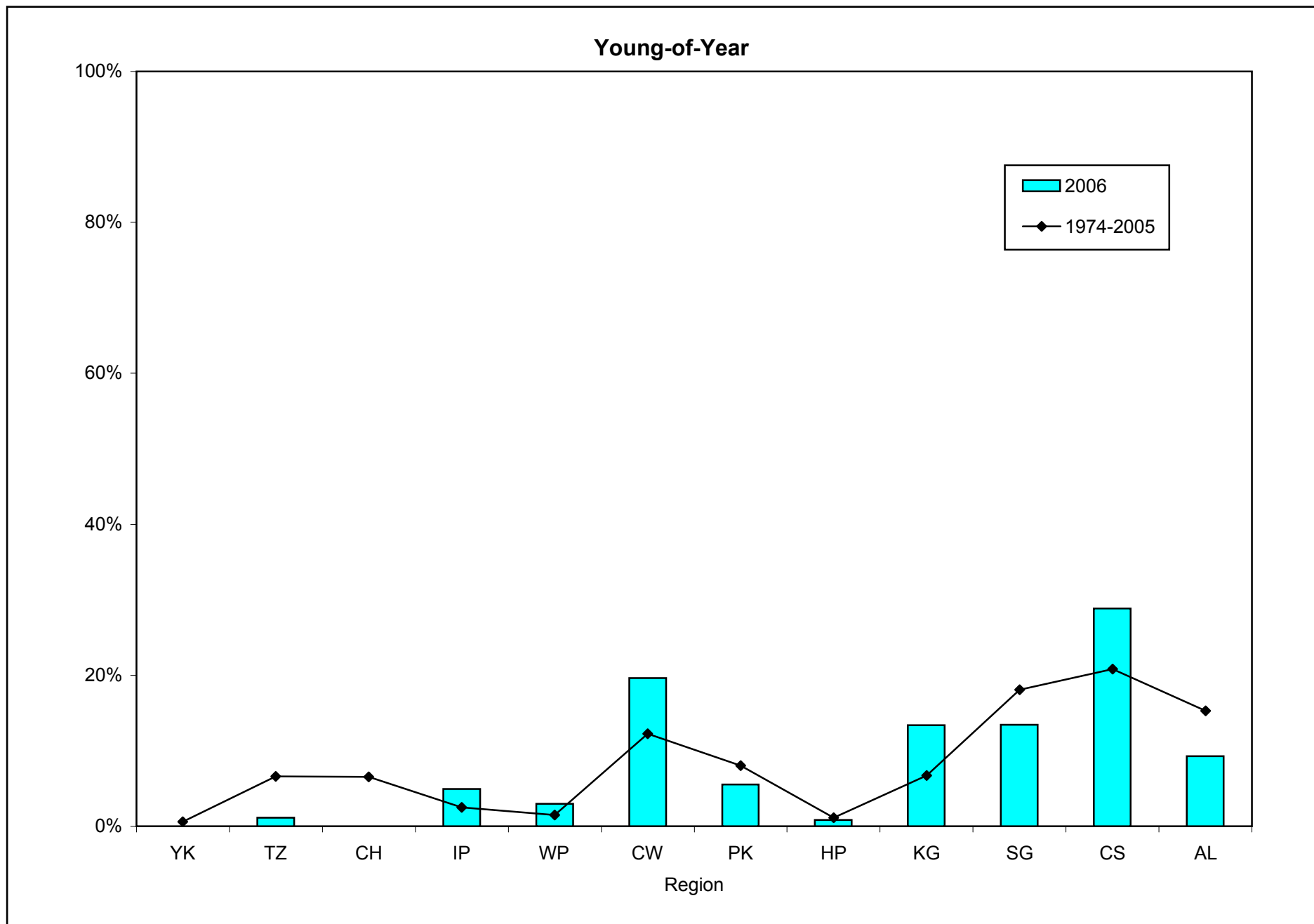


Figure 4-36. Geographic distribution indices for American shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

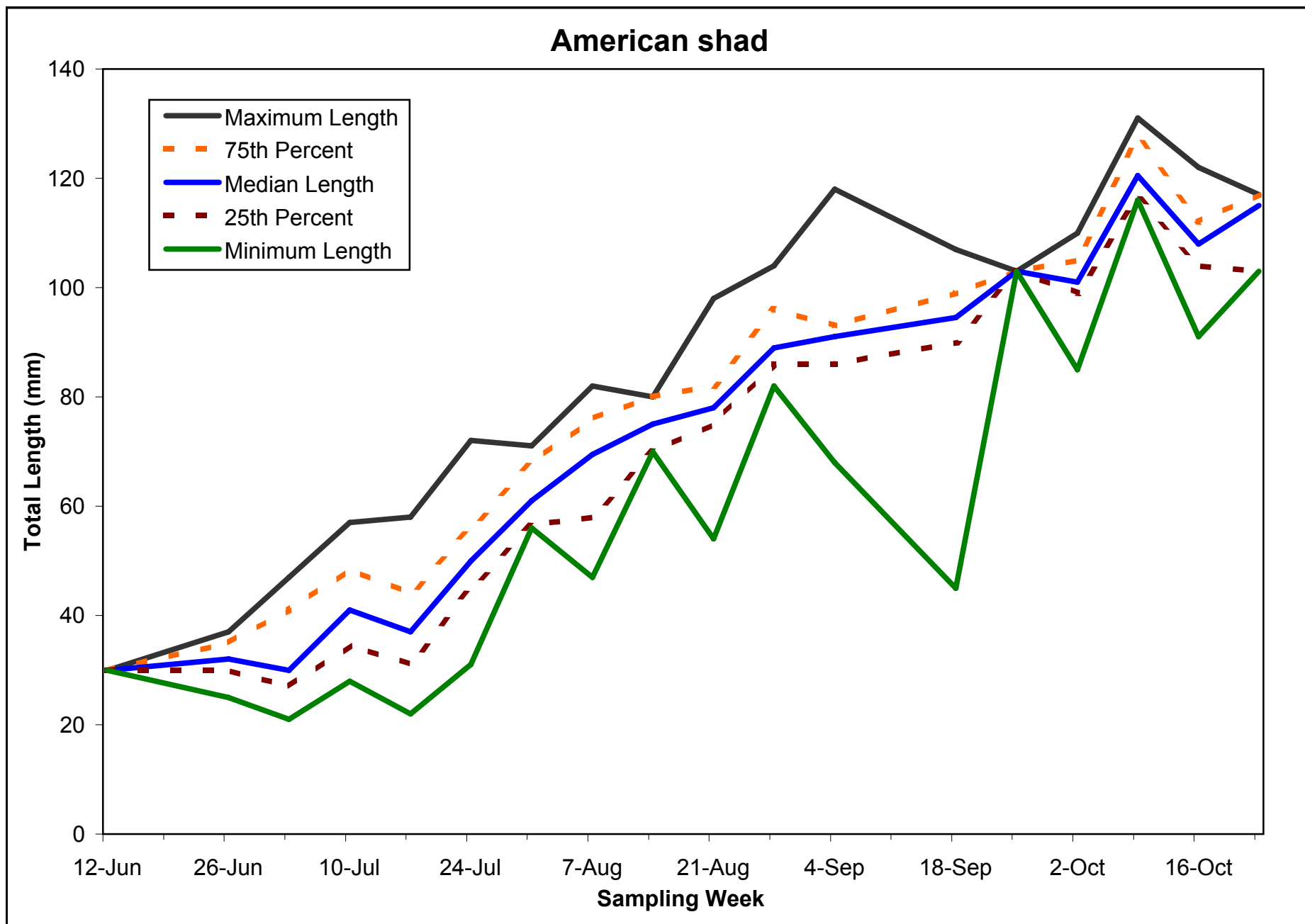


Figure 4-37. Weekly length statistics for young-of-year American shad in the Hudson River estuary, 2006.

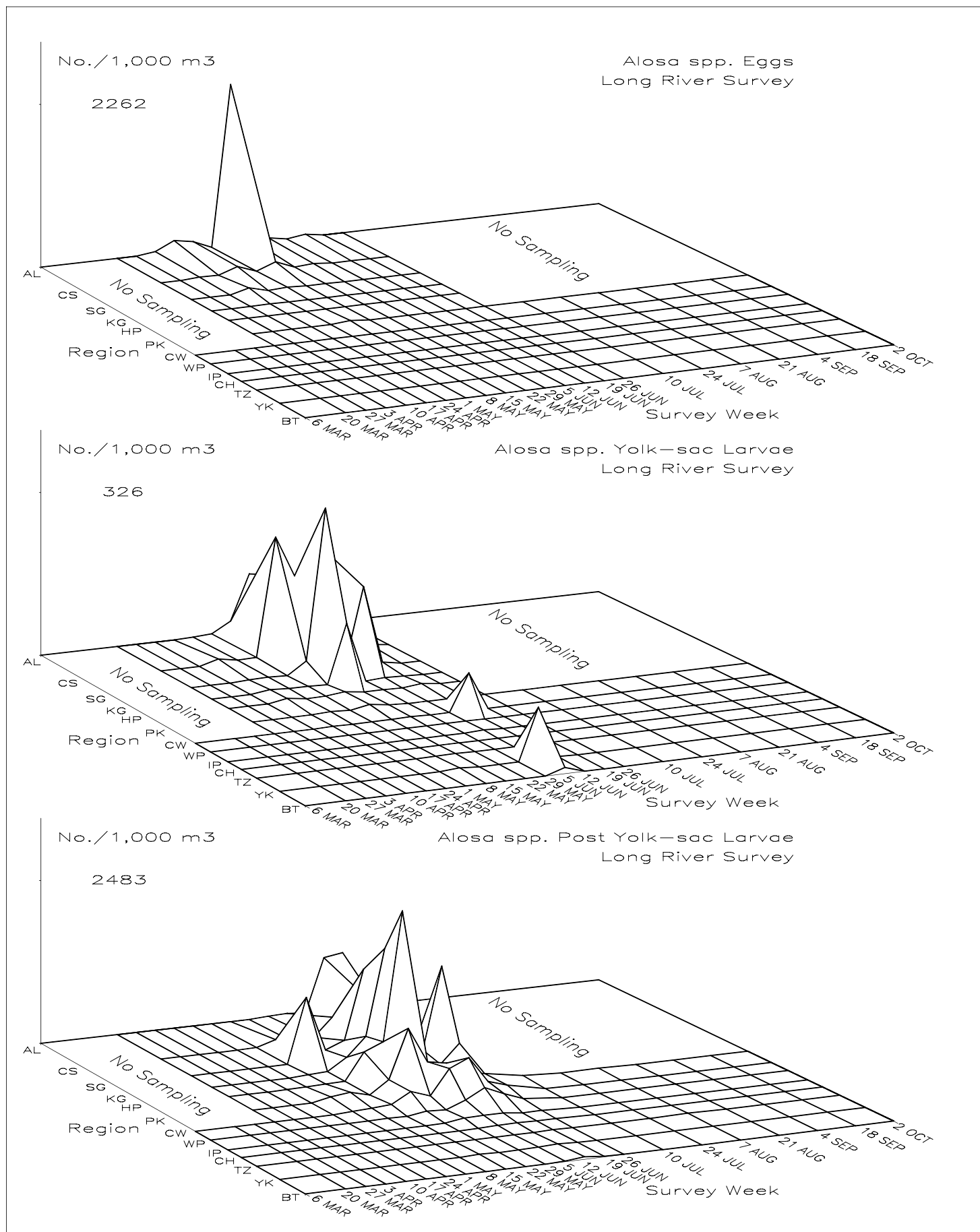


Figure 4-38. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval *Alosa* spp. in the Hudson River estuary based on the 2006 Long River Survey.

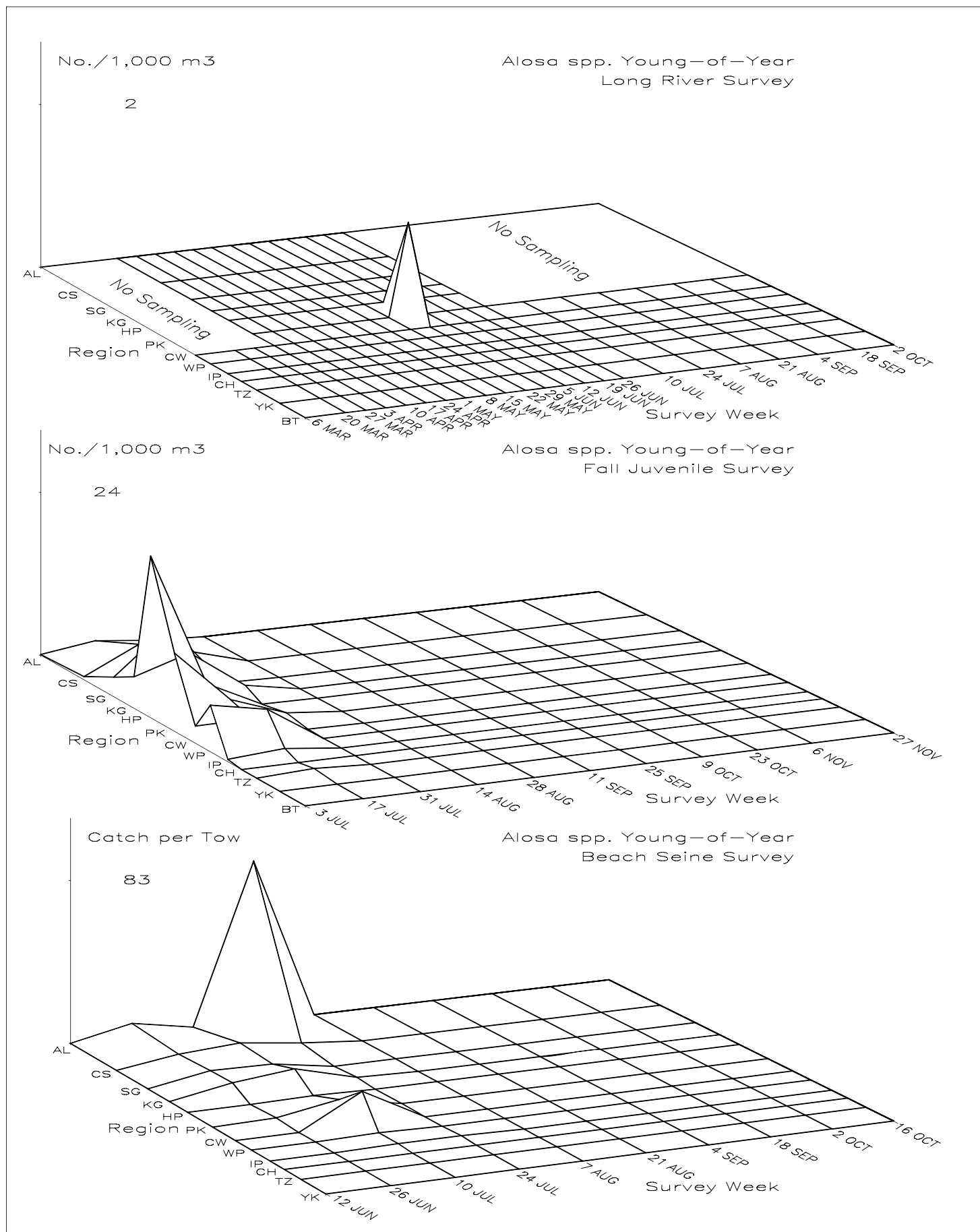


Figure 4–39. Spatiotemporal distribution of young-of-year *Alosa* spp. in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

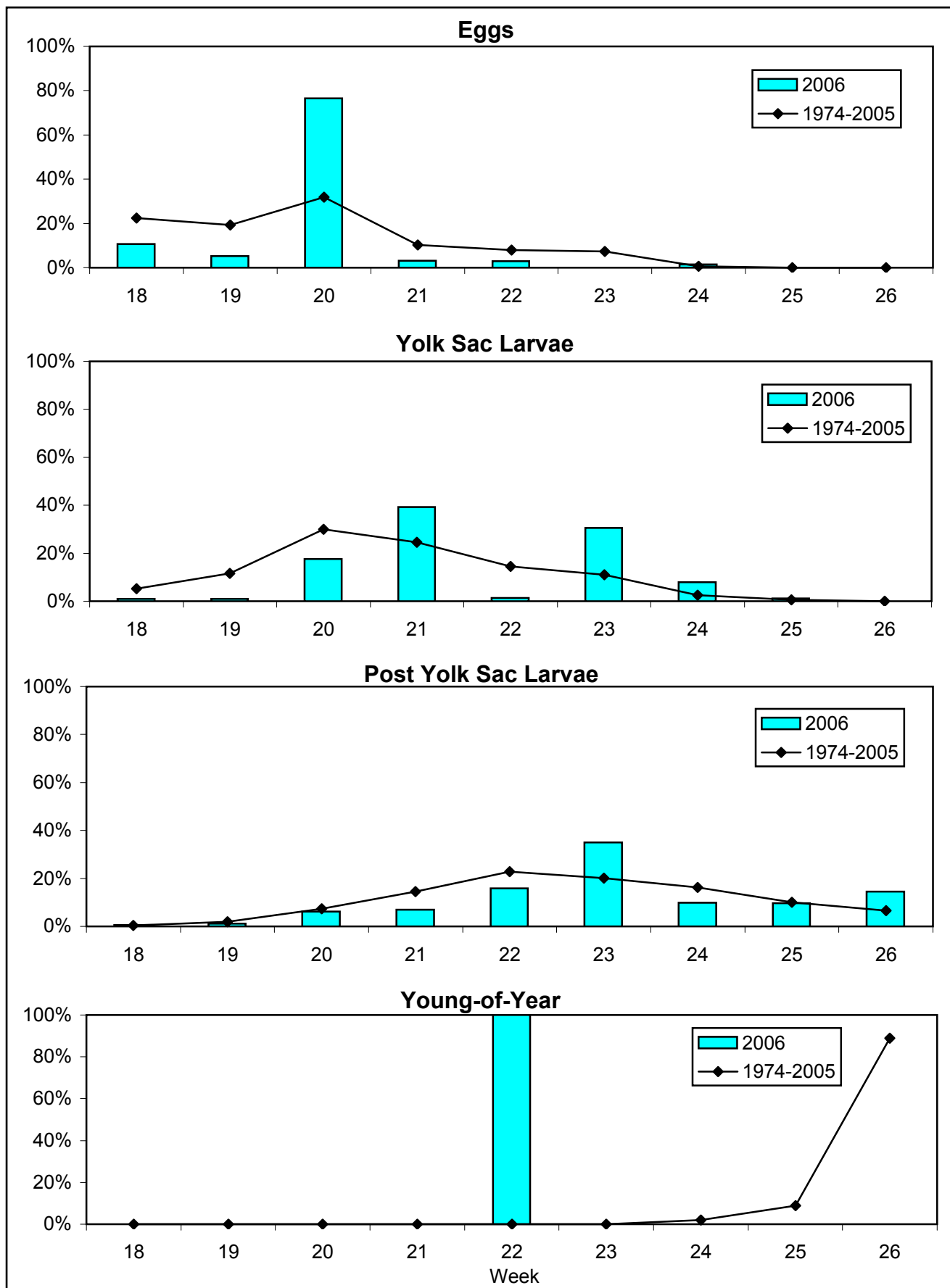


Figure 4-40. Temporal distribution indices for *Alosa* spp. collected during Long River surveys of the Hudson River estuary, 1974-2006.

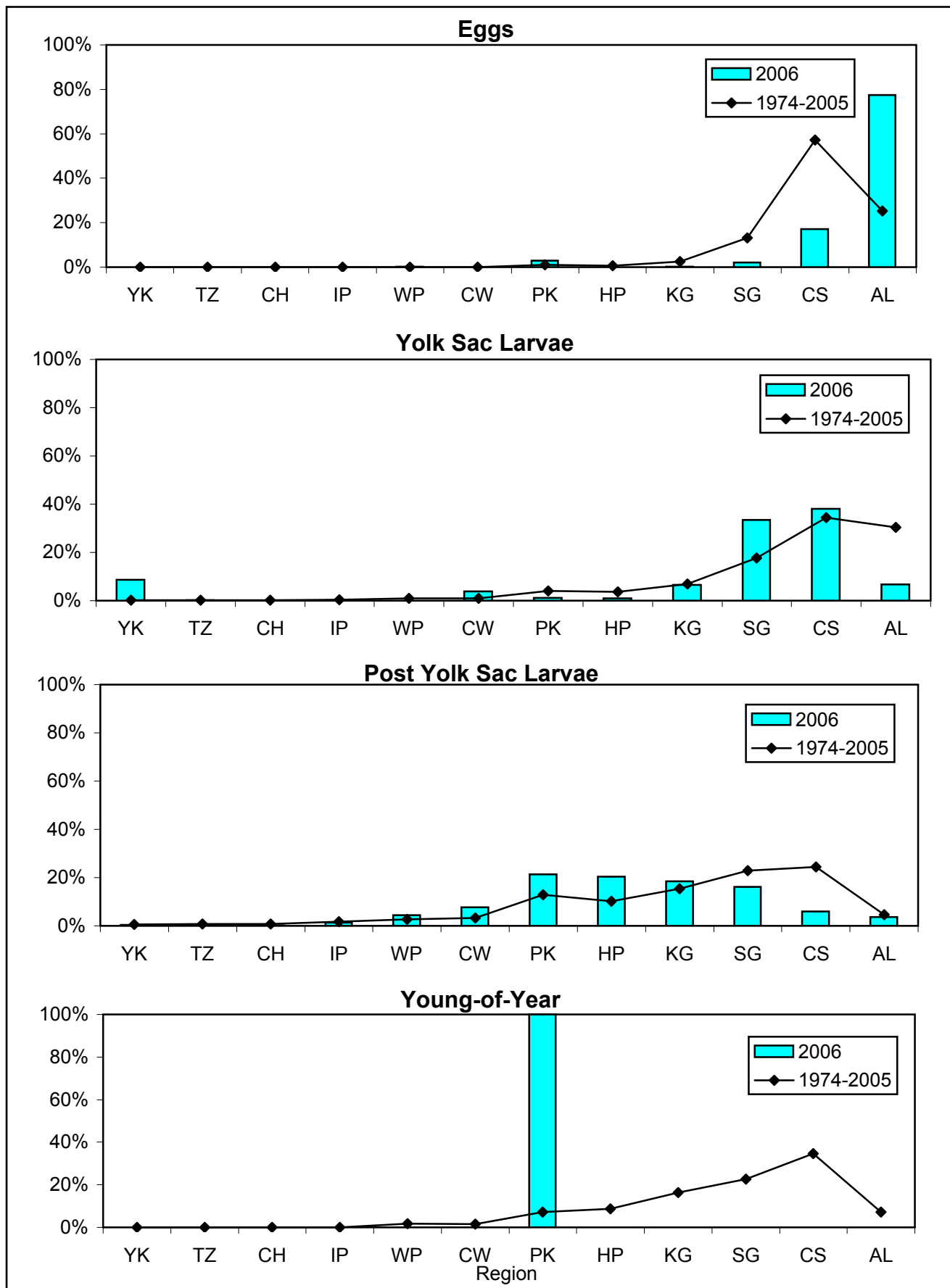


Figure 4-41. Geographic distribution indices for *Alosa* spp. collected during Long River surveys of the Hudson River estuary, 1974-2006.

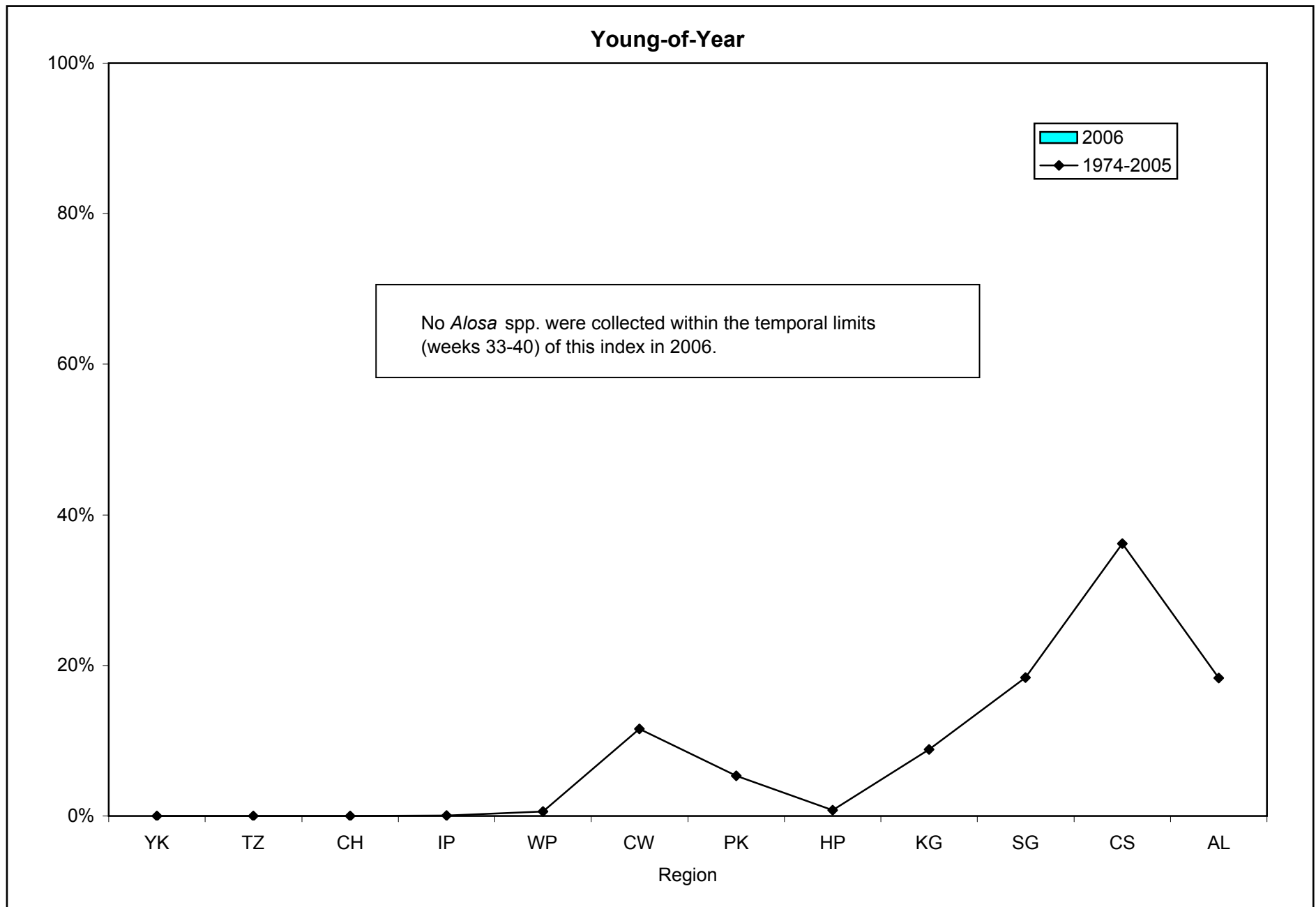


Figure 4-42. Geographic distribution indices for *Alosa* spp. collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

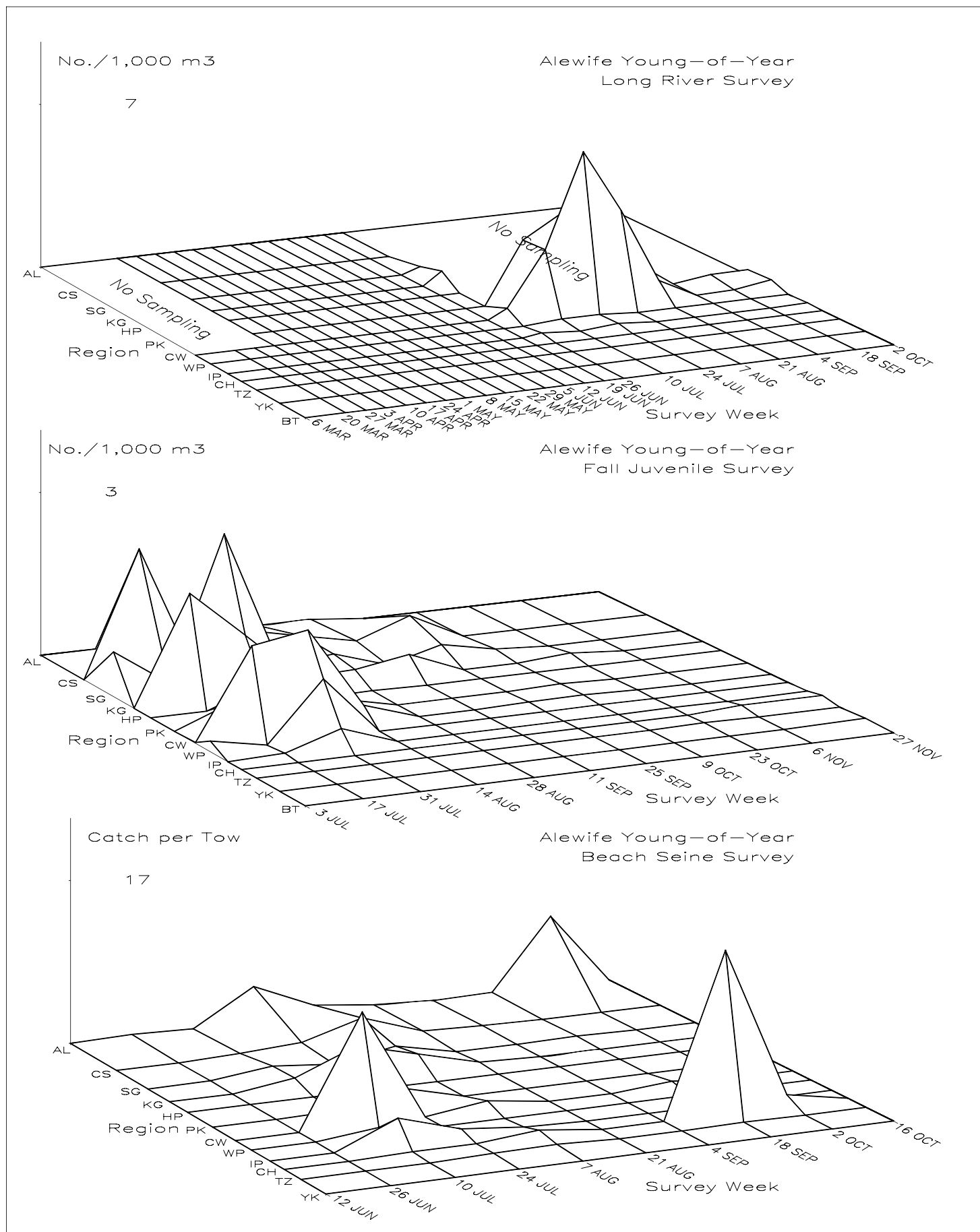


Figure 4-43. Spatiotemporal distribution of young-of-year alewife in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

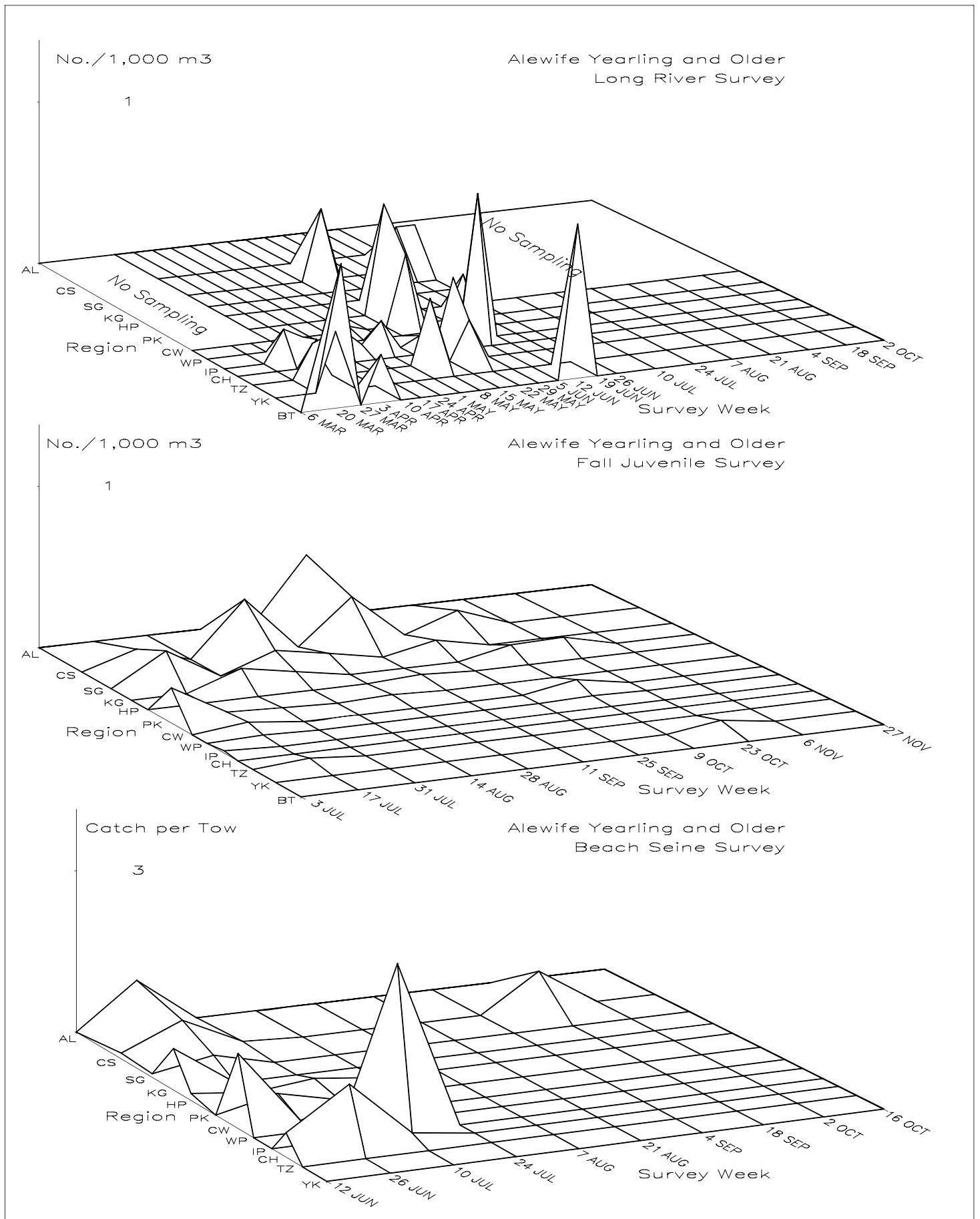


Figure 4-44. Spatiotemporal distribution of yearling and older alewife in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

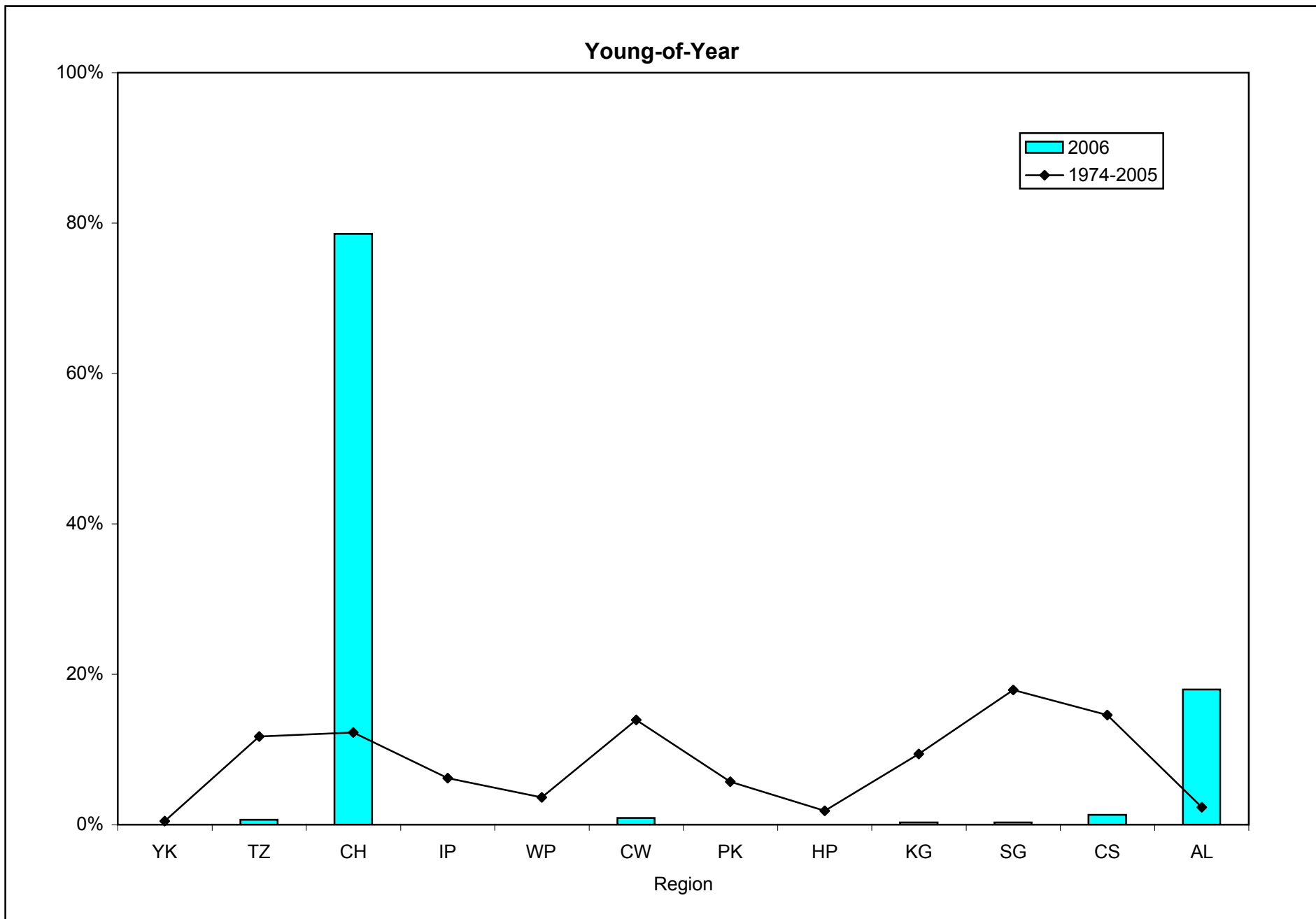


Figure 4-45. Geographic distribution indices for alewife collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

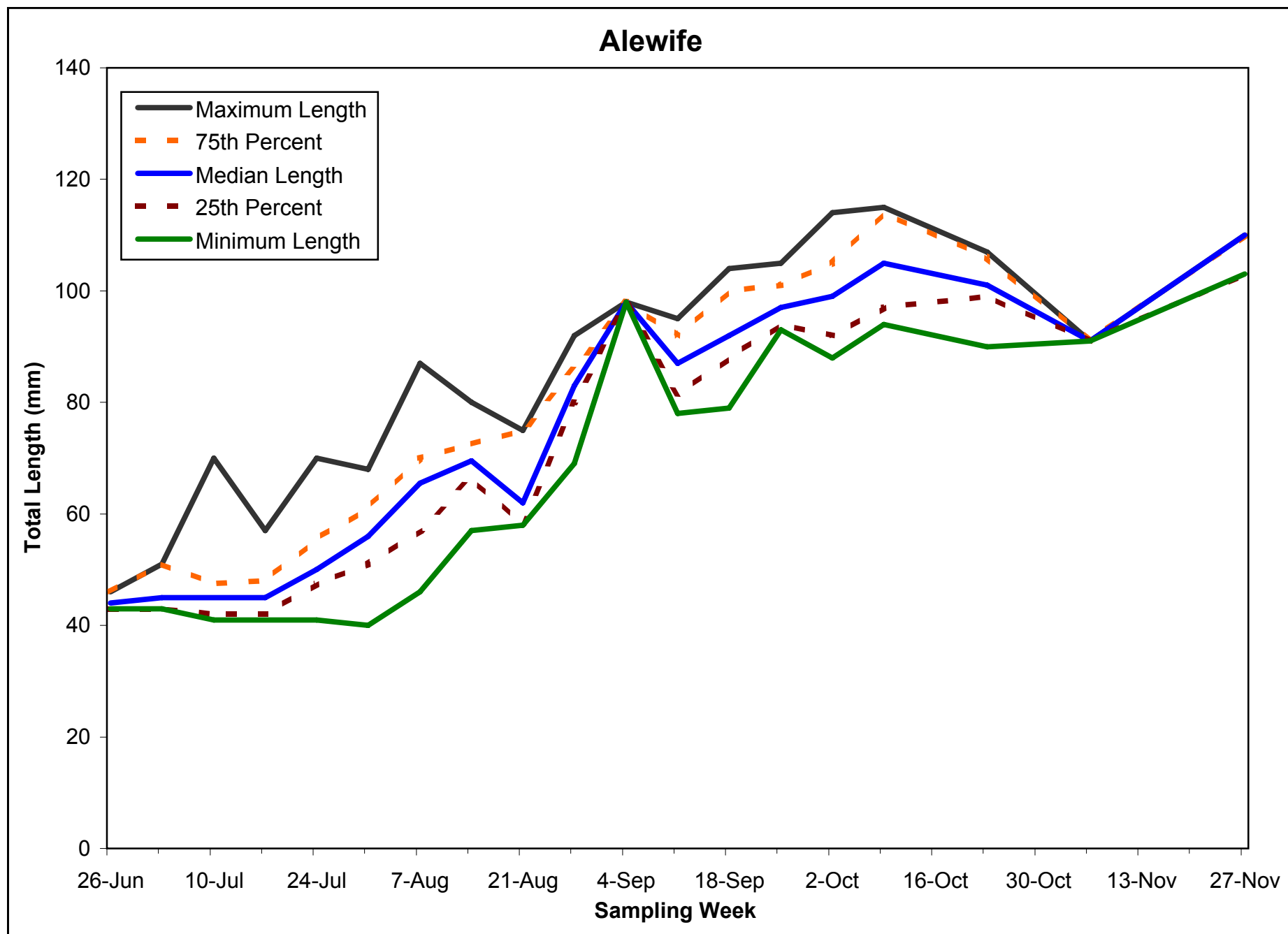


Figure 4-46. Weekly length statistics for young-of-year alewife in the Hudson River estuary, 2006.

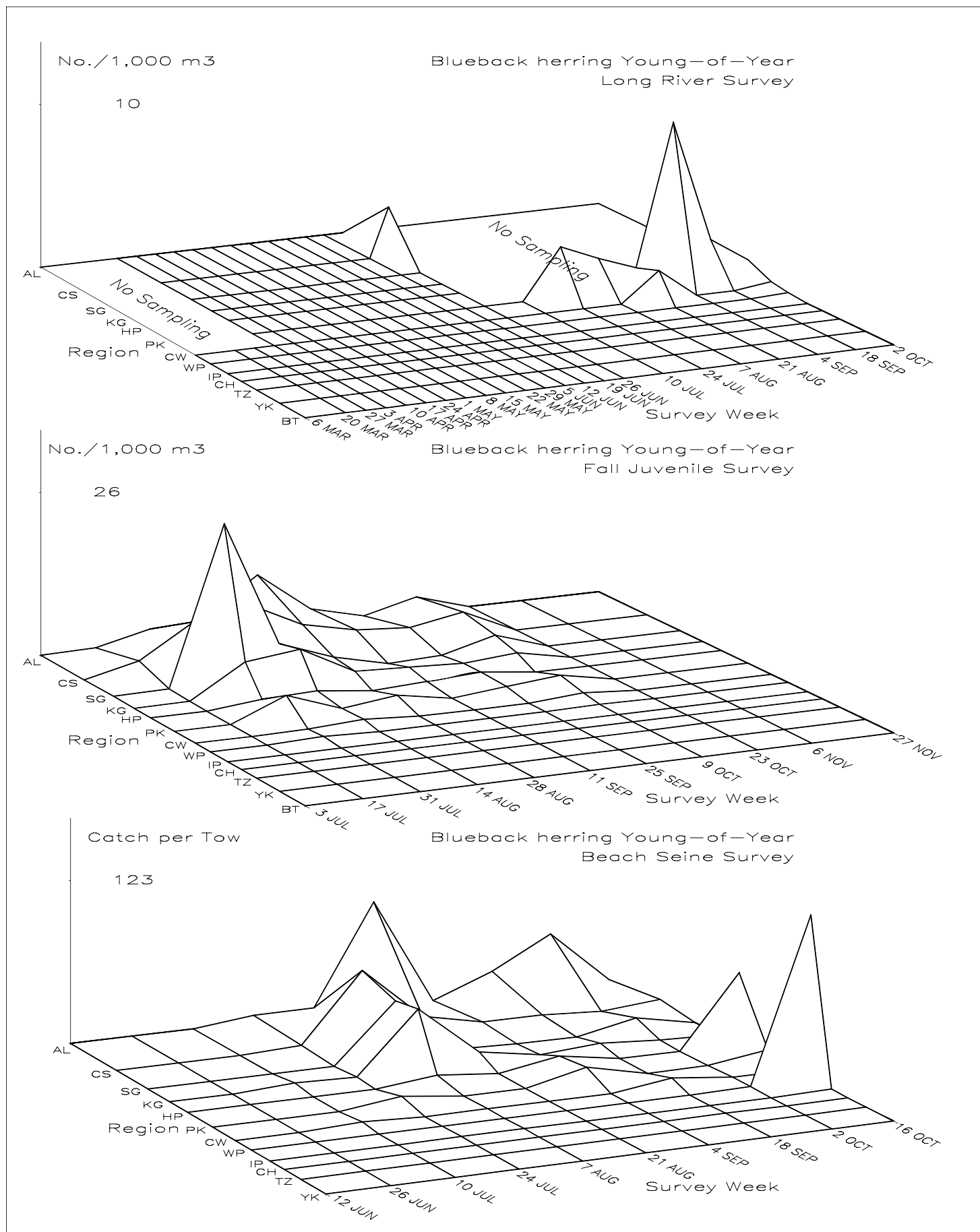


Figure 4-47. Spatiotemporal distribution of young-of-year blueback herring in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

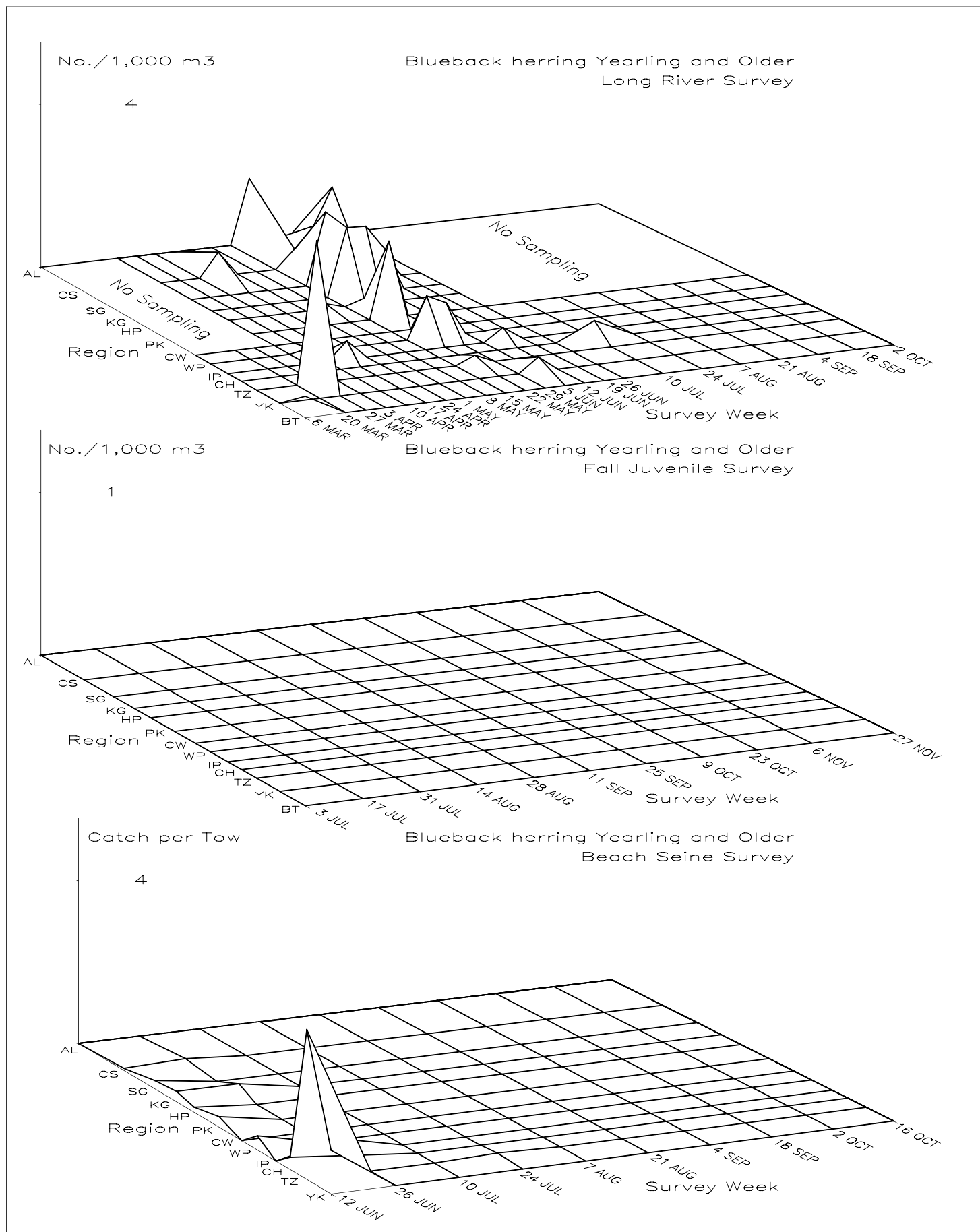


Figure 4–48. Spatiotemporal distribution of yearling and older blueback herring in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

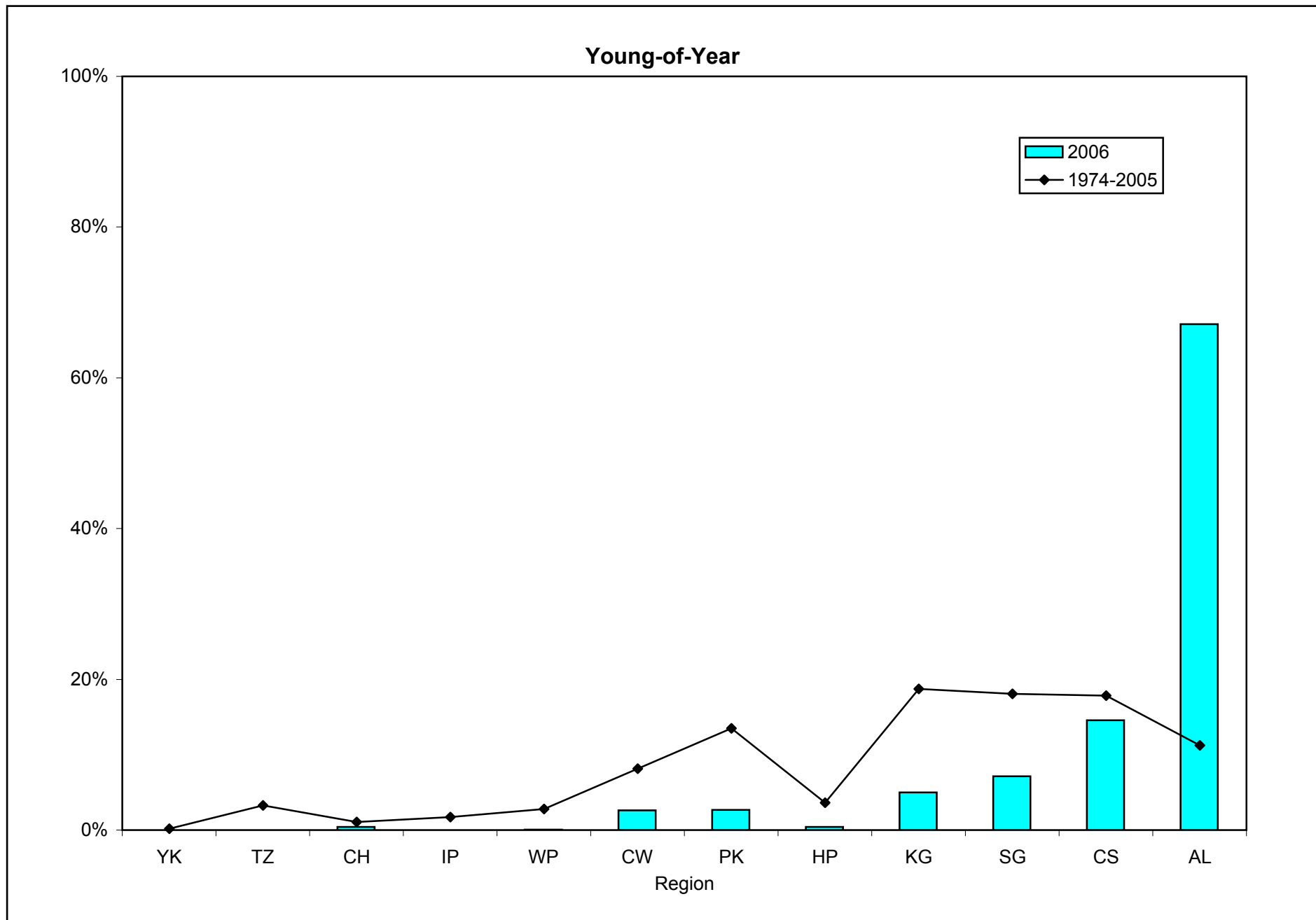


Figure 4-49. Geographic distribution indices for blueback herring collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

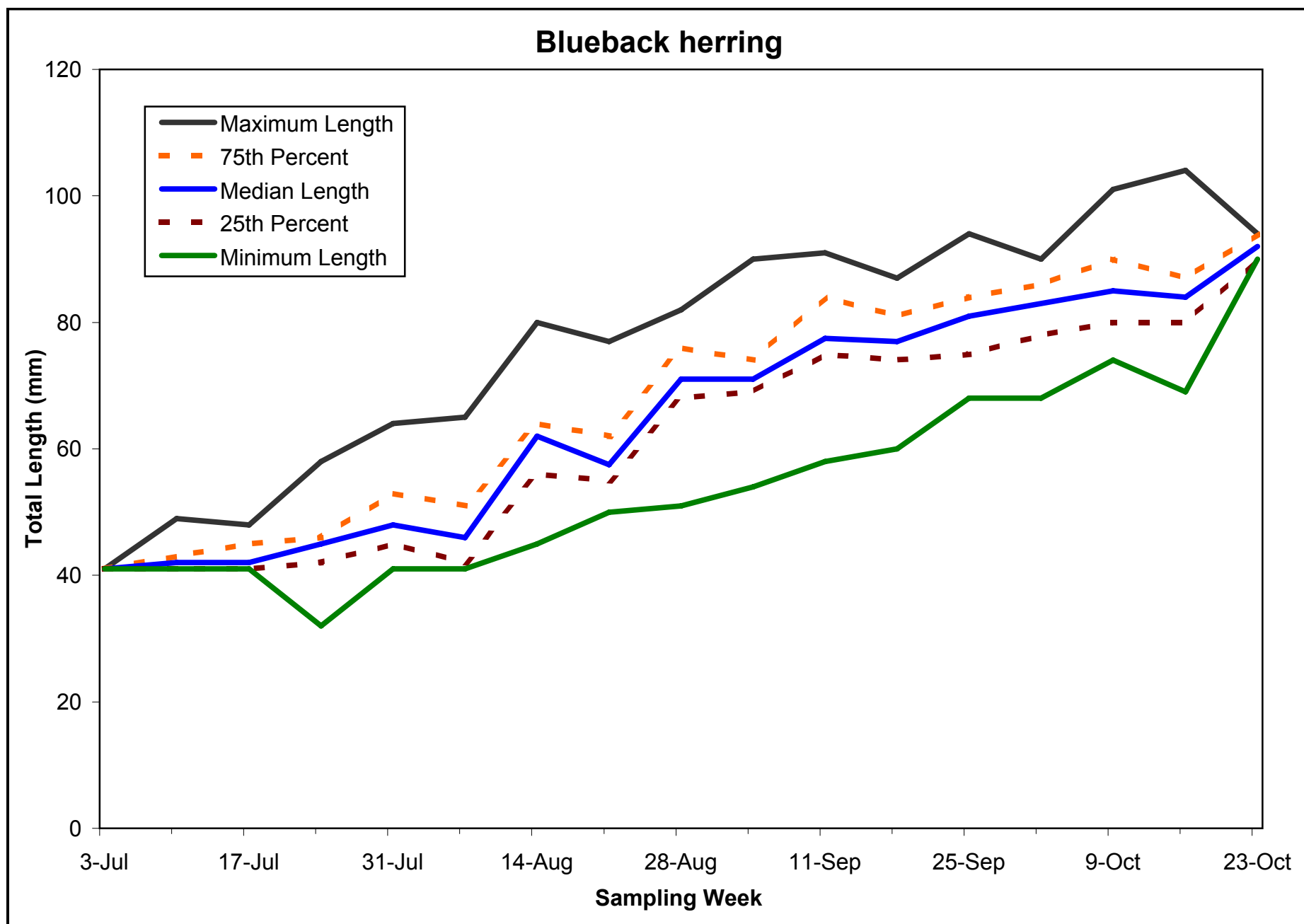


Figure 4-50. Weekly length statistics for young-of-year blueback herring in the Hudson River estuary, 2006.

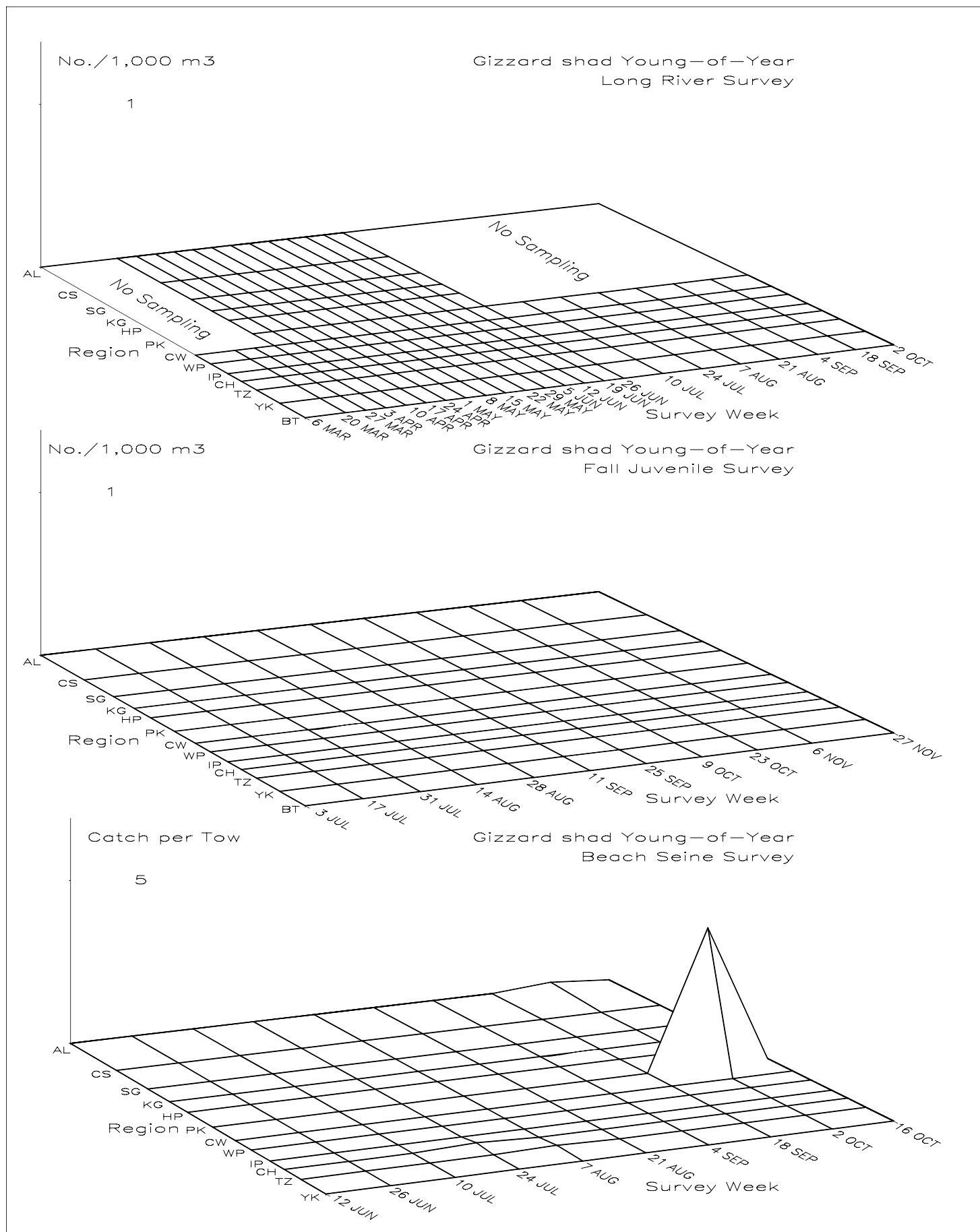


Figure 4-51. Spatiotemporal distribution of young-of-year gizzard shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

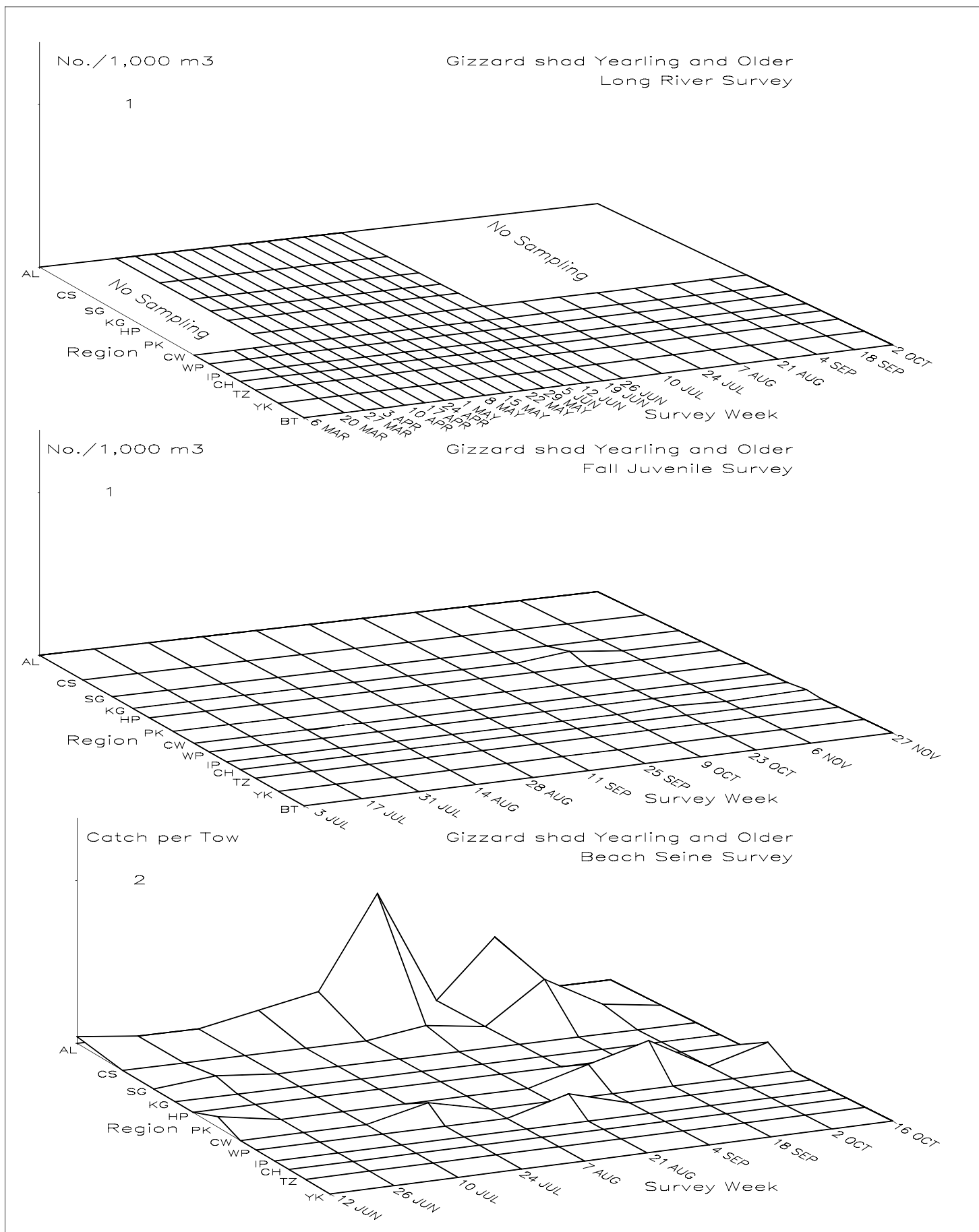


Figure 4–52. Spatiotemporal distribution of yearling and older gizzard shad in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

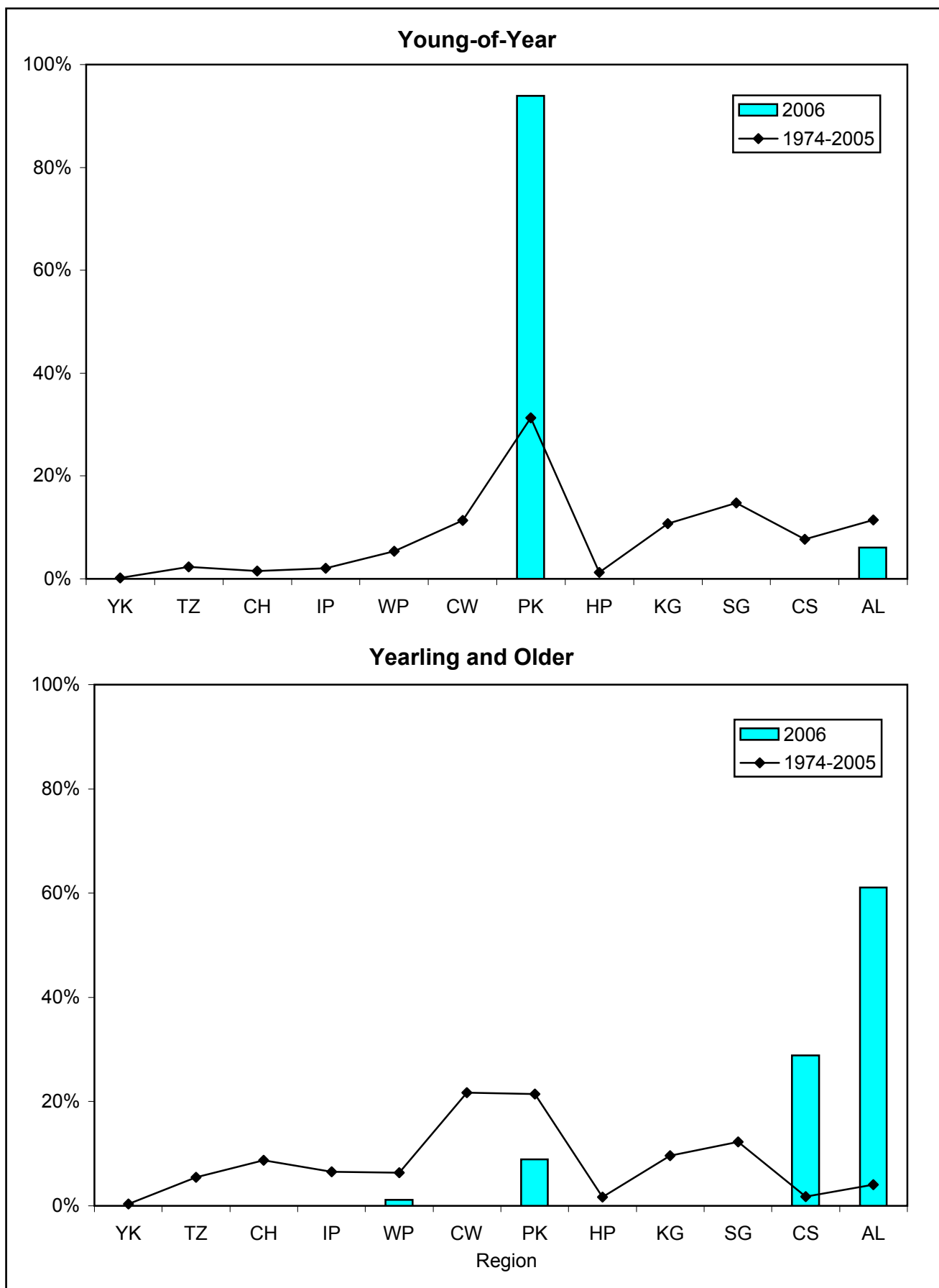


Figure 4-53. Geographic distribution indices for gizzard shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

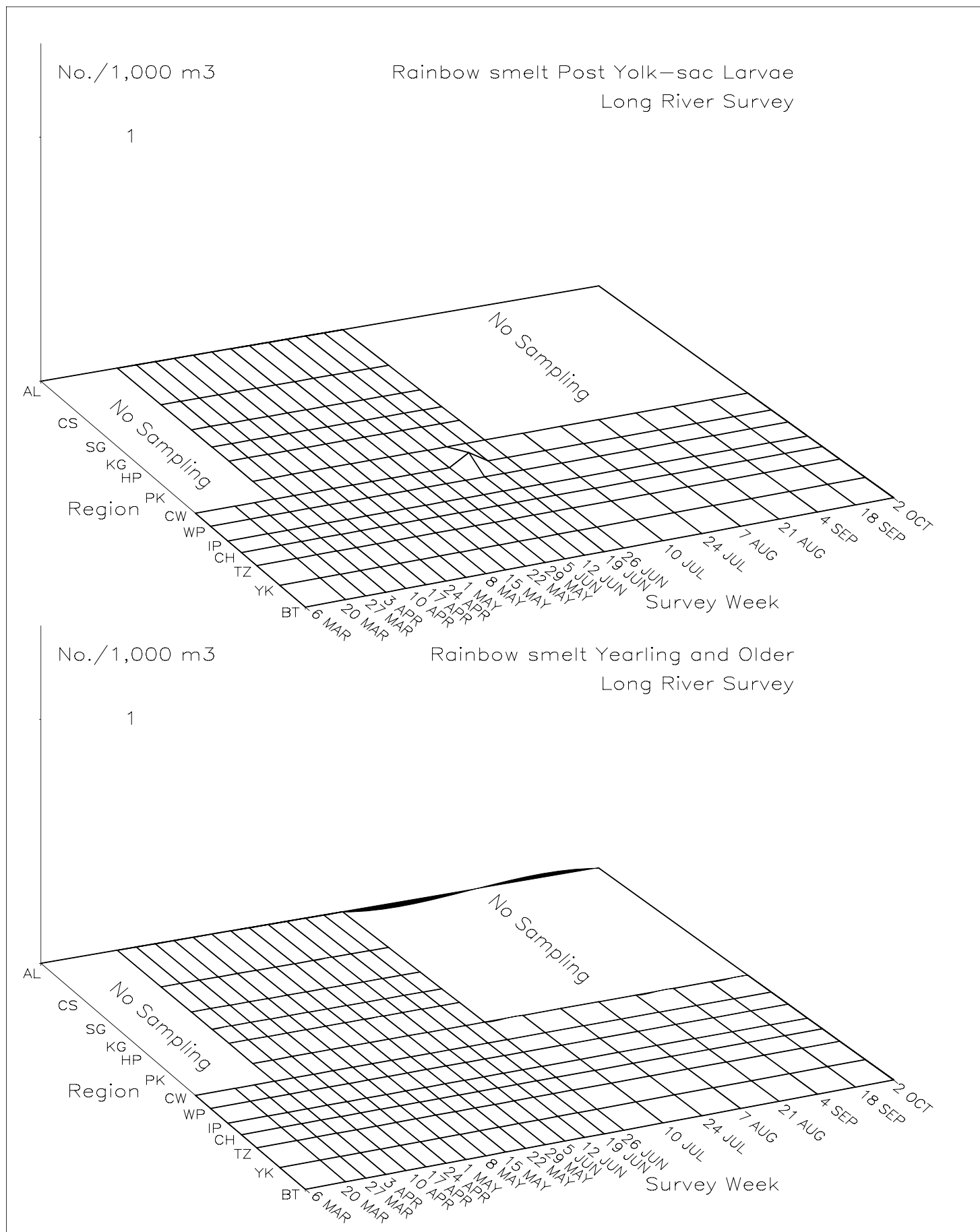


Figure 4-54. Spatiotemporal distribution of post yolk-sac larval and yearling and older rainbow smelt in the Hudson River estuary based on the 2006 Long River Survey.

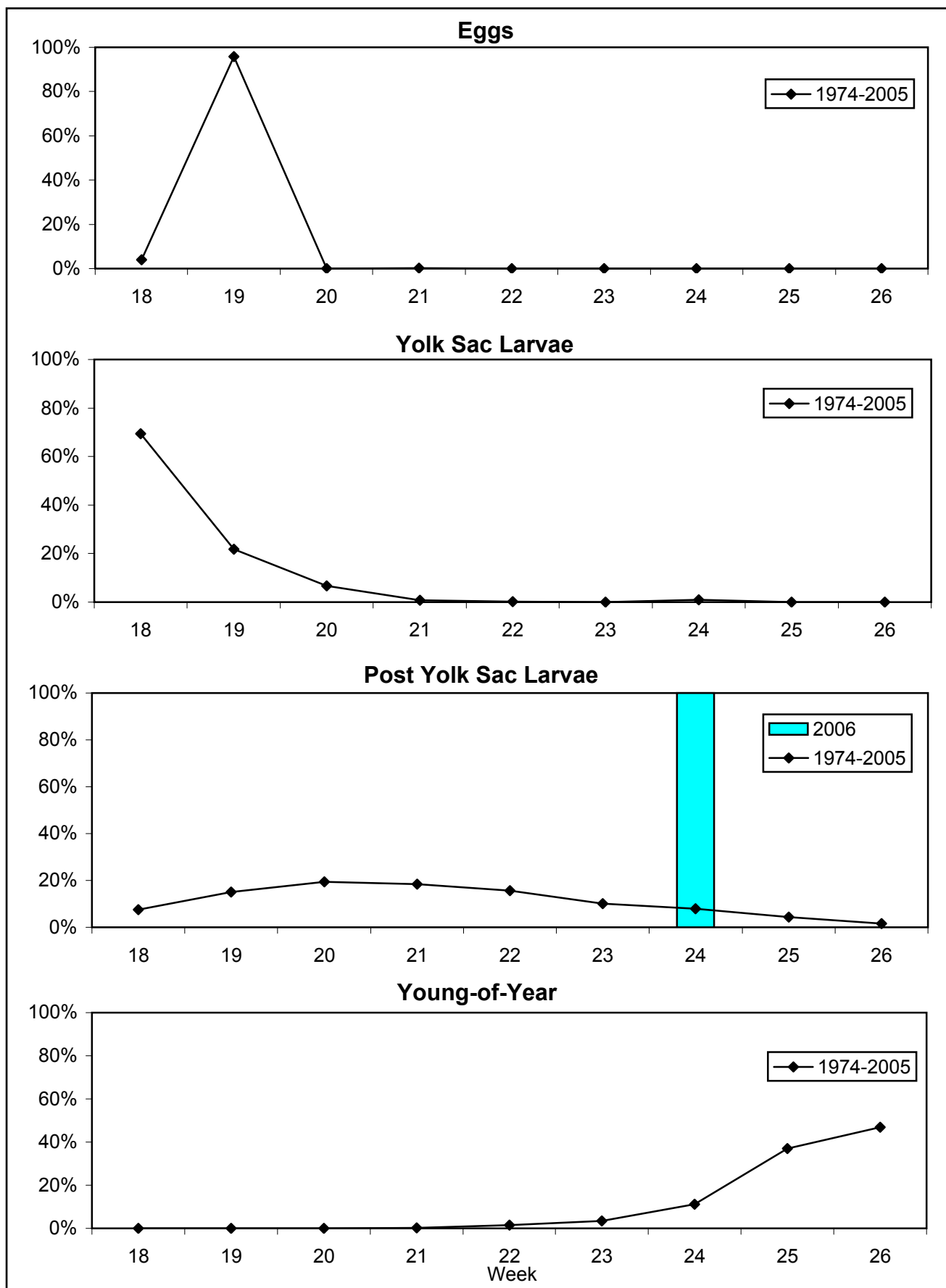


Figure 4-55. Temporal distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2006.

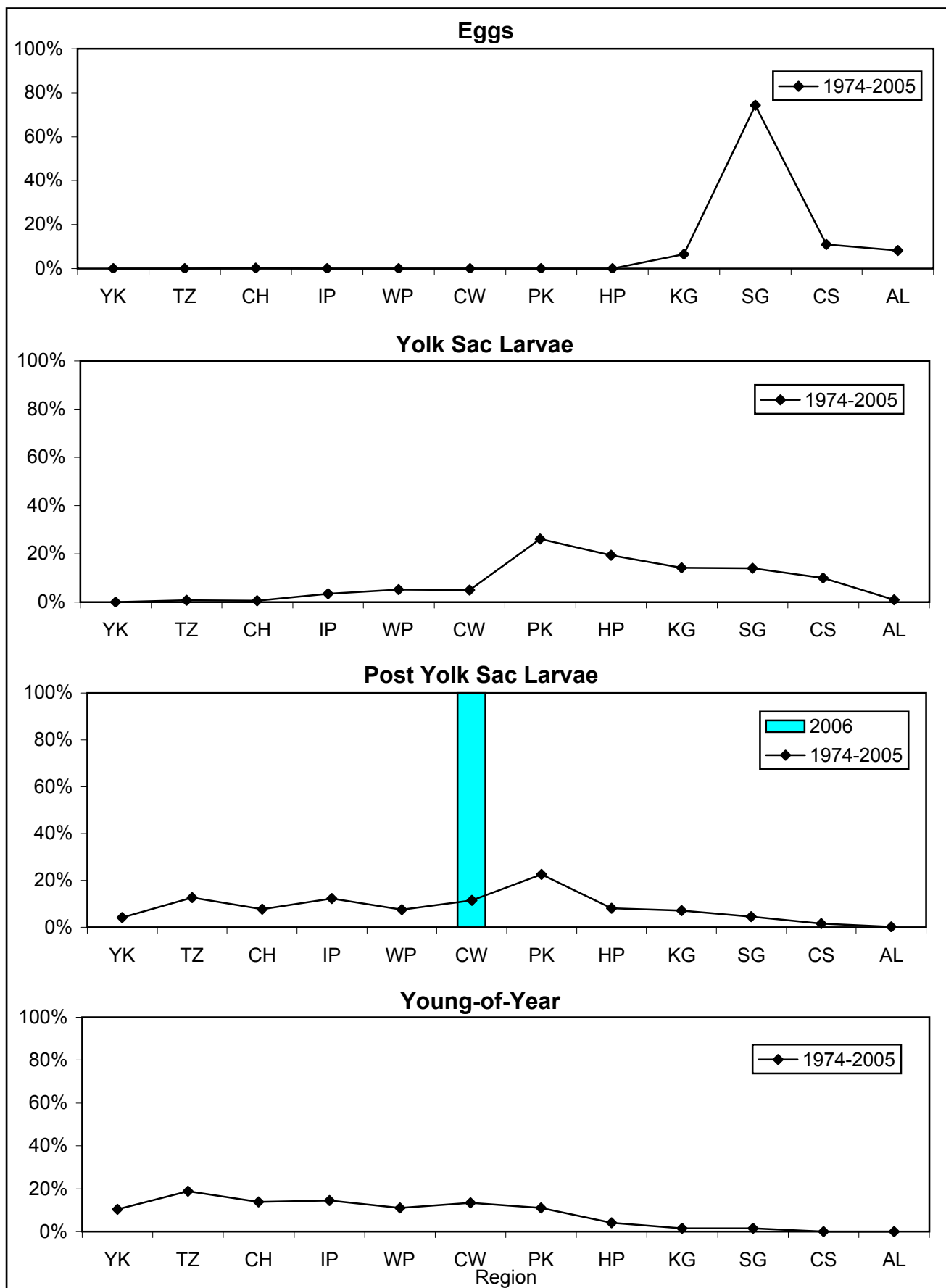


Figure 4-56. Geographic distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2006.

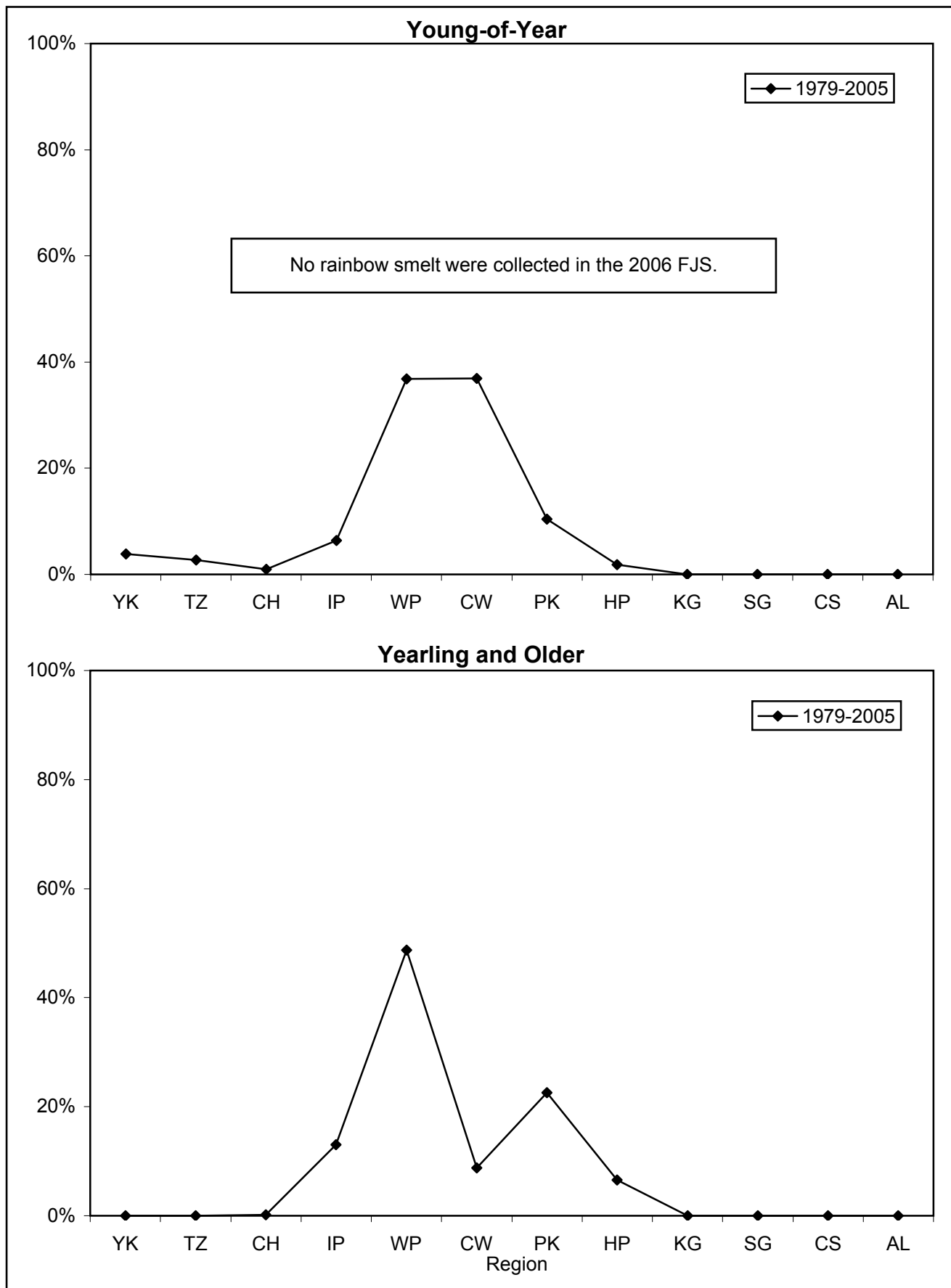


Figure 4-57. Geographic distribution indices for rainbow smelt collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.

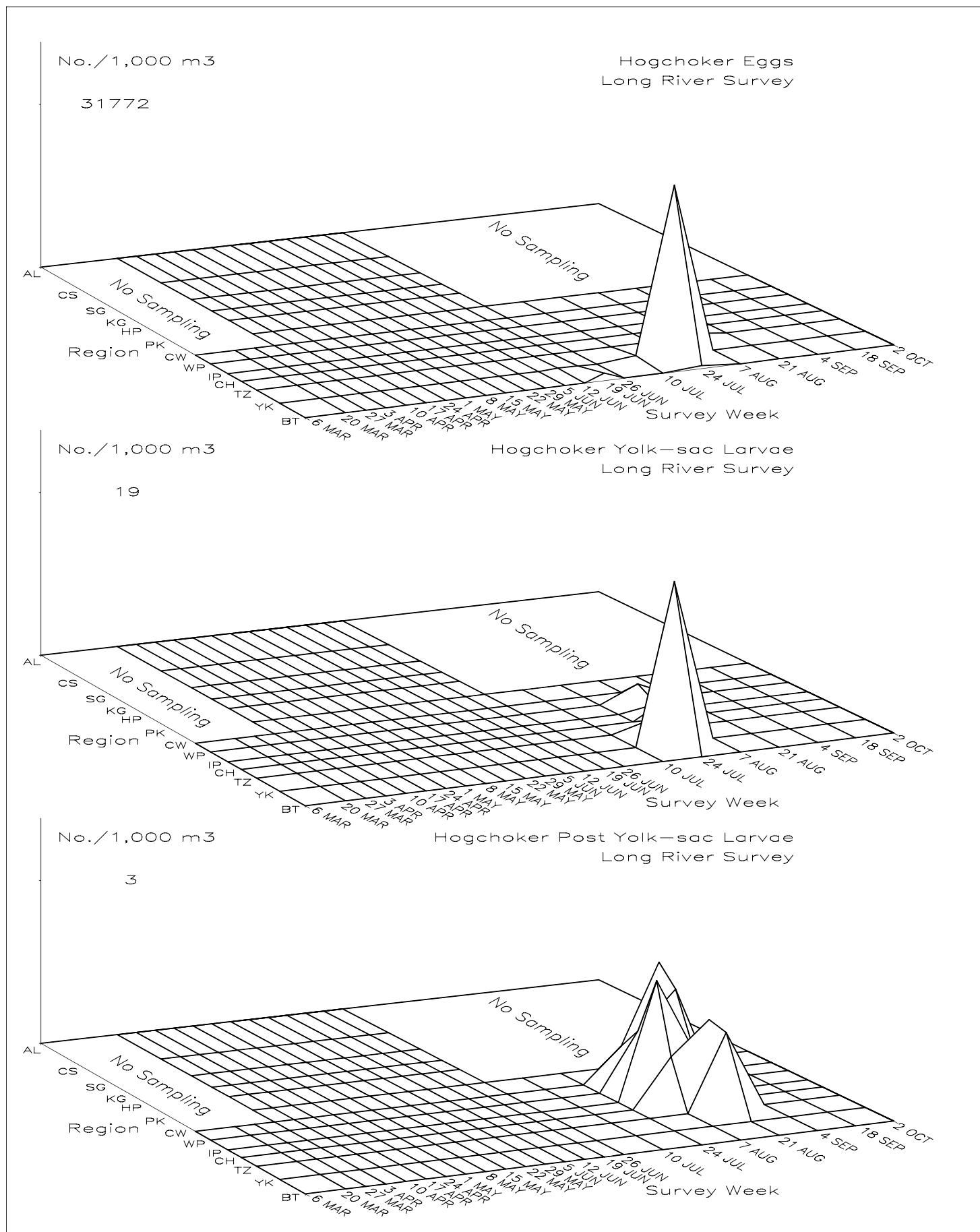


Figure 4-58. Spatiotemporal distribution of eggs, yolk-sac, and post yolk-sac larval hogchoker in the Hudson River estuary based on the 2006 Long River Survey.

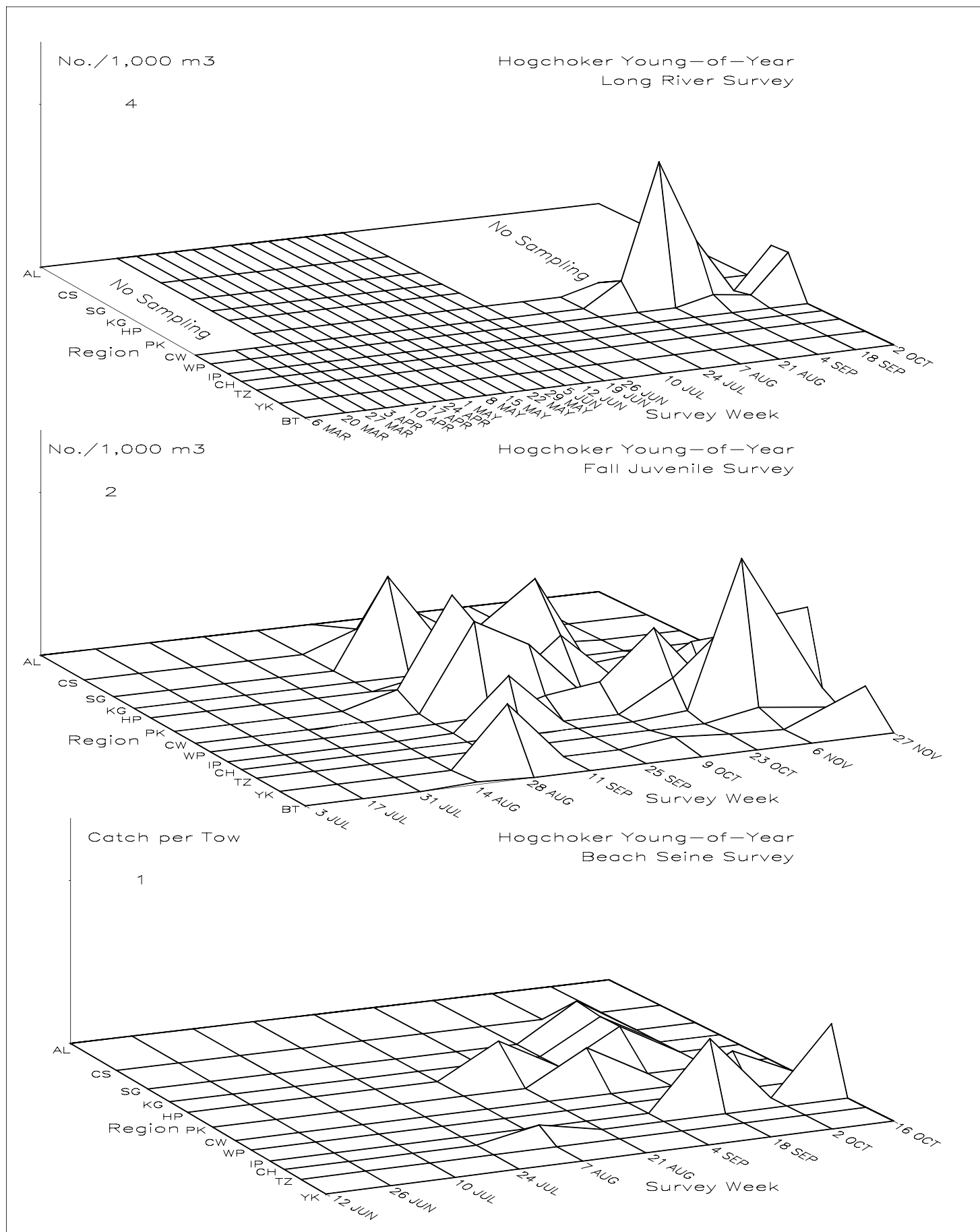


Figure 4–59. Spatiotemporal distribution of young-of-year hogchoker in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

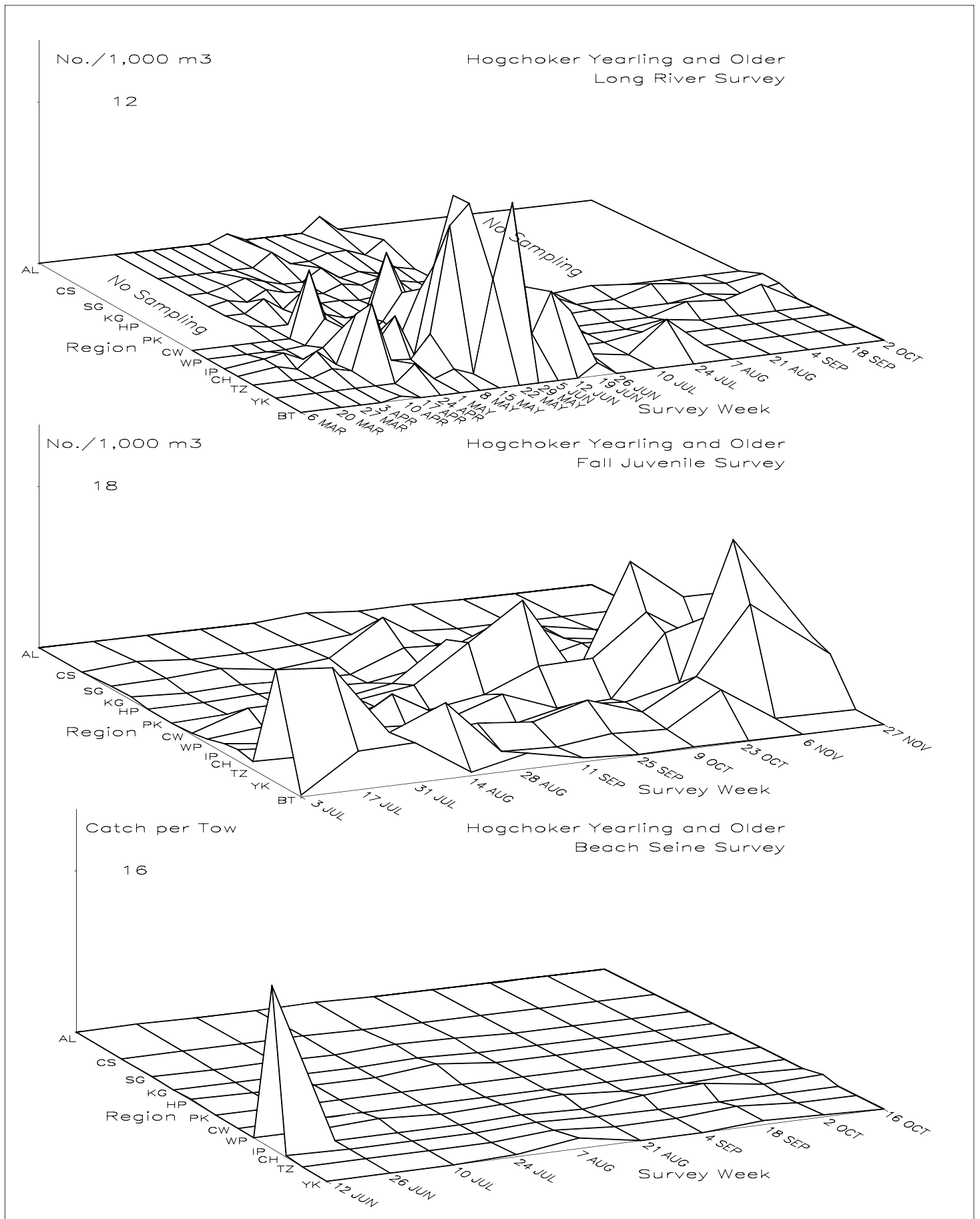


Figure 4–60. Spatiotemporal distribution of yearling and older hogchoker in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

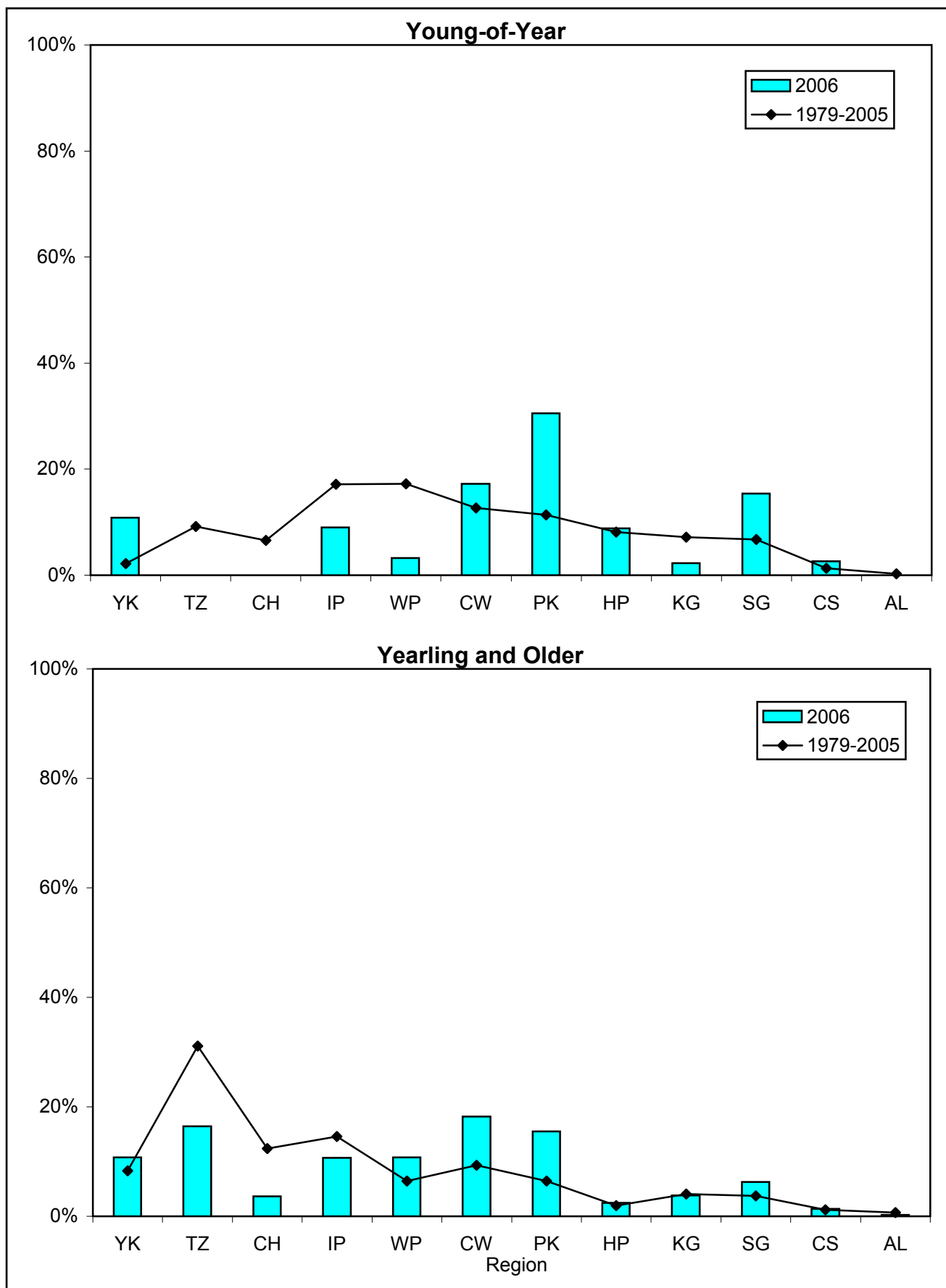


Figure 4-61. Geographic distribution indices for hogchoker collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.

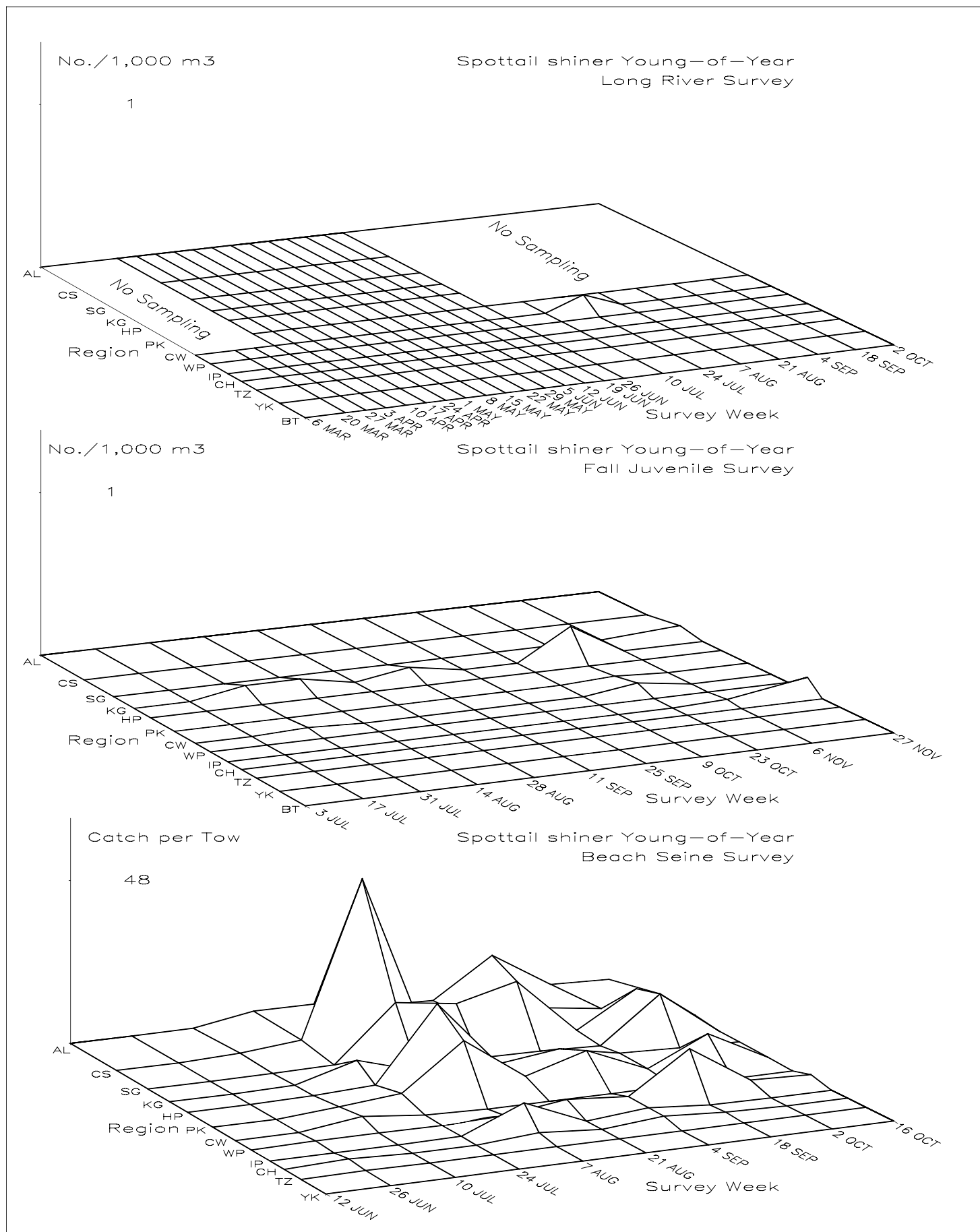


Figure 4–62. Spatiotemporal distribution of young-of-year spottail shiner in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

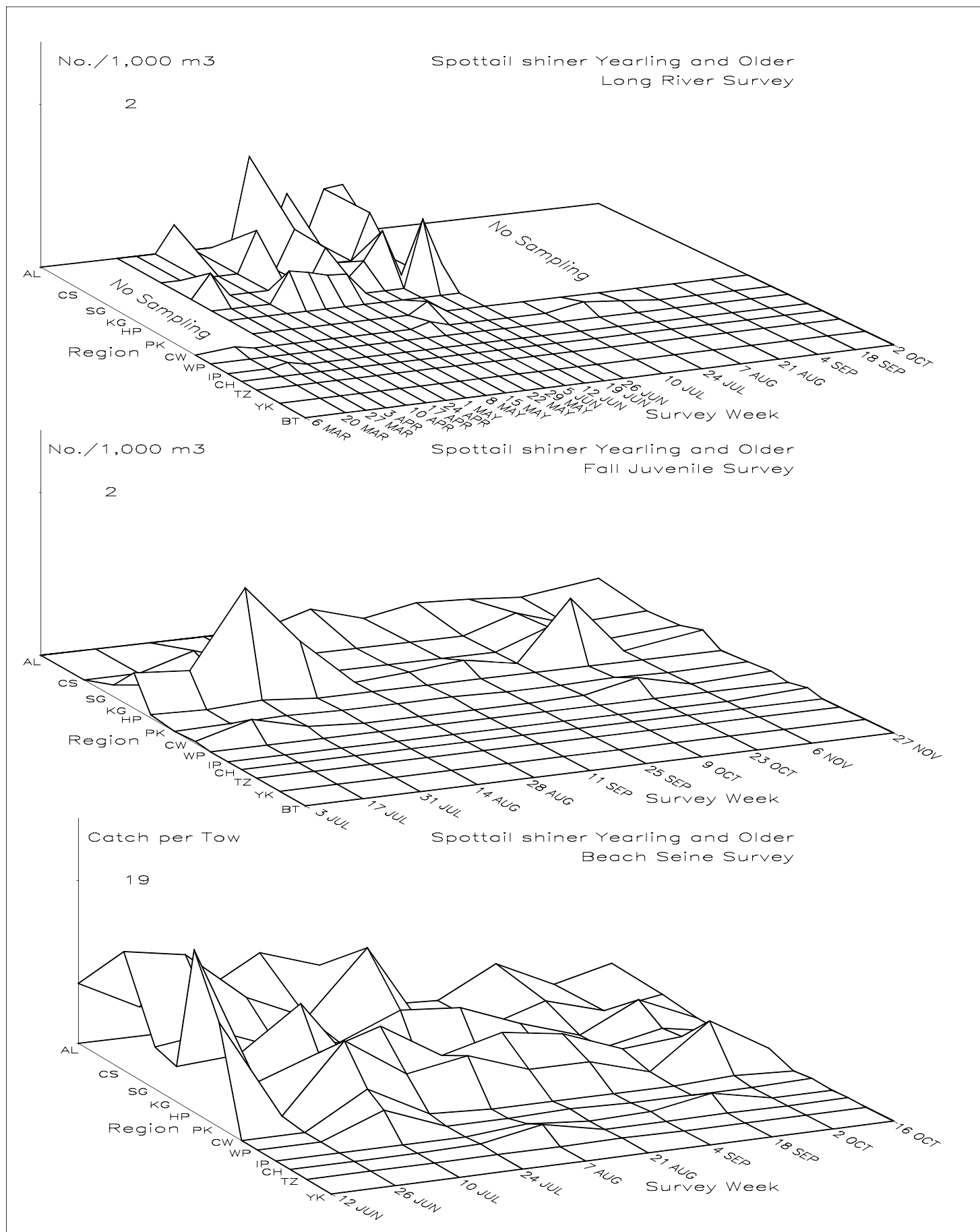


Figure 4–63. Spatiotemporal distribution of yearling and older spottail shiner in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

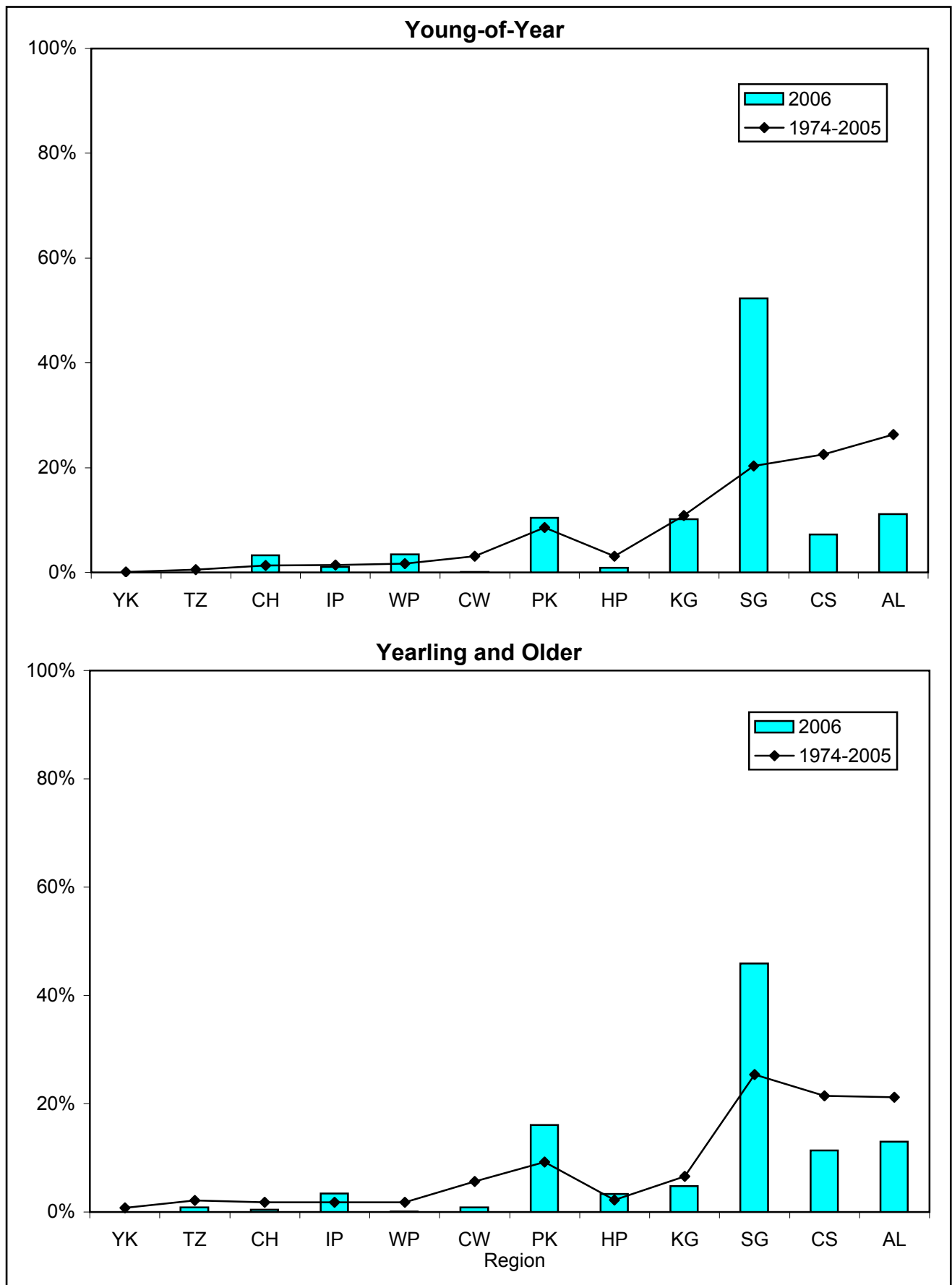


Figure 4-64. Geographic distribution indices for spottail shiner collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

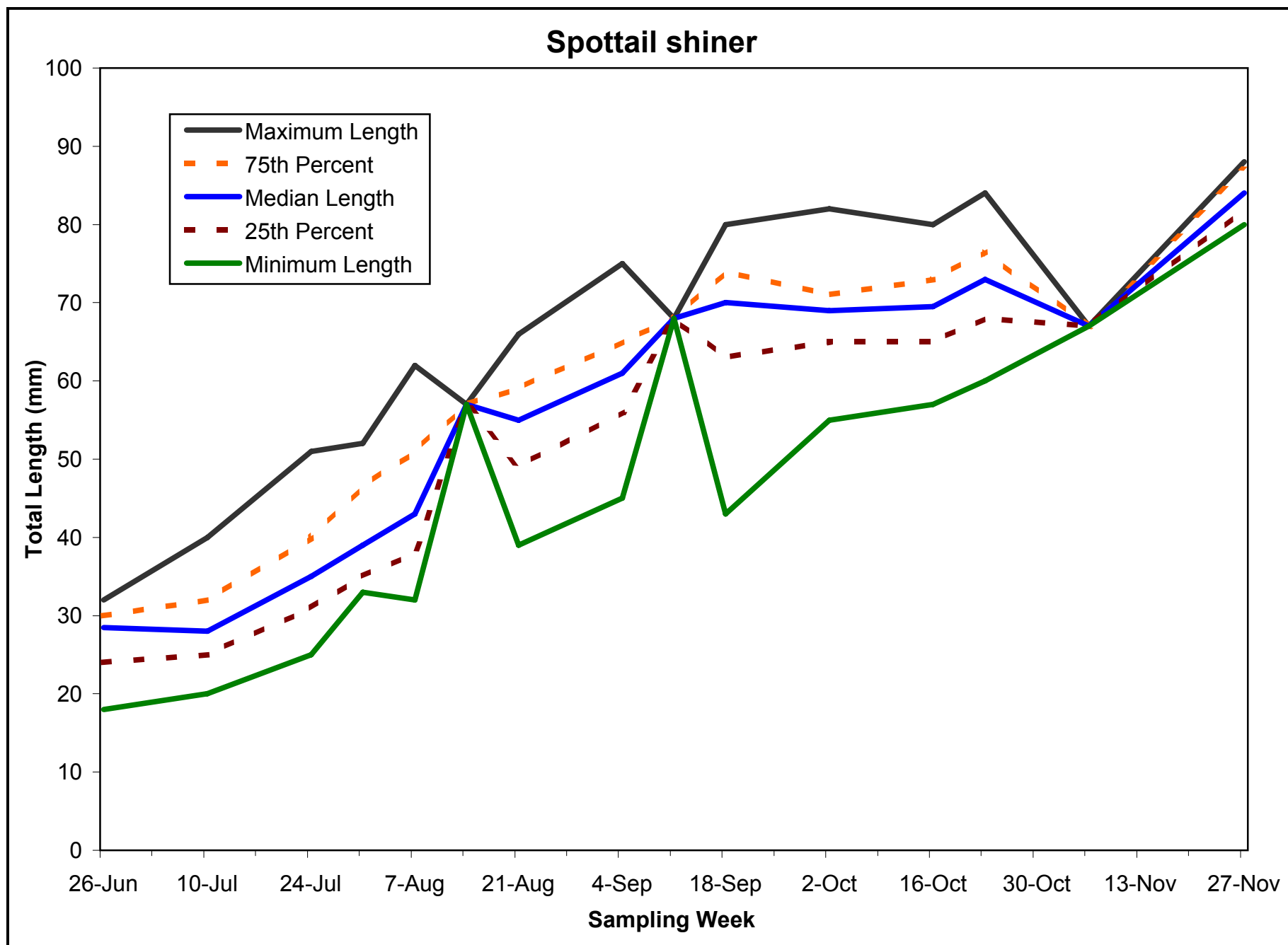


Figure 4-65. Weekly length statistics for young-of-year spottail shiner in the Hudson River estuary, 2006.

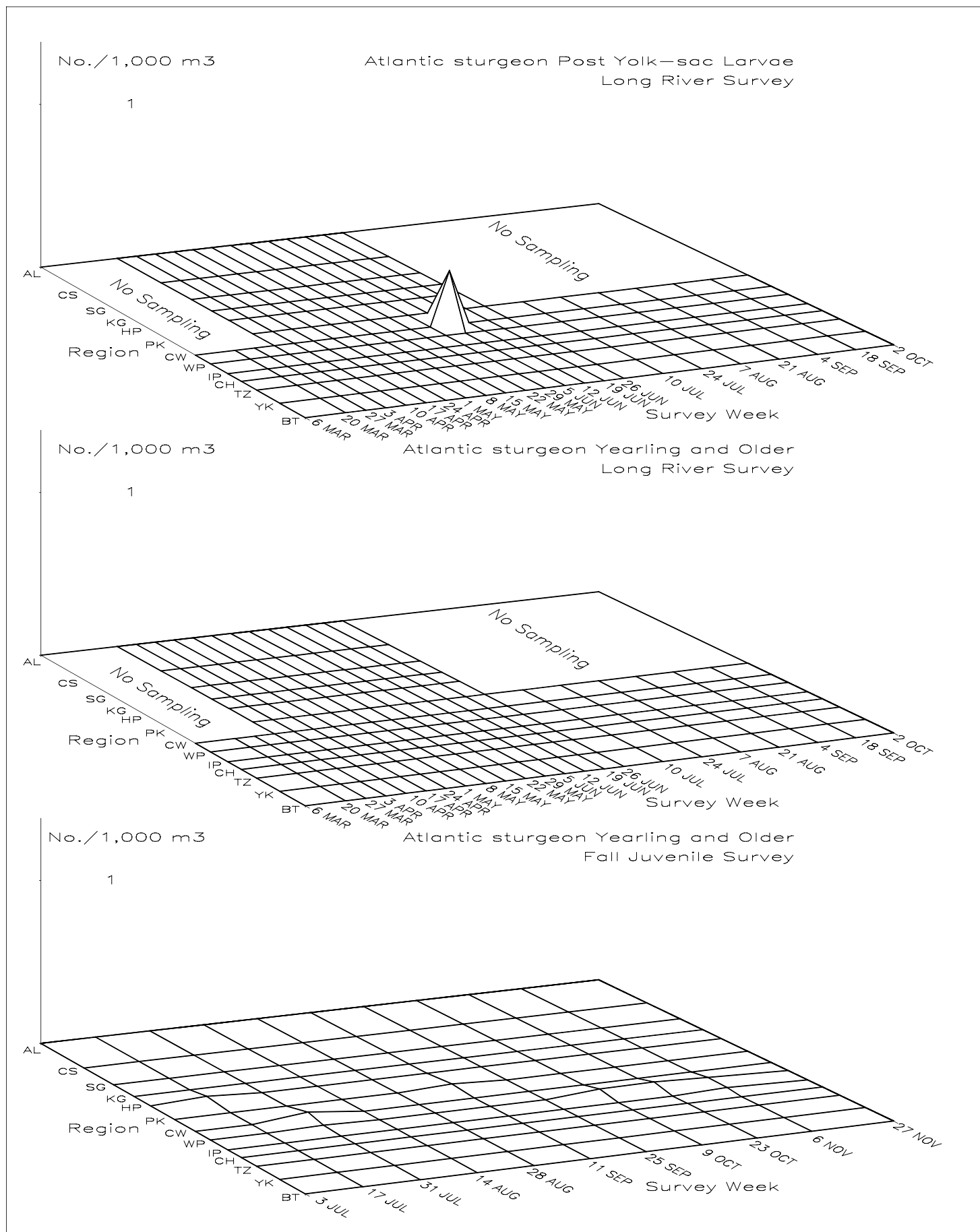


Figure 4-66. Spatiotemporal distribution of post yolk-sac larval and yearling and older Atlantic sturgeon in the Hudson River estuary based on the 2006 Long River and Fall Juvenile surveys.

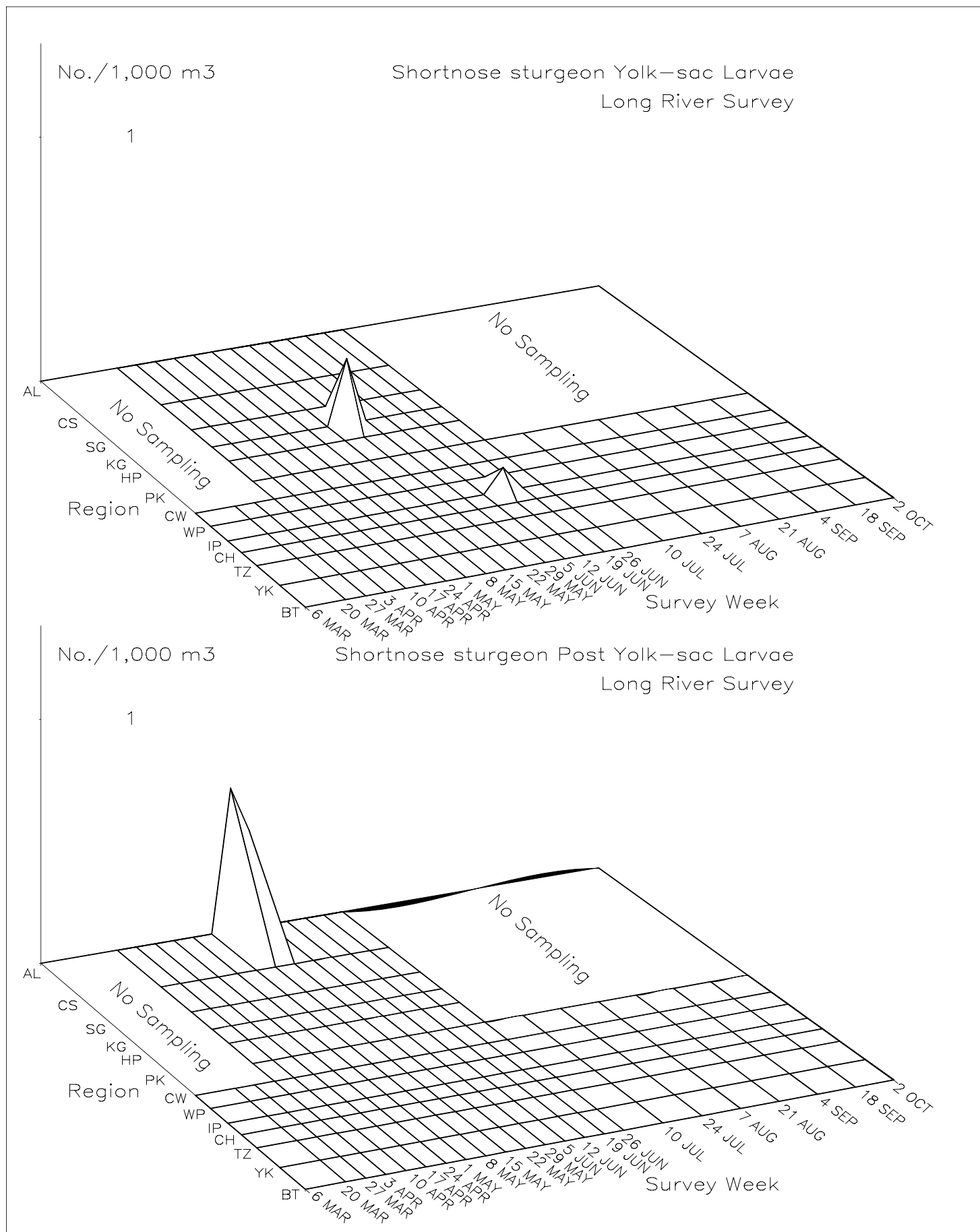


Figure 4-67. Spatiotemporal distribution of yolk-sac and post yolk-sac larval shortnose sturgeon in the Hudson River estuary based on the 2006 Long River Survey.

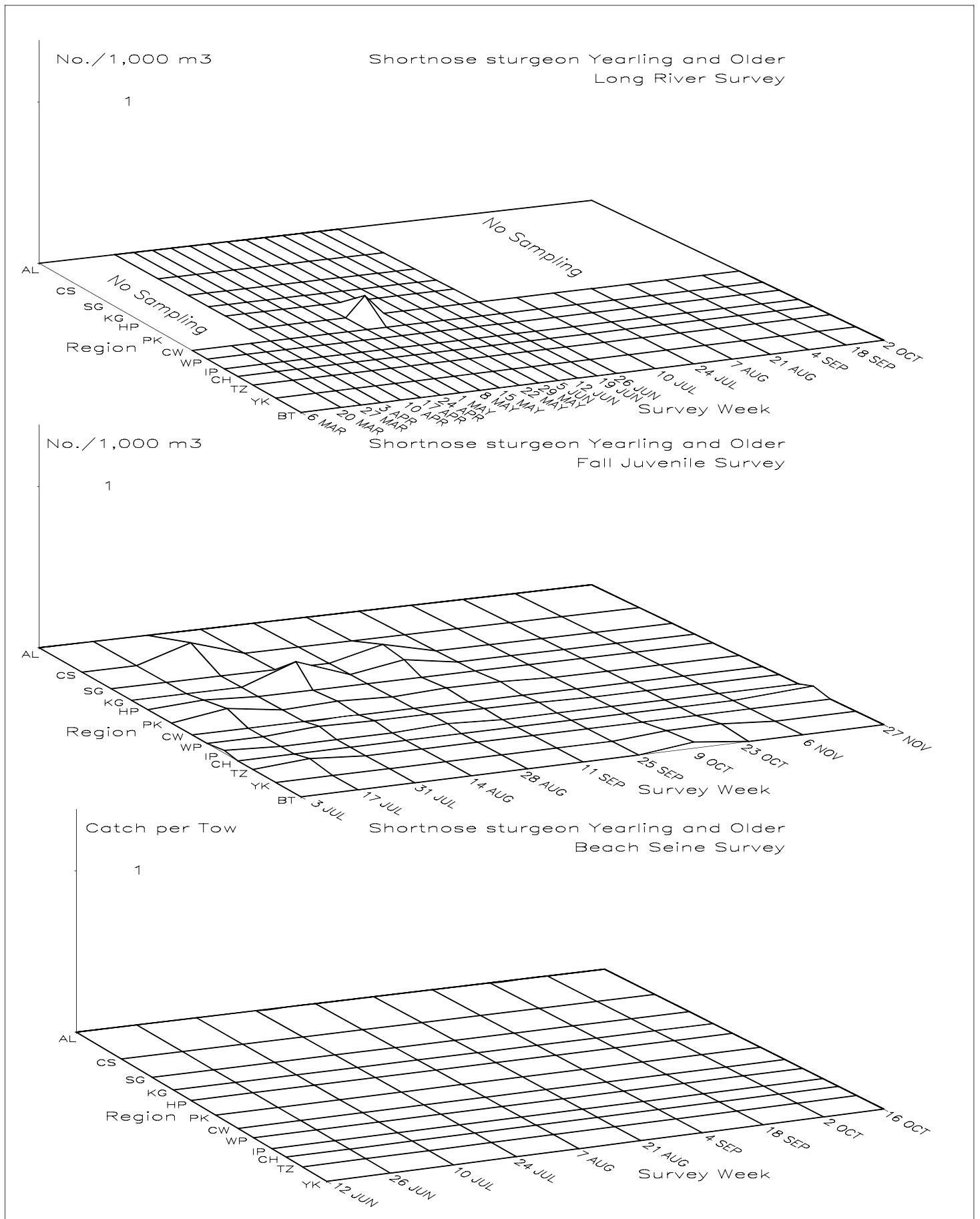


Figure 4–68. Spatiotemporal distribution of yearling and older shortnose sturgeon in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

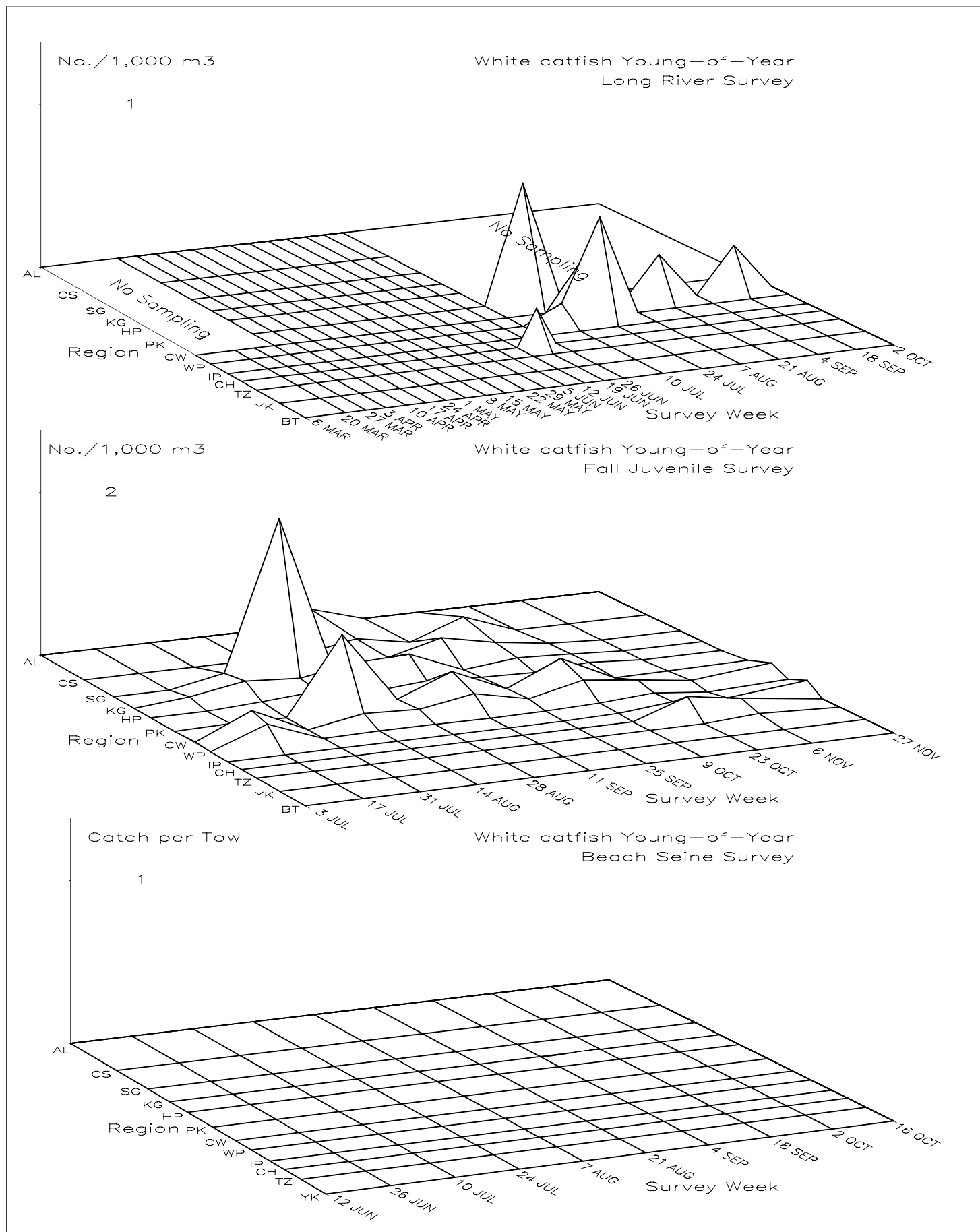


Figure 4–69. Spatiotemporal distribution of young-of-year white catfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

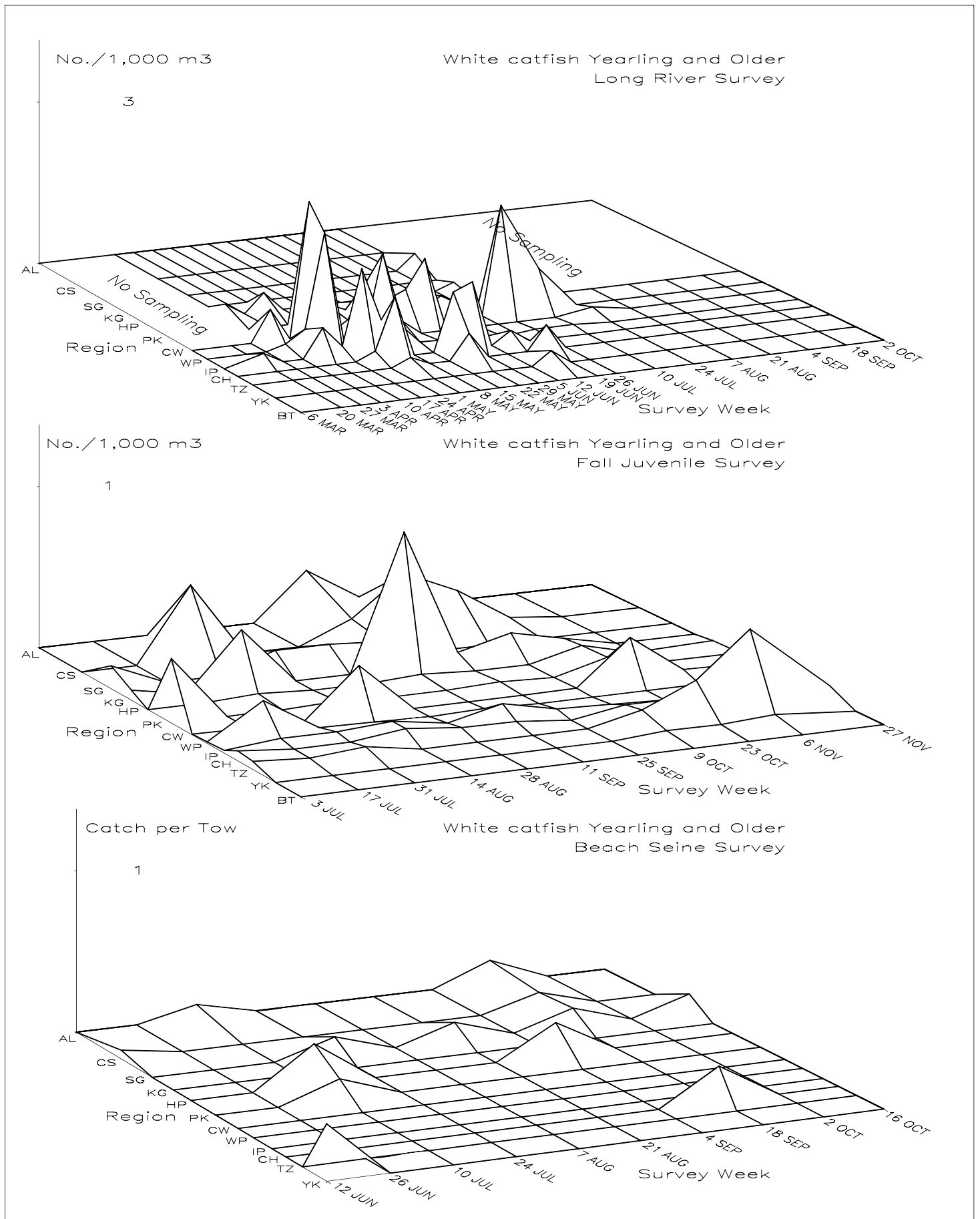


Figure 4–70. Spatiotemporal distribution of yearling and older white catfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

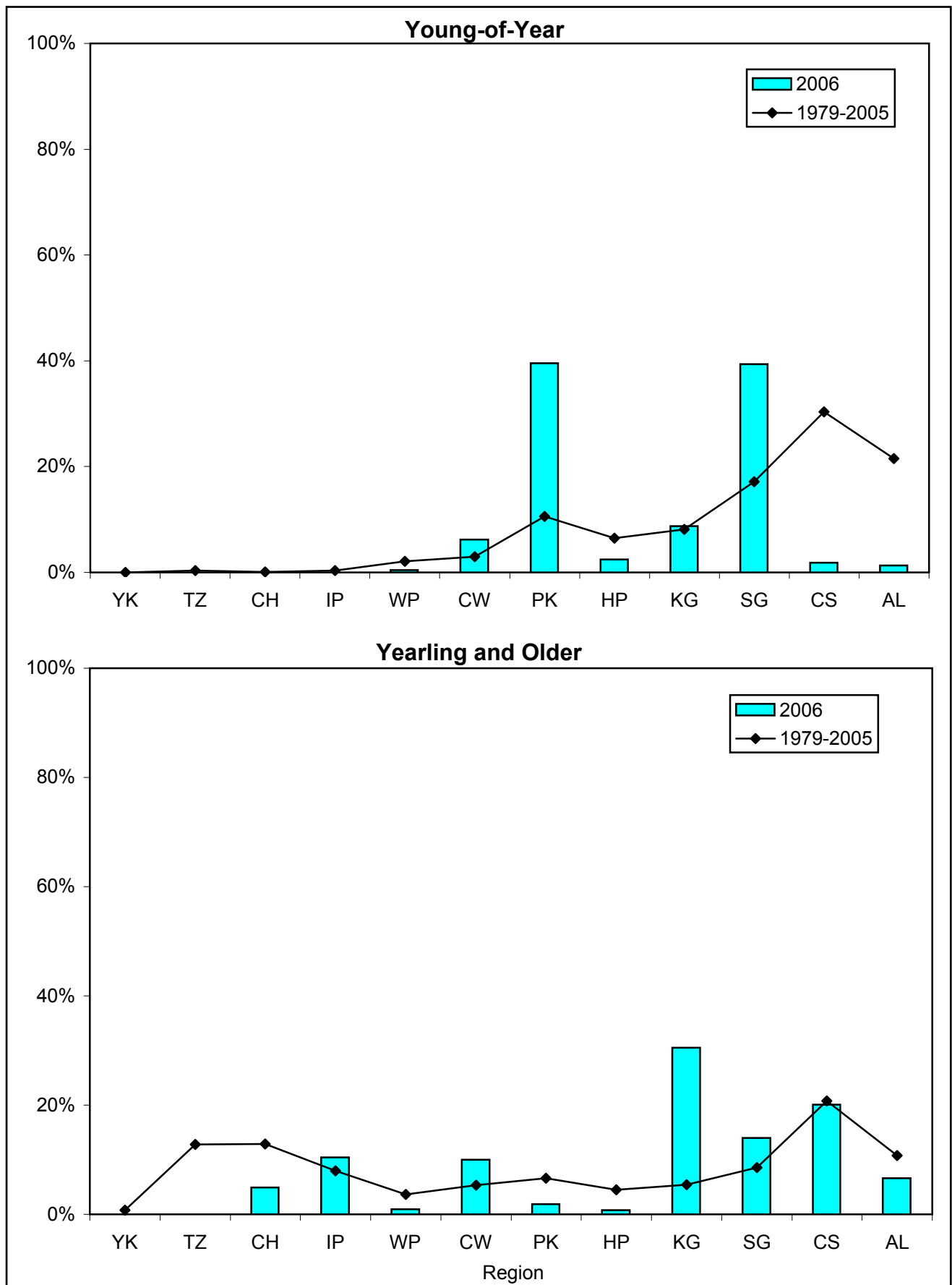


Figure 4-71. Geographic distribution indices for white catfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.

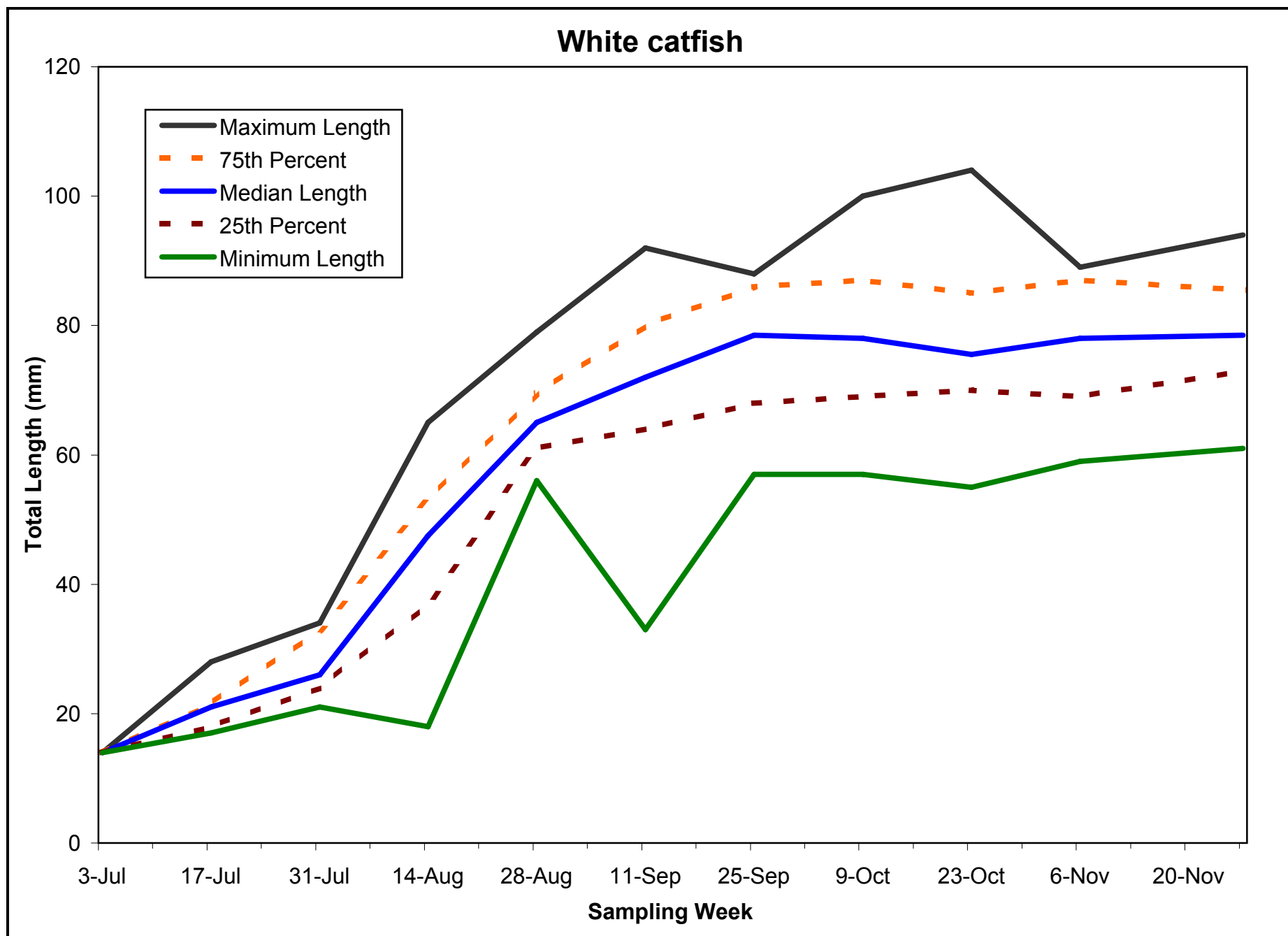


Figure 4-72. Weekly length statistics for young-of-year white catfish in the Hudson River estuary, 2006.

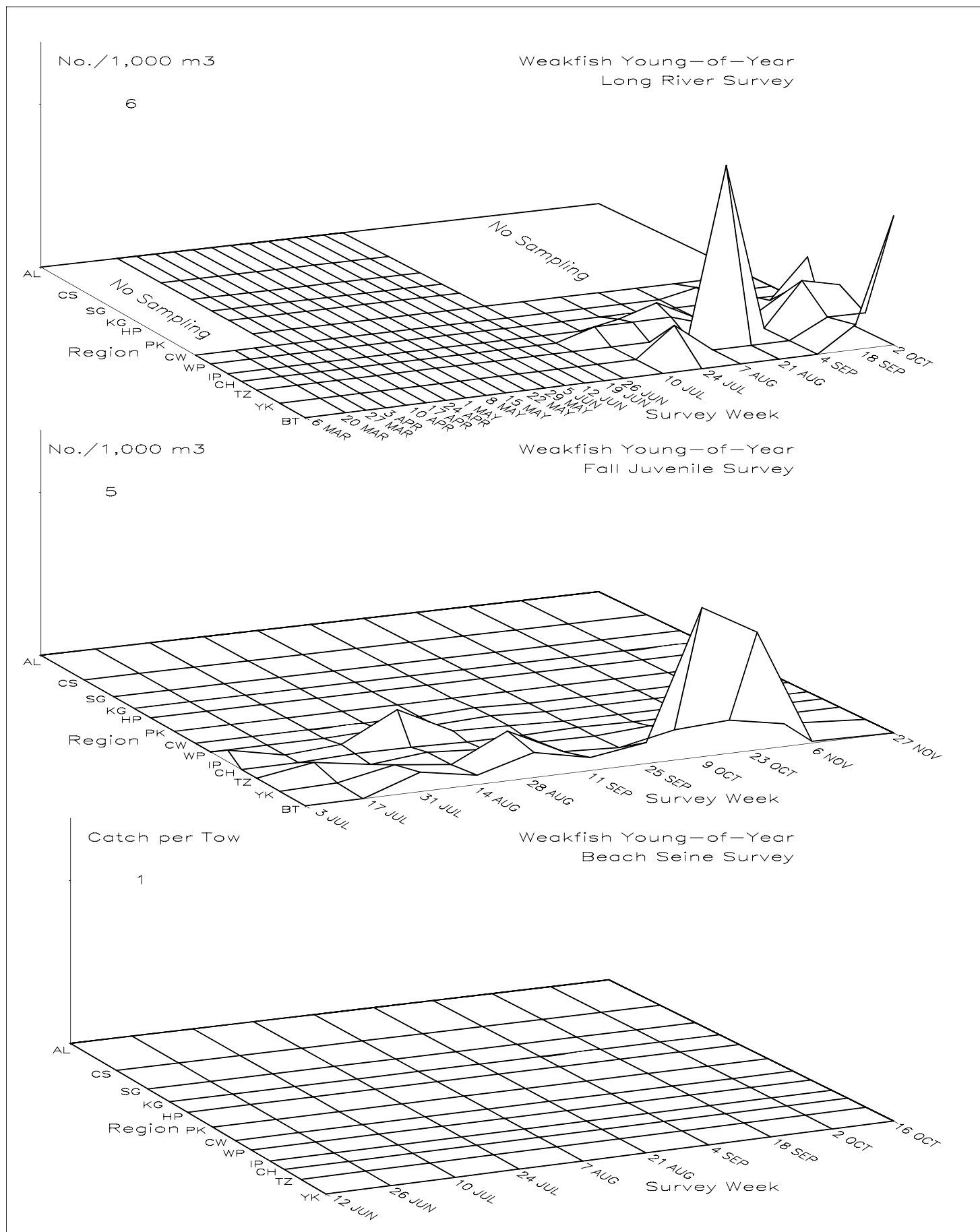


Figure 4-73. Spatiotemporal distribution of young-of-year weakfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

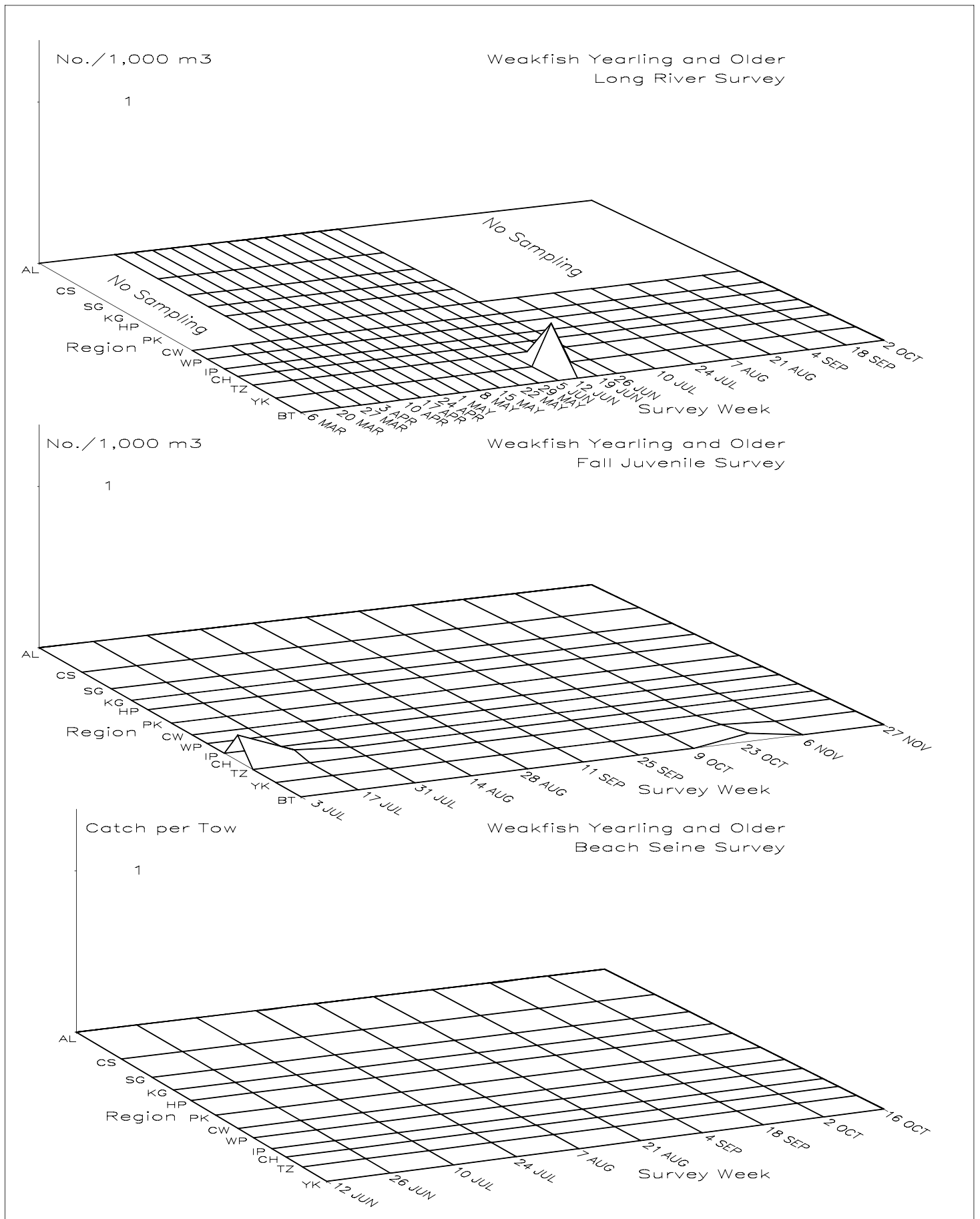


Figure 4–74. Spatiotemporal distribution of yearling and older weakfish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

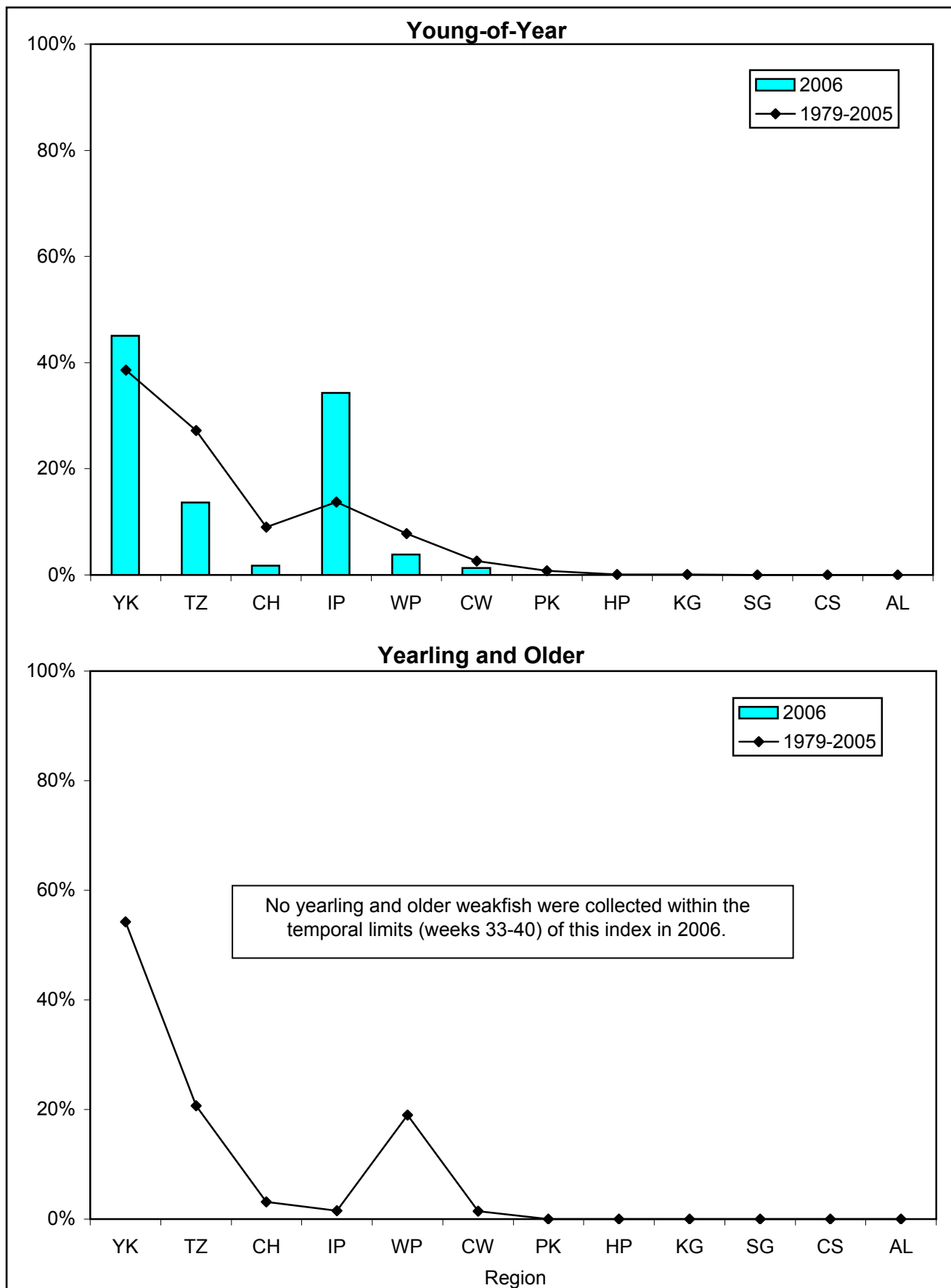


Figure 4-75. Geographic distribution indices for weakfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2006.

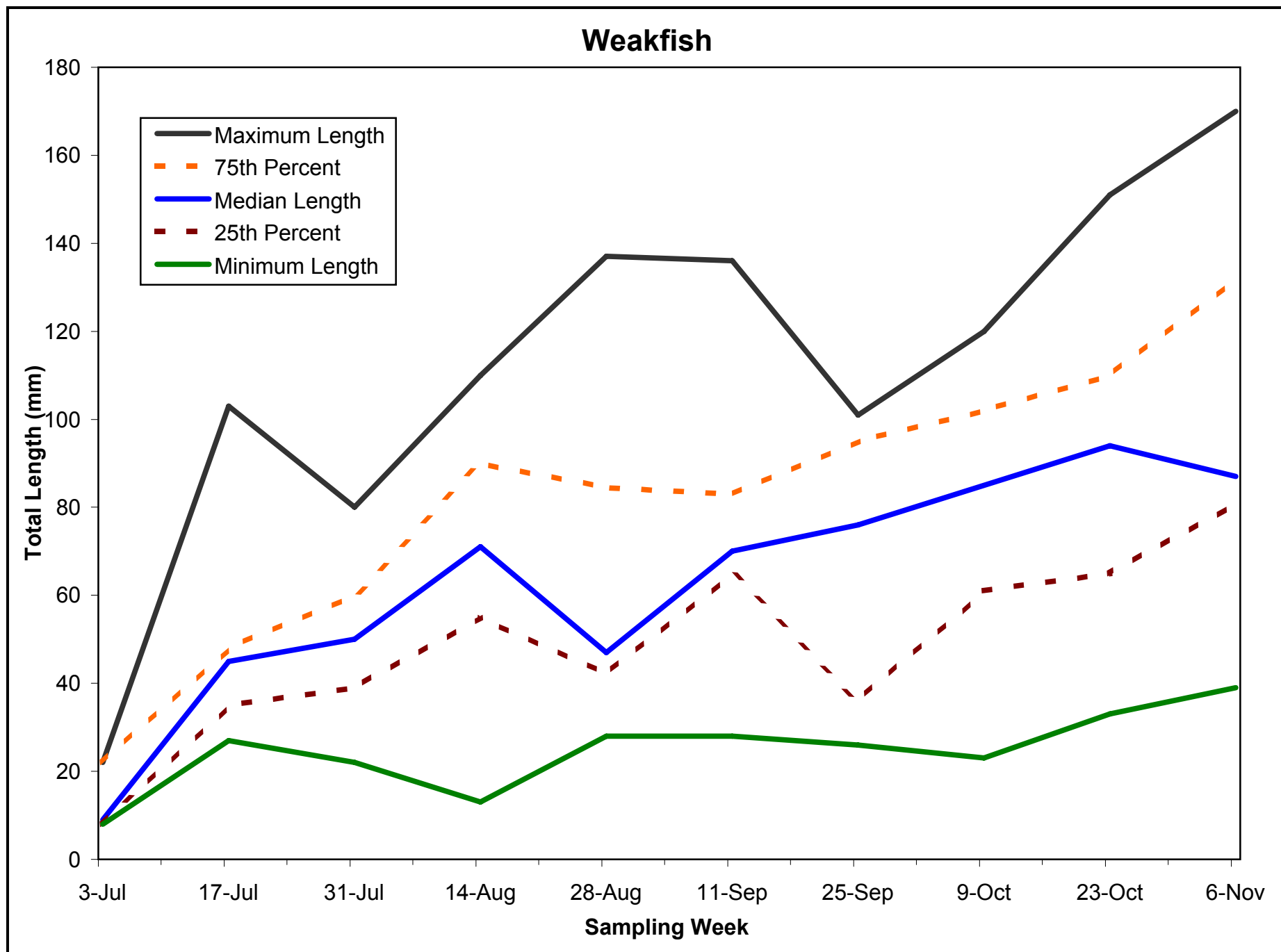


Figure 4-76. Weekly length statistics for young-of-year weakfish in the Hudson River estuary, 2006.

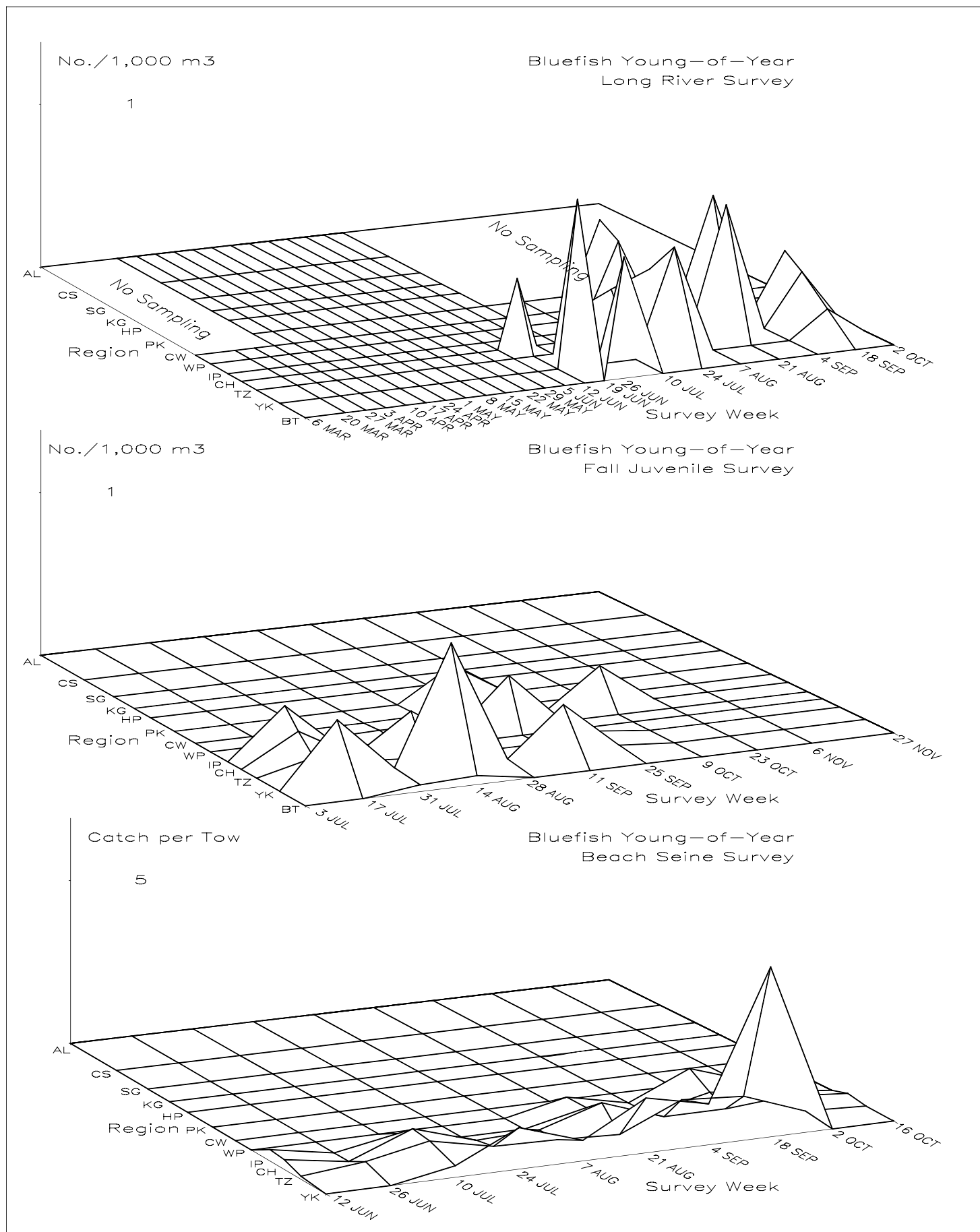


Figure 4-77. Spatiotemporal distribution of young-of-year bluefish in the Hudson River estuary based on the 2006 Long River, Fall Juvenile, and Beach Seine surveys.

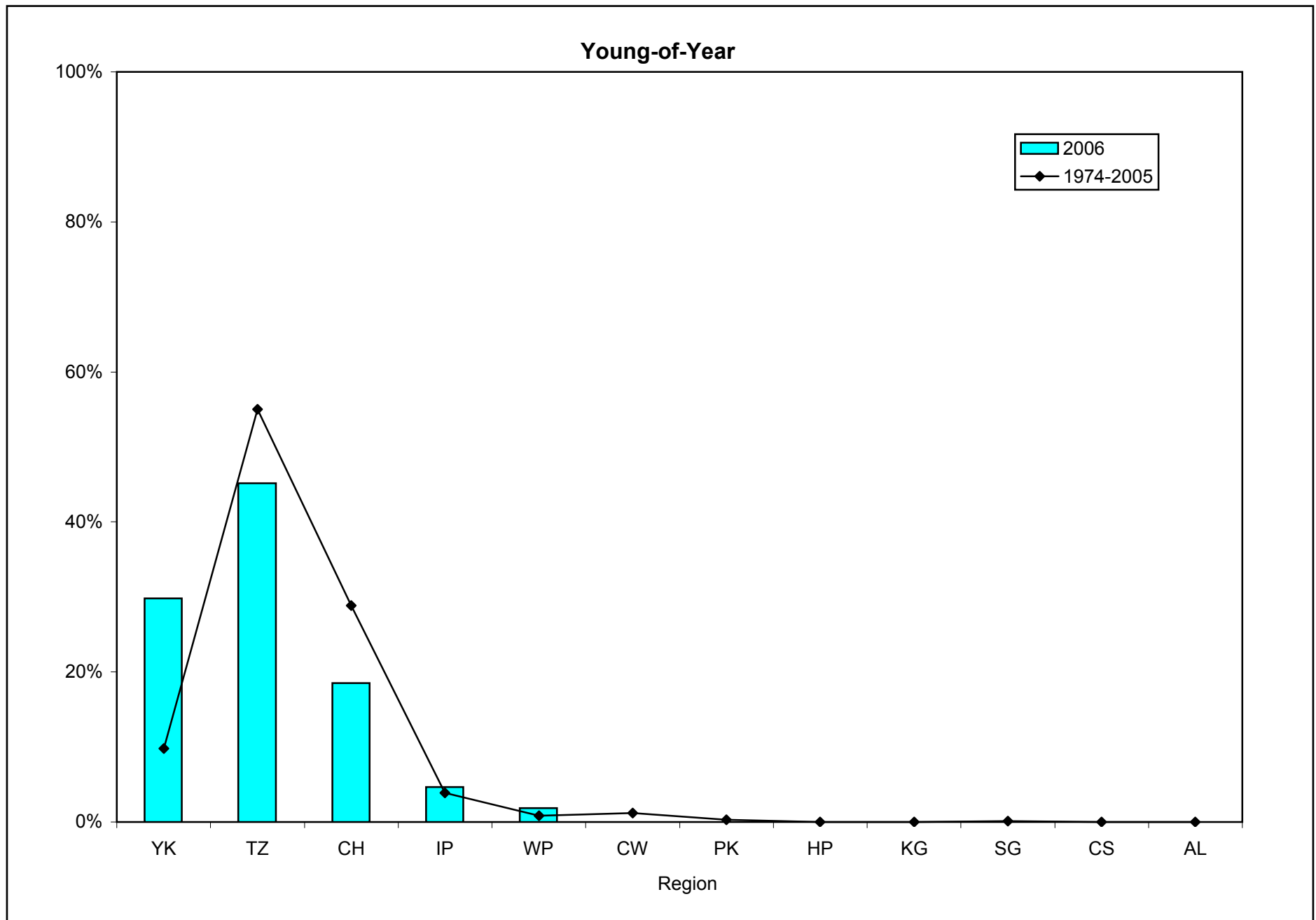


Figure 4-78. Geographic distribution indices for bluefish collected during Beach Seine surveys of the Hudson River estuary, 1974-2006.

Table 4-1 Species Composition of Fish Collected During Hudson River Studies from 1974 to 2006

Common Name	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Anadromous																																		
Alewife	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
American shad	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Atlantic sturgeon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Atlantic tomcod	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Blueback herring	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hickory shad		X			X	X				X			X								X	X		X	X							X		
Rainbow smelt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X					X
Sea lamprey	X	X				X	X	X			X				X		X							X	X									X
Striped bass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total	8	9	7	7	8	9	8	8	7	8	8	7	8	7	8	7	8	7	7	7	7	8	7	8	9	8	7	7	7	6	6	7	8	
Catadromous																																		
American eel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Total	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Estuarine																																		
Atlantic																																		
silverside	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Banded killifish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Fat sleeper												X														X								
Fourspine																																		
stickleback	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hogchoker	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Inland silverside	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Lined seahorse															X		X	X			X		X	X	X	X	X	X	X	X	X	X	X	
Mummichog	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Northern pipefish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Shortnose																																		
sturgeon	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Threespine																																		
stickleback	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
White catfish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
White mullet	X	X	X	X	X	X	X		X	X	X	X	X			X	X	X		X				X					X	X			X	
White perch	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Total	12	11	12	12	11	12	12	11	12	12	12	12	13	11	12	12	13	13	11	12	10	12	11	12	11	13	11	12	13	12	10	11	12	
Freshwater																																		
Black bullhead				X				X			X	X																		X				
Black crappie	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Blacknose dace	X	X	X	X	X	X	X					X		X	X								X							X				
Bluegill		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Bluntnose																																		
minnow	X	X	X	X	X	X	X														X		X		X	X	X			X	X			
Bridle shiner	X		X						X															X										
Brook silverside																				X	X	X	X	X	X	X		X	X	X	X	X	X	
Brook																																		
stickleback	X	X	X	X				X								X																		

Table 4-1 (Continued)

Common Name	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Brook trout				X	X													X															
Brown bullhead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brown trout			X	X	X	X	X	X				X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carp			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Central mudminnow			X				X							X																			
Chain pickerel	X	X	X	X	X	X	X	X	X		X					X			X			X	X	X	X	X	X		X		X	X	
Channel catfish	X							X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Comely shiner	X						X												X														
Common shiner	X	X	X	X	X	X	X	X		X					X		X		X		X							X					
Creek chub	X	X	X	X	X	X	X			X		X						X		X			X	X	X	X				X	X		
Cutlips minnow	X	X	X	X	X	X									X	X						X	X	X	X	X				X	X		
Eastern mudminnow		X					X																										
Emerald shiner	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
Fallfish		X	X	X	X	X	X	X	X	X				X				X	X	X	X	X	X	X	X	X	X			X	X	X	X
Fathead minnow	X	X	X	X	X	X	X					X	X				X			X	X		X				X				X		X
Freshwater drum																X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gizzard shad	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Golden shiner	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Goldfish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Grass carp																																	
Grass pickerel	X				X												X																
Green sunfish		X		X			X								X															X			
Largemouth bass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Logperch	X		X	X		X	X			X					X	X			X	X			X		X	X		X	X	X	X	X	X
Longear sunfish																	X																
Longnose dace		X	X	X	X				X			X																					
Margined madtom														X				X			X												
Mimic shiner	X																						X										
Northern hog sucker	X		X	X	X		X	X			X			X	X		X	X	X				X	X	X	X	X		X	X	X	X	
Northern pike	X	X	X	X	X	X	X		X				X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
Pugnose shiner																		X															
Pumpkinseed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rainbow trout					X																												
Redbreast sunfish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Redfin pickerel	X	X	X	X	X	X	X	X	X		X				X			X					X		X	X	X	X	X	X	X	X	X
Rock bass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rosyface shiner	X																																
Rudd																																	
Satinfin shiner	X	X	X	X	X	X	X				X	X	X		X		X					X	X	X	X	X		X	X	X	X	X	X
Shield darter							X																										
Silvery minnow	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Slimy sculpin																														X			
Smallmouth bass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spotfin shiner	X	X	X	X	X	X	X	X		X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spottail shiner	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Swallowtail shiner																			X						X	X		X		X			

Table 4-1 (Continued)

Common Name	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tessellated darter	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tiger muskellunge																			X			X	X										
Trout perch	X	X		X	X	X					X																			X			
Walleye			X	X	X	X				X	X			X		X					X	X	X				X	X	X	X	X	X	X
White bass				X																													
White crappie	X	X	X	X	X	X	X	X			X		X	X	X		X	X	X		X				X								
White sucker	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow bullhead		X						X								X						X											
Yellow perch	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total	37	36	40	42	38	36	38	30	23	23	27	26	24	28	30	28	26	30	31	29	30	29	35	30	35	33	29	27	28	35	35	29	28
Marine																																	
American sandlance													X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X
Ammodytes sp.		X	X	X	X	X	X	X				X									X	X	X		X	X	X	X	X	X	X	X	X
Atlantic cod							X							X	X															X		X	
Atlantic croaker			X	X		X						X	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Atlantic cutlassfish																																	X
Atlantic herring		X	X		X	X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Atlantic mackerel															X			X	X				X	X	X	X	X	X	X	X	X	X	X
Atlantic menhaden	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Atlantic needlefish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Atlantic seasnail																														X			
Bay anchovy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Black seabass					X							X			X						X				X	X	X						
Blackcheek tonguefish																			X														
Bluefish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Butterfish	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cobia																																	X
Conger eel						X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Crevalle jack	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cunner									X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cusk																																	
Feather blenny																									X	X	X		X				
Fourbeard rockling						X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fourspot flounder	X						X	X			X	X	X		X	X	X				X			X		X		X					
Goosefish																		X	X														
Gray snapper							X					X	X	X				X											X		X		X
Grubby													X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gulf Stream flounder																								X	X	X			X		X		
Harvestfish																										X			X				

Table 4-1 (Continued)

Common Name	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Hightail goby																	X									X							
Inshore lizardfish	X					X	X	X			X	X			X	X		X	X	X	X	X		X	X	X	X	X	X				X
Longhorn sculpin	X	X								X						X				X													
Lookdown	X	X		X		X	X	X				X	X	X	X	X	X								X	X	X	X		X		X	X
Moonfish			X										X	X		X			X						X	X	X	X	X	X	X	X	X
Naked goby	X		X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Northern kingfish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Northern puffer		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		X	X
Northern searobin			X		X		X	X	X		X		X	X	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X
Northern stargazer	X						X		X	X	X	X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Orangespotted filefish													X																				
Oyster toadfish																			X	X		X	X		X	X	X	X	X	X	X	X	X
Permit																			X	X					X		X	X					
Pinfish																						X											
Pollack		X																				X											
Radiated shanny																										X							
Red hake	X		X			X	X	X			X	X			X	X	X		X	X			X	X	X	X	X	X	X	X	X	X	X
Rock gunnel			X	X											X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X
Rough silverside		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Scup	X																					X					X	X	X	X	X	X	X
Seaboard goby		X	X				X								X			X	X	X		X		X	X	X	X	X	X	X	X	X	X
Sea raven							X																										
Sheepshead minnow								X																									
Silver hake	X	X		X									X		X	X	X	X					X	X		X	X	X	X	X	X	X	X
Silver perch	X					X					X	X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Smallmouth flounder						X	X		X		X	X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spanish mackerel																	X	X		X	X										X		
Speckled worm eel					X		X				X			X	X									X			X		X				
Spot	X	X	X	X			X		X	X		X	X	X	X		X	X	X	X	X		X		X	X	X	X	X	X		X	X
Spotfin butterflyfish												X										X											
Spotfin mojarra										X															X								
Spotted goatfish																					X												
Spotted hake							X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Striped anchovy		X				X			X			X							X	X	X	X	X	X	X	X	X	X		X	X	X	X
Striped burrfish													X																				X
Striped cuskeel							X					X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X
Striped killifish			X																X														
Striped mullet	X		X	X		X	X	X	X	X	X	X	X	X	X			X										X					X
Striped searobin		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer flounder	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tautog		X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Weakfish	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 4-1 (Continued)

Common Name	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Windowpane	X	X		X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Winter flounder	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Witch flounder																							X										
Yellowtail flounder	X																		X		X	X	X	X	X	X	X	X			X		
Total	24	24	24	20	16	26	33	24	25	20	28	35	35	29	41	34	35	38	42	37	37	39	39	40	45	49	46	43	44	39	40	42	40
<u>All Categories</u>																																	
Total	82	81	84	82	74	84	92	74	68	64	76	81	81	76	92	82	83	89	92	86	85	89	93	91	101	104	94	90	93	93	92	90	89

Table 4-2 Species Composition of Fish Collected in Each of the Hudson River Surveys During 2006

<u>Common Name</u>	<u>BSS</u>	<u>FSS</u>	<u>LRS</u>
<u>Anadromous</u>			
Alewife	X	X	X
American shad	X	X	X
Atlantic sturgeon		X	X
Atlantic tomcod	X	X	X
Blueback herring	X	X	X
Rainbow smelt			X
Sea lamprey			X
Striped bass	X	X	X
Total	5	6	8
<u>Catadromous</u>			
American eel	X	X	X
Total	1	1	1
<u>Estuarine</u>			
Atlantic silverside	X	X	X
Banded killifish	X	X	
Fourspine stickleback	X		
Hogchoker	X	X	X
Inland silverside	X		X
Lined seahorse			X
Mummichog	X		X
Northern pipefish	X	X	X
Shortnose sturgeon		X	X
White catfish	X	X	X
White mullet		X	
White perch	X	X	X
Total	9	8	9
<u>Freshwater</u>			
Black crappie	X		
Bluegill	X	X	
Brook silverside	X		
Brown bullhead	X	X	X
Carp	X	X	X
Channel catfish	X	X	X
Emerald shiner	X		
Fall fish	X		
Fathead minnow	X	X	
Freshwater drum	X	X	X
Gizzard shad	X	X	X
Golden shiner	X	X	X
Goldfish	X		
Largemouth bass	X	X	
Logperch	X		X
Northern pike	X		
(Continued)			

Table 4-2 (Continued)

<u>Common name</u>	<u>BSS</u>	<u>FSS</u>	<u>LRS</u>
<u>Freshwater (continued)</u>			
Pumpkinseed	X	X	X
Redbreast sunfish	X		
Rock bass	X		
Satinfin shiner	X		
Silvery minnow	X		
Smallmouth bass	X		X
Spotfin shiner	X		X
Spottail shiner	X	X	X
Tessellated darter	X	X	X
Walleye			X
White sucker	X	X	X
Yellow perch	X		X
Total	27	13	15
<u>Marine</u>			
American sand lance			X
Atlantic croaker	X	X	X
Atlantic cutlassfish		X	
Atlantic herring			X
Atlantic menhaden	X	X	X
Atlantic needlefish	X		
Bay anchovy	X	X	X
Bluefish	X	X	X
Butterfish		X	X
Conger eel			X
Crevalle jack	X	X	
Cunner			X
Fourbeard rockling			X
Grubby			X
Inshore lizardfish	X		
Lookdown		X	X
Moonfish		X	
Naked goby	X	X	X
Northern kingfish	X	X	
Northern searobin			X
Northern stargazer			X
Oyster toadfish		X	
Red hake		X	X
Rock gunnel			X
Rough silverside	X		X
Seaboard goby		X	X
Silver hake		X	
Smallmouth flounder			X
Spot	X		X
(Continued)			

Table 4-2 (Continued)

<u>Common name</u>	<u>BSS</u>	<u>FSS</u>	<u>LRS</u>
<u>Marine (continued)</u>			
Spotted hake	X	X	X
Striped anchovy	X		
Striped burrfish			X
Striped cuskeel		X	
Striped mullet	X		
Striped searobin	X	X	X
Summer flounder	X	X	X
Tautog			X
Weakfish		X	X
Windowpane		X	X
Winter flounder	X	X	X
Total	17	22	29
<u>Undetermined</u>			
Alosa spp.	X	X	X
Centrarchidae	X		X
Cyprinidae			X
Gobiidae		X	X
Menidia spp.			X
Morone unidentified		X	X
Searobin			X
Unidentifiable			X
Unidentified hake			X
Unidentified lamprey			X
Total	2	3	10

Table 4-3 Collections Of Atlantic Sturgeon During The 2006 Hudson River Surveys

<u>Date</u>	<u>Survey</u>	<u>Region</u>	<u>River Mile</u>	<u>Gear</u>	<u>Number Collected</u>	<u>Total Length (mm)</u>
7-Jun	LRS	Cornwall	58	1-m Tucker Trawl	1	PYSL
18-Jul	FJS	Hyde Park	81	3-m Beam Trawl	1	410
2-Aug	FJS	West Point	51	3-m Beam Trawl	1	761
2-Aug	FJS	Cornwall	58	3-m Beam Trawl	1	458
2-Aug	FJS	Cornwall	59	3-m Beam Trawl	1	432
13-Sep	FJS	Poughkeepsie	62	3-m Beam Trawl	1	444
11-Oct	FJS	West Point	54	3-m Beam Trawl	3	481,506,514
25-Oct	FJS	West Point	55	3-m Beam Trawl	3	239,250,192
9-Nov	FJS	Indian Point	43	3-m Beam Trawl	1	496
9-Nov	FJS	West Point	51	3-m Beam Trawl	1	503
9-Nov	FJS	West Point	55	3-m Beam Trawl	1	208

Table 4-4 Collections of Shortnose Sturgeon During the 2006 Hudson River Surveys

<u>Date</u>	<u>Survey</u>	<u>Region</u>	<u>River Mile</u>	<u>Gear</u>	<u>Number Collected</u>	<u>Total Length (mm)</u>
6-Apr	LRS	Albany	133	1-m Epibenthic sled	1	756
16-May	LRS	Poughkeepsie	63	1-m Epibenthic sled	1	726
17-May	LRS	Albany	126	1-m Epibenthic sled	1	PYSL
22-May	LRS	Albany	137	1-m Tucker Trawl	1	PYSL
23-May	LRS	Kingston	92	1-m Epibenthic sled	1	YSL
15-Jun	LRS	Indian Point	44	1-m Epibenthic sled	1	YSL
8-Jul	FJS	Indian Point	43	3-m Beam Trawl	1	670
18-Jul	FJS	Hyde Park	82	3-m Beam Trawl	1	765
19-Jul	FJS	Tappan Zee	33	3-m Beam Trawl	1	593
19-Jul	FJS	Poughkeepsie	71	3-m Beam Trawl	3	725,738,744
31-Jul	FJS	Catskill	124	3-m Beam Trawl	1	120
2-Aug	FJS	West Point	55	3-m Beam Trawl	3	692,658,913
15-Aug	FJS	Poughkeepsie	72	3-m Beam Trawl	1	772
15-Aug	FJS	Kingston	93	3-m Beam Trawl	2	171,801
16-Aug	FJS	West Point	55	3-m Beam Trawl	2	715,811
30-Aug	FJS	Indian Point	41	3-m Beam Trawl	1	710
30-Aug	FJS	West Point	54	3-m Beam Trawl	1	754
30-Aug	FJS	West Point	55	3-m Beam Trawl	1	725
12-Sep	FJS	Kingston	92	3-m Beam Trawl	1	823
12-Sep	FJS	Saugerties	98	3-m Beam Trawl	1	735
13-Sep	FJS	West Point	55	3-m Beam Trawl	1	711
13-Sep	FJS	Poughkeepsie	62	3-m Beam Trawl	1	719
26-Sep	FJS	Poughkeepsie	68	3-m Beam Trawl	1	770
27-Sep	FJS	West Point	55	3-m Beam Trawl	1	658
11-Oct	FJS	Battery	8	3-m Beam Trawl	1	735
11-Oct	FJS	Yonkers	20	3-m Beam Trawl	1	890
23-Oct	FJS	Yonkers	21	3-m Beam Trawl	1	805
28-Nov	FJS	Croton-Haverstraw	34	3-m Beam Trawl	1	709

REFERENCES CITED AND PREVIOUS YEAR CLASS REPORTS

- Albrecht, A.B. 1964. Some observations on factors associated with survival of striped bass eggs and larvae. *Calif. Fish & Game* 50(2):100-113.
- Applied Science Associates, Inc. 2000. 1996 Year Class Report for the Hudson River estuary monitoring program. Prepared for Central Hudson Gas & Electric Corporation.
- Applied Science Associates, Inc. 2001. 1997 Year Class Report for the Hudson River estuary monitoring program. Prepared for Central Hudson Gas & Electric Corporation.
- ASA Analysis & Communication, Inc. 2001. 1998 Year Class Report for the Hudson River estuary monitoring program. Prepared for Central Hudson Gas & Electric Corporation.
- ASA Analysis & Communication, Inc. 2002. 1999 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2003. 2000 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2004. 2001 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2004. 2002 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2005. 2003 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2006. 2004 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- ASA Analysis & Communication, Inc. 2007. 2005 Year Class Report for the Hudson River estuary monitoring program. Prepared for Dynegy Roseton L.L.C., Entergy Nuclear Indian Point 2 L.L.C., Entergy Nuclear Indian Point 3 L.L.C., and Mirant Bowline L.L.C.
- Bain, M.B. 1996. Trends in the abundance of Hudson River sturgeons. *Sturgeon Notes* 4:16. Department of Natural Resources, Cornell University, Ithaca, New York.
- Bain, M.B. 1997. Atlantic and shortnose sturgeons of the Hudson river: Common and divergent life history attributes. *Envir. Biol. of Fishes* 48:347-358.

- Bain, M.B., S. Nack, and J.G. Knight. 1995. Population status of shortnose sturgeon in the Hudson River. Phase 1 project report to the U.S. Army Corps of Engineers, North Atlantic Division, New York, New York.
- Bain, M.B., S. Nack, and B. Dovel. 1996. Senescence in shortnose sturgeon. *Sturgeon Notes* 4:15. Department of Natural Resources, Cornell University, Ithaca, New York.
- Bain, M.B., D.L. Peterson, and K.K. Arend. 1998. Population status of shortnose sturgeon in the Hudson River. Final Report. Prepared for National Marine Fisheries Services, Milford, Connecticut. October.
- Bath, D.W. and J.M. O'Connor. 1982. The biology of the white perch, *Morone americana*, in the Hudson River estuary. *Fishery Bulletin* 80:599-610.
- Battelle New England Marine Research Laboratory (Battelle). 1983. 1980 and 1981 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Beebe, C.A. and I.R. Savidge. 1988. Historical perspective on fish species composition and distribution in the Hudson River estuary. in *Science, Law, and Hudson River Power Plants: A Case Study in Environmental Impact Assessment* (L.W. Barnhouse, R.J. Klauda, D.S. Vaughan, and R.L. Kendall, eds.). Am. Fish. Soc. Monograph 4, pp. 25-36. Bethesda, Maryland.
- Bigelow, H.B. and W.C. Schroeder. 1953. Fishes of the Gulf of Maine. *Fish. Bull. Fish. Wildl. Serv.* 53(74):1-577.
- Buckley, J.L. 1989. Species profiles: Life histories and environmental requirements of coastal fishes and invertebrates (North Atlantic) - rainbow smelt. U.S. Fish Wildl. Serv. Biol. Rep. 82 (11.106). U.S. Army Corps of Engineers, TR EL-82-4.
- Buckley, J. and B. Kynard. 1981. Spawning and rearing of shortnose sturgeon from the Connecticut River. *Progr. Fish-Cult.* 43(2):74-76.
- Carlson, D.M. 1986. Fish and their habitats in the Upper Hudson Estuary. Unpublished report, NYSDEC, Region 4 fisheries.
- Carlson, F.T. and J.A. McCann. 1969. Hudson River Fisheries Investigations, 1965-1968: Evaluations of a Proposed Pumped Storage Project at Cornwall, New York in relation to fish in the Hudson River. Prepared for Consolidated Edison Company of New York, Inc.
- Chiarella, L.A. and D.O. Conover. 1990. Spawning season and first-year growth of adult bluefish from the New York Bight. *Trans. Am. Fish. Soc.* 119:455-462.
- Chittenden, M.E., Jr. 1969. Life history and ecology of the American shad, *Alosa sapidissima*, in the Delaware River. Ph.D. thesis, Rutgers - The State University, New Brunswick, New Jersey.
- Consolidated Edison Company of New York, Inc. (Con Edison). 1996. 1992 Year Class Report for the Hudson River estuary monitoring program. New York, New York.

- Consolidated Edison Company of New York, Inc. 1997a. 1993 Year Class Report for the Hudson River estuary monitoring program. New York, New York.
- Consolidated Edison Company of New York, Inc. 1997b. 1994 Year Class Report for the Hudson River estuary monitoring program. New York, New York.
- Dadswell, M.J. 1979. Biology and population characteristics of the shortnose sturgeon, *Acipenser brevirostrum* LeSueur 1818 (Osteichthyes: Acipenseridae), in the Saint John Estuary, New Brunswick, Canada. Can. J. Zool. 57:2186-2210.
- Dadswell, M.J., B.D. Taubert, T.S. Squires, D. Marchette, and J. Buckley. 1984. Synopsis of biological data in shortnose sturgeon, *Acipenser brevirostrum* LeSueur 1818. NOAA Technical Report NMFS 14, National Marine Fisheries Service, Washington, D.C.
- Dadswell, M.J., G.D. Moluin, P.J. Williams, and D.E. Themelis. 1987. Influences of origin, life history, and chance on the Atlantic coast migration of American shad. Am. Fish. Soc. Monograph 1: 313-330.
- Daniels, R.A. Undated. Long-term change in the near-shore fish assemblage of the lower Hudson River. Biological Survey Laboratory, Troy, New York.
- Daniels, R.A. and T. Lawrence. 1991. Stability of fish assemblages in the lower Hudson River. Final Report to the Hudson River Foundation. New York, New York.
- Dean, B. 1895. The early development of gar-pike and sturgeon. *J. Morphol.* 11:1-62.
- Dew, C.B. and J.H. Hecht. 1976. Ecology and population dynamics of Atlantic tomcod (*Microgadus tomcod*) in the Hudson River Estuary, in *Hudson River Ecology*, Fourth Symposium on Hudson River Ecology, The Hudson River Environmental Society, Inc. New Paltz, New York.
- Doroshev, S.I. 1970. Biological features of the eggs, larvae, and young of the striped bass (*Roccus saxatilis* [Walbaum]) in connection with the problem of its acclimatization in the USSR. *J. Ichthyol.* 10(2):235-247.
- Dovel, W.L. 1979. The biology and management of shortnose and Atlantic sturgeon of the Hudson River, Final report to the New York State Department of Environmental Conservation, Albany, New York.
- Dovel, W.L. and T.J. Berggren. 1983. Atlantic sturgeon of the Hudson estuary, New York, NY. *Fish Game J.* 30(2):140-72.
- Dovel, W.L., J.A. Nihursky, and A.J. McErlean. 1969. Life history aspects of the hogchoker in the Patuxent River Estuary, Maryland. *Ches. Sci.* 10(2):104-119.
- Dovel, W.L., A.W. Pekovitch, and T.J. Berggren. 1992. Biology of the shortnose sturgeon (*Acipenser brevirostrum*, LeSueur, 1818) in the Hudson River estuary, New York, in *Estuarine Research in the 1980s* (C.L. Smith, ed.), pp. 187-216. State Univ. New York Press, Albany, New York.

- EA Engineering, Science, and Technology (EA). 1990. 1988 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- EA Engineering, Science, and Technology. 1991. 1989 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- EA Engineering, Science, and Technology. 1996. 1995 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Fay, C.W., R.J. Neves, and G.B. Pardue. 1983. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic) - Striped bass. U.S. Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.8. U.S. Army Corps of Engineers, TR EL-82-4.
- Field, J. 1996. Atlantic sturgeon management workshop. Sturgeon Notes 4:14. Department of Natural Resources, Cornell University, Ithaca, New York.
- Gardinier, M.N. and T.B. Hoff. 1982. Diet of striped bass in the Hudson River estuary. NY Fish Game J. 19:152-165.
- Geoghegan, P., M.T. Mattson, and R.G. Keppel. 1992. Distribution of the shortnose sturgeon in the Hudson River estuary, 1984-1988, in *Estuarine Research in the 1980s* (C.L. Smith, ed.), pp. 217-277. State Univ. New York Press, Albany, New York.
- Gilbert, C.R. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic Bight) - Atlantic and shortnose sturgeons. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.122). U.S. Army Corps of Engineers TR EL-82-4.
- Gorham, S.W. and D.E. McAllister. 1974. The shortnose sturgeon (*Acipenser brevirostrum*), in the Saint John River, New Brunswick, Canada, a rare and possibly endangered species. Syllogeus No. 5, National Museum of Canada, Ottawa.
- Grabe, S.A. 1978. Food and feeding habits of juvenile Atlantic tomcod, *Microgadus tomcod*, from Haverstraw Bay, Hudson River, New York. U.S. Nat. Mar. Fish. Serv. Fish. Bull. 76: 89-94.
- Greeley, J.R. 1937. Fishes of the area with annotated list, in *A Biological Survey of the Lower Hudson Watershed*, Supplement to 26th Annual Report, pp. 45-104. New York State Conserv. Dept., Albany, New York.
- Grossman, G.D., P.B. Moyle, and J.O. Whitaker, Jr. 1982. Stochasticity in structural and functional characteristics of an Indian stream fish assemblage: a test of community theory. American Naturalist 120:423-454.
- Gruchy, C.G. and B. Parker. 1980a. *Acipenser oxyrhynchus* Mitchill, Atlantic sturgeon, in *Atlas of North American Freshwater Fishes* (D.S. Lee et al., eds.), p. 41. North Carolina State Mus. Nat. Hist., Raleigh.
- Gruchy, C.G. and B. Parker. 1980b. *Acipenser brevirostrum* LeSueur, shortnose sturgeon, in *Atlas of North American Freshwater Fishes* (D.S. Lee, et al., eds.), p. 38. North Carolina State Mus. Nat. Hist., Raleigh.

- Haley, N., J. Boreman, and M.B. Bain. 1996. Juvenile sturgeon habitat use in the Hudson River, in *Final Reports of the Tibor T. Polgar Fellowship Program, 1995* (J.R. Waldman, W.C. Nieder, and E.A. Blair, eds.), Section VIII: 36pp. Hudson River Foundation, New York, New York.
- Harris, P.J. and R.A. Rulifson. 1989. Investigations of ocean landings for American shad and river herring from United States East Coast rivers. Special Report No. 18 of the Atlantic States Marine Fisheries Commission, Washington, D.C.
- Heller, R.F., A. Perlmutter, S.L. Sininsky, F.C. Ford, Jr., and H. Hermo, Jr. 1969. Distribution and Abundance of Fishes along the Western Shore of the lower Hudson River during the Summer of 1968. Unpublished report.
- Hergenrader, G.L. and Q.P. Bliss. 1971. The white perch in Nebraska. *Trans. Am. Fish. Soc.* 100 (4):734-738.
- Hildebrand, S.F. 1963. Family Clupeidae, in *Fishes of the western North Atlantic* (H.B. Bigelow, ed.), pp. 257-454. Memoir 1, Sears Foundation for Marine Research, New Haven, Connecticut.
- Hoff, T.B. and R.J. Klauda. 1979. Data on shortnose sturgeon (*Acipenser brevirostum*) collected incidentally from 1969 through June 1979 in sampling programs conducted for the Hudson River Ecological Study. Prepared for the Shortnose Sturgeon Recovery Team Meeting, 30 November 1979, Danvers, Massachusetts. Texas Instruments, Buchanan, New York.
- Hoff, T.B., R.J. Klauda, and J.R. Young. 1988. Contribution to the biology of shortnose sturgeon in the Hudson River estuary, in *Fisheries Research in the Hudson River* (C.L. Smith, ed.), pp. 171-189. State University of New York Press, Albany, New York.
- Houde, E.D. and C.E. Zastrow. 1991. Bay anchovy, *Anchoa mitchilli*, in *Habitat Requirements for Chesapeake Bay Living Resources, Second Edition*, (S.L. Funderburk, J.A. Mihursky, S.J. Jordan, and D. Riley, eds.), pp. 8-1 - 8-14. Chesapeake Research Consortium, Inc. Solomons, Maryland.
- Hubbs, C.L. and K.F. Lagler. 1958. Fishes of the Great Lakes region. Univ. Mich. Press, Ann Arbor.
- Ichthyological Associates (IA). 1977. Impingement and entrainment at the Werner Generating Station and a study of the fishes of the Raritan River and Bay near the station. Report submitted to Jersey Central Power and Light Company.
- Kahnle, A.W. and K.A. Hattala. 1998. Stock status of Atlantic sturgeon of Atlantic coast estuaries. Draft report for the Atlantic States Marine Fisheries Commission.
- Kendall, A.W., Jr. and L.A. Walford. 1979. Sources and distribution of bluefish, *Pomatomus saltatrix*, larvae and juveniles off the east coast of the United States. *Fishery Bulletin* 77.
- Klauda, R.J., J.B. McLaren, R.E. Schmidt, and W.P. Dey. 1988a. Life history of white perch in the Hudson River estuary, in *Science, Law, and Hudson River Power Plants: A Case Study in*

- Environmental Impact Assessment* (L.W. Barnthouse, R.J. Klauda, D.S. Vaughan, and R.L. Kendall, eds.), pp. 69-88. Am. Fish. Soc. Monograph 4, Bethesda, Maryland.
- Klauda R.J., R.E. Moos, and R.E. Schmidt. 1988b. Life history of Atlantic tomcod, *Microgadus tomcod*, in the Hudson River estuary, with emphasis on spatial temporal distribution and movement, in *Fisheries Research in the Hudson River* (C.L. Smith, ed.), pp. 193-215. State University of New York Press, Albany, New York.
- Koski, R.T. 1973. Life history and ecology of the hogchoker, *Trinectes maculatus*, in its northern range. Ph.D. thesis. University of Connecticut.
- Lawler, Matusky & Skelly Engineers (LMS). 1989. 1986 and 1987 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Lawler, Matusky & Skelly Engineers. 1992. 1990 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Lawler, Matusky & Skelly Engineers. 1996. 1991 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Leggett, W.C. 1976. The American shad (*Alosa sapidissima*), with special reference to its migration and population dynamics on the Connecticut River, in *The Connecticut River Ecological Study: The Impact of a Nuclear Power Plant* (D. Merriman and L.M. Thorpe, eds.), pp. 169-225. Am. Fish. Soc. Monograph 1.
- Loesch, J.F. and W.A. Lund, Jr. 1977. A contribution to the life history of the blueback herring, *Alosa aestivalis*. Trans. Amer. Fish. Soc. 106:583-589.
- Mansueti, R.J. 1957. Movements, reproduction, and mortality of the white perch in the Patuxent River estuary, Maryland. Ph.D. thesis, Johns Hopkins University, Maryland.
- Mansueti, R.J. 1964. Eggs, larvae, and young of the white perch, *Roccus americanus*, with comments on its ecology in the estuary. Ches. Sci. 5:3-45.
- Marcy, B.C. 1976. Early life history studies of American shad in the lower Connecticut River and the effects of the Connecticut Yankee Plant, in *The Connecticut River Ecological Study: The Impact of a Nuclear Power Plant* (D. Merriman and L.M. Thorpe, eds.), pp. 141-168. Am. Fish. Soc. Monograph 1.
- Marine Research Laboratory (MRL). 1970. Ecology of Thermal Additions, Lower Hudson River Cooperative Fishery Study, Vicinity of Indian Point, Buchanan, New York: Data Report for June-December 1969 (Revised Edition). Prepared for Consolidated Edison Company of New York, Inc.
- Markle, D.F. 1976. The seasonality of availability and movements of fishes in the channel of the York River, Virginia. Ches. Sci. 17:50-55.
- Martin Marietta Environmental Systems (MMES). 1986. 1984 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.

- McHugh, J.L. 1967. Estuarine nekton, in *Estuaries* (G.H. Lauff, ed.), pp. 581-620. AAAS, Washington.
- McKown, K.A. 1992. An investigation of the movements and growth of the 1990 Hudson River year class, in *A study of the striped bass in the Marine District of New York VI*.
- McKown, K.A. 1996. New York Atlantic sturgeon landings. Sturgeon Notes 4:8. Department of Natural Resources, Cornell University, Ithaca, New York.
- Miller, R.R. 1960. Systematics and biology of the gizzard shad (*Dorosoma cepedianum*) and related fishes. Fish Bulletin 60(173): 371-392.
- Nack, S. and M.B. Bain. 1996. Sturgeon of the Hudson River. Sturgeon Notes 4:11-12. Department of Natural Resources, Cornell University, Ithaca, New York.
- National Marine Fisheries Service (NMFS). 1987. Status Review of Shortnose Sturgeon (*Acipenser brevirostrum* Lesueur 1818). Listed under the Endangered Species Act of 1973. National Oceanographic and Atmospheric Administration.
- National Marine Fisheries Service. 1998. Final recovery plan for the shortnose sturgeon (*Acipenser brevirostrum*). Prepared by the shortnose sturgeon recovery team for the National Marine Fisheries Service, Silver Spring, MD. February. Draft.
- Nelson, J.S., E.J. Crossman, H. Espinosa-Pérez, L.T. Findley, C.R. Gilbert, R.N. Lea, and J.D. Williams. 2004. Common and scientific names of fishes from the United States, Canada, and Mexico. American Fisheries Society, Special Publication 29, Bethesda, Maryland.
- Neves, R.J. and L. Depres. 1979. The oceanic migration of American shad, *Alosa sapidissima*, along the Atlantic Coast. Fishery Bulletin 77:199-212.
- Normandeau Associates, Inc. (NAI). 1985a. 1982 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Normandeau Associates, Inc. 1985b. 1983 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Normandeau Associates, Inc. 1992. Abundance and stock characteristics of the Atlantic tomcod spawning population in the Hudson River, Winter 1990-1991. Prepared for New York Power Authority.
- Pace, M.L., J.A. Downing, H. Cyr, S. Baines, and S. Lalond. 1993. Analysis of Hudson River Fish Populations from the Utilities Monitoring Program. Final Report to the Hudson River Foundation. New York, New York.
- Polgar, T.T., J.A. Mihursky, R.E. Ulanowicz, R.P. Morgan, and J.S. Wilson. 1976. An analysis of 1974 striped bass spawning success in the Potomac estuary, in *Estuarine Processes, Volume I: Uses, Stresses, and Adaption to the Estuary* (M.L. Wilery, ed.), pp. 151-165. Academic Press, New York.

- Pottern, G.B., M.T. Huish, and J.H. Kerby. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (mid-Atlantic) - bluefish. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.94). U.S. Army Corps of Engineers, TR EL-82-4.
- Richards, S.W. 1959. Pelagic fish eggs and larvae of Long Island Sound. Bulletin of the Bingham Oceanographic Collection 17(1): 95-124.
- Richmond, A.M. and B. Kynard. 1995. Ontogenetic behavior of shortnose sturgeon, *Acipenser brevirostrum*. *Copeia* 1:172-182.
- Rounsefell, G.A. 1975. *Ecology, Utilization, and Management of Marine Fisheries*. The C.V. Mosby Co. St. Louis, Missouri.
- Sandler, R. and D. Schoenhard (eds.). 1981. *The Hudson River Power Plant Settlement*. New York University School of Law, New York.
- Schmidt, R.E. 1992. Temporal and spatial distribution of bay anchovy eggs through adults in the Hudson River estuary, in *Estuarine Research in the 1980s* (C.L. Smith, ed.), pp. 228-241. State University of New York Press, Albany, New York.
- Schmidt, R.E., R.J. Klauda, and J.M. Bartels. 1988. Distributions and movements of the early life stages of three species of *Alosa* in the Hudson River, with comments on mechanisms to reduce interspecific competition, in *Fisheries Research in the Hudson River* (C.L. Smith, ed.), pp. 193-215. State University of New York Press, Albany, New York.
- Scott, W.B. and E.J. Crossman. 1973. *Freshwater Fishes of Canada*. Fish. Res. Bd. Can. Bull. 184:966.
- Setzler, E.M., W.R. Boynton, K.V. Wood, H.H. Zion, L. Lubbers, N.K. Mountford, P. Frer, L. Tucker, and J.A. Mihursky. 1980. Synopsis of biological data on striped bass, *Morone saxatilis* (Walbaum). NOAA Technical Report NMFS circular 433. U.S. Department of Commerce.
- Smith, C.L. 1985. *The Inland Fishes of New York State*. New York State Department of Environmental Conservation, Albany, New York.
- Smith, C.L. and T.R. Lake. 1990. Documentation of the Hudson River fish fauna. American Museum of Natural History, New York, New York.
- Talbot, G.B. 1954. Factors associated with fluctuations in abundance of Hudson River shad. U.S. Fish and Wildlife Service, Fishery Bulletin 56: 373-413.
- Texas Instruments, Inc. (TI). 1975. First annual report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Texas Instruments, Inc. 1977. 1974 Year Class Report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Texas Instruments, Inc. 1978. 1975 Year Class Report for the multiplant impact study of the Hudson River Estuary. Prepared for Consolidated Edison Company of New York, Inc.

- Texas Instruments, Inc. 1979. 1976 Year Class Report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Texas Instruments, Inc. 1980a. 1977 Year Class Report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Texas Instruments, Inc. 1980b. 1978 Year Class Report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Texas Instruments, Inc. 1981. 1979 Year Class Report for the multiplant impact study of the Hudson River estuary. Prepared for Consolidated Edison Company of New York, Inc.
- Van Den Avyle, M.J. 1984. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (South Atlantic) -- Atlantic sturgeon. U.S. Fish and Wildlife Service FWS/OBS-82/11.25, Washington, D.C.
- Van Eenennaam, J.P., S.I. Doroshov, G.P. Moberg, J.G. Watson, D.S. Moore, and J. Linares. 1996. Reproductive conditions of the Atlantic sturgeon (*Acipenser oxyrinchus*) in the Hudson River. *Estuaries* 19: 769-777.
- Versar, Inc. 1987. 1985 Year Class Report for the Hudson River estuary monitoring program. Prepared for Consolidated Edison Company of New York, Inc.
- Vladykov, V.D. and J.R. Greeley. 1963. Order Acipenseroidei, in *Fishes of the Western North Atlantic* (Y.H. Olsen, ed.), pp. 24-59. Sears Found., Mar. Res., Yale University, New Haven, Connecticut.
- Vougliatois, J.J., K.W. Able, R.J. Kurtz, and K.A. Tighe. 1987. Life history and population dynamics of the bay anchovy in New Jersey. *Trans. Am. Fish. Soc.* 116(2):141-53.
- Wang, J.C.S. and R.J. Kernehan. 1979. *Fishes of the Delaware Estuaries: A Guide to Early Life Histories*. EA Communications, Towson, Maryland.
- Washburn and Gillis Assoc. Ltd. 1980. Studies on the Early Life History of the Shortnose Sturgeon (*Acipenser brevirostrum*). Fredericton, N.B., Canada.

Appendix A

Quality Control Report for the 2006 Hudson River Ichthyoplankton Laboratory Program and 2006 Fall Juvenile Survey

**Quality Control Report for the
2006 Hudson River
Ichthyoplankton Laboratory Program
and 2006 Fall Juvenile Survey**

**Prepared for
ENTERGY NUCLEAR OPERATIONS, INC.
440 Hamilton Avenue
White Plains, NY 10601-5029**

**Prepared by
NORMANDEAU ASSOCIATES, INC.
25 Nashua Road
Bedford, NH 03110**

QA 20888.026–20725.000

July 2007

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 METHODS	2
2.1 Laboratory Quality Control Procedures	2
2.1.1 Ichthyoplankton Survey	2
2.1.2 Fall Juvenile Survey	3
2.2 Reporting Procedures	4
2.2.1 Fraction Inspected	4
2.2.2 Percent Nonconforming	6
2.2.3 Percent Measurement Error	6
2.2.4 Average Outgoing Quality	8
2.2.5 Cumulative Error Rates	9
3.0 RESULTS	10
3.1 Ichthyoplankton Laboratory Program	10
3.2 Fall Juvenile Survey	17
4.0 LITERATURE CITED	22

LIST OF FIGURES

	Page
Figure 1. Quality control inspection plan for ichthyoplankton sorting and identification tasks.	3
Figure 2. Quality control inspection plan for identification and length measurement of young-of-the-year fishes.	5
Figure 3. Example of percent measurement error calculations for individual taxa during the identification task.	7

LIST OF TABLES

	Page
Table 1. Task Specific Applications of Continuous Sampling Plans for the 2006 Hudson River Ichthyoplankton Laboratory Program	2
Table 2. Task Specific Applications of Continuous Sampling Plans for the 2006 Fall Juvenile Survey.	4
Table 3. Fraction Inspected, Percent Nonconforming, Mean Percent Measurement Error, and Average Outgoing Quality of Tasks Performed By NAI for the 2006 Hudson River Ichthyoplankton Laboratory Program.	10
Table 4. Sample Sorting Fraction Inspected Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	11
Table 5. Sample Sorting Percent Nonconformance Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	12
Table 6. Sample Sorting Mean Percent Measurement Error Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	13
Table 7. Sample Identification Fraction Inspected Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	14
Table 8. Sample Identification Percent Nonconformance Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	15
Table 9. Sample Identification Mean Percent Measurement Error Results, 2006 Hudson River Ichthyoplankton Laboratory Program.	16
Table 10. Ranking of Taxa Missed During Initial Sort and Found During Sort QC.....	18
Table 11. Summary By Life Stage of the Six Highest Ranked Taxa Missed During Original Sort and Found During Sort QC Compared to Total Count.	19
Table 12. Cumulative Net and Absolute Error Rates for Commonly Encountered Taxa in Samples Selected for QC Inspection of Identification and Counting Process.	20
Table 13. Fraction Inspected, Percent Nonconforming, and Average Outgoing Quality of Laboratory Tasks Performed by Normandeau for the 2006 Fall Juvenile Survey.....	22

QUALITY CONTROL REPORT FOR THE 2006 HUDSON RIVER ICHTHYOPLANKTON LABORATORY PROGRAM AND 2006 FALL JUVENILE SURVEY

1.0 INTRODUCTION

This quality control report for the laboratory tasks of the 2006 Hudson River Ichthyoplankton Survey and the 2006 Fall Juvenile Survey was prepared for Entergy Nuclear Operations, Inc. by Normandeau Associates Inc. (NAI).

To comply with Entergy's requirements for valid and reliable data on the Hudson River Ichthyoplankton Laboratory Program and the Fall Juvenile Survey, NAI implemented a Quality Assurance Plan that provides a 10% Average Outgoing Quality Limit (AOQL) for all measurement parameters collected. The Quality Assurance Plan consists of two systems: a quality control (QC) system and a quality assurance (QA) system. The QC system is managed by the program manager and conducted by operational personnel. The system monitors and documents the reliability and validity (accuracy, precision, completeness) of daily operations. The specific features of the QC system are determined by the Quality Assurance Department to insure that all procedures conform to Entergy's data requirements. The QA system is managed by NAI's Quality Assurance Director and utilizes project independent personnel familiar with the work or activities under evaluation to conduct performance and systems audits. These audits are designed to provide objective evidence that the quality control program and technical requirements, methods, and procedures as outlined in the program Standard Operating Procedures are being implemented. The outcomes of the QA system activities are

- verification of the effectiveness of the QC system,
- assignment of corrective actions to resolve nonconforming procedures or data deficiencies,
- communication of audit results to project and staff managers for follow-up, and
- objective validation or improvement of project operations.

This report provides a compilation of QC system data verifying the results of the 2006 Hudson River Ichthyoplankton Laboratory Program and 2006 Fall Juvenile Survey activities. Determinations of the fraction inspected, percent nonconforming, and average outgoing quality are presented for both programs. In addition, for the 2006 Hudson River Ichthyoplankton Laboratory Program the results include percent measurement error, a summary of the number of each taxon-life stage found during sorting QC, and cumulative error rates for each taxon-life stage.

2.0 METHODS

2.1 LABORATORY QUALITY CONTROL PROCEDURES

2.1.1 Ichthyoplankton Survey

For sorting and identification of samples from the 2006 Hudson River Ichthyoplankton Laboratory Program, NAI used a continuous sampling plan designed to provide a 10% Average Outgoing Quality Limit (U.S. Department of Defense 1981). A flow diagram of how the sampling plan was applied is presented in Figure 1. A summary of the sampling plan, tolerances and QC sample definitions used for each measurement parameter is presented in Table 1. Quality control inspection was applied on a laboratory-wide basis for the sorting task and to each individual processor for the identification task. Quality control samples were selected in a random manner utilizing random number tables. As determined from the sampling plan outlined in Table 1, a given number of quality control samples were reprocessed by QC inspectors with expertise in the task being inspected. In cases where a sample was subdivided and counted, counts for all subdivisions were combined before calculating percent error for that sample. If the difference between the quality control value and the original value exceeded acceptable tolerances (Table 1), a third measurement could be obtained to verify one of the measurements. If a sample was found to have exceeded acceptable tolerances, all subsequent samples processed by the same technician were subjected to 100% quality control until an appropriate number of consecutive samples (i) were found within tolerance as determined by the continuous sampling plan (Table 1 and Figure 1). The standard operating procedures manual (NAI 2003) documents specific QA/QC methods utilized for this program.

Table 1. Task Specific Applications of Continuous Sampling Plans for the 2006 Hudson River Ichthyoplankton Laboratory Program

Laboratory Task	CSP-1 AOQL 10%		Sample Tolerance	QC Sample Definition
	i	f		
Sorting	8	1/7	± 2 if ≤20 organisms ± 10% if >20 organisms	one sample
Identification	8	1/7	± 2 if ≤20 ± 10% if >20 for every taxon in the sample (in identifying, assigning a life stage, or counting any species, errors are cumulative by life stage within each taxon)	one sample

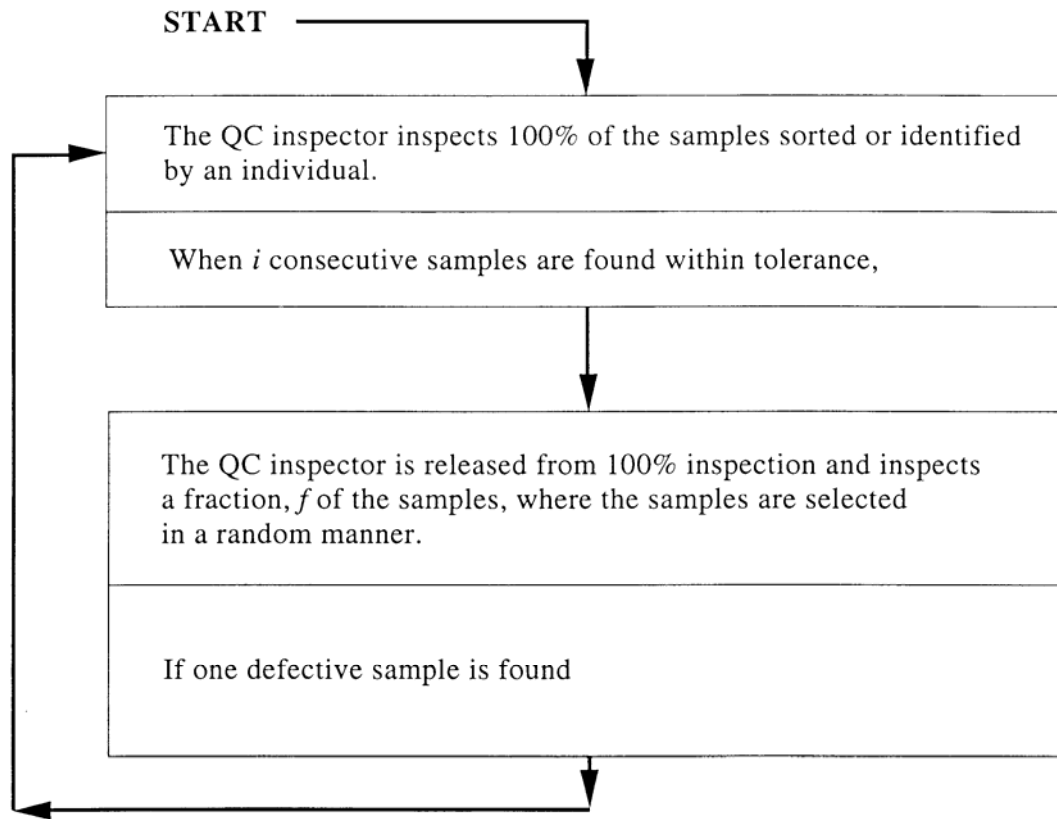


Figure 1. Quality control inspection plan for ichthyoplankton sorting and identification tasks.

In some cases one of the taxonomists (either the original identifier or the QC inspector) was able to determine the taxon or life stage of damaged specimens when the other taxonomist recorded them as unknown life stage, unidentified taxon, or a higher level taxon (genus or family). If a more general taxon or life stage used by one taxonomist *included* the more specific category used by the other taxonomist, and that was the only reason for a count discrepancy, then that sample was not considered as failing the QC inspection. For example, damaged specimens recorded as *Morone* sp. by the original identifier and as striped bass by the QC inspector were considered to be in agreement because the category *Morone* sp. includes striped bass. In contrast, an original determination of unidentified gobiid would not be acceptable if the QC determination was striped bass, because striped bass is not included in the family Gobiidae.

2.1.2 Fall Juvenile Survey

The Fall Juvenile Survey consisted of two types of collections, referred to as the Fall Shoals Survey (which used Tucker trawls) and the Beach Seine Survey. For laboratory identification and length measurements of young-of-the-year fishes in the 2006 Fall Juvenile Survey, NAI used a continuous sampling plan designed to provide a 10% Average Outgoing Quality Limit (U.S. Department of

Defense, 1981). A flow diagram of how the plan was applied is presented in Figure 2. A summary of the sampling plan, tolerances, and QC sample definitions used for each task is shown in Table 2. QC samples were selected as specified by the appropriate plan in Table 2, using random numbers, and reprocessed by QC inspectors. If the difference between original and QC values exceeded the acceptable tolerance, a third value was obtained as a resolution. The standard operating procedures manual (NAI 2006) documents specific QA/QC methods used for the 2006 Fall Juvenile Survey. Young-of-the-year fishes were identified in the laboratory for the first two Fall Shoals "river runs" (sampling weeks) and the first three Beach Seine Survey river runs. Young-of-the-year fishes were identified in the field starting with Fall Shoals river run 3 and Beach Seine Survey river run 4. The same quality control procedures applied to both field and laboratory identifications. All length measurements of young-of-the-year fishes occurred in the laboratory.

Table 2. Task Specific Applications of Continuous Sampling Plans for the 2006 Fall Juvenile Survey.

Task	QC Plan	AOQL	i	f	x	Tolerance	QC Sample Definition
Identification	CSP-V	7%	21	1/15	7	±10% of total count or ±2 individuals when <25 fish	One taxon
Length	CSP-V	7%	30	1/50	10	±1 mm when <34 mm TL ±3% when >34 mm TL	One fish

2.2 REPORTING PROCEDURES

The 2006 Hudson River Ichthyoplankton Laboratory Program Sort and Identification Quality Control Logs were keyed, verified, and error-checked to produce SAS data sets. From these data, fraction inspected, percent nonconforming, and percent measurement error (precision) were determined for each river run and for the entire study. For the 2006 Fall Juvenile Survey, QC data were used to determine fraction inspected and percent nonconforming for the entire study (combining all river runs processed in the laboratory for both the Fall Shoals Survey and the Beach Seine Survey).

2.2.1 Fraction Inspected

Fraction Inspected

$$= \frac{\text{Number of Samples Inspected}}{\text{Total Number of Samples}} \times 100 \quad (\text{Equation 1})$$

River Run: Fraction inspected for a river run (Equation 1) was one hundred times the number of samples inspected divided by the total number of samples analyzed for that river run. For ichthyoplankton tasks, the number of samples inspected excludes "training QC samples," which do not represent the independent performance of the technician. For the ichthyoplankton identification task, the total number of samples identified excludes empty ("no catch") samples, which did not require processing by an identifier.

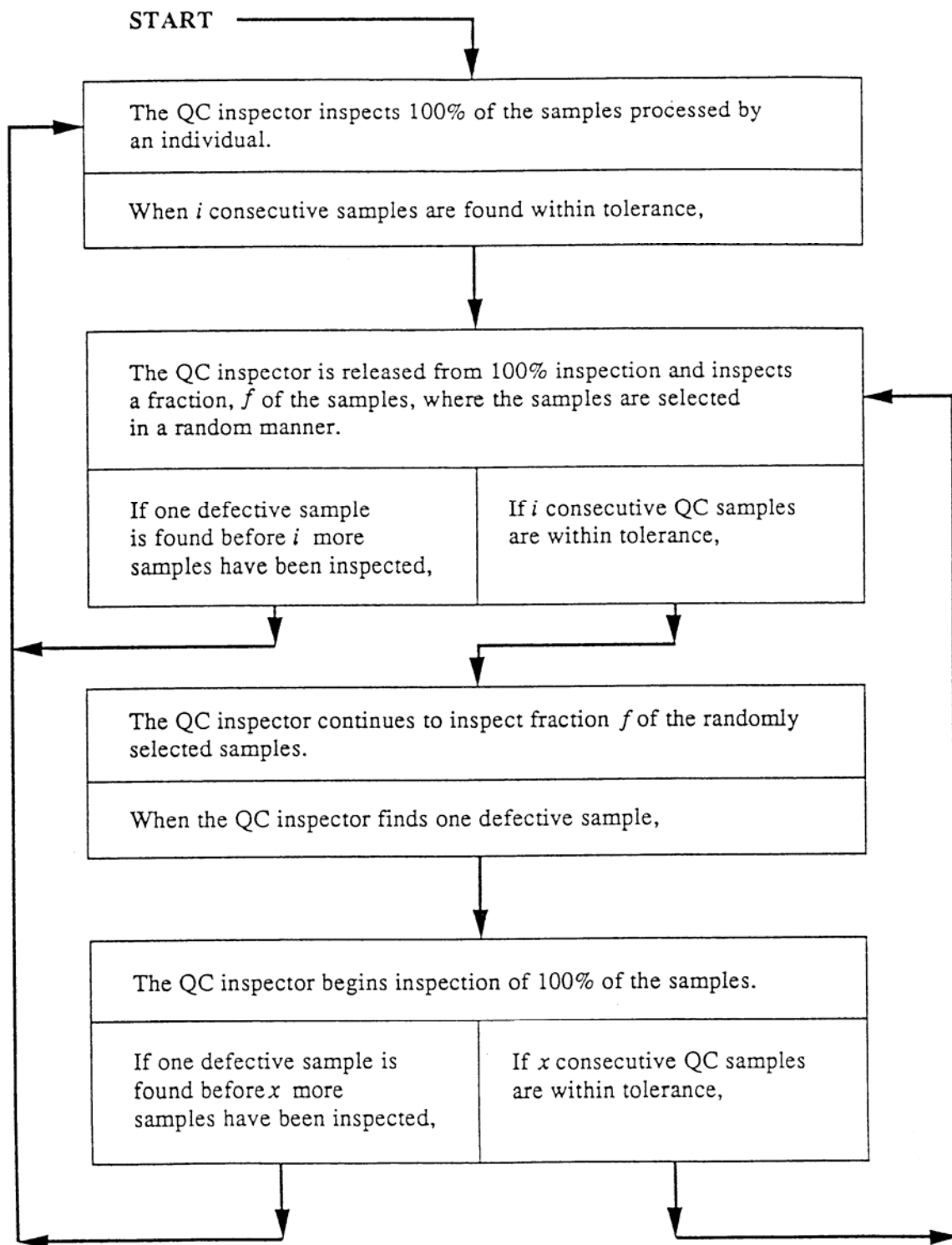


Figure 2. Quality control inspection plan for identification and length measurement of young-of-the-year fishes.

Entire Study: Fraction inspected for the entire study was one hundred times the number of samples inspected divided by the total number of samples analyzed during the study.

2.2.2 Percent Nonconforming

Percent Nonconforming

$$= \frac{\text{Number of Nonconforming Samples Inspected}}{\text{Number of Samples Inspected}} \times 100 \quad (\text{Equation 2})$$

River Run: Percent nonconforming for a river run (Equation 2) was one hundred times the number of nonconforming quality control samples found for that river run divided by the total number of quality control samples inspected for that river run.

Entire Study: Percent nonconforming for the entire study was one hundred times the total number of nonconforming quality control samples for the study divided by the total number of quality control samples inspected for the study. The results of this analysis was a determination of the actual incoming quality level of each measurement parameter. (Note that because samples checked by QC found to be defective were rectified during QC, the average outgoing quality of the final data set was better than that indicated by the percent nonconforming.)

2.2.3 Percent Measurement Error

Sorting Task

Sorting Percent Measurement Error

$$= \frac{\text{Quality Control Value}}{(\text{Original Value} + \text{Quality Control Value})} \times 100 \quad (\text{Equation 3})$$

Sample: Percent measurement error for a sorted sample (Equation 3) was one hundred times the quality control value divided by the sum of the original value and the quality control value. If the total count (original value plus quality control value) was less than or equal to 20, and the quality control value (i.e., the number of organisms missed by the sorter and found during sort QC inspection) was one or two, the percent measurement error for the sorted sample was defined as zero.

River Run: Mean percent measurement error for sorted samples for a river run was the sum of the percent measurement errors for each sample inspected during the river run divided by the total number of samples inspected for the river run.

Entire Study: Mean percent measurement error for sorted samples for the entire study was the sum of the percent measurement errors for each sample inspected during the study divided by the total number of samples inspected for the study. (Note that this method of averaging gives equal weight to each sample, regardless of the number of organisms present).

Identification Task

Life Stage Percent Measurement Error

$$= \frac{(\text{Original Value} - \text{Quality Control Value})}{\text{Quality Control Value}} \times 100 \quad (\text{Equation 4})$$

Life Stage: Percent measurement error for a life stage (Equation 4) was one hundred times the difference between the original value and the quality control value divided by the quality control value. For life stages where the quality control value was 20 or less, if the original and quality control values differed by less than or equal to two organisms the percent measurement error was defined as zero. For life stages where the quality control value was 20 or less and the original and quality control values differed by more than two organisms, the percent measurement error was calculated utilizing Equation 4. If the quality control value was zero, the percent measurement error was calculated by multiplying the difference between the original and quality control values by 100. This results in percent measurement error values which are at times extremely large (e.g. possibly several hundred percent for a life stage of a taxon in a sample) and not truly indicative of the actual proportion of specimens misidentified, mis-staged, or miscounted in a sample. If the original count for a life stage was acceptably close to a resolution value but not to the quality control value, the percent measurement error was calculated as described above except that the resolution value was substituted for the quality control value.

Taxon: Percent measurement error for an identified taxon was the sum of the absolute values of percent measurement error for each life stage within the taxon. Refer to Figure 3 for an example of taxon percent measurement error calculations.

		Eggs	Post Yolk-Sac Larvae	Young-of- the-Year	Total
Taxon 1	Original Value	103	176	25	
	Quality Control Value	100	194	26	
	% Measurement Error Life Stage	3.0	-9.3	-3.8	16.1
Taxon 2	Original Value		2		
	Quality Control Value		1		
	% Measurement Error Life Stage		0		0
Taxon 3	Original Value		8		
	Quality Control Value		2		
	% Measurement Error Life Stage		300		300

Figure 3. Example of percent measurement error calculations for individual taxa during the identification task.

River Run: Mean percent measurement error for the identification task for a river run was the sum of the percent measurement errors for all taxa inspected during the river run divided by the total number of taxa inspected for the river run. This statistic was computed by averaging taxa rather than samples because even though complete samples were inspected and reworked for identification quality control, the pass/fail criterion was whether any taxon in the sample individually exceeded the 10% tolerance.

Entire Study: Mean percent measurement error for identified taxa for the entire study was the sum of the percent measurement errors for all taxa inspected during the study divided by the total number of taxa inspected for the study.

2.2.4 Average Outgoing Quality

At the completion of these studies, the Average Outgoing Quality (AOQ) was calculated for each measurement parameter inspected. Continuous sampling plans were used for all tasks. Continuous sampling plans are devised for processes involving a continuous or nearly continuous flow of products or other entities. For these types of processes, it is extremely difficult to organize units into discrete groups commonly referred to as lots. As a result, inspection must be performed on individual units drawn from a continuous flow of products and a decision made concerning the quality of units produced based on the inspection results. Rectification is performed on any nonconforming unit found during inspection, followed by 100% screening of a number of subsequent units depending on the sampling plan. Average Outgoing Quality for each laboratory task was calculated as a function of the percent nonconforming and the fraction of total units inspected (Stephens 1979). This calculation applies to continuous sampling plans when nonconforming units found are rectified:

$$AOQ = \frac{p'(1-f)q^i}{f + (1-f)q^i} \times 100 \quad \text{(Equation 5)}$$

where

p' = Percent nonconforming as a decimal fraction
 f = Fraction of units inspected. This is a parameter of the sampling plan.
 $q = 1-p'$ = Percent conforming as a decimal fraction
 i = Clearing interval. This is a parameter of the sampling plan.

Example:

$p' = 0.0689$
 $f = 1/7 = 0.1429$
 $q = 1-0.0689 = 0.9311$
 $i = 8$

$$AOQ = \frac{0.0689(1-0.1429)(0.9311)^8}{0.1429 + (1-0.1429)(0.9311)^8} \times 100 = 5.32\%$$

The above equation for calculating AOQ was formulated specifically for CSP-1 sampling plans such as those used for the ichthyoplankton sorting and identification (Table 1). The same equation was

used to calculate AOQ for young-of-the-year identifications and measurements, which used CSP-V plans (Table 2). When Equation 5 is used for CSP-V plans, the calculated AOQ is conservatively high, because the equation does not take into account the times when the number of consecutive reinspections following a failure is x (which is smaller than i).

2.2.5 Cumulative Error Rates

Due to the non-independence of identification errors across taxa and life stages, and to the cumulation of errors within taxa, a relatively high fraction of samples may fail QC inspection even though only a small fraction of organisms are incorrectly identified or counted. In order to present the error frequencies more realistically for particular taxa-life stages, two additional statistics were calculated for each taxon-life stage for the identification/counting process.

Absolute Error Rate =

$$\sum_{i=1}^n |I_i - Q_i| / \sum_{i=1}^n Q_i \quad \text{Equation 6}$$

Net Error Rate =

$$\sum_{i=1}^n (I_i - Q_i) / \sum_{i=1}^n Q_i \quad \text{Equation 7}$$

where

- I_i = initial count for taxon-life stage in sample i
- Q_i = QC count for taxon-life stage in sample i (or the resolution count, if I_i was acceptably close to it but not to the QC count)
- n = number of samples in the entire study

If the sum of Q_i for the entire study was zero for the taxon-life stage, then the sum of Q_i was set equal to one for the purpose of calculating absolute and net error rate.

The absolute error rate is the approximate fraction of the taxon-life stage that was originally identified or counted incorrectly. This is an estimate of the fraction of erroneous countable items in the uninspected samples.

Net error rate is the approximate relative error in the total counts for the taxon-life stage. For this index, positive (original count too high) and negative (original count too low) errors cancel each other so that the index reflects the relative net bias to the taxon-life stage abundance.

3.0 RESULTS

3.1 ICHTHYOPLANKTON LABORATORY PROGRAM

The Average Outgoing Quality (AOQ) of the 2006 Hudson River Ichthyoplankton Laboratory Program was 0.92% for the sorting task 3.00% for the identification task. These AOQ levels represent the actual or achieved quality for measurement parameters and were well within the 10% AOQL requirement of the study. The Average Fraction Inspected (AFI) was 14.52% for sorting and 15.75% for identification (Table 3).

Table 3. Fraction Inspected, Percent Nonconforming, Mean Percent Measurement Error, and Average Outgoing Quality of Tasks Performed By NAI for the 2006 Hudson River Ichthyoplankton Laboratory Program.

Task	Fraction Inspected (%)	Percent Nonconforming (%)	Mean Percent Measurement Error (%)	AOQ (%)
Sorting	14.52	1.09	1.68	0.92
Identification	15.75	3.67	21.10	3.00

The AFI for the sorting task as calculated here is conservatively low, because samples used as "training QCs" were not entered into the formal QC inspection plan. Each training QC sample was reprocessed by the Sorting Supervisor during the training process, so these do not represent the independent performance of the sorter. Only after a new sorter demonstrated proficiency in the training program were subsequent samples processed by that sorter entered into the laboratory-wide QC plan.

Sorting and identification tasks were also evaluated on the basis of river runs (sampling weeks). Sorted samples were inspected at a rate of 7.14% to 19.26% for individual river runs (Table 4). Nonconformance for the sorting task among the inspected samples ranged from 0% to 5.88% among the river runs and was 1.09% overall (Table 5). Sorting measurement error was between 0% and 4.73% and averaged 1.68% for the study (Table 6). For the task of sample identification, 8.13% to 35.29% of samples were inspected from individual river runs (Table 7). Percent nonconforming for the identification task ranged from 0% to 50.00% for each of the 25 river runs and averaged 3.67% (Table 8). Measurement error ranged from 0% to 770.5% and overall measurement error was 21.10% for the identification task of this study (Table 9).

Measurement error results for the identification task are skewed towards high values as a result of the method of computation at the life stage level. In addition, measurement errors are summed over life stages within each taxon, which then amplifies the already skewed life stage values. These data are not indicative of actual measurement error and should only be compared to other measurement error results that are calculated using exactly the same methods. In all cases of failed QC samples, the data were corrected and the QC sample inspection frequency was maintained at 100% for that individual until acceptable results were demonstrated as determined by the QC sampling plan.

Additional organisms found during the sort QC were identified independently to determine the frequency of species and life stages missed during the initial sort. Six taxa accounted for 94% of the

Table 4. Sample Sorting Fraction Inspected Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	Total # of Samples Inspected	Total # of Samples Sorted	Fraction Inspected
06Mar06	11	73	15.07
20Mar06	9	74	12.16
27Mar06	7	74	9.46
03Apr06	9	126	7.14
10Apr06	23	126	18.25
17Apr06	23	126	18.25
24Apr06	18	130	13.85
01May06	18	135	13.33
08May06	26	135	19.26
15May06	17	126	13.49
22May06	21	126	16.67
29May06	22	126	17.46
05Jun06	13	123	10.57
12Jun06	22	123	17.89
19Jun06	12	123	9.76
26Jun06	15	123	12.20
10Jul06	13	81	16.05
24Jul06	12	81	14.81
07Aug06	13	81	16.05
21Aug06	14	81	17.28
04Sep06	12	81	14.81
18Sep06	11	81	13.58
02Oct06	12	81	14.81
13Nov06	7	42	16.67
04Dec06	6	42	14.29
Study	366	2520	14.52

Table 5. Sample Sorting Percent Nonconformance Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	# of Non- conformities	Total # of Samples Inspected	% Non- conformance (Week)	% Non- conformance (Study)
6-Mar-06	0	11	0.00	0.00
20-Mar-06	0	9	0.00	0.00
27-Mar-06	0	7	0.00	0.00
3-Apr-06	0	9	0.00	0.00
10-Apr-06	1	23	4.35	1.69
17-Apr-06	0	23	0.00	1.22
24-Apr-06	1	18	5.56	2.00
1-May-06	0	18	0.00	1.69
8-May-06	0	26	0.00	1.39
15-May-06	1	17	5.88	1.86
22-May-06	1	21	4.76	2.20
29-May-06	0	22	0.00	1.96
5-Jun-06	0	13	0.00	1.84
12-Jun-06	0	22	0.00	1.67
19-Jun-06	0	12	0.00	1.59
26-Jun-06	0	15	0.00	1.50
10-Jul-06	0	13	0.00	1.43
24-Jul-06	0	12	0.00	1.37
7-Aug-06	0	13	0.00	1.32
21-Aug-06	0	14	0.00	1.26
4-Sep-06	0	12	0.00	1.21
18-Sep-06	0	11	0.00	1.17
2-Oct-06	0	12	0.00	1.13
13-Nov-06	0	7	0.00	1.11
4-Dec-06	0	6	0.00	1.09
Study	4	366		

Table 6. Sample Sorting Mean Percent Measurement Error Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	Total # of Samples Inspected	Mean Percent Measurement Error
6-Mar-06	11	0.97
20-Mar-06	9	0.21
27-Mar-06	7	0.00
3-Apr-06	9	0.28
10-Apr-06	23	2.31
17-Apr-06	23	0.10
24-Apr-06	18	3.13
1-May-06	18	0.31
8-May-06	26	1.64
15-May-06	17	2.78
22-May-06	21	4.73
29-May-06	22	1.48
5-Jun-06	13	3.26
12-Jun-06	22	2.41
19-Jun-06	12	2.30
26-Jun-06	15	3.06
10-Jul-06	13	1.62
24-Jul-06	12	0.80
7-Aug-06	13	1.85
21-Aug-06	14	1.10
4-Sep-06	12	0.36
18-Sep-06	11	0.34
2-Oct-06	12	1.06
13-Nov-06	7	0.22
4-Dec-06	6	0.04
Study	366	1.68

Table 7. Sample Identification Fraction Inspected Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	Total # of Samples Inspected	Total # of Samples Identified	Fraction Inspected
6-Mar-06	9	58	15.52
20-Mar-06	15	52	28.85
27-Mar-06	8	65	12.31
3-Apr-06	11	70	15.71
10-Apr-06	8	63	12.70
17-Apr-06	12	78	15.38
24-Apr-06	15	110	13.64
1-May-06	18	127	14.17
8-May-06	17	125	13.60
15-May-06	18	121	14.88
22-May-06	14	126	11.11
29-May-06	19	126	15.08
5-Jun-06	10	123	8.13
12-Jun-06	32	123	26.02
19-Jun-06	18	123	14.63
26-Jun-06	18	122	14.75
10-Jul-06	17	81	20.99
24-Jul-06	14	80	17.50
7-Aug-06	12	81	14.81
21-Aug-06	10	79	12.66
4-Sep-06	12	81	14.81
18-Sep-06	12	81	14.81
2-Oct-06	12	80	15.00
13-Nov-06	11	38	28.95
4-Dec-06	12	34	35.29
Study	354	2247	15.75

Table 8. Sample Identification Percent Nonconformance Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	# of Noncon- formities	Total # of Samples Inspected	% Non- conformance (Week)	% Non- conformance (Study)
6-Mar-06	0	9	0.00	0.00
20-Mar-06	1	15	6.67	4.17
27-Mar-06	0	8	0.00	3.13
3-Apr-06	0	11	0.00	2.33
10-Apr-06	0	8	0.00	1.96
17-Apr-06	0	12	0.00	1.59
24-Apr-06	0	15	0.00	1.28
1-May-06	0	18	0.00	1.04
8-May-06	0	17	0.00	0.88
15-May-06	0	18	0.00	0.76
22-May-06	0	14	0.00	0.69
29-May-06	1	19	5.26	1.22
5-Jun-06	0	10	0.00	1.15
12-Jun-06	1	32	3.13	1.46
19-Jun-06	0	18	0.00	1.34
26-Jun-06	0	18	0.00	1.24
10-Jul-06	1	17	5.88	1.54
24-Jul-06	0	14	0.00	1.47
7-Aug-06	0	12	0.00	1.40
21-Aug-06	1	10	10.00	1.69
4-Sep-06	0	12	0.00	1.63
18-Sep-06	0	12	0.00	1.57
2-Oct-06	0	12	0.00	1.51
13-Nov-06	2	11	18.18	2.05
4-Dec-06	6	12	50.00	3.67
Study	13	354		

Table 9. Sample Identification Mean Percent Measurement Error Results, 2006 Hudson River Ichthyoplankton Laboratory Program.

Sampling Week (Beginning Monday)	Total # of Samples Inspected	Mean Percent Measurement Error	Number of Taxa Inspected
6-Mar-06	9	0.00	22
20-Mar-06	15	27.41	33
27-Mar-06	8	0.00	23
3-Apr-06	11	0.07	28
10-Apr-06	8	0.00	13
17-Apr-06	12	0.00	25
24-Apr-06	15	0.23	43
1-May-06	18	0.63	50
8-May-06	17	0.75	56
15-May-06	18	0.63	85
22-May-06	14	1.11	76
29-May-06	19	2.63	84
5-Jun-06	10	0.75	61
12-Jun-06	32	1.22	197
19-Jun-06	18	0.90	95
26-Jun-06	18	1.23	97
10-Jul-06	17	5.73	100
24-Jul-06	14	0.50	61
7-Aug-06	12	1.19	45
21-Aug-06	10	4.17	37
4-Sep-06	12	0.56	32
18-Sep-06	12	0.71	38
2-Oct-06	12	1.26	22
13-Nov-06	11	36.06	31
4-Dec-06	12	770.50	33
Study	354	21.10	1387

additional organisms found during sort QC: striped bass, white perch, clupeids, bay anchovy, *Morone* sp., and gobiids (Table 10). For these six taxa, the additional number found in the sort QC was less than 1% of the total found during sample processing.

For the six taxa most commonly encountered during sort QC the total number of each life stage found in the sort QC was low compared to the total number sorted (Table 11). For most taxa-life stages the percentage missed by the original sorter was well under 2%.

The life stage most commonly missed by sorters was eggs for bay anchovy, unidentified life stage for *Morone* sp., and it was post yolk-sac larvae for striped bass, white perch, clupeids, and goby family (Table 11). Generally the life stage most frequently missed by sorters was the most abundant one.

Absolute error rates of the identification process for individual life stages of commonly encountered taxa ranged from 0 to 5.29, but most taxa-life stages had rates less than 0.05. Generally, only those taxa-life stages with low total counts had absolute error rates above 0.05 (Table 12). The unusually high absolute error rates for Atlantic croaker post yolk-sac larvae (5.29) and young-of-the-year (0.60) were artificially inflated by values far in excess of 100%, as high as 17,300%.

Net error rates were substantially lower than the absolute error rates in most cases, demonstrating that errors often tended to cancel each other out. This was noticeable for many of the more abundant taxa-life stages, such as bay anchovy eggs and post yolk-sac larvae of striped bass, white perch, clupeids, and bay anchovy.

3.2 FALL JUVENILE SURVEY

Results of the laboratory quality control program for the 2006 Fall Juvenile Survey (consisting of the Beach Seine Survey and the Fall Shoals Survey) were summarized by the same methods as the QC results for the 2006 Hudson River Ichthyoplankton Laboratory Program (Section 2.1.2) and are presented in Table 13.

A total of 632 and 279 young-of-the-year fish identification records were made in the laboratory for the Fall Shoals and Beach Seine surveys respectively and 3,878 and 3,168 young-of-the-year fish length measurement records were made for the Fall Shoals and Beach Seine surveys respectively.

Table 10. Ranking of Taxa Missed During Initial Sort and Found During Sort QC.

Taxon	Number of Organisms Found in Sort QC	Percent
Striped bass	810	43.90
White perch	407	22.06
Herring family	306	16.59
Bay anchovy	120	6.50
Morone species	55	2.98
Goby family	30	1.63
Winter flounder	21	1.14
Atlantic menhaden	13	0.70
Tautog	12	0.65
Windowpane	9	0.49
Hogchoker	8	0.43
Freshwater drum	7	0.38
Unidentified	7	0.38
Weakfish	7	0.38
Gizzard shad	6	0.33
Tessellated darter	5	0.27
American shad	4	0.22
Atlantic tomcod	4	0.22
Carp and minnow family	3	0.16
Common carp	3	0.16
Yellow perch	3	0.16
Atlantic croaker	2	0.11
Grubby	1	0.05
Naked goby	1	0.05
Walleye	1	0.05
Total	1845	100.00

Table 11. Summary By Life Stage of the Six Highest Ranked Taxa Missed During Original Sort and Found During Sort QC Compared to Total Count.

Taxon	Life Stage	Number	Percent in Each Stage	Percent of Total Found	Total Organisms Found^a
Bay anchovy	Eggs	61	50.83	0.11	54985
	Yolk-sac larvae	0	0.00	0.00	64
	Post yolk-sac larvae	59	49.17	0.16	37598
	Young-of-the-year	0	0.00	0.00	6588
	Unidentified	0	0.00	0.00	20
Goby family	Yolk-sac larvae	0	0.00	0.00	1
	Post yolk-sac larvae	30	100.00	0.31	9535
	Unidentified	0	0.00	0.00	1
Herring family	Eggs	1	0.33	0.03	3646
	Yolk-sac larvae	31	10.13	1.19	2614
	Post yolk-sac larvae	266	86.93	0.81	32721
	Young-of-the-year	7	2.29	100.00	7
	Unidentified	1	0.33	0.43	234
Morone species	Yolk-sac larvae	0	0.00	0.00	41
	Post yolk-sac larvae	8	14.55	0.23	3429
	Unidentified	47	85.45	0.45	10493
Striped bass	Eggs	78	9.63	0.57	13768
	Yolk-sac larvae	254	31.36	1.46	17347
	Post yolk-sac larvae	478	59.01	0.86	55727
	Young-of-the-year	0	0.00	0.00	288
	Unidentified	0	0.00	0.00	510
White perch	Eggs	51	12.53	0.26	19552
	Yolk-sac larvae	112	27.52	1.27	8850
	Post yolk-sac larvae	244	59.95	0.46	52872
	Young-of-the-year	0	0.00	0.00	111
	Unidentified	0	0.00	0.00	103

^a Includes both original count and additional organisms found during sort QC.

Table 12. Cumulative Net and Absolute Error Rates for Commonly Encountered Taxa in Samples Selected for QC Inspection of Identification and Counting Process.

Taxon	Stage	Total Count	Net Error	Absolute Error	N
Atlantic croaker	Post yolk-sac larvae	160	5.24375	5.29375	19
	Young-of-the-year	1418	-0.59873	0.60296	58
Atlantic menhaden	Eggs	349	-0.03725	0.04298	8
	Post yolk-sac larvae	215	-0.12093	0.15814	57
	Young-of-the-year	41	-0.04878	0.04878	20
Atlantic tomcod	Unidentified	7	0.28571	0.28571	5
	Yolk-sac larvae	13	0.00000	0.00000	8
	Post yolk-sac larvae	871	0.00459	0.01148	43
	Young-of-the-year	261	-0.01533	0.02299	56
Bay anchovy	Eggs	9608	-0.00021	0.01374	45
	Post yolk-sac larvae	5936	0.00017	0.02106	106
	Young-of-the-year	1039	0.00577	0.03272	51
Carp and minnow family	Eggs	43	0.02326	0.11628	7
	Yolk-sac larvae	136	0.02206	0.08088	30
	Post yolk-sac larvae	38	0.10526	0.15789	18
	Young-of-the-year	0	1.00000	1.00000	1
Common carp	Unidentified	5	0.00000	0.00000	3
	Eggs	28	0.00000	0.00000	7
	Yolk-sac larvae	110	-0.01818	0.03636	18
	Post yolk-sac larvae	78	-0.01282	0.08974	21
Goby family	Post yolk-sac larvae	1291	-0.00077	0.01936	70
	Young-of-the-year	0	1.00000	1.00000	1
Herring family	Unidentified	142	0.04225	0.04225	2
	Eggs	972	0.01955	0.02778	21
	Yolk-sac larvae	774	0.01938	0.03230	33
	Post yolk-sac larvae	5434	-0.00092	0.02411	127
Hogchoker	Eggs	630	-0.03175	0.03810	18
	Yolk-sac larvae	3	-0.66667	0.66667	2
	Post yolk-sac larvae	1	1.00000	1.00000	2
	Young-of-the-year	4	-0.25000	0.25000	2
Morone species	Unidentified	1707	0.02343	0.05038	50
	Yolk-sac larvae	8	0.75000	0.75000	4
	Post yolk-sac larvae	723	0.01107	0.04426	25
Striped bass	Eggs	2328	0.01546	0.01718	47
	Yolk-sac larvae	2870	-0.01498	0.04634	81
	Post yolk-sac larvae	7943	0.01397	0.03261	102
	Young-of-the-year	17	-0.11765	0.11765	7

(continued)

Table 12. (Continued)

Taxon	Stage	Total Count	Net Error	Absolute Error	N
Tessellated darter	Yolk-sac larvae	181	0.00000	0.04420	49
	Post yolk-sac larvae	73	-0.08219	0.08219	23
	Young-of-the-year	2	0.00000	0.00000	2
Weakfish	Eggs	642	0.03583	0.04206	16
	Post yolk-sac larvae	12	0.16667	0.16667	7
	Young-of-the-year	2	0.00000	0.00000	2
White perch	Eggs	3874	0.00284	0.01833	56
	Yolk-sac larvae	1484	-0.01550	0.04650	80
	Post yolk-sac larvae	8430	-0.00273	0.03025	117
	Young-of-the-year	9	-0.22222	0.22222	5

Table 13. Fraction Inspected, Percent Nonconforming, and Average Outgoing Quality of Laboratory Tasks Performed by Normandeau for the 2006 Fall Juvenile Survey.

Task	Average Fraction Inspected (%)	Percent Nonconforming (%)	Average Outgoing Quality (%)
Identification	6.15	0.00	0.00
Measurement	2.40	0.00	0.00

4.0 LITERATURE CITED

Normandeau Associates Inc. 2003. Quality assurance plan for the Hudson River ichthyoplankton laboratory program. Rev. 0, April 2003. Prepared for Entergy Nuclear Operations, Inc.

_____. 2006. 2006 Hudson River fall juvenile and beach seine surveys standard operating procedures. May 2006. Prepared for Entergy Nuclear Operations, Inc.

Stephens, K.S. 1979. Volume 2: How to perform continuous sampling (CSP). American Society for Quality Control. 70 pp.

U.S. Department of Defense. 1981. Military standard. Single- and multi-level continuous sampling procedures and table for inspection by attributes. MIL-STD-1235B.

Appendix B

Physical/Chemical Parameters

APPENDIX B
LIST OF TABLES

<u>Number</u>	<u>Title</u>
B-1	Daily freshwater flow (m ³ /sec/day) estimated for Green Island, New York, 2006
B-2	Long-term (1947-2005) and 2006 monthly mean freshwater flow (m ³ /sec/day) estimated for Green Island, New York
B-3	Monthly mean freshwater flow (m ³ /sec/day) estimated for Green Island, New York, 1974 to 2006
B-4	Average annual freshwater flow (m ³ /sec/day) estimated for Green Island, New York, 1947 to 2006
B-5	Poughkeepsie's Water Treatment Facility data, mean, minimum, and maximum temperature (°C) for each day of the year, 1951 to 2006
B-6	Average annual water temperature (°C) as measured at Poughkeepsie's Water Treatment Facility, 1951 to 2006
B-7	Weighted mean temperature (°C) by region and week from 2006 Long River/Fall Juvenile surveys
B-8	Average annual temperature (°C) from Long River/Fall Juvenile surveys, 1974 to 2006
B-9	Mean temperature (°C) by region and week from 2006 Beach Seine Survey
B-10	Average annual temperature (°C) from Beach Seine Survey, 1974 to 2006
B-11	Weighted mean salinity (ppt) by region and week from 2006 Long River/Fall Juvenile surveys
B-12	Mean salinity (ppt) by region and week from 2006 Beach Seine Survey
B-13	Weighted mean dissolved oxygen (mg/L) by region and week from 2006 Long River/Fall Juvenile surveys
B-14	Average annual dissolved oxygen (mg/L) from Long River/Fall Juvenile surveys, 1974 to 2006
B-15	Mean dissolved oxygen (mg/L) by region and week from 2006 Beach Seine Survey

- B-16 Average annual dissolved oxygen (mg/L) from Beach Seine Survey, 1974 to 2006
- B-17 Weighted mean percent oxygen saturation by region and week from 2006 Long River/Fall Juvenile surveys
- B-18 Mean percent oxygen saturation by region and week from 2006 Beach Seine Survey
- B-19 Weighted mean conductivity (mS/cm @ 25°C) by region and week from 2006 Long River/Fall Juvenile surveys
- B-20 Mean conductivity (mS/cm @ 25°C) by region and week from 2006 Beach Seine Survey

Table B-1 Daily Freshwater Flow (m³/sec/day) Estimated for Green Island, New York, 2006

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT ¹	NOV ¹	DEC ¹
DAY OF MONTH												
1	776	962	357	345	492	579	1856	485	227	252	509	512
2	654	809	356	386	486	650	1369	460	270	370	445	983
3	596	795	341	455	445	979	1103	334	231	393	349	820
4	565	1118	326	579	407	1474	862	380	148	316	322	667
5	557	1158	331	604	391	890	776	480	161	314	328	615
6	532	1206	336	551	417	784	642	429	164	115	324	640
7	512	1129	336	517	397	731	592	367	157	348	404	642
8	483	999	302	526	365	1086	519	338	137	303	460	565
9	451	710	332	526	223	1011	444	325	162	286	755	553
10	456	667	375	483	208	1056	406	308	154	268	550	545
11	471	607	413	445	217	955	417	294	151	228	406	461
12	626	564	504	401	264	767	448	226	150	254	416	491
13	829	525	512	348	653	610	852	194	128	256	640	465
14	889	500	1220	348	687	575	908	184	153	251	603	500
15	1344	499	1350	327	727	480	744	161	190	257	612	526
16	894	486	897	356	761	507	682	151	196	230	558	487
17	740	487	702	351	784	471	587	134	182	281	1284	465
18	1067	547	597	307	732	563	465	140	184	491	1375	457
19	2326	455	521	227	785	492	436	146	173	641	927	447
20	1608	424	494	224	887	458	362	224	153	868	689	446
21	1276	434	456	242	854	389	379	240	154	1302	491	403
22	1149	385	454	298	919	367	484	245	182	861	344	272
23	965	440	430	1231	782	335	1121	186	178	672	325	201
24	792	397	416	1941	601	336	647	163	181	598	335	352
25	742	397	434	1225	545	327	470	137	212	522	316	307
26	666	357	450	998	542	596	545	146	205	468	295	327
27	585	345	453	970	512	1279	569	145	164	442	355	494
28	571	359	430	665	512	2218	452	154	160	676	165	412
29	578	--	424	560	450	3644	487	174	288	1329	225	688
30	650	--	374	551	407	2642	591	309	419	870	445	605
31	886	--	311	--	681	--	540	316	--	629	--	532

¹ October through December data are provisional and incomplete.

Table B-2 Long-Term (1947-2005) and 2006 Monthly Mean Freshwater Flow (m³/sec/day)
Estimated for Green Island, New York

<u>MONTH</u>	<u>2006 AVERAGE</u>	<u>LONG-TERM AVERAGE</u>	<u>LONG-TERM MINIMUM</u>	<u>LONG-TERM MAXIMUM</u>
JAN	814	391	118	961
FEB	634	395	128	885
MAR	491	615	258	1,077
APR	566	869	257	1,749
MAY	553	528	156	1,147
JUN	908	292	101	839
JUL	670	189	87	520
AUG	257	167	48	414
SEP	187	184	58	482
OCT	487 ¹	257	71	853
NOV	508 ¹	371	93	758
DEC	512 ¹	426	173	989
ANNUAL AVERAGE ²	548	390		

¹ October through December data for 2006 are provisional and incomplete.

² Weighted by number of days in each month. 2006 average is provisional.

Table B-3 Monthly Mean Freshwater Flow (m³/sec/day) Estimated for Green Island, New York, 1974 to 2006

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
JAN	623	540	417	225	744	571	256	148	321	259	133	439	310	262	268	196	383	512
FEB	527	548	885	227	400	335	128	851	356	352	552	319	362	201	349	256	703	496
MAR	587	670	897	987	619	1,077	633	349	613	580	281	581	1,018	605	461	332	994	696
APR	854	724	1,040	1,092	950	1,009	748	384	897	1,062	761	456	689	981	476	548	894	655
MAY	650	566	900	421	530	508	274	328	354	1,036	651	232	363	156	357	620	990	346
JUN	249	367	431	207	282	216	192	169	431	358	275	157	428	175	123	389	250	144
JUL	333	211	432	162	131	131	144	140	182	127	127	133	250	162	131	92	157	112
AUG	180	254	414	154	169	149	130	133	124	155	48	104	350	118	139	61	248	123
SEP	294	482	271	408	175	221	118	233	122	133	58	171	218	341	164	120	159	136
OCT	256	662	658	853	244	313	158	456	124	71	178	206	336	504	211	254	477	216
NOV	486	637	507	663	227	465	242	393	196	224	277	423	544	453	565	407	653	301
DEC	548	532	398	749	303	430	273	319	233	624	447	338	524	437	330	180	687	364
ANNUAL AVERAGE	466	516	604	512	398	452	275	325	329	415	316	296	449	366	298	288	549	342
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Range	Average	
JAN	304	550	239	490	736	465	922	426	417	291	168	331	488	624	814	133-922	420	
FEB	236	276	337	263	503	516	437	473	473	346	423	279	297	391	634	128-885	416	
MAR	408	453	562	514	461	683	873	584	861	413	540	914	651	456	491	281-1,077	632	
APR	648	1,749	1,375	257	939	873	652	593	1,069	1,375	693	833	676	1,059	566	257-1,749	836	
MAY	501	375	534	158	1,081	643	349	214	898	341	652	621	526	385	553	156-1,081	519	
JUN	342	203	233	130	353	180	550	115	573	451	483	413	298	301	909	115-909	314	
JUL	254	136	248	94	384	153	243	142	314	195	152	188	259	214	670	92-670	206	
AUG	203	140	265	97	191	126	153	84	393	105	112	332	399	126	257	48-414	182	
SEP	217	158	190	102	185	127	133	257	228	116	138	257	452	161	187	58-482	204	
OCT	286	192	177	361	288	133	169	266	264	115	248	533	222	683	487 ¹	71-853	321	
NOV	531	347	251	693	613	293	190	280	309	163	525	736	350	758	508 ¹	163-758	431	
DEC	438	403	396	328	989	268	187	298	469	220	406	846	759	639	512 ¹	180-989	451	
ANNUAL AVERAGE	364	415	401	291	560	372	405	311	522	344	378	524	448	483	548 ¹	275-604	411	

¹ October through December data for 2006 are provisional and incomplete.

Table B-4 Average Annual Freshwater Flow (m³/sec/day) Estimated for Green Island, New York, 1947 to 2006

YEAR	FLOW	YEAR	FLOW
1947	457	1977	512
1948	366	1978	398
1949	350	1979	452
1950	398	1980	275
1951	479	1981	325
1952	432	1982	329
1953	395	1983	415
1954	408	1984	316
1955	414	1985	296
1956	393	1986	449
1957	273	1987	366
1958	363	1988	298
1959	401	1989	288
1960	397	1990	549
1961	304	1991	342
1962	299	1992	364
1963	266	1993	415
1964	247	1994	401
1965	219	1995	291
1966	285	1996	560
1967	316	1997	372
1968	353	1998	405
1969	377	1999	311
1970	337	2000	522
1971	420	2001	344
1972	595	2002	378
1973	493	2003	524
1974	466	2004	448
1975	516	2005	483
1976	604	2006 ¹	548

¹ Data for 2006 are provisional.

Table B-5 Poughkeepsie's Water Treatment Facility Data, Mean, Minimum, And Maximum Temperature (°C) for Each Day of the Year, 1951 to 2006

MONTH	DAY	LONG-TERM	TEMPERATURE (1951-2005)		2006 ACTUAL TEMPERATURES
		MEAN	MINIMUM	MAXIMUM	
1	1	1.4	0.6	4.4	1.6
1	2	1.5	0.0	4.6	1.6
1	3	1.6	0.6	4.6	1.5
1	4	1.6	0.6	3.4	1.6
1	5	1.5	0.0	3.4	1.3
1	6	1.3	0.0	3.3	1.3
1	7	1.4	0.0	4.1	1.5
1	8	1.2	0.0	3.4	1.8
1	9	1.3	0.0	3.3	1.5
1	10	1.2	0.0	3.3	1.3
1	11	1.2	0.0	3.7	1.7
1	12	1.1	0.4	3.4	1.7
1	13	1.1	0.0	3.5	2.1
1	14	1.1	0.0	3.2	2.2
1	15	1.1	0.0	2.8	2.0
1	16	1.1	0.4	2.8	1.8
1	17	1.1	0.5	2.8	1.9
1	18	1.1	0.6	3.3	1.4
1	19	1.0	0.6	2.8	4.8
1	20	1.0	0.5	2.2	4.2
1	21	1.0	0.0	2.4	2.0
1	22	1.1	0.6	2.2	1.7
1	23	1.0	0.6	3.3	1.8
1	24	1.0	0.0	3.3	2.0
1	25	1.0	0.0	3.7	2.5
1	26	1.0	0.0	3.5	4.6
1	27	1.0	0.0	3.1	2.3
1	28	1.0	0.5	3.0	2.5
1	29	1.0	0.5	2.5	3.4
1	30	1.0	0.0	2.5	4.6
1	31	1.0	0.5	2.8	4.7
2	1	1.0	0.5	2.4	1.8
2	2	1.0	0.6	2.7	2.2
2	3	1.0	0.6	2.2	2.5
2	4	1.0	0.6	2.0	2.8
2	5	0.9	0.0	1.8	3.2
2	6	1.0	0.5	2.0	3.8
2	7	1.0	0.2	2.2	3.7
2	8	1.0	0.0	2.2	3.8
2	9	0.9	0.2	2.2	3.7
2	10	1.0	0.2	3.3	3.2
2	11	1.0	0.0	2.6	2.8
2	12	1.0	0.3	2.3	2.6
2	13	1.1	0.0	2.2	2.1
2	14	1.1	0.3	2.8	2.0
2	15	1.1	0.2	2.8	1.7
2	16	1.1	0.0	2.8	2.0
2	17	1.2	0.6	4.4	1.6
2	18	1.1	0.0	2.8	1.6
2	19	1.2	0.6	2.8	1.5
2	20	1.2	0.0	2.8	1.5
2	21	1.2	0.4	2.8	1.3
2	22	1.3	0.0	3.9	1.4
2	23	1.3	0.0	2.8	1.5
2	24	1.3	0.0	3.9	1.6
2	25	1.3	0.5	2.8	1.5
2	26	1.4	0.0	3.3	1.6
2	27	1.5	0.0	4.4	1.2
2	28	1.5	0.0	5.0	1.5
2	29	1.8	0.6	4.4	
3	1	1.5	0.5	4.4	1.3
3	2	1.5	0.5	4.4	1.1
3	3	1.5	0.5	4.2	1.1
3	4	1.7	0.5	4.9	0.9
3	5	1.6	0.5	4.6	1.1
3	6	1.7	0.5	4.8	0.9
3	7	1.7	0.5	4.7	1.1
3	8	1.8	0.0	4.9	1.3
3	9	1.9	0.6	4.9	1.4
3	10	1.9	0.5	5.4	1.7
3	11	2.0	0.5	5.3	2.0
3	12	2.1	0.5	5.1	2.4
3	13	2.2	0.5	5.3	3.3
3	14	2.3	0.6	5.6	4.4
3	15	2.4	0.6	5.8	3.9

Table B-5 (Continued)

MONTH	DAY	LONG-TERM	TEMPERATURE (1951-2005)		2006 ACTUAL TEMPERATURES
		MEAN	MINIMUM	MAXIMUM	
3	16	2.5	0.6	5.6	7.0
3	17	2.6	0.6	5.7	11.0
3	18	2.7	0.5	5.9	4.7
3	19	2.7	0.6	7.7	4.9
3	20	2.9	0.6	7.5	5.4
3	21	3.1	0.6	7.3	5.2
3	22	3.2	0.6	7.2	5.2
3	23	3.3	0.6	7.1	5.0
3	24	3.5	0.6	7.1	5.1
3	25	3.7	0.6	6.4	5.2
3	26	3.8	0.6	6.5	5.1
3	27	4.1	1.1	6.9	5.1
3	28	4.3	1.1	6.8	5.2
3	29	4.6	1.1	7.5	5.4
3	30	4.8	1.1	8.3	5.5
3	31	5.1	1.1	8.4	5.6
4	1	5.4	1.7	9.4	5.9
4	2	5.4	2.2	9.1	6.1
4	3	5.7	2.8	10.8	6.4
4	4	5.8	2.8	9.2	6.9
4	5	5.9	2.8	8.8	7.4
4	6	6.1	3.3	9.3	10.5
4	7	6.3	2.8	9.5	11.1
4	8	6.5	2.8	9.4	8.1
4	9	6.5	2.8	9.2	8.4
4	10	6.6	2.8	10.2	8.8
4	11	6.8	2.8	11.2	11.5
4	12	7.1	2.8	11.4	11.7
4	13	7.3	2.8	11.4	9.7
4	14	7.4	2.8	11.4	9.9
4	15	7.6	2.8	11.5	10.0
4	16	7.8	3.3	11.8	10.3
4	17	8.0	3.9	11.7	10.4
4	18	8.2	5.6	13.1	10.7
4	19	8.5	5.6	13.9	10.9
4	20	8.7	6.1	12.2	11.1
4	21	9.1	6.1	12.2	11.2
4	22	9.3	6.7	12.8	11.1
4	23	9.6	6.7	14.0	11.7
4	24	9.7	6.7	14.1	12.2
4	25	9.8	6.7	13.9	12.4
4	26	10.1	6.7	13.6	12.7
4	27	10.3	7.2	13.3	13.6
4	28	10.5	7.8	13.3	12.6
4	29	10.8	8.3	13.9	12.5
4	30	11.1	8.9	13.9	12.4
5	1	11.3	8.9	14.4	12.5
5	2	11.5	8.9	14.4	14.3
5	3	11.7	8.9	14.4	15.2
5	4	12.0	8.9	15.0	14.2
5	5	12.1	8.9	15.0	13.2
5	6	12.3	8.9	15.0	13.4
5	7	12.6	8.9	15.2	13.6
5	8	12.7	8.9	15.4	13.8
5	9	12.8	8.9	15.6	13.9
5	10	13.0	8.9	16.1	14.1
5	11	13.2	9.4	16.2	14.3
5	12	13.3	9.4	16.5	14.8
5	13	13.5	10.0	16.7	15.4
5	14	13.7	10.6	16.7	15.5
5	15	13.9	11.1	16.8	15.4
5	16	14.1	11.1	17.6	15.1
5	17	14.4	11.7	17.7	15.0
5	18	14.6	11.7	17.9	15.0
5	19	14.9	11.7	18.3	15.4
5	20	15.1	12.2	18.6	15.5
5	21	15.4	12.7	19.3	15.4
5	22	15.5	12.5	18.5	15.1
5	23	15.6	12.4	18.9	15.1
5	24	15.9	12.8	20.1	15.3
5	25	16.1	12.8	20.1	15.5
5	26	16.4	12.2	20.8	15.6
5	27	16.6	12.2	20.6	15.9
5	28	16.9	12.2	20.8	16.2
5	29	17.0	12.8	20.7	16.6

Table B-5 (Continued)

MONTH	DAY	LONG-TERM	TEMPERATURE (1951-2005)		2006 ACTUAL TEMPERATURES
		MEAN	MINIMUM	MAXIMUM	
5	30	17.0	12.8	21.5	17.0
5	31	17.1	13.3	21.3	17.5
6	1	17.6	13.3	22.0	17.8
6	2	18.0	13.3	22.2	18.3
6	3	18.1	14.4	22.1	18.6
6	4	18.3	13.9	22.5	18.8
6	5	18.4	15.0	22.2	19.3
6	6	18.5	15.6	22.4	19.4
6	7	18.7	15.0	22.4	19.4
6	8	19.0	16.1	22.5	19.4
6	9	19.2	16.3	23.0	19.1
6	10	19.5	17.2	23.2	18.7
6	11	19.7	17.2	23.4	18.6
6	12	19.9	17.2	23.3	18.8
6	13	20.0	17.8	23.4	18.8
6	14	20.1	17.5	23.3	18.8
6	15	20.2	17.2	23.5	19.0
6	16	20.4	17.8	23.8	19.4
6	17	20.6	17.8	23.8	19.5
6	18	20.8	17.8	24.2	20.2
6	19	20.9	17.8	24.1	20.3
6	20	21.1	17.8	24.0	20.5
6	21	21.2	17.8	24.3	20.8
6	22	21.5	17.2	24.3	21.1
6	23	21.6	17.2	24.1	21.3
6	24	21.8	17.8	24.1	21.4
6	25	21.9	17.8	24.2	21.7
6	26	22.0	17.8	24.5	22.1
6	27	22.1	17.8	24.7	22.4
6	28	22.3	17.8	24.9	22.3
6	29	22.5	17.8	25.0	22.4
6	30	22.6	17.8	25.1	21.8
7	1	22.8	18.9	25.5	21.6
7	2	22.9	18.9	25.5	21.6
7	3	23.0	19.4	25.5	22.1
7	4	23.0	19.4	25.5	22.2
7	5	23.3	20.0	25.7	22.2
7	6	23.4	20.0	25.6	22.4
7	7	23.4	20.0	26.3	22.7
7	8	23.5	20.0	26.1	22.7
7	9	23.7	20.0	26.2	23.1
7	10	23.7	20.6	26.0	23.4
7	11	23.8	20.6	26.0	23.7
7	12	23.9	21.1	26.4	23.9
7	13	24.1	21.7	26.7	24.1
7	14	24.1	21.7	26.7	24.5
7	15	24.3	21.7	26.7	24.8
7	16	24.4	22.2	26.7	25.3
7	17	24.4	22.2	26.6	25.6
7	18	24.4	22.2	26.3	26.0
7	19	24.7	22.2	26.6	26.1
7	20	24.8	22.2	26.8	26.4
7	21	24.8	22.8	26.6	26.5
7	22	24.9	22.2	27.0	26.5
7	23	24.9	22.2	27.0	26.6
7	24	24.9	22.8	26.8	26.6
7	25	24.9	22.8	26.7	26.6
7	26	25.0	22.8	26.8	26.6
7	27	25.2	22.8	27.2	26.6
7	28	25.2	22.8	27.2	26.6
7	29	25.3	22.8	27.1	26.6
7	30	25.3	23.3	27.1	26.6
7	31	25.2	23.0	27.2	26.5
8	1	25.2	22.8	27.0	27.2
8	2	25.3	22.8	27.4	27.4
8	3	25.4	22.8	27.3	27.1
8	4	25.4	22.8	27.4	27.4
8	5	25.5	23.3	27.7	27.7
8	6	25.5	23.3	27.6	27.7
8	7	25.3	23.2	27.6	27.7
8	8	25.3	23.3	27.5	27.7
8	9	25.3	23.3	27.8	27.5
8	10	25.4	23.3	27.8	27.2
8	11	25.4	22.8	27.8	27.0
8	12	25.4	22.8	28.1	26.7

Table B-5 (Continued)

MONTH	DAY	LONG-TERM	TEMPERATURE (1951-2005)		2006 ACTUAL TEMPERATURES
		MEAN	MINIMUM	MAXIMUM	
8	13	25.3	22.2	28.0	26.7
8	14	25.2	22.2	28.4	26.6
8	15	25.1	22.2	28.4	26.6
8	16	25.1	22.2	28.4	26.3
8	17	25.0	22.2	28.1	26.5
8	18	25.0	22.8	28.0	26.5
8	19	25.0	22.2	27.7	26.4
8	20	25.1	22.8	27.6	26.2
8	21	24.9	22.2	27.5	26.2
8	22	24.8	22.2	27.1	26.1
8	23	24.7	22.5	26.9	26.0
8	24	24.6	22.2	26.7	25.8
8	25	24.5	21.7	26.4	25.5
8	26	24.5	21.7	26.3	25.5
8	27	24.6	22.2	26.3	25.2
8	28	24.5	22.2	26.3	25.1
8	29	24.4	22.2	26.7	24.8
8	30	24.3	22.2	26.2	24.3
8	31	24.3	22.2	26.3	23.9
9	1	24.2	22.2	26.1	23.8
9	2	24.2	22.2	26.7	23.3
9	3	24.0	22.2	26.1	22.8
9	4	24.0	22.2	25.6	22.6
9	5	23.9	21.7	25.6	22.5
9	6	23.9	22.2	25.6	22.3
9	7	23.7	21.6	25.6	22.4
9	8	23.6	21.7	25.6	22.4
9	9	23.5	21.7	25.6	22.2
9	10	23.4	21.1	25.6	21.9
9	11	23.3	21.1	25.6	21.9
9	12	23.2	21.1	25.6	21.7
9	13	23.0	20.0	25.6	21.6
9	14	22.9	18.9	25.1	21.3
9	15	22.7	17.8	25.1	21.1
9	16	22.5	17.2	25.1	21.0
9	17	22.3	17.2	25.1	20.9
9	18	22.1	16.7	25.0	20.9
9	19	22.1	16.7	24.9	20.8
9	20	21.8	17.2	24.9	20.6
9	21	21.4	16.7	24.7	20.5
9	22	21.3	16.1	24.6	20.4
9	23	21.1	16.1	24.4	20.4
9	24	20.9	15.6	24.2	20.3
9	25	20.8	15.6	23.9	20.2
9	26	20.8	15.6	23.8	20.2
9	27	20.5	16.1	23.5	20.2
9	28	20.2	15.6	23.3	20.0
9	29	20.0	15.6	23.1	19.7
9	30	19.8	15.6	22.6	19.4
10	1	19.6	16.1	22.5	19.3
10	2	19.5	15.6	22.2	18.9
10	3	19.4	15.6	22.2	18.9
10	4	19.0	15.6	22.1	18.9
10	5	18.8	15.0	22.1	18.6
10	6	18.6	15.0	22.0	18.6
10	7	18.5	15.0	22.1	18.1
10	8	18.3	14.4	21.6	17.9
10	9	18.0	14.4	21.1	17.7
10	10	17.9	14.4	21.1	17.7
10	11	17.7	13.9	21.1	17.6
10	12	17.3	13.3	21.1	17.6
10	13	17.1	13.3	20.0	17.3
10	14	16.9	12.8	21.1	16.7
10	15	16.8	12.2	20.0	16.3
10	16	16.6	12.2	20.0	15.9
10	17	16.4	12.8	20.0	15.8
10	18	16.2	12.2	20.0	15.7
10	19	15.9	11.7	20.0	15.4
10	20	15.6	10.6	19.4	15.2
10	21	15.3	10.6	18.9	14.2
10	22	15.1	10.0	18.9	13.8
10	23	14.9	10.0	18.9	13.6
10	24	14.7	10.0	18.3	13.1
10	25	14.5	10.0	18.3	12.6
10	26	14.3	10.0	17.8	12.3

Table B-5 (Continued)

MONTH	DAY	LONG-TERM	TEMPERATURE (1951-2005)		2006 ACTUAL TEMPERATURES
		MEAN	MINIMUM	MAXIMUM	
10	27	13.9	9.4	17.8	11.9
10	28	13.8	8.9	17.8	12.0
10	29	13.5	8.3	17.8	10.7
10	30	13.3	7.8	16.7	9.5
10	31	13.1	7.2	16.7	9.5
11	1	13.0	7.2	16.7	9.4
11	2	12.8	7.2	16.1	9.4
11	3	12.6	7.2	16.1	9.3
11	4	12.3	7.2	15.6	9.0
11	5	12.1	7.2	15.6	9.0
11	6	11.8	6.7	15.6	8.9
11	7	11.6	6.1	15.0	8.9
11	8	11.4	6.1	15.0	8.9
11	9	11.2	5.6	15.0	10.2
11	10	10.8	5.0	14.4	9.0
11	11	10.4	5.0	13.9	9.0
11	12	10.3	5.0	13.3	9.0
11	13	10.1	5.0	13.3	9.0
11	14	9.9	5.0	13.3	9.3
11	15	9.8	5.0	12.8	9.6
11	16	9.5	5.0	12.8	9.7
11	17	9.2	5.0	12.8	10.0
11	18	9.0	5.0	12.8	10.3
11	19	8.8	5.0	12.2	10.5
11	20	8.5	4.9	11.1	10.5
11	21	8.3	3.9	11.1	10.3
11	22	8.1	3.9	11.1	9.8
11	23	8.0	3.9	11.1	9.4
11	24	7.7	3.9	10.6	8.9
11	25	7.4	3.9	10.6	8.6
11	26	7.2	3.3	10.2	8.2
11	27	7.0	3.3	10.4	7.8
11	28	6.8	3.3	10.5	7.8
11	29	6.7	3.3	10.3	7.7
11	30	6.5	2.8	10.3	7.7
12	1	6.2	2.2	9.4	7.7
12	2	6.0	3.0	8.9	7.7
12	3	5.8	2.2	9.3	7.6
12	4	5.5	1.3	8.3	7.5
12	5	5.3	2.8	9.6	7.3
12	6	5.3	2.6	9.6	8.8
12	7	5.3	2.0	9.8	7.2
12	8	4.9	2.0	8.2	6.5
12	9	4.6	1.7	8.1	6.0
12	10	4.4	1.1	8.8	5.7
12	11	4.2	1.1	8.8	5.4
12	12	3.9	0.6	8.8	5.1
12	13	3.9	0.6	8.8	5.0
12	14	3.7	0.6	8.6	4.7
12	15	3.4	0.6	7.1	4.8
12	16	3.2	0.6	6.9	4.7
12	17	3.2	0.6	8.0	4.5
12	18	2.9	0.6	7.9	4.5
12	19	2.7	0.6	7.6	4.5
12	20	2.7	0.5	7.6	4.5
12	21	2.6	0.5	7.5	6.3
12	22	2.3	0.5	6.5	4.5
12	23	2.3	0.6	6.1	4.5
12	24	2.2	0.6	7.3	4.2
12	25	2.1	0.5	5.6	4.2
12	26	1.9	0.0	6.1	4.1
12	27	1.9	0.0	6.1	4.2
12	28	1.9	0.0	6.1	6.7
12	29	1.8	0.0	6.1	4.9
12	30	1.8	0.6	6.1	4.5
12	31	1.8	0.0	5.0	4.2

Table B-6 Average Annual Water Temperature (°C) as Measured at Poughkeepsie's Water Treatment Facility, 1951 to 2006

YEAR	TEMPERATURE	YEAR	TEMPERATURE
1951	11.66	1979	12.49
1952	12.25	1980	12.72
1953	12.87	1981	12.63
1954	11.92	1982	12.48
1955	12.40	1983	13.01
1956	11.92	1984	13.04
1957	13.03	1985	13.05
1958	12.18	1986	12.69
1959	12.90	1987	12.66
1960	11.29	1988	12.57
1961	12.17	1989	12.09
1962	11.63	1990	12.77
1963	11.82	1991	13.67
1964	12.99	1992	12.10
1965	12.51	1993	12.47
1966	12.75	1994	12.39
1967	12.05	1995	12.48
1968	13.10	1996	12.19
1969	12.59	1997	12.42
1970	12.79	1998	13.96
1971	12.31	1999	13.22
1972	11.35	2000	12.25
1973	12.73	2001	13.41
1974	11.61	2002	13.17
1975	12.37	2003	12.46
1976	11.43	2004	13.07
1977	11.97	2005	12.94
1978	12.27	2006	13.09

Table B-7 Weighted Mean Temperature (°C) by Region and Week from 2006 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
06MAR06	3.7	3.4	3.4	3.1	1.9	1.2	1.4	.	.	.	.	.	.
20MAR06	4.9	4.8	4.4	4.3	3.3	2.9	3.1	.	.	.	.	.	.
27MAR06	6.3	6.4	6.2	5.8	5.2	4.7	4.8	.	.	.	.	.	.
03APR06	8.1	8.4	8.5	8.4	7.7	6.7	6.5	6.1	7.0	7.5	8.2	8.8	7.2
10APR06	9.2	9.8	9.5	9.1	8.5	7.7	7.9	8.5	9.1	8.9	7.7	7.4	7.1
17APR06	10.2	10.6	10.9	10.9	10.3	9.9	10.3	10.4	10.8	11.0	11.2	12.4	13.1
24APR06	11.7	12.5	12.3	12.0	11.6	11.8	11.8	12.1	12.2	12.7	12.4	12.2	10.0
01MAY06	12.7	13.2	13.5	13.2	13.1	13.3	13.5	13.1	12.2	12.4	12.7	12.7	12.8
08MAY06	13.7	14.1	14.1	14.6	14.7	14.6	14.3	13.7	14.3	14.7	15.0	14.8	14.5
15MAY06	14.6	14.9	15.0	15.0	15.0	14.4	14.6	15.2	15.2	14.8	14.7	14.9	14.4
22MAY06	14.4	15.4	15.4	16.0	16.0	15.4	15.4	15.3	14.9	14.4	13.9	13.4	12.7
29MAY06	18.7	19.7	19.6	19.2	19.4	18.5	18.1	17.5	17.7	17.5	18.0	18.4	18.9
05JUN06	17.5	18.3	18.8	18.6	18.6	18.3	18.9	19.3	19.8	19.5	19.2	18.7	17.8
12JUN06	18.4	18.8	18.9	20.3	20.5	20.2	20.2	19.4	18.7	18.2	17.6	16.6	16.5
19JUN06	19.0	21.2	22.8	23.6	23.5	21.8	21.2	20.7	20.6	20.5	20.9	21.2	21.2
26JUN06	22.7	24.2	23.8	22.8	22.4	22.0	21.9	22.6	22.7	22.5	22.6	23.4	23.7
03JUL06	18.6	21.3	23.2	23.3	23.3	23.0	22.7	22.4	22.9	22.5	22.6	22.9	23.1
10JUL06	20.3	20.9	23.2	23.9	24.6	23.7	23.9	23.9	.	.	.	.	.
17JUL06	23.3	25.5	26.4	27.0	26.1	25.4	25.9	26.1	26.4	26.2	26.2	25.8	25.3
24JUL06	24.2	24.7	25.7	26.4	27.0	26.2	26.4	26.6	.	.	.	.	.
31JUL06	24.6	26.8	27.9	29.0	28.5	27.6	28.0	27.8	27.1	26.8	26.3	25.9	25.8
07AUG06	22.7	23.9	26.4	27.4	27.6	27.6	27.9	27.6	.	.	.	.	.
14AUG06	23.7	24.6	25.3	27.2	27.6	26.9	26.8	26.9	26.5	26.0	25.5	25.4	25.1
21AUG06	23.8	24.6	25.5	26.6	27.0	26.6	26.5	26.5	.	.	.	.	.
28AUG06	23.1	23.8	24.4	25.2	25.6	25.0	24.8	25.2	24.8	24.3	23.9	23.4	23.1
04SEP06	21.3	21.7	22.5	23.5	23.9	23.5	23.3	22.9	.	.	.	.	.
11SEP06	21.4	21.6	21.9	23.2	24.0	23.2	22.6	22.4	21.5	20.8	20.9	21.0	20.7
18SEP06	21.7	22.0	22.6	23.4	23.3	22.2	22.0	21.6	.	.	.	.	.
25SEP06	20.7	20.8	20.8	22.0	22.2	21.0	20.4	20.1	20.0	19.6	19.4	19.2	18.9
02OCT06	19.7	20.0	20.5	21.2	21.6	20.4	20.0	19.6	.	.	.	.	.
09OCT06	18.4	18.7	19.1	19.8	20.1	18.6	18.4	18.2	17.5	16.7	16.3	15.9	15.5
23OCT06	16.2	16.2	15.4	15.6	15.5	13.7	13.2	13.0	12.2	10.7	9.9	9.3	8.8
06NOV06	12.3	12.2	11.4	10.2	10.4	9.4	9.1	9.0	8.2	7.7	7.7	7.2	7.1
27NOV06	10.1	10.0	9.8	9.8	9.4	9.2	8.9	8.4	7.3	7.5	7.3	7.2	7.1

Note: Dots (.) indicate no sampling.

Table B-8 Average Annual Temperature (°C) from Long River/Fall Juvenile Surveys,
1974 to 2006

YEAR	TEMPERATURE
1974	21.54
1975	22.10
1976	20.04
1977	20.79
1978	20.16
1979	21.53
1980	21.23
1981	20.96
1982	19.16
1983	19.14
1984	19.22
1985	21.69
1986	21.28
1987	21.41
1988	21.80
1989	20.65
1990	20.97
1991	23.59
1992	21.06
1993	21.01
1994	21.93
1995	21.78
1996	20.18
1997	20.96
1998	22.26
1999	23.17
2000	20.43
2001	21.43
2002	22.07
2003	21.09
2004	21.94
2005	22.14
2006	21.08

Table B-9 Mean Temperature (°C) by Region and Week from 2006 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
12JUN06	18.6	18.8	19.9	20.3	20.5	20.9	21.2	19.8	19.1	18.9	19.5	18.0
26JUN06	24.5	24.2	23.6	24.0	23.1	23.8	23.2	23.3	24.2	22.7	22.6	23.7
10JUL06	23.7	24.1	24.5	24.5	23.5	25.2	24.6	24.8	25.8	24.9	25.8	24.5
24JUL06	26.5	26.9	28.6	28.2	26.9	27.3	27.4	27.2	27.7	28.8	27.9	25.1
07AUG06	27.2	27.2	27.8	28.6	27.7	28.2	27.6	26.9	26.4	27.1	27.2	26.5
21AUG06	25.4	25.6	27.7	27.6	26.7	26.5	26.1	25.4	24.7	26.2	24.6	24.5
04SEP06	22.1	22.7	24.1	24.2	23.1	22.0	20.9	20.8	20.8	20.9	21.0	20.1
18SEP06	24.1	23.1	23.2	.	.	.	.	20.2	19.5	20.9	21.1	21.5
02OCT06	19.3	19.9	20.2	22.2	20.5	20.3	19.6	17.9	17.9	18.1	17.7	16.3
16OCT06	16.6	16.9	17.5	20.3	16.9	16.1	16.4	14.9	13.9	13.1	12.5	12.5

Note: Dots (.) indicate missing values.

Table B-10 Average Annual Temperature (°C) from Beach Seine Surveys, 1974 to 2006

YEAR	TEMPERATURE
1974	21.34
1975	21.59
1976	22.21
1977	22.85
1978	23.71
1979	23.05
1980	24.29
1981	21.91
1982	22.73
1983	24.53
1984	23.17
1985	23.38
1986	22.02
1987	23.03
1988	23.16
1989	24.15
1990	24.34
1991	23.63
1992	22.07
1993	23.48
1994	22.39
1995	23.85
1996	24.42
1997	22.41
1998	24.20
1999	23.42
2000	22.32
2001	24.89
2002	24.52
2003	23.69
2004	22.60
2005	25.69
2006	23.27

Table B-11 Weighted Mean Salinity (ppt) by Region and Week from 2006 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
06MAR06	15.4	11.0	7.1	5.3	1.6	0.1	0.1	.	.	.	.	.	.
20MAR06	13.5	7.3	3.8	3.1	0.4	0.1	0.1	.	.	.	.	.	.
27MAR06	20.6	11.4	6.7	5.2	4.5	2.5	0.6	.	.	.	.	.	.
03APR06	15.7	9.5	5.6	3.9	2.0	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10APR06	16.8	11.1	6.2	5.2	3.3	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17APR06	14.8	8.6	5.0	2.9	1.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24APR06	13.1	5.9	2.4	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
01MAY06	9.5	4.7	1.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
08MAY06	16.0	11.0	11.3	8.0	4.8	1.3	0.4	0.1	0.1	0.1	0.1	0.1	0.1
15MAY06	12.9	8.4	5.9	4.4	2.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
22MAY06	15.9	5.3	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
29MAY06	12.5	4.9	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
05JUN06	14.9	9.8	5.0	3.4	2.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
12JUN06	13.6	9.0	4.1	1.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
19JUN06	18.3	7.6	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26JUN06	7.4	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
03JUL06	16.7	10.1	4.0	3.9	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10JUL06	16.6	13.1	7.3	4.9	2.6	0.4	0.1	0.1	.	.	.	.	.
17JUL06	15.3	6.2	4.2	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24JUL06	15.0	10.2	5.1	2.0	0.6	0.1	0.1	0.1	.	.	.	.	.
31JUL06	16.5	9.2	5.7	2.5	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
07AUG06	20.7	16.0	8.6	6.2	5.1	2.7	0.6	0.1	.	.	.	.	.
14AUG06	19.2	10.6	7.6	4.2	2.7	1.3	0.4	0.1	0.1	0.1	0.1	0.1	0.1
21AUG06	21.7	15.2	9.5	5.9	4.4	2.1	0.5	0.1	.	.	.	.	.
28AUG06	16.2	10.1	7.4	6.2	4.1	1.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1
04SEP06	19.5	14.3	9.4	7.5	5.9	3.5	1.4	0.1	.	.	.	.	.
11SEP06	17.2	10.9	8.1	5.6	4.2	2.6	0.9	0.1	0.1	0.1	0.1	0.1	0.1
18SEP06	17.5	12.5	8.3	5.2	4.0	1.8	0.4	0.1	.	.	.	.	.
25SEP06	15.9	12.3	7.0	3.8	2.4	0.8	0.3	0.1	0.1	0.1	0.2	0.2	0.2
02OCT06	20.7	14.4	8.2	4.8	3.3	1.2	0.2	0.1	.	.	.	.	.
09OCT06	18.0	9.7	4.8	3.1	1.6	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1
23OCT06	12.8	7.4	1.6	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
06NOV06	12.0	7.9	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27NOV06	10.7	6.2	4.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Dots (.) indicate no sampling.

Table B-12 Mean Salinity (ppt) by Region and Week from 2006 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
12JUN06	5.0	2.3	1.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26JUN06	0.6	0.7	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10JUL06	5.7	4.2	2.5	1.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24JUL06	4.2	2.4	1.0	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
07AUG06	6.2	5.8	4.5	4.8	1.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1
21AUG06	7.9	6.3	4.3	3.1	1.3	0.3	0.1	0.1	0.1	0.1	0.2	0.2
04SEP06	9.0	7.5	5.6	5.2	2.4	0.6	0.1	0.1	0.1	0.1	0.2	0.1
18SEP06	7.4	5.0	4.0	.	.	.	.	0.1	0.1	0.2	0.2	0.2
02OCT06	5.9	4.4	3.3	2.2	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1
16OCT06	6.0	3.4	1.7	1.7	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1

Note: Dots (.) indicate missing values.

Table B-13 Weighted Mean Dissolved Oxygen (mg/L) by Region and Week from 2006 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
06MAR06	11.1	11.7	12.1	11.7	13.6	14.2	14.1	.	.	.	.	.	.
20MAR06	10.3	11.1	11.7	11.5	12.8	13.3	13.0	.	.	.	.	.	.
27MAR06	9.3	10.5	11.6	10.9	10.2	10.7	11.3	.	.	.	.	.	.
03APR06	9.2	9.9	10.6	11.4	9.9	10.5	10.5	10.4	11.6	11.9	11.7	11.5	11.4
10APR06	8.2	8.7	9.7	10.1	10.6	11.5	11.6	11.1	10.9	10.7	11.1	11.7	12.1
17APR06	8.0	8.9	9.7	10.3	10.4	10.6	10.6	10.3	10.4	10.5	10.5	10.1	10.1
24APR06	7.8	8.8	9.5	8.7	10.4	10.3	10.3	10.1	10.2	9.1	9.2	9.1	10.9
01MAY06	9.0	9.5	10.2	10.4	10.4	10.4	10.3	10.2	10.2	10.2	10.5	10.5	10.3
08MAY06	6.5	8.1	8.5	8.8	8.2	8.8	9.0	9.0	9.2	9.7	9.9	9.7	9.6
15MAY06	7.4	7.6	8.3	7.9	7.9	8.6	8.8	8.4	8.3	8.5	8.3	8.8	9.3
22MAY06	8.4	8.4	9.0	9.1	9.0	9.1	8.6	8.0	8.3	8.6	9.0	9.1	10.0
29MAY06	6.9	7.5	9.3	8.8	7.9	8.0	8.1	8.0	8.4	8.9	9.2	9.1	8.9
05JUN06	7.2	7.2	7.2	7.1	7.5	7.5	8.3	8.1	7.8	7.2	7.3	8.0	8.4
12JUN06	6.2	6.5	7.5	7.7	7.7	7.8	7.5	7.8	8.1	8.0	8.3	8.7	8.8
19JUN06	5.7	6.1	7.1	7.2	7.4	7.0	7.8	7.9	8.3	8.3	8.3	8.2	8.6
26JUN06	6.4	7.7	7.8	7.3	7.4	7.2	7.1	7.9	8.2	8.0	8.1	7.8	7.9
03JUL06	4.9	5.3	5.8	5.5	5.9	6.1	6.5	6.8	6.9	7.1	7.5	7.6	7.8
10JUL06	5.3	5.2	5.9	5.8	5.6	5.9	6.4	6.2	.	.	.	.	.
17JUL06	4.2	4.9	5.7	6.3	6.1	5.9	6.2	6.2	6.2	6.1	6.8	7.0	7.3
24JUL06	5.1	5.4	5.6	5.8	5.8	5.9	6.0	6.0	.	.	.	.	.
31JUL06	5.9	6.1	5.8	5.5	5.9	6.1	6.0	6.0	6.2	6.3	6.6	7.0	7.5
07AUG06	5.4	6.0	6.6	6.0	5.4	5.5	5.8	5.8	.	.	.	.	.
14AUG06	5.4	5.6	6.6	7.1	5.6	6.0	6.3	6.2	6.5	7.2	7.2	7.3	7.3
21AUG06	5.1	5.7	6.2	6.7	6.9	7.2	8.4	7.7	.	.	.	.	.
28AUG06	5.1	5.6	5.5	5.1	5.5	6.1	6.6	6.3	6.3	6.4	6.9	7.2	6.7
04SEP06	5.3	5.8	6.6	6.2	5.7	6.2	6.9	7.2	.	.	.	.	.
11SEP06	4.9	5.6	6.3	6.6	5.8	5.7	6.9	7.0	7.1	7.7	8.4	9.0	8.6
18SEP06	5.1	5.6	6.0	6.1	7.4	8.0	8.4	8.4	.	.	.	.	.
25SEP06	5.1	5.3	6.5	6.7	6.5	7.0	7.4	7.3	7.4	8.0	8.1	8.1	8.1
02OCT06	4.9	5.4	6.1	6.2	7.1	7.7	8.0	7.9	.	.	.	.	.
09OCT06	5.4	6.3	7.1	6.9	6.9	7.3	7.5	7.6	8.3	9.1	10.9	10.1	9.7
23OCT06	6.3	6.9	8.0	7.9	7.8	9.6	9.7	9.9	9.9	10.4	10.5	11.0	11.5
06NOV06	7.2	7.4	8.9	9.1	9.7	9.7	11.0	11.8	12.2	12.1	9.6	10.5	11.5
27NOV06	8.2	9.0	9.3	9.8	10.5	10.6	10.0	10.0	11.1	12.0	12.6	12.7	12.6

Note: Dots (.) indicate no sampling.

Table B-14 Average Annual Dissolved Oxygen (mg/l) from Long River/Fall Juvenile Surveys, 1974 to 2006

YEAR	DISSOLVED OXYGEN
1974	7.26
1975	7.69
1976	8.37
1977	7.66
1978	7.86
1979	8.02
1980	7.77
1981	7.82
1982	7.99
1983	8.29
1984	8.64
1985	8.14
1986	8.19
1987	7.79
1988	7.58
1989	7.58
1990	7.77
1991	7.10
1992	7.67
1993	7.59
1994	7.95
1995	7.90
1996	7.95
1997	7.91
1998	7.61
1999	7.56
2000	7.97
2001	7.54
2002	7.51
2003	7.51
2004	7.12
2005	7.04
2006	7.13

Table B-15 Mean Dissolved Oxygen (mg/L) by Region and Week from 2006 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
12JUN06	6.8	7.6	7.7	7.1	7.3	6.9	7.1	7.9	7.6	7.6	7.4	7.8
26JUN06	7.2	7.0	6.9	6.6	7.4	7.0	7.8	7.7	7.7	7.4	7.4	7.1
10JUL06	5.8	6.1	6.1	6.1	6.2	6.8	6.3	6.4	6.4	6.3	6.5	6.7
24JUL06	5.1	5.9	6.3	6.3	6.5	6.0	5.2	5.5	5.7	5.6	6.2	6.3
07AUG06	6.7	6.2	6.2	5.4	5.5	5.8	5.9	5.3	5.2	7.2	7.1	6.8
21AUG06	6.8	7.1	7.2	6.1	6.6	7.7	7.6	7.5	7.6	7.7	7.7	7.3
04SEP06	6.5	6.5	7.0	6.1	6.8	7.3	7.7	7.4	7.8	7.9	8.5	7.9
18SEP06	6.2	7.5	6.6	.	.	.	.	6.8	6.7	7.4	9.0	8.4
02OCT06	7.2	7.6	7.1	7.0	7.6	7.7	6.9	6.9	7.0	7.3	8.6	8.5
16OCT06	6.7	7.3	6.8	7.4	7.4	7.8	7.2	7.8	8.5	8.6	8.3	8.2

Note: Dots (.) indicate missing values.

Table B-16 Average Annual Dissolved Oxygen (mg/l) from Beach Seine Surveys, 1974 to 2006

YEAR	DISSOLVED OXYGEN
1974	8.71
1975	7.82
1976	7.89
1977	7.35
1978	7.29
1979	8.61
1980	8.08
1981	8.34
1982	7.85
1983	7.14
1984	8.42
1985	7.98
1986	8.28
1987	8.63
1988	7.95
1989	7.60
1990	7.90
1991	8.82
1992	8.56
1993	7.39
1994	8.33
1995	7.67
1996	6.93
1997	8.44
1998	7.42
1999	7.62
2000	7.38
2001	7.37
2002	6.76
2003	7.09
2004	7.20
2005	6.44
2006	7.26

Table B-17 Weighted Mean Percent Oxygen Saturation by Region and Week from 2006 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
06MAR06	94.3	95.1	95.8	90.2	99.6	100.9	100.6	.	.	.	.	.	.
20MAR06	88.4	91.3	92.7	90.5	95.8	98.3	97.1	.	.	.	.	.	.
27MAR06	87.4	92.1	98.0	90.5	83.2	84.5	88.7	.	.	.	.	.	.
03APR06	87.3	90.7	94.8	99.8	84.0	86.3	85.2	83.5	96.1	99.6	99.0	99.1	94.3
10APR06	79.9	82.5	89.1	90.7	92.7	96.5	97.6	94.8	94.2	92.3	93.3	97.3	99.6
17APR06	79.0	85.5	90.8	95.2	94.2	93.7	94.8	92.4	94.1	95.1	95.5	94.8	96.4
24APR06	79.1	86.1	89.7	80.6	95.8	95.1	95.0	94.4	94.9	85.7	86.4	84.9	96.8
01MAY06	90.1	93.8	99.0	99.6	98.9	99.1	98.8	96.9	94.7	95.8	98.5	99.1	97.2
08MAY06	69.7	85.2	89.4	91.4	83.2	87.2	88.2	86.6	90.1	96.0	97.8	95.9	94.4
15MAY06	79.2	80.1	85.4	81.2	79.5	84.0	86.5	83.6	82.7	84.1	82.0	87.0	90.7
22MAY06	91.3	86.8	90.1	92.1	91.2	91.3	86.3	79.3	82.3	84.5	87.7	87.5	94.5
29MAY06	80.2	84.4	101.9	95.0	85.7	85.3	85.4	84.0	87.8	93.3	97.1	97.0	95.3
05JUN06	82.6	81.6	80.1	77.6	81.4	79.6	89.7	87.2	85.0	78.4	79.5	86.0	88.2
12JUN06	71.8	74.2	82.7	85.2	85.1	86.5	83.2	84.7	86.4	85.3	87.0	89.2	90.6
19JUN06	69.4	71.7	82.8	85.1	86.8	79.6	88.5	88.3	91.9	92.0	92.7	92.4	96.4
26JUN06	78.1	91.6	92.0	85.0	84.7	82.6	81.6	91.2	94.5	92.2	94.2	91.1	93.6
03JUL06	58.4	64.0	69.2	66.3	70.3	71.5	75.0	78.1	80.6	82.2	86.4	88.6	91.1
10JUL06	65.3	63.1	71.9	70.8	68.4	69.8	76.0	74.0	.	.	.	.	.
17JUL06	54.5	62.0	72.7	78.8	74.6	72.3	76.9	76.9	77.0	75.8	83.5	85.7	89.0
24JUL06	67.1	69.1	71.2	72.2	72.9	73.4	74.2	74.5	.	.	.	.	.
31JUL06	79.3	81.3	76.8	72.1	77.1	77.6	76.6	76.7	77.5	78.7	82.2	85.9	91.6
07AUG06	70.9	79.2	86.4	79.3	70.5	70.9	73.9	73.9	.	.	.	.	.
14AUG06	72.7	71.5	84.6	91.5	72.5	75.4	78.4	78.1	80.4	88.3	87.8	88.9	88.1
21AUG06	69.2	74.9	80.3	86.8	89.2	90.3	104.5	95.6	.	.	.	.	.
28AUG06	65.6	71.0	68.6	63.8	69.3	74.1	79.3	76.0	76.1	77.0	81.5	84.7	78.8
04SEP06	68.2	72.2	80.9	75.9	70.4	74.3	81.3	83.4	.	.	.	.	.
11SEP06	61.7	67.9	75.3	80.2	70.5	68.3	80.7	80.1	81.0	85.4	94.3	100.6	96.1
18SEP06	65.3	69.2	73.2	74.4	88.9	93.2	96.8	95.3	.	.	.	.	.
25SEP06	62.8	63.9	76.3	79.0	76.3	79.2	81.7	80.1	81.6	86.8	88.4	87.8	87.7
02OCT06	61.0	65.6	71.3	72.4	82.2	85.7	88.1	86.2	.	.	.	.	.
09OCT06	65.3	71.5	78.6	77.7	76.4	77.9	79.9	80.5	86.4	93.4	110.9	102.3	97.3
23OCT06	69.4	73.6	80.6	79.2	78.4	92.9	92.6	94.4	91.9	93.2	93.1	95.8	98.6
06NOV06	73.1	73.2	82.2	81.2	86.9	85.1	95.8	102.5	103.8	101.1	80.7	87.4	95.0
27NOV06	78.1	83.2	84.1	86.9	91.5	92.0	86.5	84.9	92.2	100.5	104.6	105.2	104.5

Note: Dots (.) indicate no sampling.

Table B-18 Mean Percent Oxygen Saturation by Region and Week from 2006 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
12JUN06	75.1	82.6	85.3	79.2	80.6	77.4	80.3	86.2	81.9	81.8	80.2	82.4
26JUN06	86.2	83.8	81.1	78.5	85.8	83.3	91.4	90.3	92.4	86.3	86.1	84.0
10JUL06	71.0	74.1	74.5	74.2	73.2	82.1	75.9	77.1	78.1	75.8	79.5	80.3
24JUL06	65.3	74.5	81.1	81.0	81.4	76.1	65.1	69.7	72.5	72.5	78.8	76.0
07AUG06	87.2	81.2	80.7	71.8	70.1	74.2	74.1	66.1	64.0	90.7	89.5	85.0
21AUG06	87.6	90.3	93.9	78.5	82.7	95.6	93.5	91.7	91.7	95.4	91.9	87.8
04SEP06	78.6	78.5	86.9	74.8	80.3	84.1	86.3	83.0	87.6	87.9	94.9	87.6
18SEP06	78.0	89.5	79.1	.	.	.	.	74.9	72.6	82.5	100.7	95.5
02OCT06	81.0	85.7	80.6	80.7	84.5	85.6	75.1	72.6	73.9	77.5	90.2	86.2
16OCT06	71.8	77.4	72.4	82.4	76.2	79.6	73.8	77.5	82.7	82.1	78.2	77.0

Note: Dots (.) indicate missing values.

Table B-19 Weighted Mean Conductivity (mS/cm @ 25°C) by Region and Week from 2006 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
06MAR06	25.2	18.4	12.0	9.1	2.8	0.2	0.2	.	.	.	.	.	.
20MAR06	22.2	12.4	6.6	5.4	0.7	0.2	0.2	.	.	.	.	.	.
27MAR06	33.2	19.2	11.6	9.1	7.8	4.4	1.1	.	.	.	.	.	.
03APR06	25.8	16.1	9.8	6.8	3.5	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10APR06	27.6	18.7	10.7	9.0	5.8	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
17APR06	24.4	14.7	8.7	5.1	2.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24APR06	21.9	10.2	4.2	0.9	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
01MAY06	16.1	8.2	2.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
08MAY06	26.3	18.4	18.8	13.6	8.4	2.3	0.8	0.2	0.2	0.2	0.2	0.2	0.2
15MAY06	21.4	14.3	10.2	7.6	4.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2
22MAY06	26.1	9.0	0.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
29MAY06	20.6	8.4	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
05JUN06	24.4	16.4	8.6	5.9	3.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
12JUN06	22.6	15.4	7.1	1.8	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
19JUN06	29.7	13.0	1.8	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
26JUN06	12.4	1.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
03JUL06	26.9	16.8	6.9	6.7	2.6	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
10JUL06	27.2	21.9	12.5	8.5	4.6	0.7	0.2	0.2	.	.	.	.	.
17JUL06	25.1	10.7	7.3	1.6	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24JUL06	24.8	17.2	8.9	3.5	1.1	0.2	0.2	0.2	.	.	.	.	.
31JUL06	26.8	15.3	9.7	4.3	2.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
07AUG06	33.3	26.3	14.7	10.6	8.8	4.7	1.0	0.2	.	.	.	.	.
14AUG06	31.2	17.9	13.0	7.4	4.8	2.2	0.7	0.2	0.2	0.2	0.2	0.2	0.2
21AUG06	34.8	25.1	16.1	10.2	7.7	3.6	0.9	0.2	.	.	.	.	.
28AUG06	26.6	17.1	12.6	10.8	7.2	2.4	0.5	0.2	0.2	0.2	0.2	0.3	0.3
04SEP06	31.7	23.8	16.0	12.9	10.2	6.2	2.4	0.2	.	.	.	.	.
11SEP06	28.2	18.4	13.8	9.8	7.3	4.5	1.6	0.3	0.2	0.2	0.3	0.3	0.3
18SEP06	28.6	20.9	14.1	9.1	7.0	3.1	0.7	0.2	.	.	.	.	.
25SEP06	26.1	20.6	12.1	6.7	4.3	1.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3
02OCT06	33.2	23.8	14.0	8.4	5.9	2.1	0.3	0.3	.	.	.	.	.
09OCT06	29.4	16.4	8.3	5.5	2.8	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2
23OCT06	21.3	12.7	2.8	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
06NOV06	20.0	13.5	2.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
27NOV06	17.8	10.6	7.2	1.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Note: Dots (.) indicate no sampling.

Table B-20 Mean Conductivity (mS/cm @ 25°C) by Region and Week from 2006 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
12JUN06	8.7	4.0	2.4	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
26JUN06	1.0	1.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10JUL06	9.9	7.5	4.4	3.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24JUL06	7.3	4.1	1.7	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
07AUG06	10.7	10.0	7.9	8.3	2.8	0.3	0.2	0.2	0.2	0.2	0.2	0.2
21AUG06	13.6	10.9	7.4	5.5	2.2	0.5	0.2	0.2	0.2	0.2	0.3	0.3
04SEP06	15.4	12.9	9.7	9.0	4.2	1.1	0.2	0.2	0.2	0.2	0.3	0.2
18SEP06	12.8	8.7	7.1	.	.	.	.	0.3	0.3	0.3	0.3	0.3
02OCT06	10.2	7.6	5.8	3.8	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3
16OCT06	10.5	6.0	3.1	3.0	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2

Note: Dots (.) indicate missing values.

Appendix C

**Numbers of Fish Collected in the
Long River (1988-2006),
Fall Juvenile (1985-2006), and
Beach Seine (1985-2006) Surveys**

APPENDIX C

LIST OF TABLES

<u>Number</u>	<u>Title</u>
C-1	Total number of fish collected in the Long River Survey, 1988-2006
C-2	Total number of fish collected in the Fall Juvenile Survey, 1985-2006
C-3	Total number of fish collected in the Beach Seine Survey, 1985-2006

Table C-1 Total Number of Fish Collected in the Long River Survey, 1988-2006

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Anadromous																		
Alewife	8,200	624	60	2,727	555	1,275	1,679	293	1,787	171	235	10,231	320	5,284	183	537	641	5,479
Alosa spp.	258,802	423,742	714,369	250,755	465,613	191,558	206,819	122,644	460,957	58,794	128,111	124,710	391,708	180,190	145,643	141,877	126,035	103,618
American shad	51,162	62,755	49,242	25,128	30,345	15,867	31,213	12,120	23,378	6,744	8,887	12,185	11,567	14,048	6,732	15,676	4,711	7,126
Atlantic sturgeon	11	2	5	26	4	.	7	1	1	3	2	.	.	1	10	3	4	.
Atlantic tomcod	25,414	37,397	38,431	40,804	10,558	21,343	20,724	64,680	17,375	71,070	91,679	13,625	10,337	57,412	7,556	20,724	92,099	55,146
Blueback herring	4,992	2,568	1,230	28,397	30,496	3,290	9,315	1,412	18,354	2,358	246	4,367	1,907	1,100	578	8,760	801	1,977
Hickory shad	.	.	.	.	.	.	.	1	4	5	.	.	.	.	.	.	.	.
Rainbow smelt	24,693	767	6,838	2,494	23,035	12,002	59,829	2,354	.	.	4	.	1	1	.	.	.	.
Sea lamprey	.	.	.	.	.	.	.	.	.	1	4	.	.	.	.	.	.	.
Striped bass	61,072	225,498	264,907	359,994	462,382	459,384	674,881	383,781	962,335	272,329	443,766	790,358	1,376,173	1,192,084	151,199	732,410	416,917	387,265
Catadromous																		
American eel	789	917	848	1,372	827	1,505	921	1,388	1,230	527	519	294	468	708	262	476	365	513
Estuarine																		
Atlantic silverside	152	11	67	49	27	19	144	323	52	4	12	29	98	35	35	54	188	50
Banded killifish	5	2,274	1	.	5	3	4	24	2	.	2	2	.	1	.	.	.	13
Fat sleeper	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Fourspine stickleback	6	1	1	2	1	7	5	.	7	1	.	1	.	.	.	.	1	1
Hogchoker	301,192	589,469	13,591	908,378	44,337	87,673	159,013	130,281	51,986	22,814	36,279	23,050	24,894	13,417	28,225	17,313	36,061	24,267
Inland silverside	98	101	.	58	42	209	857	149	166	40	9	69	12	57	97	51	338	169
Lined sea horse	11	.	1	9	.	.	.	2	.	1	3	1	1	.	.	.	.	.
Mummichog	1	.	.	.	.	.	2	6	.	.	.	1	2	.	20	4	2	1
Northern pipefish	1,135	153	102	2,059	137	416	186	277	291	170	120	427	82	186	226	64	130	238
Shortnose sturgeon	3	.	2	3	3	14	8	7	38	2	5	1	4	13	1	4	4	1
Threespine stickleback	2	.	1	.	.	2	.	2	3	.	.	1	.	.	.	.	.	.
White catfish	77	100	87	76	52	25	214	196	205	96	70	172	70	80	56	78	38	79
White perch	138,753	198,953	157,348	147,232	265,656	221,021	172,995	115,842	287,690	69,844	130,785	136,518	267,801	134,744	142,260	140,645	138,513	107,406
Freshwater																		
Black bullhead	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.
Black crappie	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Bluegill	.	.	.	5	.	.	1	1	.	.	.	.	3	.	.	1	1	.
Brown bullhead	1	12	33	30	4	7	18	25	31	11	8	3	8	22	1	48	36	10
Brown trout	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Carp	730	651	.	340	731	136	121	147	1,199	867	161	211	533	22	130	597	455	647
Catostomidae	.	.	.	1	1	.	.	.	.	.	.	.	.	4	.	.	.	.
Centrarchidae	30	66	46	40	132	40	125	11	152	26	100	16	137	552	155	50	136	67
Chain pickerel	.	.	.	.	.	.	.	.	2	1	.	1	.	.	1	.	.	.
Channel catfish	.	.	.	1	1	.	.	5	5	4	.	11	8	23	24	118	91	101
Common shiner	.	.	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Creek chub	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Cyprinidae	470	1,736	6,839	1,764	2,576	2,276	2,044	910	2,709	696	1,358	2,705	3,482	3,101	2,623	1,150	1,073	786
Emerald shiner	.	.	.	.	.	.	.	.	.	.	19	2	.	1	.	.	.	.
Fathead minnow	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Freshwater drum	.	.	.	.	1	1	.	8	124	1	10	27	8	15	90	55	255	640
Gizzard shad	.	85	5	3	535	123	440	1,065	688	708	885	1,281	2,383	161	9,060	1,292	360	80
Golden shiner	.	1	7	.	.	1	2	11	1	.	1	.	2	1	.	.	.	2
Goldfish	113	217	.	97	22	7	18	.	5	2	2	.	.	.	.	.	.	.
Largemouth bass	.	1	.	2	.	1	1	.	.	.	1	.	.	.	.	.	2	.
Logperch	48	20	.	.	179	.	.	.	.	.	3	.	.	.	.	3	4	.

Table C-1 (Continued)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freshwater (cont.)																		
Northern hog sucker	19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Percidae	2	15	.	18	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pumpkinseed	132	1	.	2	.	4	1	.	.	1	.	1	.	.	.	2	.	.
Rock bass	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Satinfin shiner	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Silvery minnow	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Slimy sculpin	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Smallmouth bass	.	3	1	.	23	.	1	.	.	.	2	.	1	3	.	.	.	2
Spotfin shiner	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spottail shiner	60	98	55	83	45	33	62	94	156	89	53	45	62	87	9	42	23	29
Tesselated darter	2,898	2,805	2,290	1,566	2,836	1,936	1,714	2,205	1,550	1,493	2,834	2,726	2,822	1,884	1,455	1,990	2,642	718
Walleye	.	26	.	1	2	12	32	.	23	22	29	.	80	5	5	132	31	279
White crappie	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
White sucker	.	10	44	.	1	.	.	1	13	5	24	6	11	3	3	2	3	2
Yellow bullhead	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Yellow perch	152	325	610	157	369	225	333	69	764	141	307	127	1,062	228	476	1,096	1,145	801
Marine																		
American sand lance	48	8	2	4	4	.	1	42	6	.	7	2	11	119	2	49	47	20
Atlantic cod	68	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	3
Atlantic croaker	.	.	.	.	157	1	5	409	3	.	3,405	3,781	6,512	1,371	2,574	1,260	11,094	544
Atlantic herring	522	178	76	1,177	842	1,151	37	3,986	5,485	2,614	3,809	4,585	27	1,984	18	887	325	279
Atlantic mackerel	4	.	.	1	2	.	.	.	1,968	1,076	9	141	6	1	603	32	4	.
Atlantic menhaden	6	12	671	1,301	404	268	13,009	2,678	3,036	35,979	18,041	68,998	4,887	29,431	9,644	10,873	7,420	78,741
Atlantic needlefish	.	.	3	.	.	1	.	1	.	.	.	.	.	.	.	.	.	20
Atlantic seasnail	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Bay anchovy	2,852,331	444,854	900,354	3,831,982	1,341,076	1,849,143	3,051,491	1,271,339	1,337,747	795,707	698,247	339,031	215,316	146,897	671,428	363,737	1,749,221	790,847
Black sea bass	.	.	.	.	.	.	4	.	.	1	3	6	.	.	.	.	.	.
Blackcheek tonguefish	.	.	.	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.
Blenniidae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Bluefish	85	54	165	151	147	78	73	61	43	35	21	71	46	62	15	26	28	34
Bothidae	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Butterfish	143	18	18	27	46	38	108	11	12	29	22	273	6	120	7	13	240	24
Conger eel	132	72	54	29	124	195	175	45	117	14	10	1	71	22	29	42	3	13
Cottidae	128	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crevalle jack	1	4	.	1	.	.	.	.	1	.	2	1	.	.	.	.	.	.
Cunner	11,129	1,429	.	1,955	4,221	996	2,176	3,790	4,932	3,106	1,884	4,733	1,739	6,210	3,658	3,325	5,293	6,416
Cusk	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Feather blenny	.	.	.	.	.	.	.	.	.	.	1	23	3	.	5	.	.	.
Fourbeard rockling	108	209	2	404	691	4	4,157	6,487	571	7,586	3,116	391	184	2,319	2,205	389	1,360	5,072
Fourspot flounder	.	1	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
Gadidae	6	.	.	.	.	10	.	.	1	.	.	.	.	.	.	.	.	2
Gobiidae	9,007	5,593	22,569	78,349	26,599	3,794	3,411	2,683	1,108	936	3,411	28,420	16,276	15,046	22,722	7,756	20,143	23,597
Goosefish	.	.	.	8	12	.	.	.	1	.	.	.	.	.	.	.	.	.
Grubby	605	387	167	521	248	66	99	2,516	317	1,768	1,525	575	161	898	702	122	1,207	904
Gulf stream flounder	.	.	.	.	.	.	.	.	.	3	1	1	.	.	2	.	1	.
Harvestfish	.	.	.	.	.	.	.	.	.	.	.	2	.	.	1	.	.	.
Inshore lizardfish	8	8	.	3	14	1	2	1	.	4	36	4	2	8	.	.	.	.
King mackerel	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Labridae	.	.	.	48	.	.	.	.	1	.	.	.	.	.	.	1	.	.
Longhorn sculpin	.	2	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.
Lookdown	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Moonfish	.	.	.	.	.	.	1	.	.	.	.	.	.	2	.	.	.	.
Myoxocephalus spp.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Naked goby	279	44	1,619	8	73	9	1	3	6	.	5	369	107	6	169	72	8	19

Table C-1 (Continued)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marine (cont.)																		
Northern kingfish	.	118	.	10	10	1	39	1	.	.	2	16	.	.	1	.	.	.
Northern puffer	1	5	32	279	.	2	.	4	14	2	.	11	1	3	.	.	4	2
Northern searobin	40	2	17	19	1	4	27	5	48	1	14	37	.	23	1	4	.	1
Northern stargazer	129	.	.	.	.	.	53	.	.	.	1	4	.	2	1	.	.	.
Oyster toadfish	.	1	.	.	.	.	.	.	.	.	1	1	1	.	.	1	.	7
Phycidae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	35
Pinfish	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Pleuronectidae	.	.	.	144	.	.	.	.	.	16	2	3	.	.	.	.	.	.
Pleuronectiformes	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Pollack	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Radiated shanny	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Red hake	3	1	1	.	1	1	.	.	9	13	19	15	2	1	.	.	.	1
Rock gunnel	9	2	1	5	6	.	.	35	32	54	28	17	13	49	7	44	72	71
Rough silverside	110	19	.	41	44	30	447	218	37	33	4	26	66	12	22	7	4	50
Sciaenidae	.	3	.	.	.	2	65	.	.	.	.	.	.	.	.	.	.	1
Scup	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Seaboard goby	1	.	.	4	19	1	.	1	.	19	4	14	77	10	234	116	2	19
Searobin	8	.	312	26	.	16	.	.	.	8	1	399	.	4	65	70	33	697
Sharptail goby	.	.	1	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
Silver hake	1	3	.	.	.	.	.	.	2	.	.	1	.	2	.	.	1	.
Silver perch	.	.	.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.
Smallmouth flounder	38	.	1	91	71	32	175	22	7	18	40	37	47	6	6	20	61	4
Spanish mackerel	.	.	.	20	.	2	1	.	.	.	.	.	.	.	.	.	.	.
Speckled worm eel	1	.	.	.	.	.	.	.	1	.	.	.	1	.	2	.	.	.
Spot	.	.	2	.	.	20	9	.	8	.	.	.	11	.	3	.	.	.
Spotted hake	62	1	1	19	40	13	6	146	186	76	49	52	38	90	35	193	111	40
Striped anchovy	.	.	.	.	.	.	.	5	35	6	3	5	.	.	.	.	65	.
Striped burrfish	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped cuskeel	2	1	.	4	3	1	.	1	3	18	8	9	19	8	.	3	3	4
Striped killifish	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped searobin	43	4	.	234	5	41	671	3	4	112	45	85	15	1	39	21	27	5
Summer flounder	.	24	1	39	18	.	7	23	11	5	8	8	26	26	10	8	22	4
Tautog	1,205	3,432	.	969	488	241	439	3,171	3,396	3,009	490	2,908	2,028	6,129	4,192	4,483	8,668	9,966
Tetraodontidae	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Weakfish	1,586	2,602	122,082	6,821	1,206	1,621	2,804	623	59,707	13,345	145,785	224,618	50,800	83,380	51,266	57,429	94,647	108,943
Windowpane	8,866	5,162	49	1,500	14,953	166,221	6,917	17,602	7,074	13,902	1,635	3,210	1,816	13,095	1,563	4,134	2,192	2,557
Winter flounder	900	178	64	340	794	188	362	4,754	774	4,109	2,325	3,996	9,831	1,905	4,353	10,306	9,580	1,921
Witch flounder	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Yellowtail flounder	.	.	.	.	2	.	1	162	2	6	13	7	1	5	2	.	.	6
Unidentified																		
Acipenseridae	4	6	18	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Atherinidae	.	1	.	259	.	16	45	19	26	44	1	4	1	.	.	1	.	.
Cyprinodontidae	.	8	.	.	.	5	.	.	.	5	.	.	.	.	1	.	.	.
Fundulus spp.	.	2	4	3	1	111	4	3	2	.	1	62	.	1	.	1	1	1
Gasterosteidae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Menidia spp.	12	7	193	.	2	.	1	1	.	52	11	1	.	.	1	.	.	.
Morone unidentified	2,180	13,473	955	17,620	7,246	12,406	8,350	5,416	29,225	3,094	31,732	54,420	58,042	37,644	5,768	16,709	9,721	2,233
Petromyzontidae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentifiable	49,244	7,031	36,103	113,576	18,496	9,938	32,546	1,131	7,378	480	1,125	1,240	1,146	2,979	448	1,914	4,528	1,320

Table C-1 (Continued)

	2006
Anadromous	
Alewife	153
Alosa spp.	75,365
American shad	800
Atlantic sturgeon	1
Atlantic tomcod	9,049
Blueback herring	177
Hickory shad	.
Rainbow smelt	1
Sea lamprey	1
Striped bass	109,061
Catadromous	
American eel	276
Estuarine	
Atlantic silverside	157
Banded killifish	.
Fat sleeper	.
Fourspine stickleback	.
Hogchoker	44,711
Inland silverside	162
Lined sea horse	.
Mummichog	1
Northern pipefish	36
Shortnose sturgeon	5
Threespine stickleback	.
White catfish	147
White perch	95,979
Freshwater	
Black bullhead	.
Black crappie	.
Bluegill	.
Brown bullhead	32
Brown trout	.
Carp	1,219
Catostomidae	.
Centrarchidae	151
Chain pickerel	.
Channel catfish	137
Common shiner	.
Creek chub	.
Cyprinidae	1,622
Emerald shiner	.
Fathead minnow	.
Freshwater drum	590
Gizzard shad	1,230
Golden shiner	7
Goldfish	.
Largemouth bass	.
Logperch	1
Northern hog sucker	.
Percidae	.

Table C-1 (Continued)

	2006
Freshwater (cont.)	
Pumpkinseed	1
Rock bass	.
Satinfin shiner	.
Silvery minnow	.
Slimy sculpin	.
Smallmouth bass	3
Spotfin shiner	7
Spottail shiner	33
Tesselated darter	1,484
Walleye	105
White crappie	.
White sucker	12
Yellow bullhead	.
Yellow perch	538
Marine	
American sand lance	8
Atlantic cod	.
Atlantic croaker	2,000
Atlantic herring	48
Atlantic mackerel	.
Atlantic menhaden	10,562
Atlantic needlefish	.
Atlantic seasnail	.
Bay anchovy	374,336
Black sea bass	.
Blackcheek tonguefish	.
Blenniidae	.
Bluefish	18
Bothidae	.
Butterfish	37
Conger eel	13
Cottidae	.
Creville jack	.
Cunner	1,363
Cusk	.
Feather blenny	.
Fourbeard rockling	2,189
Fourspot flounder	.
Gadidae	.
Gobiidae	14,995
Goosefish	.
Grubby	620
Gulf stream flounder	.
Harvestfish	.
Inshore lizardfish	.
King mackerel	.
Labridae	.
Longhorn sculpin	.
Lookdown	.
Moonfish	.
Myoxocephalus spp.	.
Naked goby	94
Northern kingfish	.
Northern puffer	.

Table C-1 (Continued)

	2006
Marine (cont.)	
Northern searobin	1
Northern stargazer	1
Oyster toadfish	.
Phycidae	2
Pinfish	.
Pleuronectidae	.
Pleuronectiformes	.
Pollack	.
Radiated shanny	.
Red hake	1
Rock gunnel	19
Rough silverside	55
Sciaenidae	.
Scup	.
Seaboard goby	235
Searobin	20
Sharptail goby	.
Silver hake	.
Silver perch	.
Smallmouth flounder	29
Spanish mackerel	.
Speckled worm eel	.
Spot	5
Spotted hake	144
Striped anchovy	.
Striped burrfish	1
Striped cuskeel	.
Striped killifish	.
Striped searobin	16
Summer flounder	18
Tautog	1,177
Tetraodontidae	.
Weakfish	17,960
Windowpane	978
Winter flounder	1,312
Witch flounder	.
Yellowtail flounder	.
Unidentified	
Acipenseridae	.
Atherinidae	.
Cyprinodontidae	.
Fundulus spp.	.
Gasterosteidae	.
Menidia spp.	3
Morone unidentified	3,677
Petromyzontidae	1
Unidentifiable	101

Table C-1 (Continued)

Sampling Statistics for Long River Survey, 1988-2006

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Start Date	18-Apr	17-Apr	19-Apr	15-Apr	13-Apr	12-Apr	11-Apr	6-Mar	12-Mar	11-Mar
End Date	25-Aug	23-Aug	16-Aug	17-Oct	14-Oct	5-Oct	5-Oct	12-Oct	9-Oct	9-Oct
Volume Sampled (m3)	524,777	519,252	419,294	537,825	632,978	596,043	579,959	649,908	675,698	671,661
Sample Size	1,663	1,641	1,561	1,991	1,986	1,987	1,986	2,431	2,362	2,365
	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Start Date	2-Mar	23-Mar	7-Mar	15-Mar	4-Mar	19-Mar	2-Mar	16-Mar	8-Mar	
End Date	7-Oct	6-Oct	5-Oct	9-Oct	9-Oct	9-Oct	7-Oct	6-Oct	5-Oct	
Volume Sampled (m3)	810,440	774,435	857,373	711,723	716,977	704,211	706,106	654,297	689,180	
Sample Size	2,435	2,329	2,435	2,300	2,438	2,433	2,439	2,433	2,436	

Table C-2 Total Number of Fish Collected in the Fall Juvenile Survey, 1985-2006

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Anadromous																					
Alewife	1,142	554	702	379	327	459	994	790	730	719	519	830	868	97	3,925	746	2,118	379	1,077	307	1,980
Alosa spp.	3,341	282	2,591	4,193	4,331	3,543	1,276	10,650	1,905	1,725	2,895	18,007	6,547	82	7,681	2,688	2,562	2,356	4,262	1,688	3,500
American shad	1,717	2,166	776	1,483	3,646	1,323	1,291	3,406	961	2,095	831	2,964	1,105	310	1,407	808	1,369	598	433	400	294
Atlantic sturgeon	96	184	149	117	63	6	10	11	7	15	15	8	40	30	18	5	23	37	39	22	12
Atlantic tomcod	5,083	10,046	7,908	8,210	14,060	1,105	4,914	7,299	3,664	1,679	3,649	4,632	10,645	1,928	1,798	6,528	5,910	581	1,456	4,802	2,536
Blueback herring	41,919	6,525	18,596	37,957	22,112	15,982	55,299	38,090	22,442	18,790	14,006	20,863	13,999	566	20,315	6,412	13,731	6,205	10,727	3,223	15,677
Hickory shad	.	3	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Rainbow smelt	126	389	429	576	34	216	256	2,549	757	363	136	.	.	1	.	.	.	.	.	.	.
Sea lamprey	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped bass	888	2,348	11,633	18,679	8,472	3,624	4,672	3,773	8,333	8,719	10,327	6,293	4,461	1,367	8,989	3,683	3,654	2,516	8,553	1,893	5,107
Catadromous																					
American eel	1,872	2,906	2,254	2,076	1,444	342	984	1,392	1,406	1,647	1,627	1,434	722	763	738	792	566	244	310	360	376
Estuarine																					
Atlantic silverside	.	2	.	3	1	2	18	2	29	25	33	42	19	20	19	82	13	33	10	62	22
Banded killifish	78	12	3	3	3	.	2	.	6	21	24	.	.	1	1	.	1	2	.	.	3
Fat sleeper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50	.	.	.	.	.	.
Fourspine stickleback	1	9	.	1	1	.	.	.	2	.	1	1	.	1	.	.	.	.	2	1	.
Hogchoker	89,948	108,036	89,042	74,672	73,613	22,760	42,916	62,358	43,064	15,581	23,823	18,422	4,861	3,964	5,696	7,452	7,243	11,320	19,446	20,370	16,413
Inland silverside	.	.	.	1	.	2	.	.	2	.	4	.	.	.	1	.	.	.	.	.	.
Lined sea horse	.	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	1	.	.	.	.
Mummichog	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Northern pipefish	40	13	22	25	12	4	16	14	65	15	24	3	27	10	9	9	12	15	3	17	17
Shortnose sturgeon	16	8	11	20	12	2	18	76	82	50	36	48	26	30	52	50	47	27	29	29	30
White catfish	721	677	775	806	740	352	547	172	939	1,363	1,077	967	235	840	494	337	371	155	228	147	522
White mullet	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
White perch	19,721	31,771	27,008	25,760	20,106	5,381	11,019	13,832	8,341	9,007	10,272	8,569	3,655	3,474	8,955	6,225	5,775	4,715	11,131	5,426	8,631
Freshwater																					
Black bullhead	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Black crappie	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Bluegill	.	.	1	.	1	.	.	3	2	.	1	1	2	.	.	.	.	1	1	.	.
Brook trout	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Brown bullhead	37	127	109	171	172	17	125	177	92	278	211	251	97	167	524	549	460	501	600	476	611
Carp	4	13	5	4	10	1	6	7	7	3	6	2	5	.	11	2	6	5	2	1	6
Central mudminnow	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centrarchidae	1	4	1	5	3	.	.	.	.	4	.	.	4	2	1	1	.	8	7	2	2
Channel catfish	.	5	10	9	12	1	4	7	38	187	95	127	66	149	331	378	507	674	1,497	995	2,974
Cyprinidae	48	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Emerald shiner	.	.	.	.	1	.	.	.	.	.	.	.	.	11	2	1	.	.	.	.	.
Fall fish	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Fathead minnow	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Freshwater drum	.	.	.	.	3	.	.	1	2	1	3	1	.	2	1	5	3	4	25	.	37

Table C-2 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freshwater																					
(cont.)																					
Gizzard shad	4	6	8	2	8	1	.	.	3	1	5	.	15	3	25	4	35	33	4	26	11
Golden shiner	.	1	.	.	.	.	.	29	.	.	.	2	3	.	.	4	.	5	1	1	.
Goldfish	.	.	.	.	1	.	.	1	.	1	.	.	.	.	1	1	3	2	.	1	11
Largemouth bass	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	1
Logperch	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	18	.	.
Margined madtom	.	.	1	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Pumpkinseed	57	2	13	5	1	6	12	2	16	12	49	20	9	1	10	2	1	5	4	7	6
Redbreast sunfish	1	.	.	1	2	.	.	.	.	1	3	.	.	.	.	43	.	.	.	.	.
Rock bass	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Satinfin shiner	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Silvery minnow	.	1	.	.	.	.	.	.	.	.	.	56	.	.	.	.	.	.	.	.	.
Smallmouth bass	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spottail shiner	244	685	333	369	102	43	404	259	351	248	204	382	83	105	175	110	114	48	85	382	156
Tessellated darter	89	747	197	370	120	10	187	225	306	684	228	148	100	96	131	25	26	20	153	81	41
Walleye	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
White sucker	1	8	4	2	1	.	.	.	.	1	.	1	2	1	6	1	.	4	1	9	2
Yellow bullhead	.	.	.	.	30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Yellow perch	.	.	1	1	.	.	.	.	.	1	.	.	.	.	.	.	.	8	2	.	6
Marine																					
Atlantic croaker	1	4	7	.	1	4	.	4	18	97	336	10	183	5,028	4,015	2,280	3,894	1,479	20	8,838	8,697
Atlantic cutlassfish	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Atlantic herring	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.
Atlantic menhaden	51	139	67	9	38	129	478	122	13	78	26	260	19	101	12,685	2,535	337	746	445	566	139
Atlantic needlefish	.	.	.	1	.	1	1	.	.	.	3	.	1	3	2	.	.	.	1	.	3
Bay anchovy	27,902	20,988	39,348	59,244	41,475	16,465	44,815	37,264	53,437	54,615	93,826	26,168	71,630	51,368	58,298	15,533	27,794	47,096	37,511	43,166	38,534
Black sea bass	1	.	.	1	.	.	.	.	.	2	.	.	9	.	.	.	.	.	.	.	.
Bluefish	60	51	107	116	62	82	58	82	53	37	42	39	55	27	165	53	60	56	30	31	18
Butterfish	61	106	48	110	81	43	35	141	121	109	21	18	90	177	74	9	25	26	16	106	66
Cobia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
Conger eel	.	.	.	14	.	.	.	.	.	.	2	2	.	1	1	1	.	.	.	.	.
Crevalle jack	2	1	1	10	8	7	3	1	10	1	4	1	.	9	.	.	2	.	1	1	1
Cunner	.	.	.	.	.	1	.	1	.	.	.	.	.	1	.	.	.	.	.	.	1
Feather blenny	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Fourspot flounder	2	2	.	1	.	1	.	.	.	25	.	.	4	.	.	.	1	.	.	.	.
Gobiidae	.	.	.	4	.	.	.	38	.	2	.	.	3	4	12	2	2	8	4	3	1
Goosefish	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Gray snapper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Grubby	.	.	.	2	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.
Inshore lizardfish	1	.	.	1	4	.	1	4	8	1	.	.	.	.	.	71	1	.	.	.	.
Longhorn sculpin	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.
Lookdown	1	.	1	1	1	.	.	.	.	1	.	.	1	1	3	2	.	.	1	.	1
Moonfish	.	1	2	.	5	.	.	1	.	.	.	.	.	4	1	3	9	5	3	9	.
Naked goby	3	6	47	9	21	1	7	30	3	1	26	.	8	4	7	7	33	5	46	8	26
Northern kingfish	9	6	.	20	3	3	10	2	4	16	7	.	2	.	3	.	.	.	.	1	1
Northern puffer	9	1	5	3	2	.	36	3	1	.	3	.	.	1	.	.	.	3	.	2	2
Northern searobin	.	2	7	21	3	16	7	12	53	305	6	5	16	.	.	.	6	.	.	1	24
Northern stargazer	1	.	.	20	.	4	3	10	2	7	.	.	6	.	2	1	3	5	1	1	2

Table C-2 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marine (cont.)																					
Oyster toadfish	.	.	.	.	.	.	.	1	.	.	.	4	.	2	3	2	1	1	1	11	13
Red hake	1	.	.	.	.	1	.	.	.	.	.	.	2	.	.	1	.	.	.	.	38
Rock gunnel	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
Rough silverside	1	.	3	1	.	.	.	3	2	.	4	.	4	1	1	2	.	.	.	.	1
Scup	1	.	.	.	.	.	3	.	.	.	8	.	.	.	.	2	5	1	8	2	2
Seaboard goby	.	.	.	12	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Searobin	.	.	.	.	.	.	.	.	.	.	.	.	339	.	69	8	2	.	12	7	.
Silver hake	.	3	.	.	.	1	1	.	.	.	.	.	5	.	1	3	.	1	.	1	1
Silver perch	.	.	.	13	.	.	1	.	7	11	36	1	1	.	.	.	.	.	.	.	1
Smallmouth flounder	.	.	.	8	.	.	.	1	1	9	3	.	.	1	1	.	.	2	.	.	.
Spanish mackerel	.	.	.	.	.	1	17	.	7	.	.	.	.	.	.	.	.	.	.	1	.
Spot	5	14	1	1,257	.	.	2	1.	4	.	.	30	.	.	.	1	1	.	.	.	.
Spotfin butterflyfish	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Spotted hake	2	1	.	.	.	.	3	32	7	3	3	224	54	9	7	15	106	12	34	20	9
Striped anchovy	.	.	.	.	.	.	.	1	.	.	2	.	.	.	.	.	.	1	1	.	.
Striped burrfish	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped cuskeel	3	.	.	1	.	.	1	1	.	.	.	.	.	1	.	1	.	.	.	.	12
Striped searobin	321	148	10	101	25	26	310	54	96	648	15	.	416	294	1,498	8	123	189	236	121	37
Summer flounder	232	447	58	7	42	35	102	56	39	32	108	41	4	2	23	4	6	2	3	9	8
Tautog	.	.	.	2	.	3	.	1	.	.	.	.	1	.	.	.	.	.	.	.	.
Tetraodontidae	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Weakfish	2,214	1,482	749	3,777	2,842	770	5,878	756	2,332	2,416	3,773	2,202	2,713	2,039	7,412	7,147	3,567	3,806	1,952	686	4,083
Windowpane	1	1	5	17	.	5	9	32	1	5	19	2	12	5	46	4	7	3	4	1	2
Winter flounder	226	196	92	39	23	13	28	36	51	21	62	32	56	12	10	8	3	2	4	3	20
Unidentified																					
Morone unidentified	1	.	.	.	3	2	.	.	.	.	.	.	2	3	.	1	.	.	35	.	.
Unidentifiable	.	.	.	.	.	.	.	.	6	.	18	1	68	.	1	.	.	.	.	.	.

Table C-2 (Continued)

	2006
Anadromous	
Alewife	236
Alosa spp.	755
American shad	77
Atlantic sturgeon	14
Atlantic tomcod	1,007
Blueback herring	943
Hickory shad	.
Rainbow smelt	.
Sea lamprey	.
Striped bass	1,795
Catadromous	
American eel	448
Estuarine	
Atlantic silverside	29
Banded killifish	12
Fat sleeper	.
Fourspine stickleback	.
Hogchoker	15,079
Inland silverside	.
Lined sea horse	.
Mummichog	.
Northern pipefish	16
Shortnose sturgeon	28
White catfish	412
White mullet	5
White perch	7,151
Freshwater	
Black bullhead	.
Black crappie	.
Bluegill	1
Brook trout	.
Brown bullhead	505
Carp	2
Central mudminnow	.
Centrarchidae	.
Channel catfish	2,279
Cyprinidae	.
Emerald shiner	.
Fall fish	.
Fathead minnow	18
Freshwater drum	37
Gizzard shad	3
Golden shiner	2

Table C-2 (Continued)

	2006
Freshwater	
(cont.)	
Goldfish	.
Largemouth bass	1
Logperch	.
Margined madtom	.
Pumpkinseed	5
Redbreast sunfish	.
Rock bass	.
Satinfin shiner	.
Silvery minnow	.
Smallmouth bass	.
Spottail shiner	212
Tesselated darter	41
Walleye	.
White sucker	2
Yellow bullhead	.
Yellow perch	.
Marine	
Atlantic croaker	5,127
Atlantic cutlassfish	2
Atlantic herring	.
Atlantic menhaden	1,288
Atlantic needlefish	.
Bay anchovy	28,864
Black sea bass	.
Bluefish	30
Butterfish	58
Cobia	.
Conger eel	.
Crevale jack	3
Cunner	.
Feather blenny	.
Fourspot flounder	.
Gobiidae	10
Goosefish	.
Gray snapper	.
Grubby	.
Inshore lizardfish	.
Longhorn sculpin	.
Lookdown	1
Moonfish	6
Naked goby	13
Northern kingfish	2
Northern puffer	.
Northern searobin	.
Northern stargazer	.
Oyster toadfish	4
Red hake	1

Table C-2 (Continued)

2006

Marine (cont.)

Rock gunnel	.
Rough silverside	.
Scup	.
Seaboard goby	1
Searobin	.
Silver hake	3
Silver perch	.
Smallmouth flounder	.
Spanish mackerel	.
Spot	.
Spotfin butterflyfish	.
Spotted hake	71
Striped anchovy	.
Striped burrfish	.
Striped cuskeel	1
Striped searobin	78
Summer flounder	13
Tautog	.
Tetraodontidae	.
Weakfish	452
Windowpane	2
Winter flounder	4

Unidentified

Morone unidentified	37
Unidentifiable	.

Sampling Statistics for Fall Juvenile Survey, 1985-2006

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Start Date	22-Jul	21-Jul	13-Jul	18-Jul	17-Jul	9-Jul	15-Jul	13-Jul	19-Jul	18-Jul	10-Jul	10-Jul
End Date	14-Nov	2-Dec	5-Nov	28-Oct	26-Oct	17-Oct	25-Oct	23-Oct	29-Oct	27-Oct	20-Oct	17-Oct
Volume Sampled (m3)	1,886,745	2,298,278	2,035,357	1,826,628	1,590,047	1,252,910	1,707,237	1,865,365	2,010,162	2,018,414	1,782,105	1,824,729
Sample Size	1,802	2,098	1,958	1,680	1,679	1,680	1,678	1,680	1,680	1,681	1,680	1,669
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
Start Date	7-Jul	6-Jul	6-Jul	5-Jul	10-Jul	8-Jul	7-Jul	6-Jul	5-Jul	5-Jul		
End Date	23-Nov	4-Dec	3-Dec	30-Nov	30-Nov	6-Dec	5-Dec	3-Dec	2-Dec	1-Dec		
Volume Sampled (m3)	1,995,403	2,214,609	2,159,879	2,174,794	2,097,800	2,105,181	1,891,049	2,106,764	2,063,565	2,014,940		
Sample Size	2,015	2,130	2,085	2,113	2,084	2,128	2,131	2,128	2,128	2,129		

Table C-3 Total Number of Fish Collected in the Beach Seine Survey, 1985-2006

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Anadromous																					
Alewife	1,272	818	515	675	439	925	2,323	870	638	1,738	1,051	437	1,664	423	3,636	574	1,868	379	2,129	1,087	4,143
Alosa spp.	8,272	2,529	5,685	21,022	8,346	10,853	38,966	3,490	5,237	14,468	10,653	47,511	7,889	1,773	35,377	3,993	14,296	2,141	13,250	4,151	13,707
American shad	9,171	14,716	7,641	10,780	13,026	12,261	15,771	15,366	5,122	13,007	4,049	21,339	8,618	5,931	13,755	5,968	18,402	4,252	6,231	3,028	4,287
Atlantic sturgeon	1	.	.	.	3	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Atlantic tomcod	243	148	209	230	81	115	46	328	13	9	22	51	27	163	15	54	12	7	65	78	5
Blueback herring	25,362	12,522	31,373	36,245	19,037	43,555	40,731	29,105	29,722	46,040	21,506	28,591	59,867	1,337	28,384	9,272	21,907	6,018	48,011	23,285	34,233
Hickory shad	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.	.	.	.	.
Rainbow smelt	.	1	.	.	.	2	5	.	5	.	.	.	.	.	.	.	.	.	.	.	.
Striped bass	1,413	1,854	11,987	6,151	5,585	6,906	10,813	6,156	10,765	7,273	6,463	2,847	10,438	8,225	16,897	3,693	11,709	5,783	16,077	4,987	16,012
Catadromous																					
American eel	315	163	125	151	107	81	208	127	97	86	121	90	136	137	131	84	114	130	257	205	167
Estuarine																					
Atlantic silverside	1,197	4,406	1,459	6,760	686	8,383	17,291	6,668	14,493	21,101	28,061	9,014	11,757	17,160	25,690	9,587	8,064	11,994	4,382	17,936	17,217
Banded killifish	5,959	3,514	4,369	4,917	1,948	1,513	3,232	1,243	2,708	6,402	8,659	1,544	4,080	1,541	3,269	1,223	902	4,503	7,374	2,354	2,717
Fat sleeper	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fourspine stickleback	359	525	296	194	12	11	24	15	32	29	20	13	7	16	13	4	16	10	288	77	153
Hogchoker	1,033	276	312	305	261	150	652	329	143	230	392	54	53	29	20	20	115	391	322	183	62
Inland silverside	464	653	146	406	234	190	160	1,129	9	4	12	1	6	4	3	4	.	22	59	20	9
Mummichog	455	38	496	414	68	109	183	128	208	448	613	86	294	85	235	80	31	379	589	124	335
Northern pipefish	844	166	348	297	156	86	689	51	124	16	248	9	335	79	123	12	244	243	86	126	508
Shortnose sturgeon	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	.	.	.	.
Threespine stickleback	2	17	10	3	4	2	4	1	.	.	.	1	.	.	1	.	.	1	.	.	1
White catfish	52	83	86	101	66	23	25	18	16	7	10	28	10	15	4	8	3	19	31	8	21
White mullet	4	3	.	.	3	1	2	.	1	.	.	.	1	.	.	.	.	1	1	.	.
White perch	9,938	12,082	12,303	14,607	11,407	8,485	10,033	9,497	11,771	8,789	6,368	3,501	5,292	4,368	10,931	5,652	7,928	11,124	16,737	8,492	8,588
Freshwater																					
Black crappie	.	47	52	10	10	8	12	20	4	14	19	19	5	11	26	16	16	11	13	19	43
Blacknose dace	2	.	1	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.
Bluegill	64	57	76	355	159	89	69	61	94	89	201	61	73	260	119	122	117	349	299	86	245
Bluntnose minnow	.	.	.	.	.	.	.	.	3	.	.	2	.	4	1	3	.	.	3	5	.
Bridle shiner	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Brook silverside	.	.	.	.	.	.	.	.	44	6	2	1	8	34	9	.	.	4	266	1	3
Brook stickleback	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Brown bullhead	6	41	12	53	28	10	42	40	252	117	23	21	24	37	146	37	37	89	1,870	181	155
Brown trout	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.
Carp	50	102	78	133	86	57	111	90	62	41	64	51	72	72	69	74	32	64	213	75	92
Catostomidae	.	.	.	.	.	.	.	.	.	.	.	3	3	.	.	.	.	.	.	.	.
Centrarchidae	673	327	388	351	100	106	64	29	42	216	89	79	91	98	138	69	109	176	4,120	379	235
Chain pickerel	.	.	.	.	4	.	.	1	.	.	1	.	.	1	.	2	.	.	.	1	1
Channel catfish	.	.	.	.	.	3	.	.	.	.	.	.	2	3	.	7	2	9	13	18	37
Comely shiner	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.

Table C-3 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freshwater																					
(cont.)																					
Common shiner	.	.	.	1	.	.	.	1	1	.	.	.	.	.	.	.	2	.	.	.	.
Creek chub	1	.	.	.	.	.	4	.	1	.	2	.	1	.	2	.	.	.	1	.	.
Cyprinidae	1	6	6	.	.	.	134	.	5	2	18	.	1	1	5	.	1	.	4	.	.
Emerald shiner	4	4	5	22	.	11	8	4	2	1	.	76	18	1,271	209	296	73	32	6	9	6
Fall fish	.	2	.	.	.	.	9	3	2	11	2	3	1	6	1	.	.	.	18	1	1
Fathead minnow	1	10	.	.	1	.	.	.	.	2	.	7	.	.	3	3	.	.	.	1	.
Freshwater drum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	5	5	5
Gizzard shad	3	13	100	10	7	28	22	158	38	49	61	50	139	67	140	75	45	99	51	231	108
Golden shiner	460	1,223	647	676	640	817	672	787	659	760	404	460	193	472	278	296	425	489	1,031	428	349
Goldfish	14	25	16	97	1	3	33	1	29	3	16	3	1	1	4	.	3	4	9	4	2
Grass carp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Grass pickerel	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Green sunfish	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Largemouth bass	44	71	44	57	51	34	85	55	55	74	169	29	53	120	221	46	39	67	270	78	162
Logperch	.	.	.	.	.	.	.	1	1	.	.	1	.	1	4	.	4	4	11	1	9
Longear sunfish	.	.	.	.	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Longnose dace	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mimic shiner	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Northern hog sucker	.	.	1	3	.	1	4	2	.	.	.	1	.	.	.	1	.	.	2	3	9
Northern pike	.	2	4	2	4	2	2	.	3	2	.	2	.	.	1	2	.	.	28	12	.
Pugnose shiner	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pumpkinseed	740	496	609	1,070	633	724	1,195	602	774	1,535	1,648	284	619	555	771	281	647	1,084	2,039	1,271	1,576
Redbreast sunfish	115	158	185	160	111	76	200	259	251	382	454	116	141	188	323	137	64	189	408	336	292
Redfin pickerel	.	.	.	2	.	.	1	.	.	.	.	3	.	2	1	1	.	.	4	2	.
Rock bass	6	8	1	12	3	.	22	1	1	.	10	2	2	7	8	8	1	7	18	15	6
Rudd	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.
Satinfin shiner	1	2	.	1	.	2	.	.	1	.	6	5	12	10	10	.	1	40	36	4	1
Silvery minnow	3	13	23	119	2	9	387	68	568	1,027	8	2,131	31	40	428	18	48	6	145	64	31
Smallmouth bass	7	25	8	28	25	21	25	28	30	73	81	50	26	86	176	80	45	78	157	107	121
Spotfin shiner	5	8	17	5	.	.	.	.	12	8	8	49	4	27	127	15	34	4	49	40	46
Spottail shiner	5,316	5,177	4,452	5,407	5,129	5,500	12,385	7,727	7,169	12,452	7,529	3,887	7,189	4,996	16,512	3,927	11,969	9,313	19,830	9,296	10,147
Swallowtail shiner	.	.	.	.	.	.	.	3	.	.	.	.	.	2	1	.	2	.	10	.	.
Tesselated darter	1,198	1,372	820	1,697	415	479	2,385	929	1,251	1,669	700	663	1,767	1,359	3,858	760	2,140	948	4,657	2,969	1,087
Tiger muskellunge	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Trout perch	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
Walleye	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	2	.	.	.	3	.
White crappie	.	4	1	3	.	1	2	1	.	.	.	.	.	1	.	.	.	.	.	.	.
White sucker	7	16	17	32	9	15	12	21	11	12	14	24	11	48	16	18	47	19	32	43	45
Yellow perch	22	67	44	49	34	12	27	23	22	29	16	53	20	49	65	60	78	40	160	194	115
Marine																					
Atlantic croaker	.	1	.	.	.	26	.	1	.	.	7	.	.	35	5	19	3	21	.	7	1
Atlantic herring	.	.	.	.	.	.	.	.	.	.	.	.	1	.	4	.	.	.	.	.	.
Atlantic menhaden	118	834	30	99	159	1,063	678	415	16	1,637	56	1,526	117	331	50,419	16,025	130	2,481	3,586	8,465	1,128
Atlantic needlefish	92	77	54	48	41	96	476	9	11	12	22	28	50	21	181	12	6	8	28	33	28
Bay anchovy	4,081	4,155	3,746	3,989	9,507	4,134	4,669	8,729	8,106	10,447	17,615	3,544	16,980	11,333	6,662	2,617	3,275	13,862	6,431	2,330	4,830
Bluefish	567	400	533	280	224	348	314	375	223	80	252	98	320	141	2,180	218	474	815	336	246	308
Butterfish	.	.	.	4	.	1	.	1	9	.	.	.	.	2	.	.	.	.	.	.	.

Table C-3 (Continued)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marine (cont.)																					
Crevalle jack	71	10	3	22	40	32	58	53	30	2	2	1	.	45	3	24	4	9	10	.	3
Cunner	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Fourbeard rockling	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Goosefish	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gray snapper	7	1	3	.	.	.	2	.	.	.	.	.	.	.	.	.	1	.	.	.	1
Grubby	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Inshore lizardfish	.	.	.	1	1	.	14	8	11	5	1	.	3	4	7	.	.	3	.	.	.
Lookdown	18	1	.	.	10	1	.	.	.	.	.	.	2	.	.	2	.	.	.	.	.
Moonfish	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Naked goby	20	9	11	4	4	7	14	22	2	.	9	.	8	5	15	2	12	20	13	24	12
Northern kingfish	20	8	.	9	1	4	42	2	17	13	8	1	15	31	21	1	13	35	.	45	6
Northern puffer	2	1	.	1	.	.	10	.	4	.	2	.	2	.	6	.	.	4	.	.	4
Northern searobin	.	2	.	.	.	.	8	.	.	1	.	.	.	.	.	.	2	.	.	.	3
Northern stargazer	1	.	.	.	.	.	1	.	1	1	1	1	8	.	1	.	1	9	.	1	2
Orangespotted filefish	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Permit	.	.	.	.	.	.	.	1	2	.	.	.	.	2	.	7	5	.	.	.	.
Red hake	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	26	.	.
Rough silverside	35	4	23	258	9	4	.	2	.	1	1	.	36	.	.	.	.	.	.	.	.
Seaboard goby	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.
Searobin	.	.	.	.	.	.	5	.	.	.	.	.	1	.	.	.	3	.	3	.	.
Silver hake	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silver perch	13	1	.	19	.	.	29	8	61	25	5	5	25	4	1	1	.	.	.	60	.
Smallmouth flounder	1	.	.	.	.	.	.	.	.	.	1	.	12	.	.	.	.	.	.	.	.
Spanish mackerel	.	.	.	.	.	.	12	.	4	1	.	.	.	.	.	.	.	.	.	.	.
Spot	35	106	4	32	.	1	8	2	39	24	.	59	.	3	6	15	.	11	1	.	2
Spotfin mojarra	.	.	.	.	.	.	.	.	.	2	.	.	.	1	.	.	.	.	.	.	.
Spotted goatfish	.	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.	.
Spotted hake	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Striped anchovy	1	.	.	.	.	.	.	.	1	15	25	6	4	.	.	1	.	57	8	2	.
Striped mullet	2	6	1	1	.	.	5	.	.	.	2	.	.	.	.	1	.	1	.	.	.
Striped searobin	5	16	.	3	.	.	34	1	11	.	.	.	35	21	8	1	4	7	1	14	1
Summer flounder	48	45	4	1	2	2	46	26	20	18	10	2	.	7	4	5	5	11	5	10	5
Tautog	2	5	2	20	.	6	31	1	.	1	.	.	22	1	.	.	5	2	.	1	2
Weakfish	72	5	.	2	.	27	111	1	4	4	1	25	27	4	30	18	2	33	8	5	3
Windowpane	.	.	3	.	.	.	1	.	.	.	.	1	.	.	.	.	.	.	.	.	1
Winter flounder	282	80	29	41	9	23	154	35	74	45	110	6	124	28	46	68	44	55	52	105	41
Unidentified																					
Morone unidentified	.	.	1	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.	1	.
Unidentifiable	.	.	.	.	.	.	.	.	.	.	150	.	.	.	.	.	.	.	.	.	.

Table C-3 (Continued)

	2006
Anadromous	
Alewife	601
Alosa spp.	1,297
American shad	697
Atlantic sturgeon	.
Atlantic tomcod	27
Blueback herring	3,911
Hickory shad	.
Rainbow smelt	.
Striped bass	4,348
Catadromous	
American eel	154
Estuarine	
Atlantic silverside	2,116
Banded killifish	1,283
Fat sleeper	.
Fourspine stickleback	27
Hogchoker	130
Inland silverside	5
Mummichog	25
Northern pipefish	56
Shortnose sturgeon	.
Threespine stickleback	.
White catfish	16
White mullet	.
White perch	7,707
Freshwater	
Black crappie	21
Blacknose dace	.
Bluegill	224
Bluntnose minnow	.
Bridle shiner	.
Brook silverside	4
Brook stickleback	.
Brown bullhead	141
Brown trout	.
Carp	69
Catostomidae	.
Centrarchidae	213
Chain pickerel	.
Channel catfish	100
Comely shiner	.
Common shiner	.

Table C-3 (Continued)

	2006
Freshwater	
(cont.)	
Creek chub	.
Cyprinidae	.
Emerald shiner	52
Fall fish	2
Fathead minnow	1
Freshwater drum	14
Gizzard shad	58
Golden shiner	231
Goldfish	2
Grass carp	.
Grass pickerel	.
Green sunfish	.
Largemouth bass	48
Logperch	3
Longear sunfish	.
Longnose dace	.
Mimic shiner	.
Northern hog sucker	.
Northern pike	9
Pugnose shiner	.
Pumpkinseed	569
Redbreast sunfish	87
Redfin pickerel	.
Rock bass	1
Rudd	.
Satinfin shiner	3
Silvery minnow	13
Smallmouth bass	81
Spotfin shiner	2
Spottail shiner	4,417
Swallowtail shiner	.
Tesselated darter	1,229
Tiger muskellunge	.
Trout perch	.
Walleye	.
White crappie	.
White sucker	36
Yellow perch	107
Marine	
Atlantic croaker	292
Atlantic herring	.
Atlantic menhaden	4,885
Atlantic needlefish	58
Bay anchovy	5,376
Bluefish	169
Butterfish	.
Creville jack	21

Table C-3 (Continued)

	2006
Marine (cont.)	
Cunner	.
Fourbeard	.
rockling	.
Goosefish	.
Gray snapper	.
Grubby	.
Inshore lizardfish	1
Lookdown	.
Moonfish	.
Naked goby	5
Northern kingfish	6
Northern puffer	.
Northern searobin	.
Northern	.
stargazer	.
Orangespotted	.
filefish	.
Permit	.
Red hake	.
Rough silverside	9
Seaboard goby	.
Searobin	.
Silver hake	.
Silver perch	.
Smallmouth	.
flounder	.
Spanish mackerel	.
Spot	22
Spotfin mojarra	.
Spotted goatfish	.
Spotted hake	2
Striped anchovy	4
Striped mullet	24
Striped searobin	1
Summer flounder	12
Tautog	.
Weakfish	.
Windowpane	.
Winter flounder	28
Unidentified	
Morone	.
unidentified	.
Unidentifiable	.

Table C-3 (Continued)

Sampling Statistics for Beach Seine Survey, 1985-2006

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Start Date	16-Jul	15-Jul	24-Jun	14-Jun	13-Jun	18-Jun	24-Jun	23-Jun	1-Jul	27-Jun	19-Jun	18-Jun
End Date	21-Nov	21-Nov	13-Nov	3-Nov	2-Nov	24-Oct	1-Nov	28-Oct	4-Nov	2-Nov	26-Oct	23-Oct
Sample Size	1,000	1,000	1,101	1,100	1,100	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
Start Date	16-Jun	15-Jun	14-Jun	13-Jun	19-Jun	18-Jun	17-Jun	15-Jun	14-Jun	12-Jun		
End Date	23-Oct	21-Oct	22-Oct	18-Oct	25-Oct	23-Oct	22-Oct	21-Oct	20-Oct	19-Oct		
Sample Size	1,000	1,000	994	1,000	952	1,000	1,000	1,000	1,000	1,000		

Appendix D

Annual Abundance Indices

APPENDIX D

CONTENTS

- D.1 INTRODUCTION
- D.2 METHODS
- D.3 LITERATURE CITED

LIST OF FIGURES

<u>Number</u>	<u>Title</u>
D-1	Striped bass indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-2	White perch indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-3	Atlantic tomcod indices of annual abundance based on Long River Survey, 1974-2006
D-4	Bay anchovy indices of annual abundance based on Fall Juvenile Survey, 1979-2006
D-5	American shad indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-6	Alewife indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Beach Seine Survey, 1974-2006
D-7	Blueback herring indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Beach Seine Survey, 1974-2006
D-8	Rainbow smelt indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Long River Survey, 1974-2006
D-9	Hogchoker indices of annual abundance based on Fall Juvenile Survey, 1974-2006
D-10	Spottail shiner indices of annual abundance based on Beach Seine Survey, 1974-2006
D-11	White catfish indices of annual abundance based on Beach Seine Survey, 1974-2006
D-12	Weakfish indices of annual abundance based on Fall Juvenile Survey, 1979-2006

D-13 Bluefish indices of annual abundance based on Beach Seine Survey, 1974-2006

LIST OF TABLES

<u>Number</u>	<u>Title</u>
D-1	Parameters for indices of annual abundance based on data from the Beach Seine Survey (BSS), Fall Juvenile Survey (FJS), and Longitudinal River Survey (LRS)
D-2	Striped bass indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-3	White perch indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-4	Atlantic tomcod indices of annual abundance based on Long River Survey, 1974-2006
D-5	Bay anchovy indices of annual abundance based on Fall Juvenile Survey, 1979-2006
D-6	American shad indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006
D-7	Alewife indices of annual abundance based on Fall Juvenile Survey, 1979-2006
D-8	Blueback herring indices of annual abundance based on Fall Juvenile Survey, 1979-2006
D-9	Rainbow smelt indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Long River Survey, 1974-2006
D-10	Hogchoker indices of annual abundance based on Fall Juvenile Survey, 1974-2006
D-11	Spottail shiner indices of annual abundance based on Beach Seine Survey, 1974-2006
D-12	White catfish indices of annual abundance based on Beach Seine Survey, 1974-2006
D-13	Weakfish indices of annual abundance based on Fall Juvenile Survey, 1979-2006
D-14	Bluefish indices of annual abundance based on Beach Seine Survey, 1974-2006

D.1 INTRODUCTION

Annual indices of abundance for 13 species of finfish are based on data from the Longitudinal River Survey (LRS), Fall Juvenile Survey (FJS) and Beach Seine Survey (BSS). This appendix documents the methods used to calculate these indices of abundance and presents the indices from 1974 through 2006.

For each of the 13 species, one or more sampling programs were selected to be the basis for the index of abundance. The selections considered when and where each species was expected to be present in the Hudson River based on life-history characteristics of each species in relation to the times and places that sampling gear is deployed by each program. The selections were also based on observed catch rates from each of the three sampling programs. The sampling programs on which the indices of abundance are based as well as the life stages and weeks selected for analysis are summarized in [Table D-1](#).

The statistical methods used to estimate the annual indices of abundance are described in the following section. Summaries of the indices of annual abundance for the 13 species are presented in [Figures D-1 through D-13](#) and [Tables D-2 through D-14](#).

D.2 METHODS

D.2.1 Beach Seine Survey

Indices of abundance using data from the BSS were calculated for juvenile striped bass, white perch, American shad, alewife, blueback herring, bluefish, and spottail shiner; for yearling white perch; and for yearling and older white catfish. Weeks 33 to 40 were selected as the only period consistently sampled in the BSS. The Beach Seine Survey Index of abundance (B) for each year and species is a measure of catch per haul and is calculated according to the following formula:

$$B = \frac{1}{n} \sum_{w=33}^{40} \left[\frac{\sum_{i=1}^{12} W_i \left(\frac{\sum_j C_{jiw}}{h_{iw}} \right)}{\sum_{i=1}^{12} W_i} \right] X_w ,$$

where

- B = the BSS index for a species in a year;
- C_{jiw} = the count of a species in sample j , region i , and week w ;
- X_w = 1 if week w was sampled during the year, 0 otherwise;
- n = the number of weeks sampled in the year,
= $\sum_{w=33}^{40} X_w$;
- h_{iw} = the number of seine hauls in region i and week w ; and
- W_i = the number of beaches in the sampling design in river region i .

The above equation can be expressed in terms of a weighted average catch per haul (CPH) as follows:

$$B = \frac{1}{n} \sum_{w=33}^{40} \bar{Y}_w X_w = \frac{1}{n} \sum_{w=33}^{40} \left[\frac{\sum_{i=1}^{12} W_i \bar{Y}_{wi}}{\sum_{i=1}^{12} W_i} \right] X_w ,$$

where

$$\begin{aligned} \bar{Y}_{wi} &= \text{the average CPH in week } w \text{ and region } i \text{ and} \\ \bar{Y}_w &= \text{the weighted average CPH in week } w. \end{aligned}$$

Because not all weeks within the period of week 33 to 40 were sampled by the BSS in each year, the variance of the BSS index in any year is calculated as a two-stage variance. The primary sampling unit in the first stage is weeks, and the design is assumed to be simple random sampling (i.e., weeks of sampling are construed to be a random sample of weeks within the period from week 33 through week 40). The sampling units in the second stage are regions, and the design is stratified random where regions are the statistical strata. The variance is calculated using a two-stage estimator based on equation 11.24 in Cochran (1977, p. 303):

$$\text{var}(B) = \frac{\left(1 - \frac{n}{N}\right)}{n} S_1^2 + \frac{1}{Nn} \sum_w S_{2,w}^2 ,$$

where

$$\begin{aligned} S_1^2 &= \text{the first stage variance (temporal, among weeks),} \\ S_{2,w}^2 &= \text{the second stage variance (spatial) in week } w, \text{ and} \\ N &= \text{the number of weeks (8) within the selected period, i.e., weeks 33 through 40.} \end{aligned}$$

The first stage variance component is estimated as:

$$S_1^2 = \frac{1}{n-1} \sum_{w=33}^{40} (\bar{Y}_w - B)^2 .$$

The second stage variance component is estimated as:

$$S_{2,w}^2 = \frac{\sum_{i=1}^{12} W_i^2 \left[\frac{\sum_j \left(C_{t_{jiw}} - \frac{1}{h_{iw}} \sum_j C_{t_{jiw}} \right)^2}{(h_{iw})(h_{iw} - 1)} \right]}{\left(\sum_{i=1}^{12} W_i \right)^2}.$$

Then:

$$\text{std. err.}(B) = (\text{var}(B))^{1/2}.$$

D.2.2 Fall Juvenile Survey

Indices of abundance using data from channel sampling by the FJS were calculated for juvenile blueback herring, alewife, bay anchovy, weakfish, and rainbow smelt for the years 1979 through 2006, the years that the channel was sampled. In addition, indices of abundance based on bottom sampling by the FJS were calculated for juvenile hogchoker. Weeks 33 to 40 were selected as the only period consistently sampled in the FJS for channel sampling and weeks 40 to 43 for bottom sampling. The Fall Juvenile Survey Index of abundance (F) for each year and species sampled in gear specific for either the channel or the bottom is a measure of average density and is calculated according to the following formula:

$$F_g = \frac{1}{n} \sum_{w=33}^{40} \left[\frac{\sum_{i=1}^{12} \sum_{s=1}^3 V_{is} \left(\frac{\sum_j C_{t_{jiswg}}}{\sum_j v_{jiswg}} \right)}{\sum_{i=1}^{12} \sum_{s=1}^3 V_{is}} \right] X_w,$$

where

- F_g = the FJS index (for gear g) for a species in a year;
- $C_{t_{jiswg}}$ = the count of a species in sample j from gear g , region i , stratum s , and week w ;
- X_w = 1 if week w was sampled during the year, 0 otherwise;
- n = the number of weeks sampled in the year,
 $= \sum_{w=33}^{40} X_w$;
- v_{jiswg} = the volume of sample j from gear g in region i , stratum s , and week w ; and
- V_{isg} = the volume of stratum s , sampled by gear g , in river region i .

The above equation can be expressed in terms of weighted average sample densities as follows:

$$F_g = \frac{1}{n} \sum_{w=33}^{40} \bar{Y}_{wg} X_w = \frac{1}{n} \sum_{w=33}^{40} \left[\frac{\sum_{i=1}^{12} \sum_{s=1}^3 V_{si} \bar{Y}_{iswg}}{\sum_{i=1}^{12} \sum_{s=1}^3 V_{si}} \right] X_w,$$

where

$$\begin{aligned} \bar{Y}_{iswg} &= \text{the average density of a species in samples from region } i, \text{ stratum } s, \\ &\quad \text{week } w, \text{ and gear } g \text{ and} \\ \bar{Y}_{wg} &= \text{the weighted average density of a species in samples from week } w, \\ &\quad \text{and gear } g. \end{aligned}$$

Because not all weeks within the period of week 33 to 40 (or 40 to 43 for bottom sampling) were sampled by the FSS in each year, the variance of the FSS index of abundance in any year is calculated as the sum of two components. The primary unit in the first stage is weeks, and the design is assumed to be simple random sampling (i.e., weeks of sampling are construed to be a random sample of weeks within the period from week 33 through week 40 or from week 40 through week 43). The sampling units in the second stage are region-(habitat) strata, and the design is stratified random where region-(habitat) strata are the statistical strata. The variance is calculated using a two-stage estimator based on equation 11.24 in Cochran (1977, p. 303):

$$\text{var}(F_g) = \frac{\left(1 - \frac{n}{N}\right)}{n} S_{1,g}^2 + \frac{1}{Nn} \sum_w S_{2,gw}^2,$$

where

$$\begin{aligned} S_{1,g}^2 &= \text{the first stage variance (temporal, among weeks),} \\ S_{2,gw}^2 &= \text{the second stage variance (spatial) in week } w, \text{ and} \\ N &= \text{the number of weeks (8 or 4) within the selected period, i.e., weeks} \\ &\quad \text{33 through 40 or weeks 40 through 43.} \end{aligned}$$

The first stage variance component is calculated as:

$$S_{1,g}^2 = \frac{1}{n-1} \sum_{w=33}^{40} (\bar{Y}_{wg} - F_g)^2.$$

The second stage variance is calculated as:

$$S_{2, gw}^2 = \frac{\sum_{i=1}^{12} \sum_{s=1}^3 V_{isg}^2 \left[\frac{\left(h_{iswg} \sum_j (Ct_{jiswg} - \bar{C}t_{iswg})^2 \right)}{h_{iswg} - 1} \right]}{\left(\sum_{i=1}^{12} \sum_{s=1}^3 V_{isg} \right)^2},$$

where

V_{isg} = the total volume of (habitat) stratum, s , and region, i , sampled by gear g .

Then:

$$\text{std. err. } (F_g) = (\text{var}(F_g))^{1/2}.$$

D.2.3 Long River Survey

Indices of abundance using data from the LRS were calculated for striped bass, white perch, American shad, Atlantic tomcod and rainbow smelt. For striped bass, white perch and American shad, the indices are based on the egg, yolk-sac larvae (YSL), and post yolk-sac larvae (PYSL) life stages and the weeks selected depend on the period of abundance. For Atlantic tomcod the index was based on PYSL and juveniles combined over weeks 19 through 22 and for rainbow smelt the index was based on the juvenile life stage in weeks 20 through 27. The Long River Survey Index of abundance (L) for each year and species is a measure of average density and is calculated according to the following formula:

$$L = \sum_{w=firstwk}^{lastwk} \left[\frac{\sum_{i=1}^{12} \sum_{s=1}^5 V_{is} \left(\frac{\sum_j Ct_{jisw}}{\sum_j v_{jisw}} \right)}{\sum_{i=1}^{12} \sum_{s=1}^5 V_{is}} \right],$$

where

- L = the LRS index for any species in any year;
- Ct_{jisw} = the count of a species in sample j , region i , stratum s , and week w ;
- v_{jisw} = the volume of sample j from in region i , stratum s , and week w ;
- V_{is} = the volume of stratum s in river region i ;
- $firstwk$ = the first week included in the annual index of abundance:
 striped bass, American shad, and white perch egg, YSL, and
 PYSL -- the first week of the year in which the sum of weekly
 density estimates (from the initial week of sampling in the

year through the current week) exceeds 5% of the sum of densities over all weeks of sampling,
Atlantic tomcod PYSL and juveniles combined -- week 19, and rainbow smelt juveniles -- week 20; and
 $lastwk$ = the last week included in the annual index of abundance:
striped bass, American shad, and white perch egg, YSL, and PYSL -- $firstwk + 7$;
Atlantic tomcod PYSL and juveniles combined -- week 22; and rainbow smelt juveniles -- week 27.

The above equation can be expressed in terms of average sample density as follows:

$$L = \sum_{w=firstwk}^{lastwk} \bar{Y}_w = \sum_{w=firstwk}^{lastwk} \left[\frac{\sum_{i=1}^{12} \sum_{s=1}^5 V_{si} \bar{Y}_{isw}}{\sum_{i=1}^{12} \sum_{s=1}^5 V_{si}} \right],$$

where

\bar{Y}_{isw} = the average density of a species in samples from region i , stratum s , and week w [Note: for strata and regions that were not sampled, predicted densities (based on regression predictors and densities in adjacent strata) were used] and
 \bar{Y}_w = the weighted average density of a species in samples collected during week w .

Variance of the index was estimated using the following equation:

$$var(L) = \sum_{w=firstwk}^{lastwk} \left[\frac{\sum_s \sum_i V_{is}^2 \left(\frac{n_{si} \left(\sum_j \frac{(Ct_{jisw} - \bar{Ct}_{isw})^2}{n_{si} - 1} \right)}{\left(\sum_j v_{jisw} \right)^2} \right)}{\left(\sum_s \sum_i V_{is} \right)^2} \right],$$

where

V_{is} = the total volume in region i and stratum s .

Then:

$$std. \text{ err.}(L) = (var(L))^{1/2}.$$

As indicated in Heimbuch et al. (1992), for indices based on LRS sampling, the volume of water between the beach and 10 ft deep was divided into two substrata: beach and shore. The beach stratum, defined from the beach to water five ft deep, corresponds with the shallow waters sampled in the BSS. The shore stratum, defined as water greater than five ft deep and less than 10 ft deep, is an unsampleable region. Densities in these substrata were estimated based on fixed ratios to the densities in adjacent strata.

D.3 LITERATURE CITED

Cochran, W.G. 1977. Sampling techniques, 3rd edition. Wiley, New York.

Heimbuch, D.G., D.J. Dunning, and J.R. Young. 1992. Post-Yolk-Sac Larvae Abundance as an Index of Year Class Strength of Striped Bass in the Hudson River, pages 376-391 *in* C. L. Smith (ed.) Estuarine Research in the 1980s. State University of New York Press. Albany.

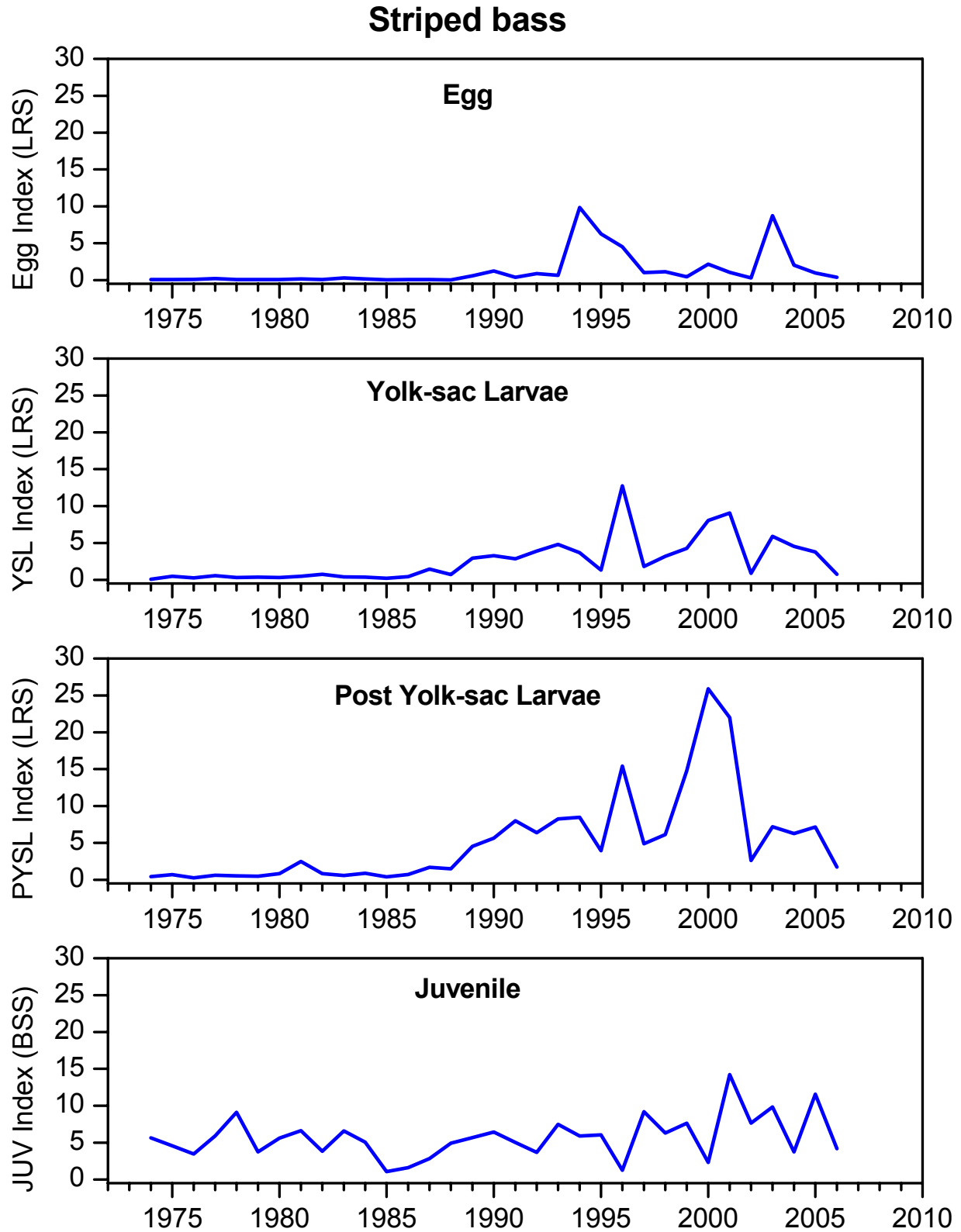


Figure D-1. Striped bass indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006

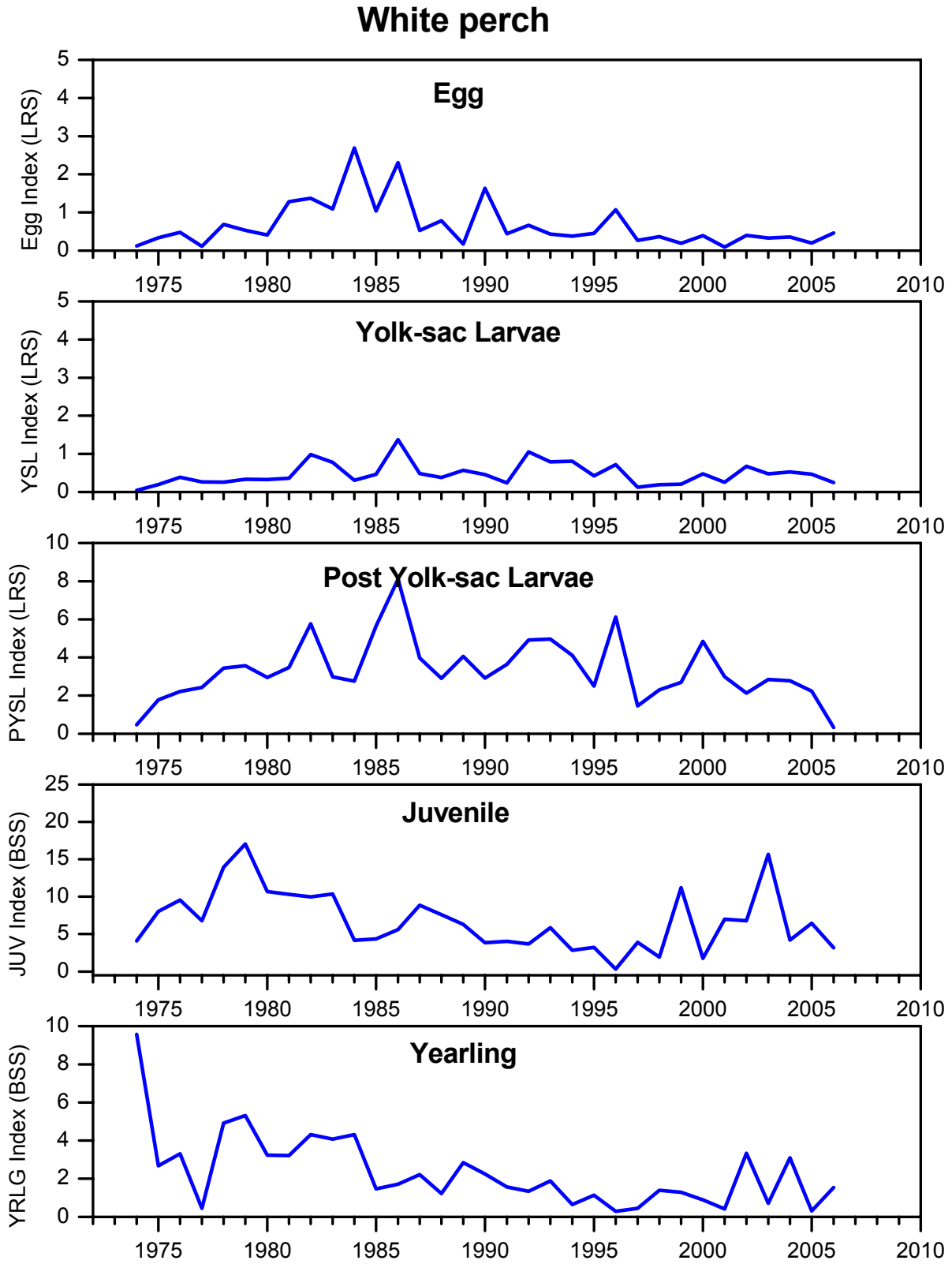


Figure D-2. White perch indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006

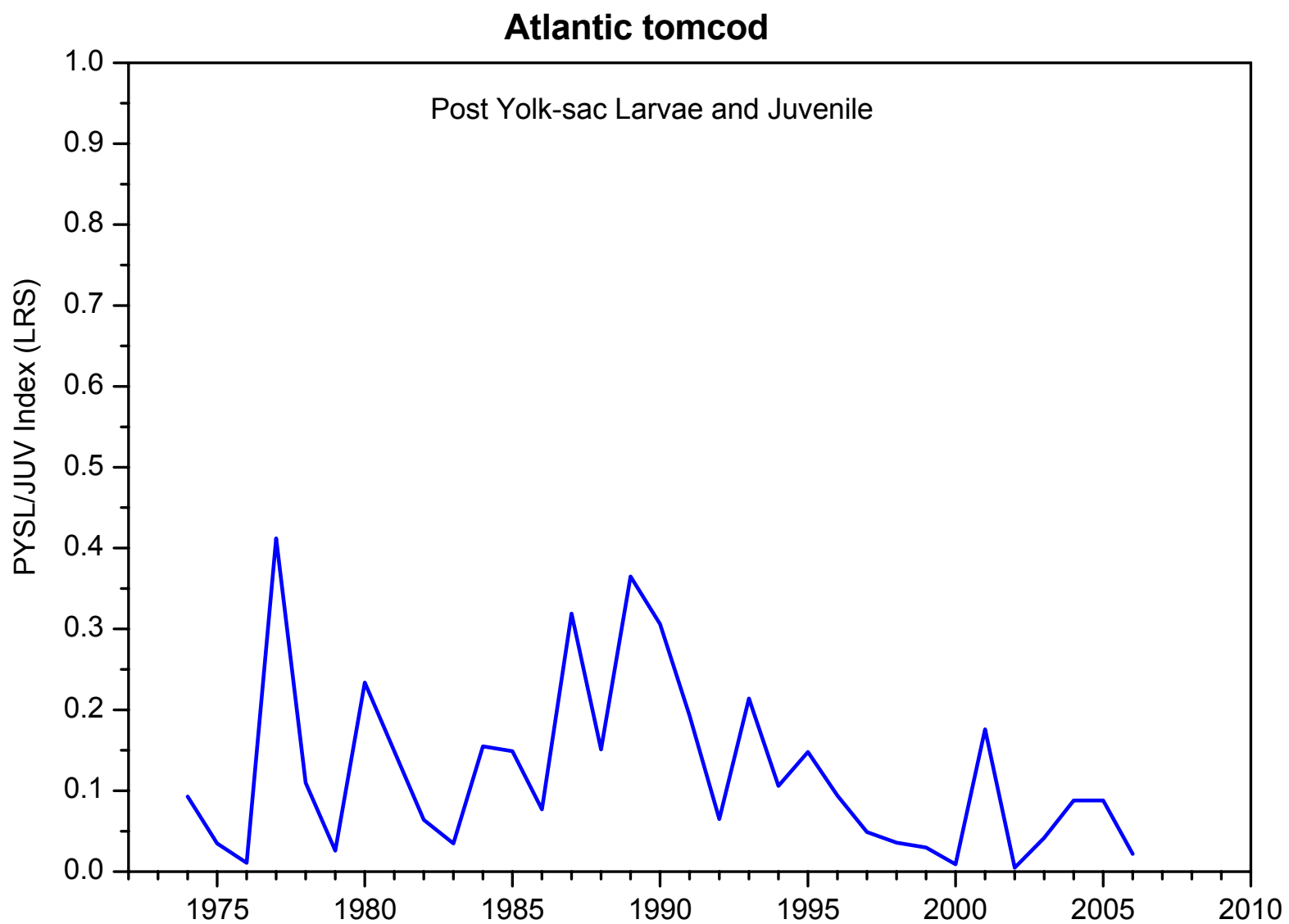


Figure D-3. Atlantic tomcod indices of annual abundance based on Long River Survey, 1974-2006

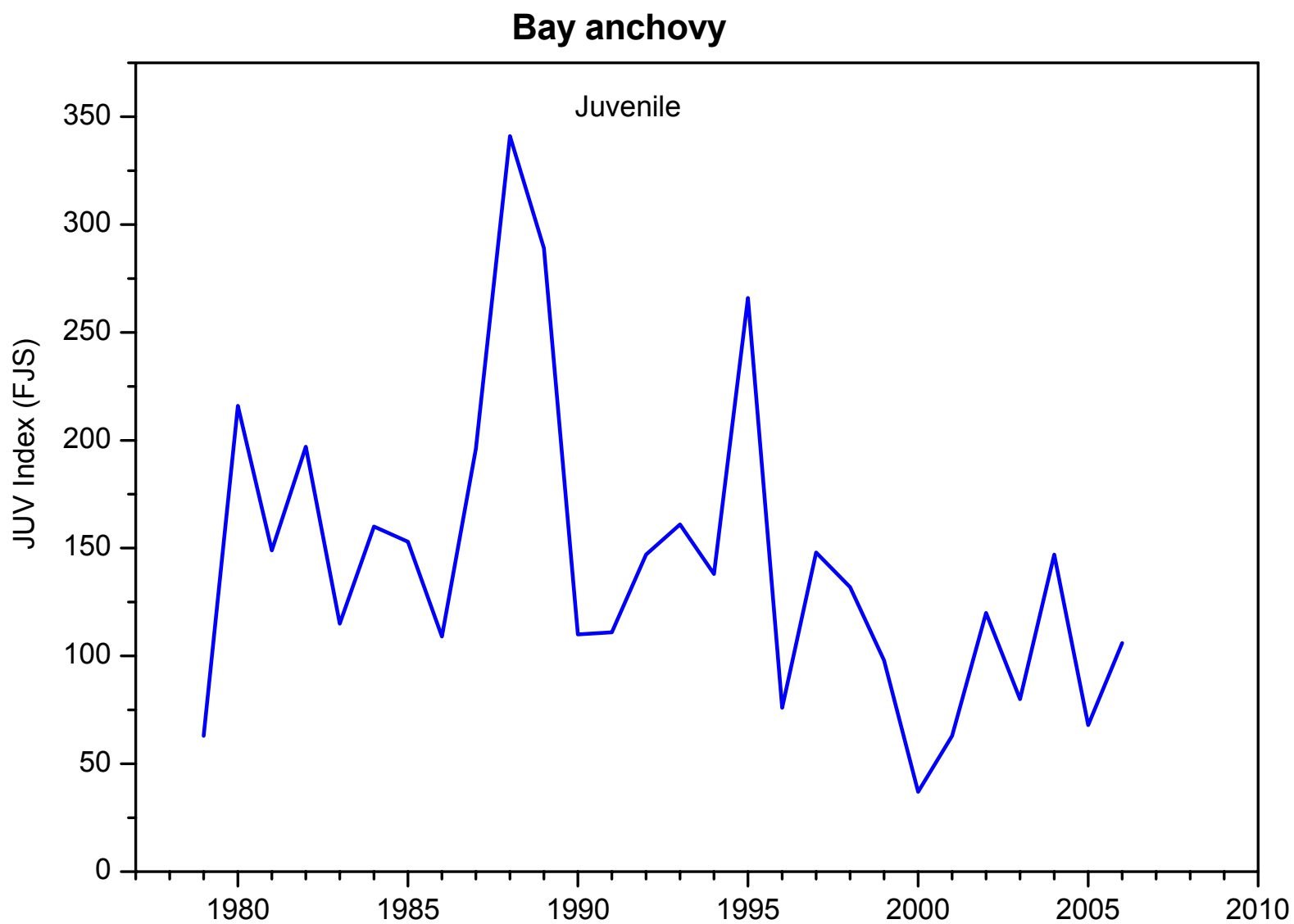


Figure D-4. Bay anchovy indices of annual abundance based on Fall Juvenile Survey, 1979-2006

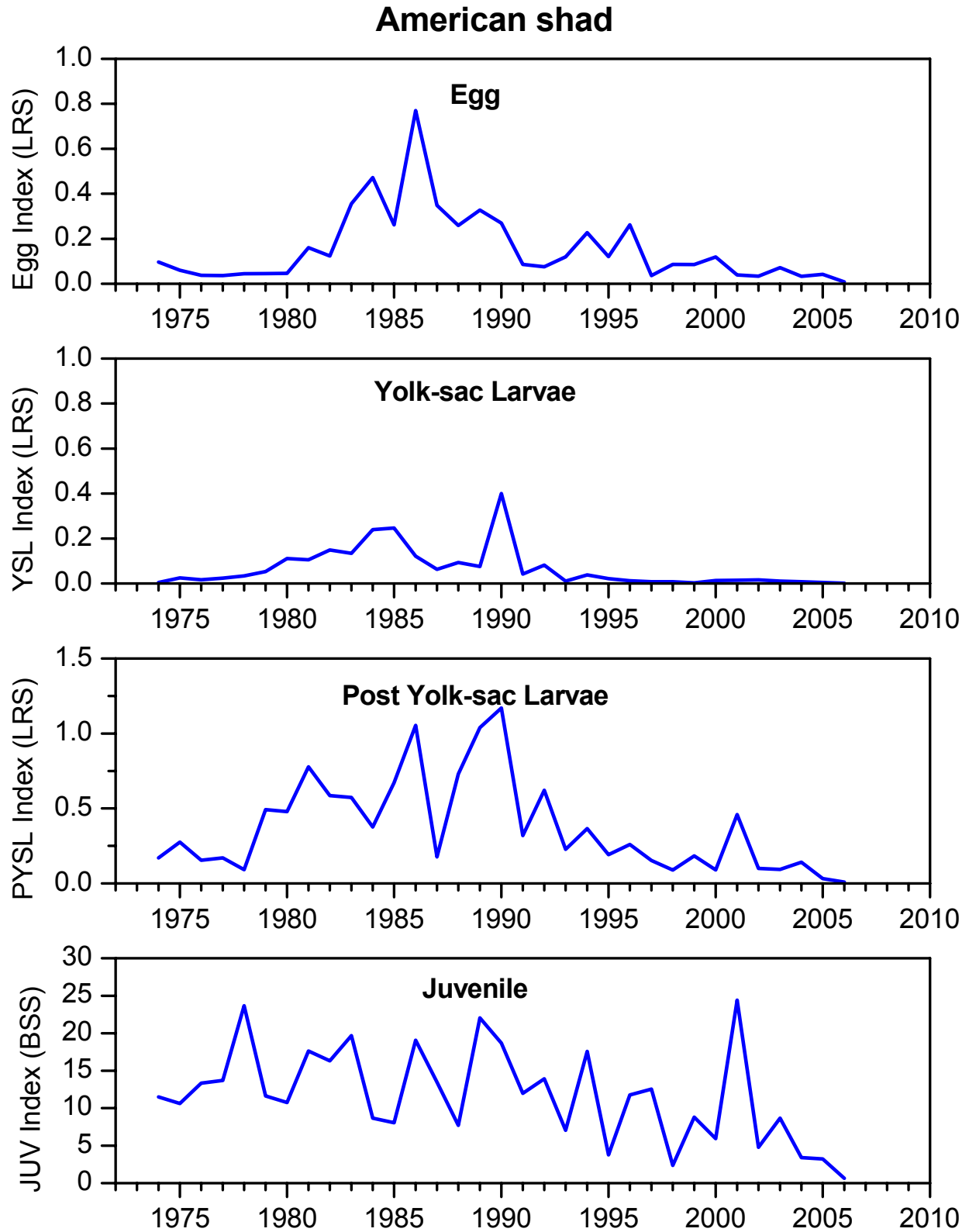


Figure D-5. American shad indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2006

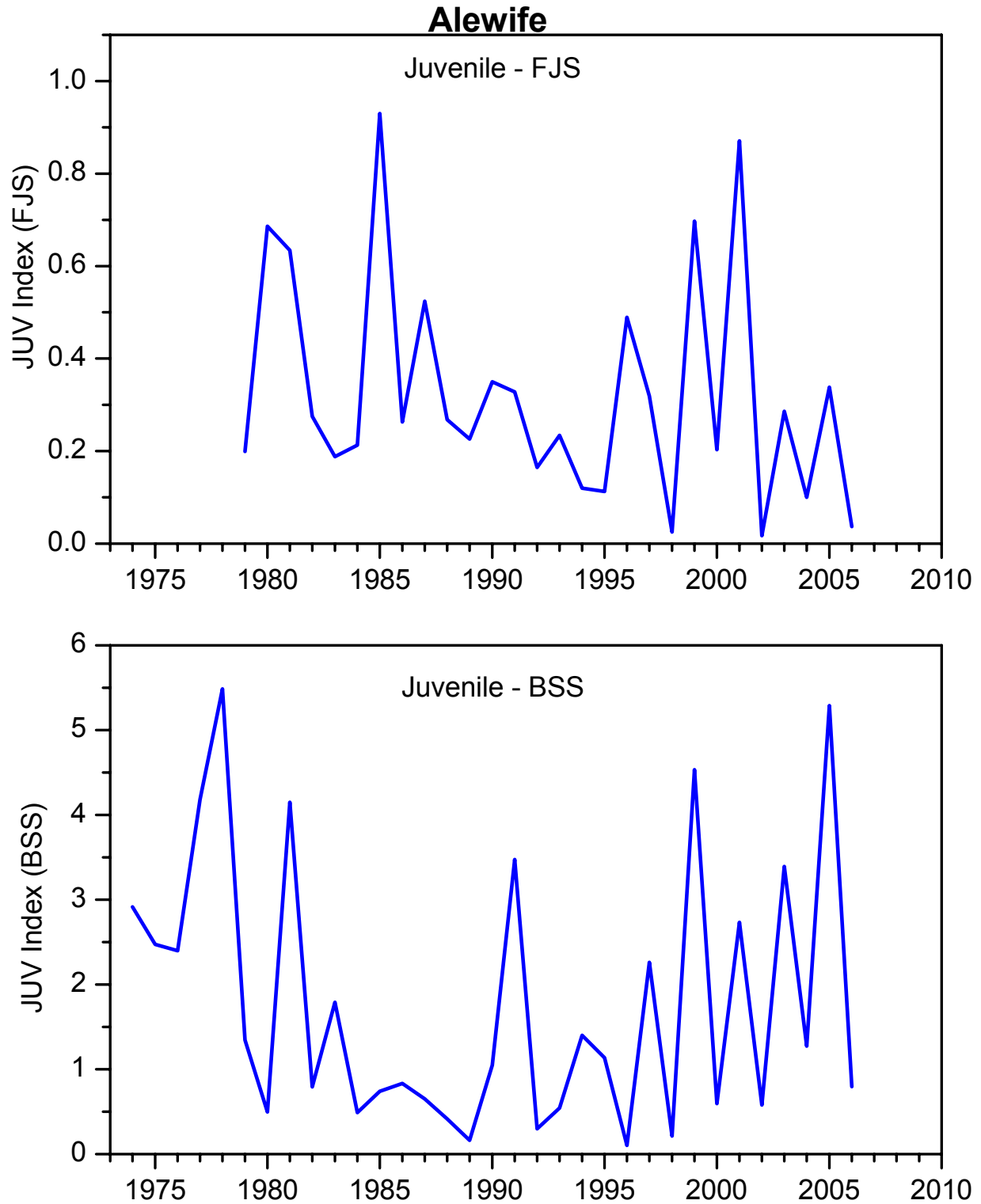


Figure D-6. Alewife indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Beach Seine Survey, 1974-2006

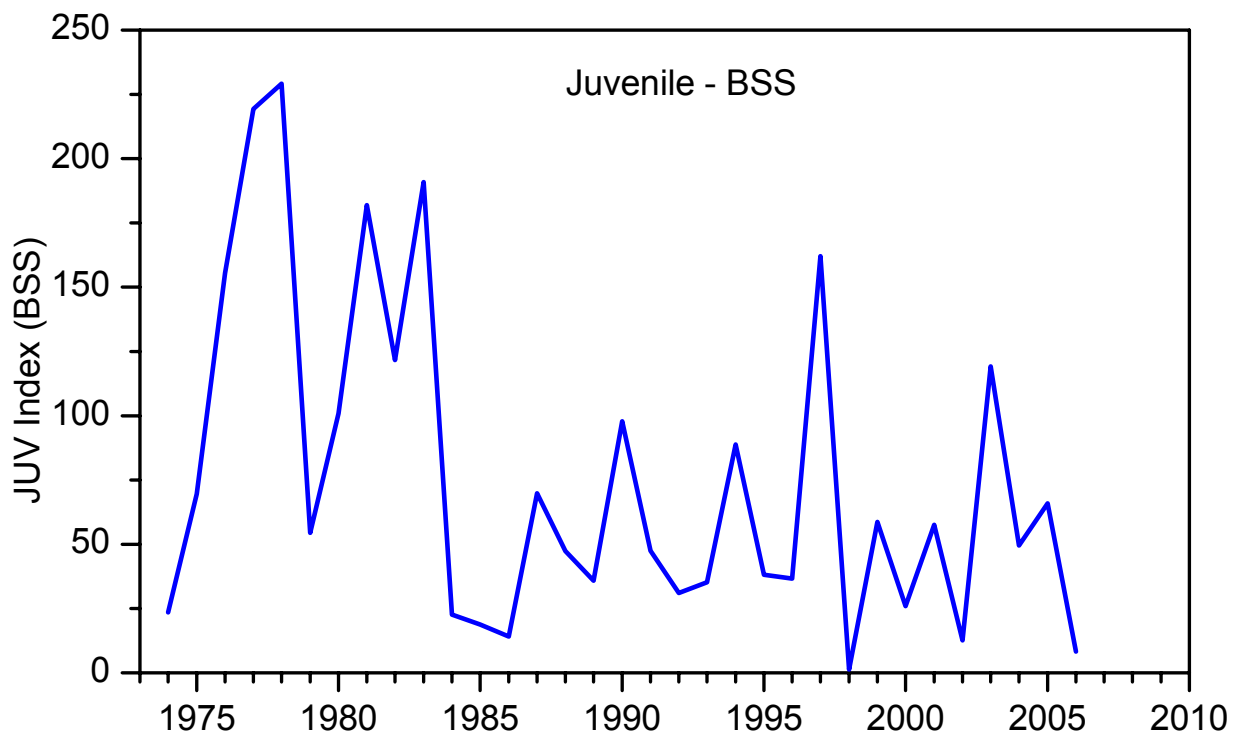
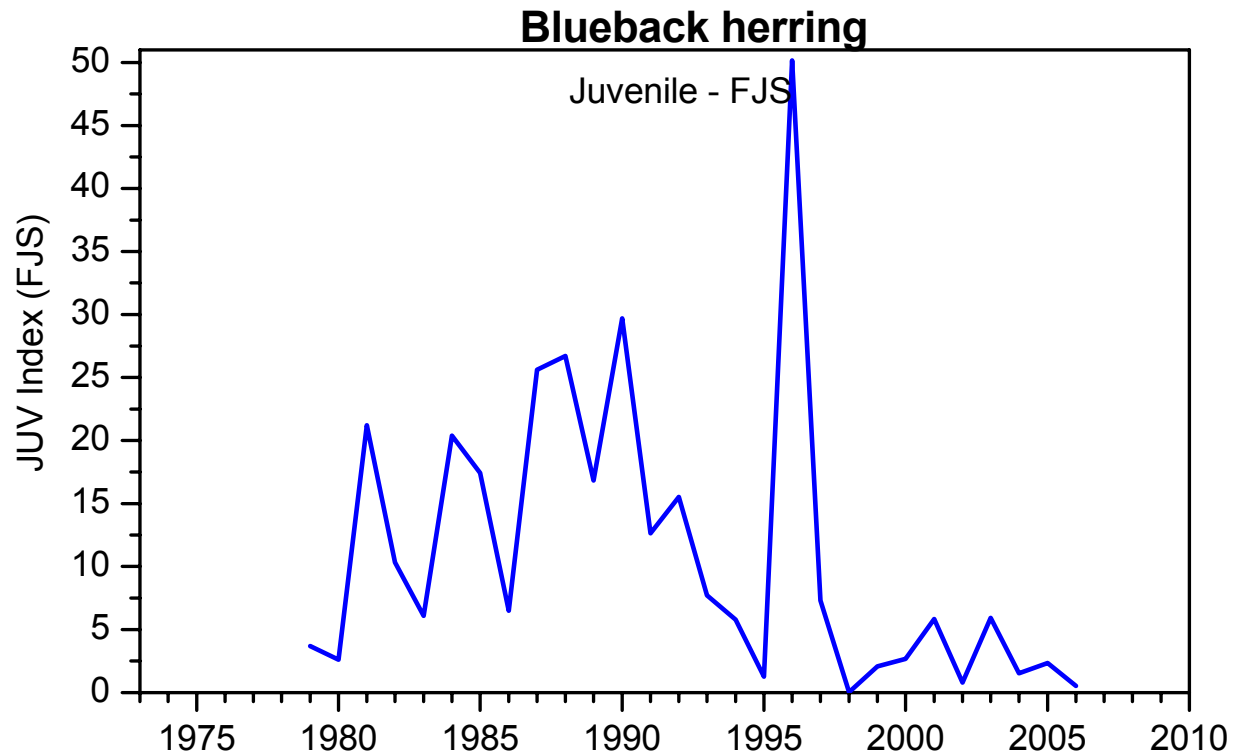


Figure D-7. Blueback herring indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Beach Seine Survey, 1974-2006

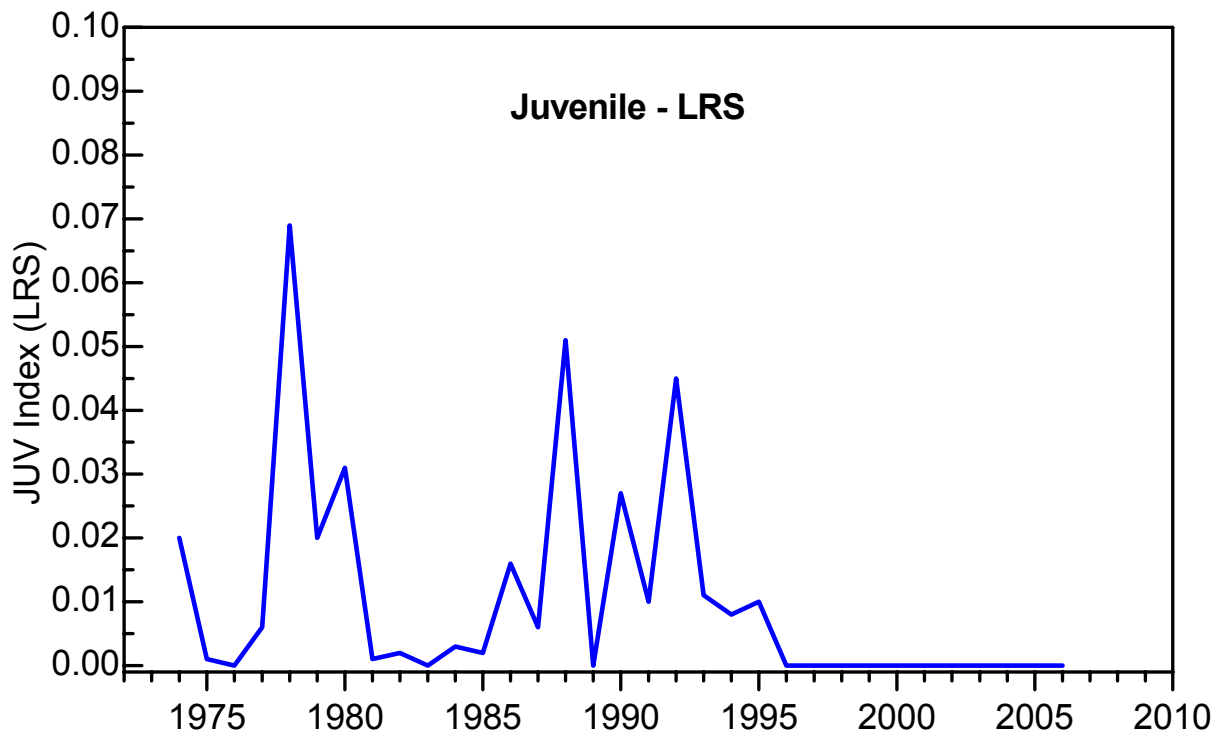
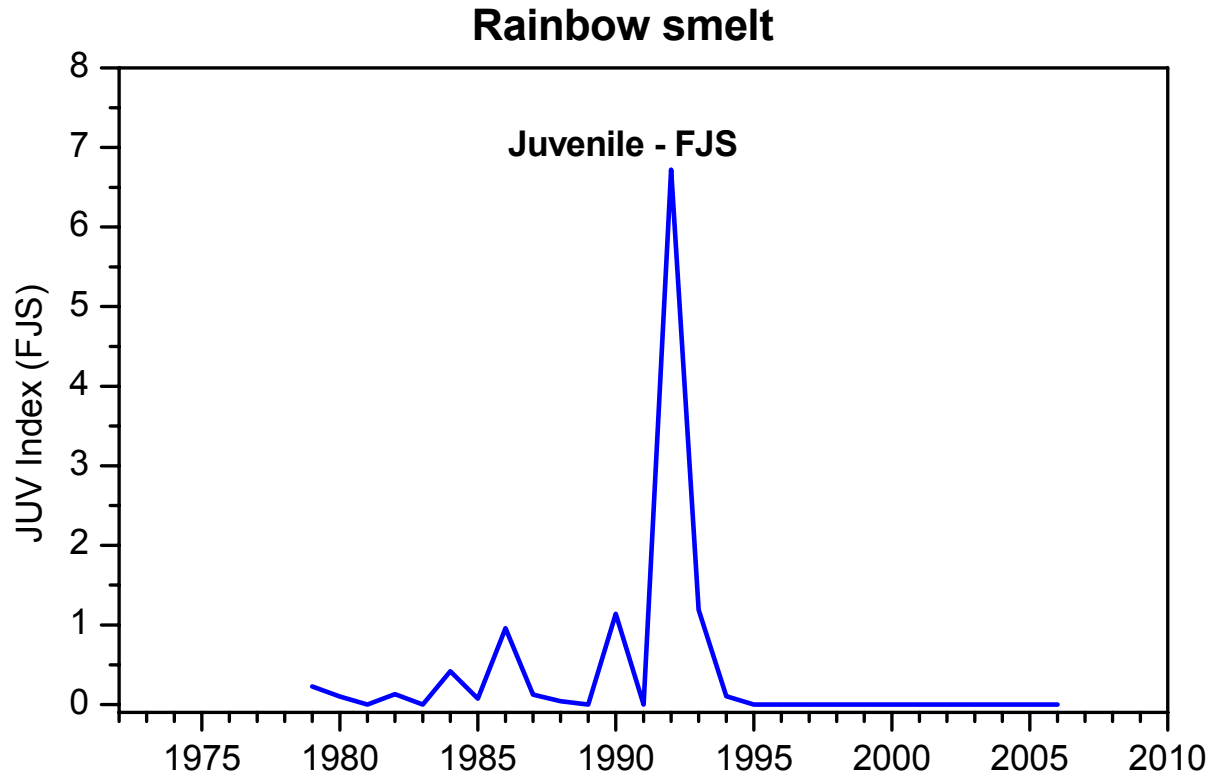


Figure D-8. Rainbow smelt indices of annual abundance based on Fall Juvenile Survey, 1979-2006, and Long River Survey, 1974-2006

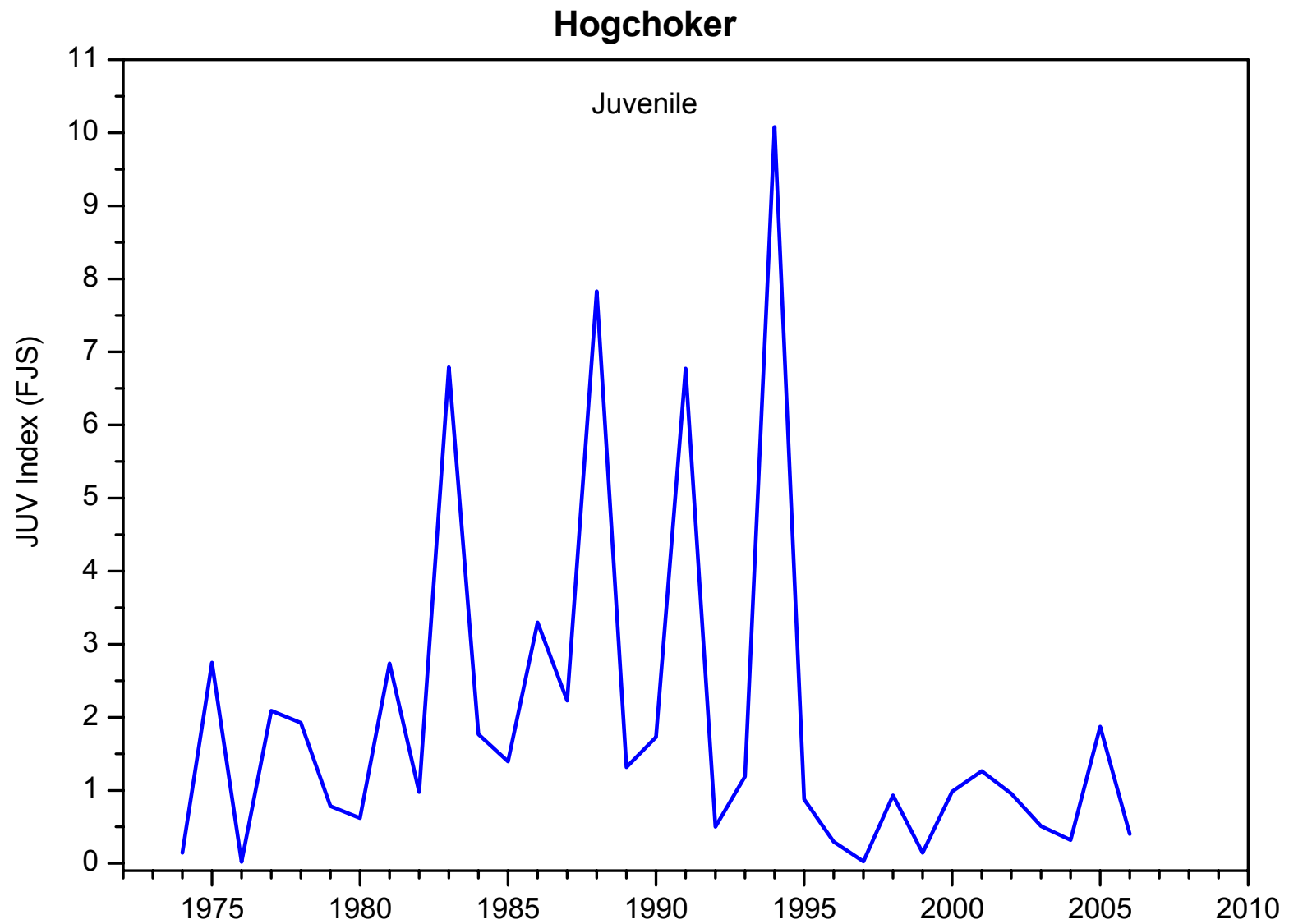


Figure D-9. Hogchoker indices of annual abundance based on Fall Juvenile Survey, 1974-2006

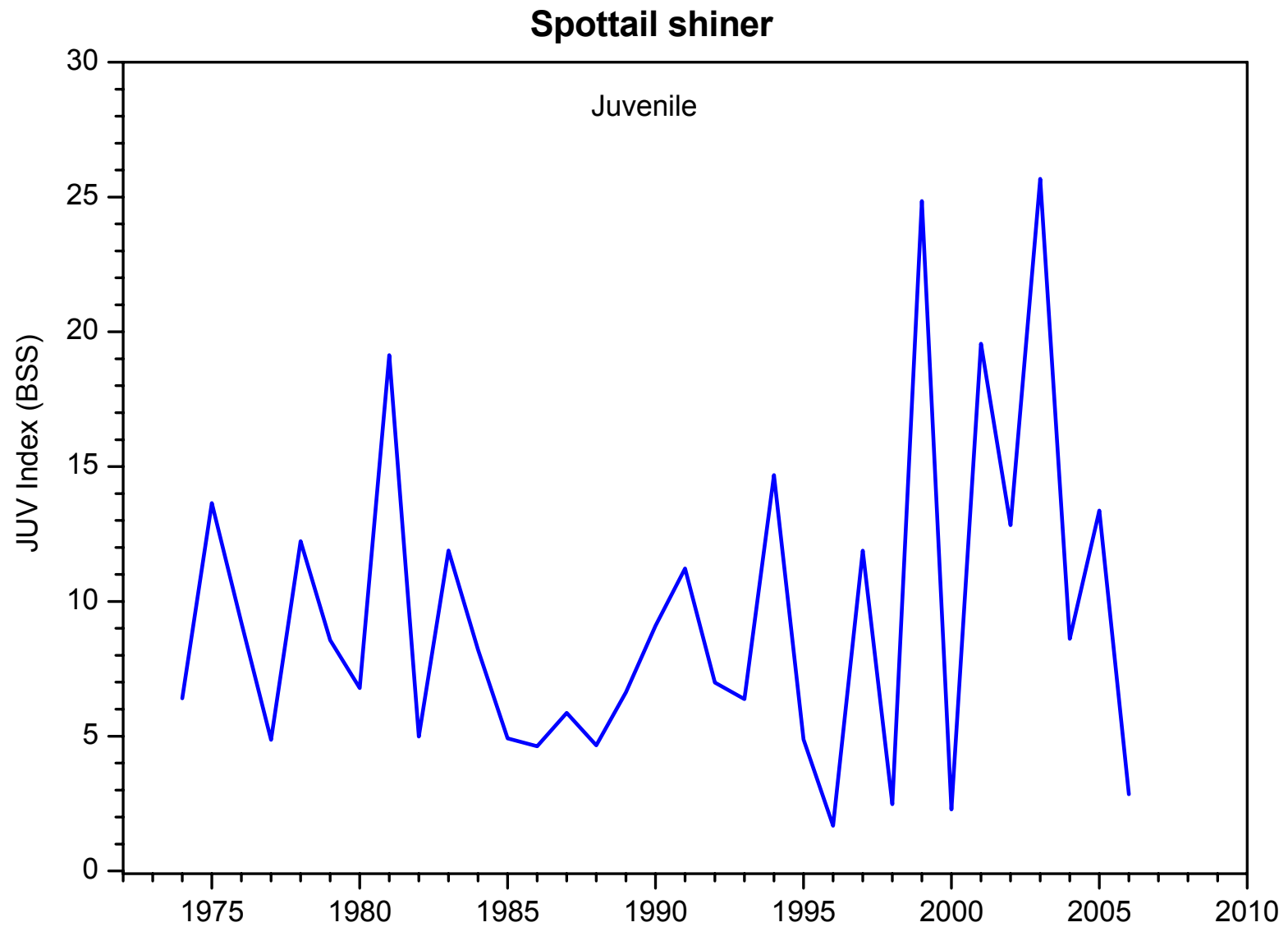


Figure D-10. Spottail shiner indices of annual abundance based on Beach Seine Survey, 1974-2006

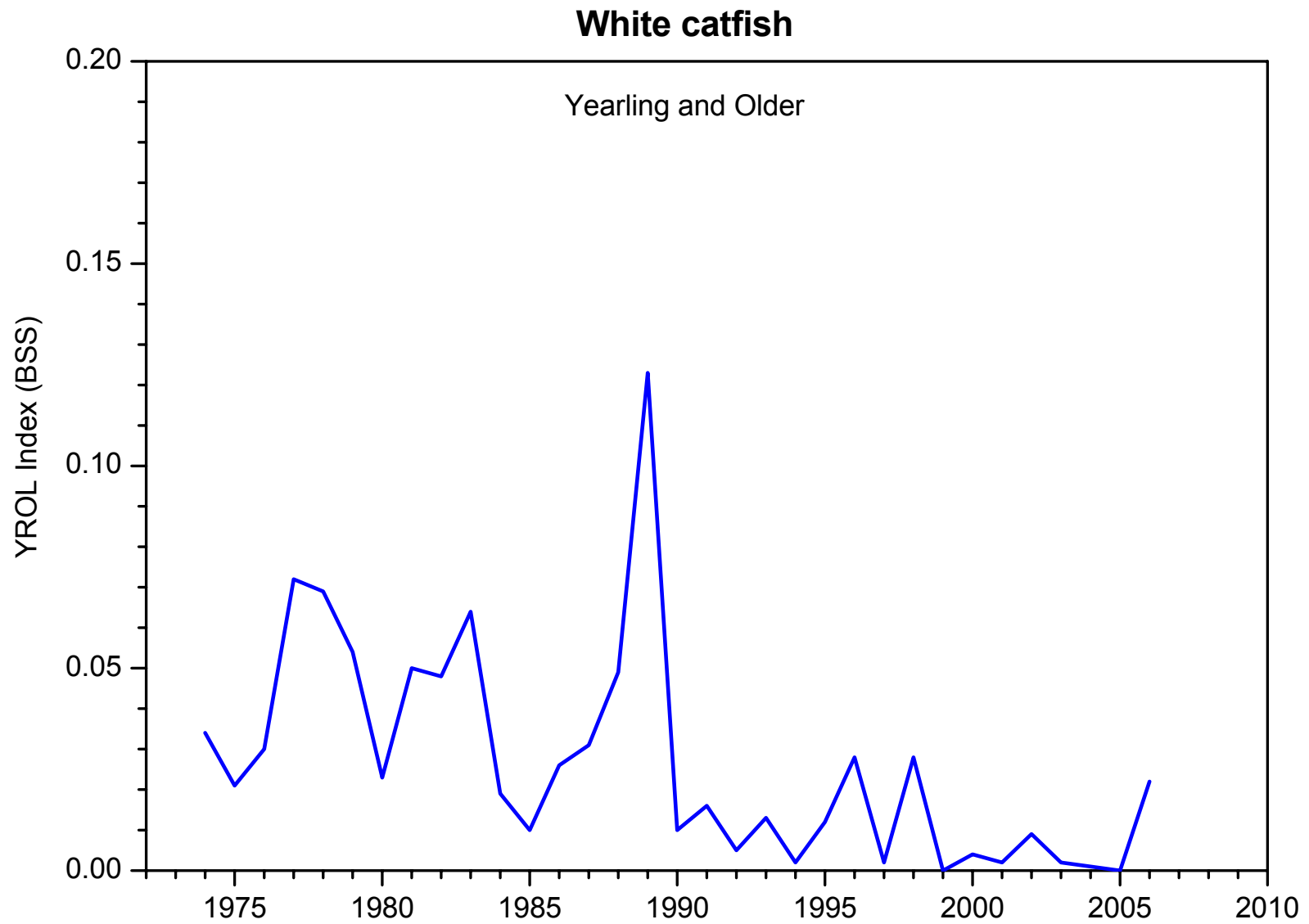


Figure D-11. White catfish indices of annual abundance based on Beach Seine Survey, 1974-2006

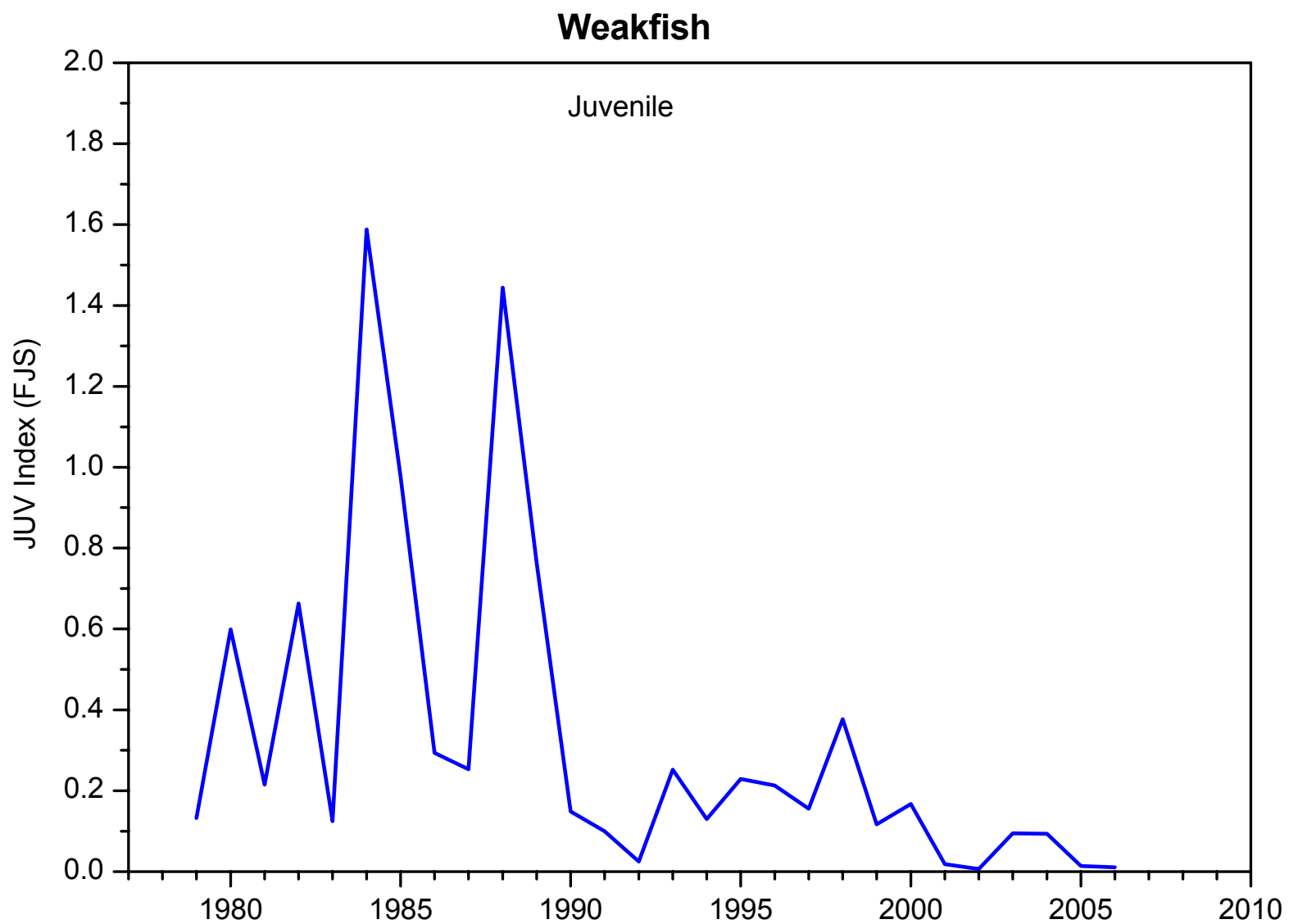


Figure D-12. Weakfish indices of annual abundance based on Fall Juvenile Survey, 1979-2006

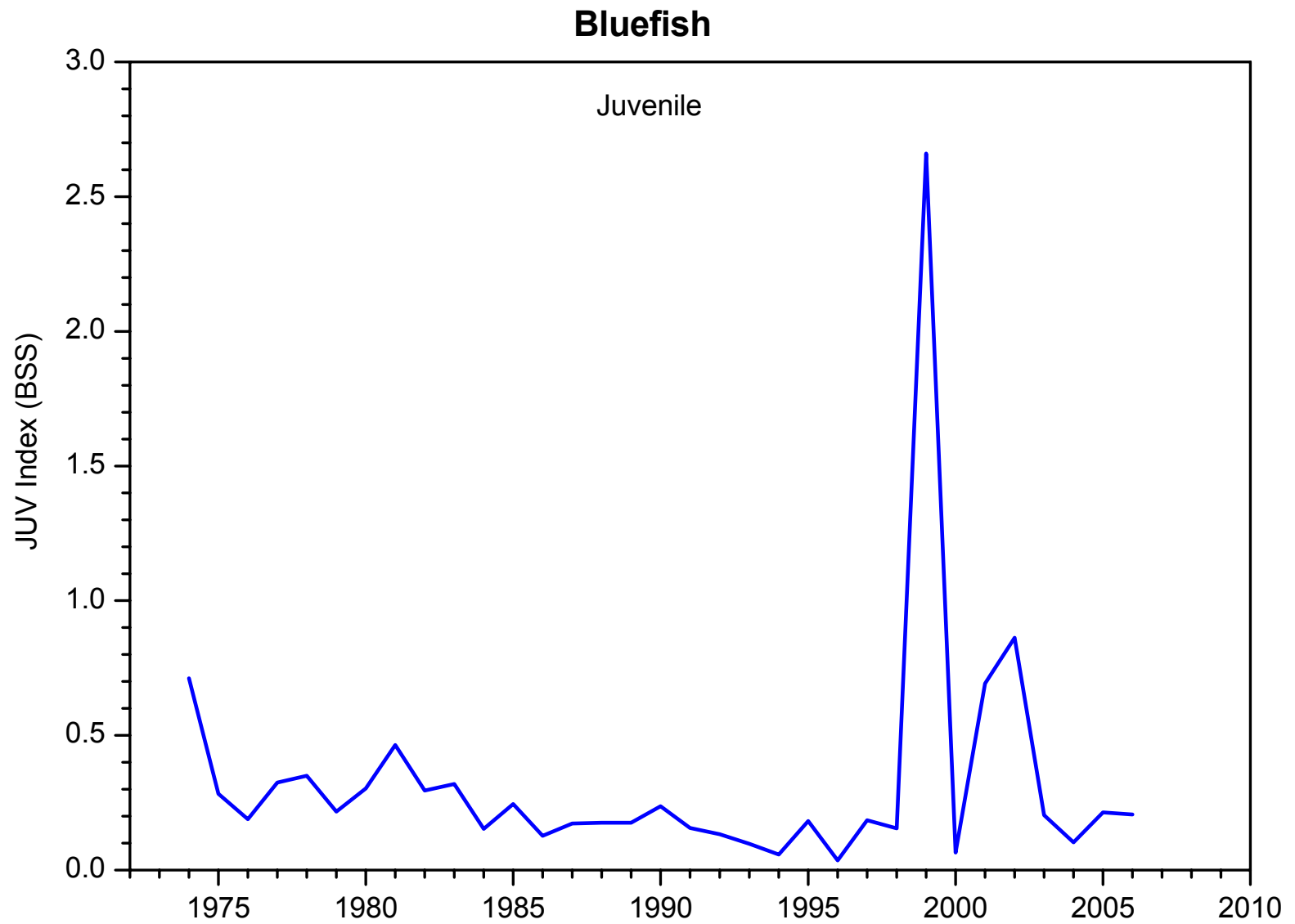


Figure D-13. Bluefish indices of annual abundance based on Beach Seine Survey, 1974-2006

Table D-1 Parameters for Indices of Annual Abundance Based on Data from the Beach Seine Survey (BSS), Fall Juvenile Survey (FJS), and Longitudinal River Survey (LRS)

Species	Life Stage	Weeks Used in Sampling Program		
		BSS	FJS	LRS
Striped bass	Egg, YSL, and PYSL			Variable ¹
Striped bass	Juvenile	33-40		
White perch	Egg, YSL, and PYSL			Variable ¹
White perch	Juvenile and Yearling	33-40		
Atlantic tomcod	PYSL and Juvenile combined			19-22
Bay anchovy	Juvenile		33-40 (Channel)	
American shad	Egg, YSL, and PYSL			Variable ¹
American shad	Juvenile	33-40		
Alewife	Juvenile	33-40	33-40 (Channel)	
Blueback herring	Juvenile	33-40	33-40 (Channel)	
Rainbow smelt	Juvenile		33-40 (Channel)	20-27
Hogchoker	Juvenile		40-43 (Bottom)	
Spottail shiner	Juvenile	33-40		
White catfish	Yearling and older	33-40		
Weakfish	Juvenile		33-40 (Channel)	
Bluefish	Juvenile	33-40		

¹ 7 weeks beginning with the first week in which 5% of annual total is achieved

Table D-2 Striped Bass Indices of Annual Abundance Based on Long River Survey and Beach Seine Survey, 1974-2006

	Long River Survey						Beach Seine Survey	
	Egg		Yolk-Sac Larvae		Post Yolk-Sac Larvae		Juvenile	
	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.
1974	0.062	0.044	0.080	0.018	0.424	0.033	5.652	0.869
1975	0.076	0.012	0.487	0.031	0.694	0.044	4.557	0.301
1976	0.097	0.011	0.253	0.014	0.265	0.017	3.445	0.392
1977	0.195	0.022	0.566	0.029	0.605	0.036	5.919	0.411
1978	0.077	0.010	0.306	0.019	0.538	0.038	9.115	1.884
1979	0.075	0.008	0.359	0.022	0.468	0.032	3.760	0.756
1980	0.072	0.009	0.319	0.024	0.833	0.062	5.605	0.829
1981	0.137	0.015	0.486	0.055	2.482	0.116	6.611	0.912
1982	0.073	0.007	0.745	0.078	0.825	0.061	3.826	0.539
1983	0.276	0.189	0.391	0.026	0.589	0.033	6.580	1.249
1984	0.152	0.019	0.358	0.030	0.867	0.096	5.059	1.008
1985	0.050	0.005	0.202	0.017	0.405	0.033	1.069	0.237
1986	0.060	0.008	0.421	0.032	0.721	0.036	1.618	0.388
1987	0.059	0.007	1.449	0.085	1.697	0.066	12.823	2.245
1988	0.024	0.008	0.706	0.068	1.481	0.139	4.912	0.607
1989	0.588	0.269	2.941	0.277	4.540	0.344	5.665	0.897
1990	1.219	0.182	3.271	0.295	5.642	0.535	6.415	0.703
1991	0.363	0.064	2.855	0.257	8.005	0.770	5.032	1.070
1992	0.874	0.154	3.884	0.219	6.380	0.426	3.678	0.581
1993	0.633	0.122	4.812	0.969	8.247	0.727	7.496	1.626
1994	9.825	1.869	3.678	0.526	8.454	0.795	5.880	1.056
1995	6.266	1.010	1.305	0.199	3.942	0.389	6.043	0.903
1996	4.497	0.649	12.743	1.796	15.404	1.465	1.252	0.330
1997	1.029	0.185	1.795	0.296	4.887	0.745	9.185	0.829
1998	1.131	0.343	3.173	0.548	6.133	0.490	6.287	0.709
1999	0.460	0.087	4.265	0.393	14.788	1.343	7.621	1.486
2000	2.144	0.194	8.061	0.817	25.886	2.823	2.320	0.691
2001	1.030	0.235	9.057	0.748	21.999	1.364	14.215	1.551
2002	0.291	0.042	0.879	0.054	2.625	0.151	7.649	0.860
2003	8.721	4.871	5.889	0.634	7.185	0.718	9.834	1.554
2004	2.018	0.402	4.534	0.372	6.254	0.352	3.752	0.822
2005	0.960	0.158	3.786	0.874	7.169	0.621	11.582	1.469
2006	0.361	0.051	0.752	0.080	1.727	0.102	4.171	0.722

Table D-3 White Perch Indices of Annual Abundance Based on Long River Survey and Beach Seine Survey, 1974-2006

	Long River Survey						Beach Seine Survey			
	Egg		Yolk-Sac Larvae		Post Yolk-Sac Larvae		Juvenile		Yearling	
	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.
1974	0.122	0.049	0.040	0.010	0.464	0.037	4.091	0.556	9.57	2.24
1975	0.335	0.095	0.198	0.016	1.783	0.147	8.040	1.954	2.68	1.41
1976	0.480	0.092	0.388	0.015	2.214	0.239	9.537	1.341	3.31	0.43
1977	0.112	0.019	0.264	0.014	2.431	0.128	6.782	1.114	0.45	0.07
1978	0.687	0.083	0.261	0.021	3.438	0.195	13.934	2.838	4.92	2.37
1979	0.533	0.070	0.336	0.017	3.571	0.103	17.033	2.747	5.31	1.63
1980	0.411	0.038	0.328	0.015	2.954	0.110	10.682	2.306	3.24	0.94
1981	1.282	0.080	0.360	0.032	3.467	0.174	10.297	1.291	3.22	0.62
1982	1.374	0.158	0.986	0.050	5.757	0.221	9.995	1.139	4.31	0.80
1983	1.089	0.084	0.776	0.040	2.977	0.101	10.363	2.016	4.08	1.60
1984	2.691	0.659	0.310	0.015	2.754	0.119	4.175	0.684	4.31	1.11
1985	1.036	0.117	0.463	0.040	5.640	0.214	4.353	1.076	1.47	0.53
1986	2.306	0.338	1.375	0.080	8.106	0.378	5.597	1.129	1.71	0.43
1987	0.528	0.063	0.483	0.022	3.974	0.119	8.880	1.678	2.21	0.26
1988	0.781	0.104	0.381	0.037	2.905	0.147	7.606	1.296	1.23	0.25
1989	0.171	0.014	0.568	0.051	4.057	0.374	6.281	1.715	2.84	0.51
1990	1.633	0.350	0.460	0.034	2.919	0.261	3.844	0.416	2.25	0.59
1991	0.443	0.059	0.241	0.017	3.637	0.236	4.033	0.754	1.57	0.43
1992	0.665	0.062	1.052	0.062	4.921	0.202	3.677	0.645	1.34	0.18
1993	0.431	0.060	0.792	0.044	4.958	0.185	5.842	0.949	1.89	0.55
1994	0.378	0.035	0.812	0.043	4.106	0.173	2.837	0.581	0.65	0.19
1995	0.454	0.070	0.427	0.020	2.506	0.108	3.209	0.484	1.14	0.34
1996	1.071	0.134	0.721	0.051	6.123	0.269	0.309	0.125	0.29	0.10
1997	0.265	0.047	0.127	0.005	1.461	0.075	3.912	0.558	0.45	0.07
1998	0.370	0.056	0.192	0.014	2.300	0.142	1.930	0.486	1.39	0.29
1999	0.192	0.026	0.210	0.017	2.696	0.152	11.218	2.992	1.29	0.43
2000	0.396	0.030	0.480	0.027	4.841	0.504	1.766	0.391	0.89	0.29
2001	0.091	0.010	0.253	0.017	2.997	0.237	6.997	0.817	0.42	0.13
2002	0.397	0.037	0.677	0.027	2.125	0.147	6.766	1.038	3.33	0.87
2003	0.329	0.034	0.478	0.023	2.845	0.171	15.671	3.697	0.71	0.13
2004	0.355	0.036	0.526	0.036	2.782	0.127	4.203	0.985	3.10	1.03
2005	0.198	0.013	0.470	0.029	2.233	0.133	6.441	0.998	0.313	0.085
2006	0.465	0.040	0.249	0.014	0.335	0.074	3.162	0.521	1.545	0.201

Table D-4 Atlantic Tomcod Indices of Annual Abundance Based on Long River Survey, 1974-2006

	Long River Survey	
	Post Yolk-Sac Larvae and Juvenile	
	Index	Std. Err.
1974	0.093	0.016
1975	0.035	0.009
1976	0.011	0.003
1977	0.412	0.267
1978	0.110	0.031
1979	0.026	0.006
1980	0.234	0.078
1981	0.149	0.037
1982	0.064	0.024
1983	0.035	0.012
1984	0.155	0.070
1985	0.149	0.027
1986	0.077	0.010
1987	0.319	0.049
1988	0.151	0.034
1989	0.365	0.089
1990	0.306	0.135
1991	0.193	0.029
1992	0.065	0.021
1993	0.214	0.061
1994	0.106	0.022
1995	0.148	0.024
1996	0.094	0.014
1997	0.049	0.011
1998	0.036	0.008
1999	0.030	0.007
2000	0.009	0.002
2001	0.176	0.029
2002	0.005	0.001
2003	0.042	0.006
2004	0.088	0.012
2005	0.088	0.014
2006	0.022	0.005

Table D-5 Bay Anchovy Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2006

	Fall Juvenile Survey	
	Juvenile	
	Index	Std. Err.
1979	63	10
1980	216	53
1981	149	24
1982	197	25
1983	115	32
1984	160	33
1985	153	16
1986	109	16
1987	196	42
1988	341	51
1989	289	40
1990	110	12
1991	111	8
1992	147	35
1993	161	20
1994	138	33
1995	266	44
1996	76	20
1997	148	27
1998	132	20
1999	98	25
2000	37	4
2001	63	10
2002	120	16
2003	80	7
2004	147	48
2005	68	7
2006	106	32

Table D-6 American Shad Indices of Annual Abundance Based on Long River Survey and Beach Seine Survey, 1974-2006

	Long River Survey						Beach Seine Survey	
	Egg		Yolk-Sac Larvae		Post Yolk-Sac Larvae		Juvenile	
	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.	Index	Std. Err.
1974	0.097	0.031	0.004	0.001	0.171	0.065	11.499	0.825
1975	0.060	0.016	0.025	0.004	0.276	0.176	10.630	1.431
1976	0.037	0.009	0.017	0.002	0.155	0.049	13.325	0.869
1977	0.036	0.004	0.024	0.002	0.170	0.033	13.702	1.388
1978	0.044	0.008	0.034	0.003	0.092	0.031	23.671	2.658
1979	0.045	0.007	0.053	0.006	0.492	0.069	11.645	1.741
1980	0.046	0.009	0.111	0.012	0.479	0.216	10.747	2.464
1981	0.161	0.075	0.106	0.012	0.777	0.309	17.615	2.167
1982	0.123	0.041	0.149	0.016	0.586	0.120	16.312	1.919
1983	0.356	0.114	0.134	0.015	0.573	0.092	19.679	3.887
1984	0.472	0.112	0.240	0.019	0.376	0.168	8.686	1.839
1985	0.262	0.039	0.247	0.041	0.672	0.165	8.078	1.297
1986	0.770	0.325	0.122	0.015	1.054	0.150	19.060	3.735
1987	0.349	0.077	0.063	0.007	0.177	0.077	13.473	2.275
1988	0.259	0.051	0.093	0.030	0.729	0.344	7.717	1.010
1989	0.327	0.063	0.075	0.010	1.040	0.794	22.052	2.414
1990	0.270	0.062	0.400	0.053	1.170	0.733	18.674	1.742
1991	0.086	0.016	0.042	0.008	0.319	0.115	11.966	3.155
1992	0.075	0.021	0.082	0.011	0.622	0.213	13.923	1.051
1993	0.120	0.031	0.011	0.002	0.228	0.116	7.065	0.869
1994	0.227	0.036	0.038	0.005	0.366	0.126	17.557	3.276
1995	0.121	0.030	0.021	0.003	0.191	0.060	3.786	0.433
1996	0.262	0.042	0.012	0.003	0.260	0.061	11.773	1.928
1997	0.036	0.005	0.008	0.001	0.153	0.033	12.537	2.036
1998	0.086	0.012	0.008	0.001	0.089	0.028	2.361	0.415
1999	0.085	0.018	0.003	0.001	0.184	0.066	8.813	2.441
2000	0.119	0.015	0.013	0.002	0.090	0.026	5.925	0.930
2001	0.039	0.012	0.014	0.004	0.459	0.182	24.402	1.827
2002	0.034	0.004	0.016	0.003	0.100	0.037	4.792	0.468
2003	0.072	0.019	0.011	0.001	0.093	0.025	8.686	1.204
2004	0.033	0.008	0.008	0.001	0.141	0.062	3.397	0.613
2005	0.042	0.005	0.004	0.001	0.032	0.015	3.208	0.601
2006	0.008	0.001	0.001	0.000	0.009	0.004	0.631	0.116

Table D-7 Alewife Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2006,
and Beach Seine Survey, 1974-2006

	Fall Juvenile Survey		Beach Seine Survey	
	Juvenile		Juvenile	
	Index	Std. Err.	Index	Std. Err.
1974			2.917	0.439
1975			2.473	0.404
1976			2.400	0.632
1977			4.182	0.605
1978			5.485	0.971
1979	0.199	0.077	1.347	0.232
1980	0.686	0.353	0.498	0.161
1981	0.634	0.214	4.148	0.936
1982	0.275	0.084	0.794	0.237
1983	0.188	0.067	1.791	0.273
1984	0.213	0.125	0.490	0.136
1985	0.930	0.407	0.741	0.173
1986	0.263	0.079	0.834	0.505
1987	0.524	0.268	0.651	0.121
1988	0.268	0.129	0.417	0.089
1989	0.226	0.068	0.163	0.040
1990	0.350	0.137	1.047	0.167
1991	0.328	0.115	3.473	0.569
1992	0.165	0.084	0.299	0.118
1993	0.234	0.083	0.544	0.159
1994	0.120	0.062	1.402	0.343
1995	0.113	0.034	1.136	0.346
1996	0.489	0.146	0.103	0.040
1997	0.319	0.101	2.262	0.439
1998	0.025	0.015	0.214	0.154
1999	0.697	0.173	4.533	1.073
2000	0.203	0.077	0.597	0.315
2001	0.871	0.720	2.733	0.783
2002	0.017	0.014	0.580	0.102
2003	0.286	0.117	3.392	0.895
2004	0.100	0.039	1.274	0.355
2005	0.338	0.092	5.289	1.232
2006	0.037	0.017	0.795	0.435

Table D-8 Blueback Herring Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2006, and Beach Seine Survey, 1974-2006

	Fall Juvenile Survey		Beach Seine Survey	
	Juvenile		Juvenile	
	Index	Std. Err.	Index	Std. Err.
1974			23.509	3.394
1975			69.660	9.490
1976			155.551	23.842
1977			219.365	26.383
1978			229.189	44.491
1979	3.695	0.746	54.451	8.318
1980	2.606	0.753	100.836	53.797
1981	21.197	5.861	181.931	72.898
1982	10.331	2.061	121.724	31.431
1983	6.082	1.073	190.860	41.849
1984	20.385	3.673	22.662	5.412
1985	17.424	4.584	18.816	3.904
1986	6.482	1.383	14.102	4.410
1987	25.608	12.357	69.798	15.687
1988	26.693	4.297	47.408	14.021
1989	16.825	5.408	35.877	8.094
1990	29.688	10.639	97.854	13.970
1991	12.648	4.469	47.440	11.057
1992	15.523	3.874	31.096	6.530
1993	7.717	1.594	35.277	5.517
1994	5.765	1.899	88.839	13.782
1995	1.266	0.417	38.176	23.296
1996	50.160	15.888	36.708	17.548
1997	7.301	1.428	162.109	35.436
1998	0.032	0.029	1.282	0.314
1999	2.073	0.783	58.668	17.791
2000	2.677	1.163	25.980	14.975
2001	5.845	4.998	57.605	11.398
2002	0.797	0.546	12.630	5.767
2003	5.920	1.891	119.197	27.386
2004	1.523	0.347	49.563	11.708
2005	2.332	1.049	65.857	20.089
2006	0.525	0.146	8.278	3.437

Table D-9 Rainbow Smelt Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2006, and Long River Survey, 1974-2006

	Fall Juvenile Survey		Long River Survey	
	Juvenile		Juvenile	
	Index	Std. Err.	Index	Std. Err.
1974			0.020	0.004
1975			0.001	0.000
1976			0.000	0.000
1977			0.006	0.002
1978			0.069	0.006
1979	0.226	0.092	0.020	0.003
1980	0.099	0.088	0.031	0.002
1981	0.000	0.000	0.001	0.000
1982	0.129	0.055	0.002	0.000
1983	0.000	0.000	0.000	0.000
1984	0.419	0.165	0.003	0.000
1985	0.074	0.057	0.002	0.000
1986	0.959	0.165	0.016	0.001
1987	0.122	0.065	0.006	0.001
1988	0.041	0.027	0.051	0.008
1989	0.000	0.000	0.000	0.000
1990	1.140	0.340	0.027	0.002
1991	0.000	0.000	0.010	0.003
1992	6.721	2.340	0.045	0.005
1993	1.190	0.563	0.011	0.003
1994	0.104	0.104	0.008	0.002
1995	0.000	0.000	0.010	0.002
1996	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000
1998	0.000	0.000	0.000	0.000
1999	0.000	0.000	0.000	0.000
2000	0.000	0.000	0.000	0.000
2001	0.000	0.000	0.000	0.000
2002	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.000
2004	0.000	0.000	0.000	0.000
2005	0.000	0.000	0.000	0.000
2006	0.000	0.000	0.000	0.000

Table D-10 Hogchoker Indices of Annual Abundance Based on Fall Juvenile Survey, 1974-2006

	Fall Juvenile Survey	
	Juvenile	
	Index	Std. Err.
1974	0.147	0.033
1975	2.748	1.910
1976	0.021	0.017
1977	2.089	1.393
1978	1.925	0.806
1979	0.786	0.172
1980	0.620	0.183
1981	2.735	0.775
1982	0.975	--
1983	6.789	4.522
1984	1.767	0.428
1985	1.396	0.257
1986	3.298	1.587
1987	2.227	0.568
1988	7.832	0.914
1989	1.318	0.406
1990	1.728	1.024
1991	6.772	4.728
1992	0.502	0.234
1993	1.189	0.308
1994	10.079	1.418
1995	0.878	0.333
1996	0.295	0.066
1997	0.026	0.026
1998	0.932	0.129
1999	0.145	0.136
2000	0.983	0.363
2001	1.264	0.426
2002	0.956	0.346
2003	0.511	0.508
2004	0.319	0.079
2005	1.873	0.785
2006	0.402	0.168

Table D-11 Spottail Shiner Indices of Annual Abundance Based on Beach Seine Survey, 1974-2006

	Beach Seine Survey	
	Juvenile	
	Index	Std. Err.
1974	6.406	1.419
1975	13.648	3.194
1976	9.211	1.452
1977	4.860	1.112
1978	12.232	1.725
1979	8.562	1.357
1980	6.785	1.281
1981	19.134	3.977
1982	4.991	0.815
1983	11.890	3.007
1984	8.202	1.942
1985	4.916	0.780
1986	4.629	1.165
1987	5.868	1.403
1988	4.663	0.722
1989	6.626	1.472
1990	9.098	1.505
1991	11.223	1.880
1992	6.987	1.066
1993	6.379	0.797
1994	14.684	2.022
1995	4.875	0.696
1996	1.681	0.632
1997	11.880	1.742
1998	2.478	0.568
1999	24.848	5.432
2000	2.287	0.634
2001	19.556	4.314
2002	12.833	1.847
2003	25.669	4.877
2004	8.613	1.323
2005	13.370	4.976
2006	2.849	0.461

Table D-12 White Catfish Indices of Annual Abundance Based on Beach Seine Survey, 1974-2006

	Beach Seine Survey	
	Yearling and Older	
	Index	Std. Err.
1974	0.034	0.020
1975	0.021	0.011
1976	0.030	0.010
1977	0.072	0.022
1978	0.069	0.030
1979	0.054	0.028
1980	0.023	0.008
1981	0.050	0.029
1982	0.048	0.026
1983	0.064	0.044
1984	0.019	0.006
1985	0.010	0.005
1986	0.026	0.012
1987	0.031	0.015
1988	0.049	0.018
1989	0.123	0.056
1990	0.010	0.005
1991	0.016	0.008
1992	0.005	0.003
1993	0.013	0.009
1994	0.002	0.002
1995	0.012	0.008
1996	0.028	0.016
1997	0.002	0.001
1998	0.028	0.022
1999	0.000	0.000
2000	0.004	0.003
2001	0.002	0.002
2002	0.009	0.008
2003	0.002	0.001
2004	0.001	0.001
2005	0.000	0.000
2006	0.022	0.013

Table D-13 Weakfish Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2006

	Fall Juvenile Survey	
	Juvenile	
	Index	Std. Err.
1979	0.133	0.070
1980	0.599	0.284
1981	0.215	0.125
1982	0.663	0.306
1983	0.125	0.088
1984	1.588	0.633
1985	0.977	0.481
1986	0.294	0.105
1987	0.253	0.180
1988	1.444	0.599
1989	0.763	0.248
1990	0.149	0.090
1991	0.100	0.061
1992	0.025	0.017
1993	0.252	0.149
1994	0.130	0.058
1995	0.229	0.128
1996	0.213	0.160
1997	0.156	0.053
1998	0.377	0.277
1999	0.117	0.047
2000	0.167	0.115
2001	0.019	0.009
2002	0.007	0.007
2003	0.095	0.049
2004	0.094	0.062
2005	0.014	0.014
2006	0.011	0.011

Table D-14 Bluefish Indices of Annual Abundance Based on Beach Seine Survey, 1974-2006

	Beach Seine Survey	
	Juvenile	
	Index	Std. Err.
1974	0.712	0.210
1975	0.283	0.074
1976	0.189	0.028
1977	0.325	0.097
1978	0.350	0.075
1979	0.217	0.054
1980	0.303	0.053
1981	0.464	0.119
1982	0.295	0.059
1983	0.320	0.101
1984	0.153	0.034
1985	0.245	0.068
1986	0.127	0.054
1987	0.173	0.049
1988	0.176	0.027
1989	0.176	0.043
1990	0.237	0.053
1991	0.156	0.043
1992	0.133	0.050
1993	0.098	0.033
1994	0.058	0.017
1995	0.182	0.043
1996	0.036	0.012
1997	0.185	0.028
1998	0.155	0.026
1999	2.660	1.116
2000	0.065	0.027
2001	0.692	0.242
2002	0.863	0.300
2003	0.204	0.073
2004	0.103	0.037
2005	0.214	0.071
2006	0.206	0.069

Appendix E

Density and Standing Crop Estimates

APPENDIX E

LIST OF TABLES

<u>Number</u>	<u>Title</u>
E-1	Regional density (no./1,000 m ³) of striped bass eggs in Hudson River estuary determined from Long River Survey, 2006
E-2	Regional standing crop (in thousands) of striped bass eggs in Hudson River estuary determined from Long River Survey, 2006
E-3	Regional density (no./1,000 m ³) of striped bass yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-4	Regional standing crop (in thousands) of striped bass yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-5	Regional density (no./1,000 m ³) of striped bass post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-6	Regional standing crop (in thousands) of striped bass post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-7	Regional density (no./1,000 m ³) of striped bass young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-8	Regional standing crop (in thousands) of striped bass young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-9	Regional density (no./1,000 m ³) of striped bass young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-10	Regional standing crop (in thousands) of striped bass young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-11	Regional catch-per-unit-effort of striped bass young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-12	Regional standing crop (in thousands) of striped bass young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-13	Regional density (no./1,000 m ³) of striped bass yearling in Hudson River estuary determined from Long River Survey, 2006
E-14	Regional standing crop (in thousands) of striped bass yearling in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-15	Regional density (no./1,000 m ³) of striped bass yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-16	Regional standing crop (in thousands) of striped bass yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-17	Regional catch-per-unit-effort of striped bass yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-18	Regional standing crop (in thousands) of striped bass yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-19	Regional density (no./1,000 m ³) of striped bass older-than-yearling in Hudson River estuary determined from Long River Survey, 2006
E-20	Regional standing crop (in thousands) of striped bass older-than-yearling in Hudson River estuary determined from Long River Survey, 2006
E-21	Regional density (no./1,000 m ³) of striped bass older-than-yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-22	Regional standing crop (in thousands) of striped bass older-than-yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-23	Regional catch-per-unit-effort of striped bass older-than-yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-24	Regional standing crop (in thousands) of striped bass older-than-yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-25	Regional density (no./1,000 m ³) of white perch eggs in Hudson River estuary determined from Long River Survey, 2006
E-26	Regional standing crop (in thousands) of white perch eggs in Hudson River estuary determined from Long River Survey, 2006
E-27	Regional density (no./1,000 m ³) of white perch yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-28	Regional standing crop (in thousands) of white perch yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-29	Regional density (no./1,000 m ³) of white perch post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-30	Regional standing crop (in thousands) of white perch post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-31	Regional density (no./1,000 m ³) of white perch young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-32	Regional standing crop (in thousands) of white perch young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-33	Regional density (no./1,000 m ³) of white perch young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-34	Regional standing crop (in thousands) of white perch young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-35	Regional catch-per-unit-effort of white perch young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-36	Regional standing crop (in thousands) of white perch young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-37	Regional density (no./1,000 m ³) of white perch yearling in Hudson River estuary determined from Long River Survey, 2006
E-38	Regional standing crop (in thousands) of white perch yearling in Hudson River estuary determined from Long River Survey, 2006
E-39	Regional density (no./1,000 m ³) of white perch yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-40	Regional standing crop (in thousands) of white perch yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-41	Regional catch-per-unit-effort of white perch yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-42	Regional standing crop (in thousands) of white perch yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-43	Regional density (no./1,000 m ³) of white perch older-than-yearling in Hudson River estuary determined from Long River Survey, 2006
E-44	Regional standing crop (in thousands) of white perch older-than-yearling in Hudson River estuary determined from Long River Survey, 2006
E-45	Regional density (no./1,000 m ³) of white perch older-than-yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-46	Regional standing crop (in thousands) of white perch older-than-yearling in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-47	Regional catch-per-unit-effort of white perch older-than-yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-48	Regional standing crop (in thousands) of white perch older-than-yearling in Hudson River estuary determined from Beach Seine Survey, 2006
E-49	Regional density (no./1,000 m ³) of Atlantic tomcod eggs in Hudson River estuary determined from Long River Survey, 2006
E-50	Regional standing crop (in thousands) of Atlantic tomcod eggs in Hudson River estuary determined from Long River Survey, 2006
E-51	Regional density (no./1,000 m ³) of Atlantic tomcod yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-52	Regional standing crop (in thousands) of Atlantic tomcod yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-53	Regional density (no./1,000 m ³) of Atlantic tomcod post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-54	Regional standing crop (in thousands) of Atlantic tomcod post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-55	Regional density (no./1,000 m ³) of Atlantic tomcod young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-56	Regional standing crop (in thousands) of Atlantic tomcod young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-57	Regional density (no./1,000 m ³) of Atlantic tomcod young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-58	Regional standing crop (in thousands) of Atlantic tomcod young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-59	Regional catch-per-unit-effort of Atlantic tomcod young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-60	Regional standing crop (in thousands) of Atlantic tomcod young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-61	Regional density (no./1,000 m ³) of Atlantic tomcod yearling and older in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-62	Regional standing crop (in thousands) of Atlantic tomcod yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-63	Regional density (no./1,000 m ³) of Atlantic tomcod yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-64	Regional standing crop (in thousands) of Atlantic tomcod yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-65	Regional catch-per-unit-effort of Atlantic tomcod yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-66	Regional standing crop (in thousands) of Atlantic tomcod yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-67	Regional density (no./1,000 m ³) of bay anchovy eggs in Hudson River estuary determined from Long River Survey, 2006
E-68	Regional standing crop (in thousands) of bay anchovy eggs in Hudson River estuary determined from Long River Survey, 2006
E-69	Regional density (no./1,000 m ³) of bay anchovy yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-70	Regional standing crop (in thousands) of bay anchovy yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-71	Regional density (no./1,000 m ³) of bay anchovy post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-72	Regional standing crop (in thousands) of bay anchovy post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-73	Regional density (no./1,000 m ³) of bay anchovy young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-74	Regional standing crop (in thousands) of bay anchovy young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-75	Regional density (no./1,000 m ³) of bay anchovy young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-76	Regional standing crop (in thousands) of bay anchovy young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-77	Regional catch-per-unit-effort of bay anchovy young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-78	Regional standing crop (in thousands) of bay anchovy young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-79	Regional density (no./1,000 m ³) of bay anchovy yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-80	Regional standing crop (in thousands) of bay anchovy yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-81	Regional density (no./1,000 m ³) of bay anchovy yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-82	Regional standing crop (in thousands) of bay anchovy yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-83	Regional catch-per-unit-effort of bay anchovy yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-84	Regional standing crop (in thousands) of bay anchovy yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-85	Regional density (no./1,000 m ³) of American shad eggs in Hudson River estuary determined from Long River Survey, 2006
E-86	Regional standing crop (in thousands) of American shad eggs in Hudson River estuary determined from Long River Survey, 2006
E-87	Regional density (no./1,000 m ³) of American shad yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-88	Regional standing crop (in thousands) of American shad yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-89	Regional density (no./1,000 m ³) of American shad post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-90	Regional standing crop (in thousands) of American shad post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-91	Regional density (no./1,000 m ³) of American shad young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-92	Regional standing crop (in thousands) of American shad young-of-year in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-93	Regional density (no./1,000 m ³) of American shad young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-94	Regional standing crop (in thousands) of American shad young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-95	Regional catch-per-unit-effort of American shad young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-96	Regional standing crop (in thousands) of American shad young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-97	Regional density (no./1,000 m ³) of American shad yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-98	Regional standing crop (in thousands) of American shad yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-99	Regional density (no./1,000 m ³) of American shad yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-100	Regional standing crop (in thousands) of American shad yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-101	Regional catch-per-unit-effort of American shad yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-102	Regional standing crop (in thousands) of American shad yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-103	Regional density (no./1,000 m ³) of <i>Alosa</i> spp. eggs in Hudson River estuary determined from Long River Survey, 2006
E-104	Regional standing crop (in thousands) of <i>Alosa</i> spp. eggs in Hudson River estuary determined from Long River Survey, 2006
E-105	Regional density (no./1,000 m ³) of <i>Alosa</i> spp. yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-106	Regional standing crop (in thousands) of <i>Alosa</i> spp. yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-107	Regional density (no./1,000 m ³) of <i>Alosa</i> spp. post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-108	Regional standing crop (in thousands) of <i>Alosa</i> spp. post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-109	Regional density (no./1,000 m ³) of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-110	Regional standing crop (in thousands) of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-111	Regional density (no./1,000 m ³) of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-112	Regional standing crop (in thousands) of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-113	Regional catch-per-unit-effort of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-114	Regional standing crop (in thousands) of <i>Alosa</i> spp. young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-115	Regional density (no./1,000 m ³) of alewife young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-116	Regional standing crop (in thousands) of alewife young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-117	Regional density (no./1,000 m ³) of alewife young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-118	Regional standing crop (in thousands) of alewife young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-119	Regional catch-per-unit-effort of alewife young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-120	Regional standing crop (in thousands) of alewife young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-121	Regional density (no./1,000 m ³) of alewife yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-122	Regional standing crop (in thousands) of alewife yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-123	Regional density (no./1,000 m ³) of alewife yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-124	Regional standing crop (in thousands) of alewife yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-125	Regional catch-per-unit-effort of alewife yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-126	Regional standing crop (in thousands) of alewife yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-127	Regional density (no./1,000 m ³) of blueback herring young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-128	Regional standing crop (in thousands) of blueback herring young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-129	Regional density (no./1,000 m ³) of blueback herring young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-130	Regional standing crop (in thousands) of blueback herring young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-131	Regional catch-per-unit-effort of blueback herring young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-132	Regional standing crop (in thousands) of blueback herring young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-133	Regional density (no./1,000 m ³) of blueback herring yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-134	Regional standing crop (in thousands) of blueback herring yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-135	Regional density (no./1,000 m ³) of blueback herring yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-136	Regional standing crop (in thousands) of blueback herring yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-137	Regional catch-per-unit-effort of blueback herring yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-138	Regional standing crop (in thousands) of blueback herring yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-139	Regional density (no./1,000 m ³) of gizzard shad young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-140	Regional standing crop (in thousands) of gizzard shad young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-141	Regional catch-per-unit-effort of gizzard shad young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-142	Regional standing crop (in thousands) of gizzard shad young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-143	Regional density (no./1,000 m ³) of gizzard shad yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-144	Regional standing crop (in thousands) of gizzard shad yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-145	Regional catch-per-unit-effort of gizzard shad yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-146	Regional standing crop (in thousands) of gizzard shad yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-147	Regional density (no./1,000 m ³) of rainbow smelt post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-148	Regional standing crop (in thousands) of rainbow smelt post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-149	Regional density (no./1,000 m ³) of rainbow smelt yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-150	Regional standing crop (in thousands) of rainbow smelt yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-151	Regional density (no./1,000 m ³) of rainbow smelt yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-152	Regional standing crop (in thousands) of rainbow smelt yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-153	Regional catch-per-unit-effort of rainbow smelt yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-154	Regional standing crop (in thousands) of rainbow smelt yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-155	Regional density (no./1,000 m ³) of hogchoker eggs in Hudson River estuary determined from Long River Survey, 2006
E-156	Regional standing crop (in thousands) of hogchoker eggs in Hudson River estuary determined from Long River Survey, 2006
E-157	Regional density (no./1,000 m ³) of hogchoker yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-158	Regional standing crop (in thousands) of hogchoker yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-159	Regional density (no./1,000 m ³) of hogchoker post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-160	Regional standing crop (in thousands) of hogchoker post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-161	Regional density (no./1,000 m ³) of hogchoker young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-162	Regional standing crop (in thousands) of hogchoker young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-163	Regional density (no./1,000 m ³) of hogchoker young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-164	Regional standing crop (in thousands) of hogchoker young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-165	Regional catch-per-unit-effort of hogchoker young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-166	Regional standing crop (in thousands) of hogchoker young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-167	Regional density (no./1,000 m ³) of hogchoker yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-168	Regional standing crop (in thousands) of hogchoker yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-169	Regional density (no./1,000 m ³) of hogchoker yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-170	Regional standing crop (in thousands) of hogchoker yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-171	Regional catch-per-unit-effort of hogchoker yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-172	Regional standing crop (in thousands) of hogchoker yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-173	Regional density (no./1,000 m ³) of spottail shiner young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-174	Regional standing crop (in thousands) of spottail shiner young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-175	Regional density (no./1,000 m ³) of spottail shiner young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-176	Regional standing crop (in thousands) of spottail shiner young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-177	Regional catch-per-unit-effort of spottail shiner young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-178	Regional standing crop (in thousands) of spottail shiner young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-179	Regional density (no./1,000 m ³) of spottail shiner yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-180	Regional standing crop (in thousands) of spottail shiner yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-181	Regional density (no./1,000 m ³) of spottail shiner yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-182	Regional standing crop (in thousands) of spottail shiner yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-183	Regional catch-per-unit-effort of spottail shiner yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-184	Regional standing crop (in thousands) of spottail shiner yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-185	Regional density (no./1,000 m ³) of Atlantic sturgeon post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-186	Regional standing crop (in thousands) of Atlantic sturgeon post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-187	Regional density (no./1,000 m ³) of Atlantic sturgeon yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-188	Regional standing crop (in thousands) of Atlantic sturgeon yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-189	Regional density (no./1,000 m ³) of Atlantic sturgeon yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-190	Regional standing crop (in thousands) of Atlantic sturgeon yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-191	Regional catch-per-unit-effort of Atlantic sturgeon yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-192	Regional standing crop (in thousands) of Atlantic sturgeon yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-193	Regional density (no./1,000 m ³) of shortnose sturgeon yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-194	Regional standing crop (in thousands) of shortnose sturgeon yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-195	Regional density (no./1,000 m ³) of shortnose sturgeon post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-196	Regional standing crop (in thousands) of shortnose sturgeon post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
E-197	Regional density (no./1,000 m ³) of shortnose sturgeon yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-198	Regional standing crop (in thousands) of shortnose sturgeon yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-199	Regional density (no./1,000 m ³) of shortnose sturgeon yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-200	Regional standing crop (in thousands) of shortnose sturgeon yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-201	Regional catch-per-unit-effort of shortnose sturgeon yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-202	Regional standing crop (in thousands) of shortnose sturgeon yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-203	Regional density (no./1,000 m ³) of white catfish young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-204	Regional standing crop (in thousands) of white catfish young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-205	Regional density (no./1,000 m ³) of white catfish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-206	Regional standing crop (in thousands) of white catfish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-207	Regional catch-per-unit-effort of white catfish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-208	Regional standing crop (in thousands) of white catfish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-209	Regional density (no./1,000 m ³) of white catfish yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-210	Regional standing crop (in thousands) of white catfish yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-211	Regional density (no./1,000 m ³) of white catfish yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-212	Regional standing crop (in thousands) of white catfish yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-213	Regional catch-per-unit-effort of white catfish yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-214	Regional standing crop (in thousands) of white catfish yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-215	Regional density (no./1,000 m ³) of weakfish young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-216	Regional standing crop (in thousands) of weakfish young-of-year in Hudson River estuary determined from Long River Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
E-217	Regional density (no./1,000 m ³) of weakfish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-218	Regional standing crop (in thousands) of weakfish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-219	Regional catch-per-unit-effort of weakfish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-220	Regional standing crop (in thousands) of weakfish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
E-221	Regional density (no./1,000 m ³) of weakfish yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-222	Regional standing crop (in thousands) of weakfish yearling and older in Hudson River estuary determined from Long River Survey, 2006
E-223	Regional density (no./1,000 m ³) of weakfish yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-224	Regional standing crop (in thousands) of weakfish yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-225	Regional catch-per-unit-effort of weakfish yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-226	Regional standing crop (in thousands) of weakfish yearling and older in Hudson River estuary determined from Beach Seine Survey, 2006
E-227	Regional density (no./1,000 m ³) of bluefish young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-228	Regional standing crop (in thousands) of bluefish young-of-year in Hudson River estuary determined from Long River Survey, 2006
E-229	Regional density (no./1,000 m ³) of bluefish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-230	Regional standing crop (in thousands) of bluefish young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
E-231	Regional catch-per-unit-effort of bluefish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006

APPENDIX E

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
----------------------	---------------------

E-232	Regional standing crop (in thousands) of bluefish young-of-year in Hudson River estuary determined from Beach Seine Survey, 2006
-----------------------	--

TABLE E-1 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.08	0.00	0.00	4.28	28.30	1.59	0.91	0.86	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.08	0.00	0.00	3.65	15.18	1.02	0.91	0.62	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	4.56	149.91	85.27	211.24	0.99	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	2.11	72.44	51.59	151.10	0.99	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	1.06	0.55	0.00	0.19	0.44	198.09	300.35	588.71	671.55	106.70	22.44	27.35	0.39
17MAY	SE	1.06	0.55	0.00	0.19	0.21	107.66	133.68	268.48	410.58	44.49	9.35	24.88	0.39
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.70	2.53	20.35	78.06	83.62	172.01	0.24	13.70	0.26	1.07	0.00	0.00
25MAY	SE	0.00	0.70	2.29	15.08	64.34	59.18	37.55	0.15	10.52	0.26	0.77	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.82	300.16	6.15	39.14	146.13	101.33	29.32	93.03	29.02	3.90	0.00
02JUN	SE	0.00	0.00	0.65	146.90	4.42	18.58	113.64	67.57	18.91	59.98	23.88	1.21	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-1 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	4.91	0.00	27.67	1.75	18.33	1.90	15.41	0.19	83.69	50.49	13.73	51.10	16.17	21.95
08JUN	SE	4.91	0.00	27.67	1.28	13.48	0.87	10.34	0.19	39.59	20.70	3.54	24.50	14.55	62.46
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	2.31	0.90	4.14	8.30	9.92	6.75	31.71	13.09	0.58	21.23	10.49	8.42
15JUN	SE	0.00	0.00	1.52	0.44	1.44	5.00	6.48	4.68	16.96	7.98	0.58	18.20	7.77	28.93
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.23	5.38	0.00	0.32	0.00	1.07	0.00	1.20	0.00	11.62	1.52
22JUN	SE	0.00	0.00	0.00	0.23	3.29	0.00	0.32	0.00	0.76	0.00	0.94	0.00	11.62	12.14
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	3.40	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.31
29JUN	SE	0.00	0.00	0.00	0.00	2.31	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	2.35
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-2 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	102	0	0	0	0	123	0	0	0	224
27APR	SE	0	0	0	0	102	0	0	0	0	87	0	0	0	134
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	19	0	0	891	5871	222	271	143	0	0	0	0	7416
03MAY	SE	0	19	0	0	760	3150	143	271	102	0	0	0	0	3256
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	0	0	0	947	20956	25421	34957	141	0	0	0	82421
10MAY	SE	0	0	0	0	0	439	10127	15381	25004	141	0	0	0	31057
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	222	126	0	28	92	41095	41986	175514	111131	15095	3957	4396	28	393669
17MAY	SE	222	126	0	28	43	22335	18687	80042	67944	6295	1649	4000	28	109223
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	0	161	816	3006	16262	17347	24045	71	2266	37	189	0	0	64200
25MAY	SE	0	161	736	2228	13403	12276	5249	45	1741	37	136	0	0	19144
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	263	44345	1281	8120	20427	30210	4852	13161	5115	626	0	128401
02JUN	SE	0	0	209	21703	920	3854	15886	20144	3130	8485	4209	195	0	35276
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-2 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST.CROP	1026	0	8904	258	3820	394	2154	58	13849	7143	2420	8214	1151	49390
08JUN	SE	1026	0	8904	189	2809	181	1446	58	6551	2929	625	3938	1035	12603
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	0	0	743	133	863	1722	1387	2013	5247	1852	102	3412	747	18221
15JUN	SE	0	0	488	66	300	1038	906	1397	2806	1130	102	2926	553	4712
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	0	0	0	34	1122	0	45	0	177	0	211	0	827	2415
22JUN	SE	0	0	0	34	685	0	45	0	125	0	166	0	827	1095
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	0	0	0	0	709	0	82	0	0	0	0	0	0	791
29JUN	SE	0	0	0	0	482	0	59	0	0	0	0	0	0	485
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-3 REGIONAL DENSITY (NO./1,000m³) OF STRIPED BASS YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.16	0.00	1.30	8.62	5.43	1.31	0.00	0.00	0.00	0.00	0.00	1.29
	SE	0.00	0.00	0.16	0.00	1.08	2.39	3.02	0.93	0.00	0.00	0.00	0.00	0.00	4.11
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	12.17	7.98	1.30	3.61	0.00	0.00	0.00	0.00	1.93
	SE	0.00	0.00	0.00	0.00	0.00	6.82	3.36	0.61	2.23	0.00	0.00	0.00	0.00	7.95
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.21	0.00	75.41	845.77	1099.69	2.35	4.01	0.44	0.00	0.00	155.99
	SE	0.00	0.00	0.00	0.21	0.00	45.43	226.91	515.52	1.54	3.04	0.27	0.00	0.00	565.09
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	5.07	186.27	419.90	157.69	916.93	165.41	52.99	5.18	0.26	0.23	0.00	0.39	146.95
	SE	0.00	3.36	60.68	103.23	45.99	533.78	38.66	26.80	2.30	0.26	0.23	0.00	0.39	551.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	67.08	140.97	86.19	132.38	170.19	194.10	21.51	4.33	0.63	0.00	0.00	62.87
	SE	0.00	0.00	24.24	51.23	48.71	59.47	48.09	71.42	4.02	3.13	0.42	0.00	0.00	128.69
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-3 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.64	103.45	50.23	31.39	19.26	22.17	140.14	17.94	2.45	0.00	29.82
08JUN	SE	0.00	0.00	0.00	0.64	51.63	24.28	13.39	4.33	8.66	61.18	10.58	2.02	0.00	85.95
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	5.20	133.14	138.44	74.51	175.03	354.09	61.68	40.08	13.63	3.69	76.88
15JUN	SE	0.00	0.00	0.00	3.71	90.74	104.98	17.53	30.28	104.54	30.46	12.44	11.19	3.69	180.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.68	2.30	1.83	9.80	12.84	11.91	53.86	55.28	36.48	14.52	0.00	1.08	15.43
22JUN	SE	0.00	0.68	1.14	0.98	3.64	5.29	4.63	28.08	27.18	11.24	4.18	0.00	1.08	41.69
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	3.99	1.12	15.68	10.36	7.91	20.52	6.83	3.17	4.34	0.95	0.48	10.41	6.60
29JUN	SE	0.00	3.99	0.62	4.12	5.42	5.74	5.43	3.36	2.56	2.61	0.95	0.48	4.39	13.04
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-4 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	53	0	270	1787	759	391	0	0	0	0	0	3260
03MAY	SE	0	0	53	0	226	495	422	277	0	0	0	0	0	744
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	2525	1115	387	598	0	0	0	0	4624
10MAY	SE	0	0	0	0	0	1415	469	180	370	0	0	0	0	1547
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	31	0	15645	118231	327854	389	567	78	0	0	462794
17MAY	SE	0	0	0	31	0	9426	31721	153693	256	429	48	0	0	157216
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	1163	59943	62035	32854	190223	23123	15799	858	36	40	0	28	386102
25MAY	SE	0	772	19529	15251	9582	110735	5405	7990	380	36	40	0	28	114288
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	21586	20827	17956	27464	23791	57868	3559	612	111	0	0	173773
02JUN	SE	0	0	7800	7569	10148	12338	6722	21294	665	443	74	0	0	29540
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-4 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	95	21552	10421	4388	5741	3669	19825	3163	394	0
08JUN SE	0	0	0	95	10756	5036	1872	1290	1433	8655	1866	325	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	769	27738	28720	10416	52181	58597	8725	7066	2191	263
15JUN SE	0	0	0	548	18905	21778	2451	9026	17300	4309	2194	1799	263
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	157	739	271	2043	2664	1666	16058	9147	5161	2561	0	77
22JUN SE	0	157	367	145	758	1097	647	8372	4498	1591	737	0	77
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	915	361	2317	2159	1641	2868	2037	525	614	167	77	741
29JUN SE	0	915	199	609	1129	1192	758	1002	423	369	167	77	313
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-5 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.18	1.30	10.00	17.54	27.13	2.55	0.15	0.00	0.00	0.00	0.00	4.53
17MAY	SE	0.00	0.00	0.18	0.73	3.58	4.97	12.93	1.83	0.15	0.00	0.00	0.00	0.00	14.44
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	92.85	722.14	1667.23	861.61	504.53	56.99	7.07	9.75	0.00	0.00	0.00	0.00	301.71
25MAY	SE	0.00	63.03	166.29	376.54	160.94	157.75	11.31	2.94	2.28	0.00	0.00	0.00	0.00	473.64
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	5.15	73.31	714.98	682.50	654.41	63.16	230.97	42.93	10.80	9.02	1.40	0.00	0.00	191.43
02JUN	SE	3.36	34.49	194.15	202.62	501.62	30.24	67.49	12.50	8.10	2.73	1.19	0.00	0.00	580.75
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-5 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	1.50	46.16	21.65	77.26	723.86	312.50	90.82	117.33	13.53	2.69	0.00	0.53	0.00	108.29
08JUN	SE	1.50	25.63	5.88	13.14	82.78	70.18	23.42	59.70	5.97	1.51	0.00	0.53	0.00	129.60
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	3.95	33.40	314.77	758.80	225.13	424.17	141.00	14.71	28.25	2.33	0.00	0.00	149.73
15JUN	SE	0.00	1.32	7.34	144.07	396.45	94.65	104.66	35.05	5.72	14.40	2.06	0.00	0.00	446.51
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	37.48	259.90	623.46	716.51	737.40	621.86	587.40	198.78	340.26	47.02	0.92	0.00	320.85
22JUN	SE	0.00	17.50	58.49	74.81	307.20	142.69	132.89	149.95	46.94	173.87	20.78	0.92	0.00	443.92
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	167.00	615.26	297.43	393.59	227.35	396.14	389.52	61.76	104.37	475.83	20.92	11.37	8.46	243.77
29JUN	SE	31.90	309.34	49.08	99.85	111.70	58.21	137.62	15.63	26.23	255.02	4.54	5.29	8.46	458.24
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.86	8.44	18.31	6.46	43.21	57.49	NS	NS	NS	NS	NS	16.85
12JUL	SE	0.00	0.00	0.86	2.37	6.77	2.90	23.47	45.52						51.80
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.46	11.44	1.94	17.37	7.05	NS	NS	NS	NS	NS	4.78
26JUL	SE	0.00	0.00	0.00	0.46	3.15	1.06	1.83	1.04						3.96
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.11	0.04	0.00	NS	NS	NS	NS	NS	0.02
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.11	0.04	0.00						0.12
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-6 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	57	192	2084	3639	3793	761	26	0	0	0	0	10552
17MAY	SE	0	0	57	108	745	1030	1807	547	26	0	0	0	0	2280
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	21302	232392	246311	179505	104669	7967	2108	1614	0	0	0	0	795868
25MAY	SE	0	14460	53515	55628	33530	32726	1581	877	378	0	0	0	0	91467
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	1077	16820	230089	100830	136337	13103	32287	12798	1787	1276	246	0	0	546650
02JUN	SE	703	7913	62480	29934	104505	6274	9434	3727	1340	386	210	0	0	126208
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-6 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	313	10590	6967	11414	150806	64831	12696	34979	2239	381	0	85	0
08JUN	SE	313	5880	1892	1942	17247	14560	3273	17800	988	214	0	85	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	907	10749	46504	158085	46705	59296	42036	2434	3997	411	0	0
15JUN	SE	0	303	2360	21285	82595	19637	14630	10448	947	2038	364	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	8599	83639	92108	149276	152979	86930	175125	32896	48136	8289	149	0
22JUN	SE	0	4014	18823	11052	64001	29601	18577	44706	7768	24597	3663	149	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	34904	141152	95715	58148	47364	82181	54451	18412	17272	67316	3688	1828	602
29JUN	SE	6668	70969	15794	14752	23271	12075	19238	4659	4341	36078	801	851	602
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	277	1246	3814	1340	6041	17140	NS	NS	NS	NS	NS
12JUL	SE	0	0	277	350	1411	602	3280	13570					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	68	2384	402	2428	2101	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	68	657	220	256	311					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	23	6	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	23	6	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-7 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-7 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
22JUN	SE	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.12	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
29JUN	SE	0.00	0.00	0.12	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	2.53	0.92	0.00	5.77	0.72	NS	NS	NS	NS	NS	1.24
12JUL	SE	0.00	0.00	0.00	2.53	0.62	0.00	5.65	0.72						6.26
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.41	3.05	0.00	1.11	0.00	NS	NS	NS	NS	NS	0.57
26JUL	SE	0.00	0.00	0.00	0.41	2.13	0.00	0.74	0.00						2.29
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.41	0.00	0.00	0.69	0.00	NS	NS	NS	NS	NS	0.14
09AUG	SE	0.00	0.00	0.00	0.41	0.00	0.00	0.45	0.00						0.61
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	1.81	4.96	0.19	1.17	0.00	NS	NS	NS	NS	NS	1.02
23AUG	SE	0.00	0.00	0.00	1.81	4.96	0.19	0.55	0.00						5.31
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.26	0.00	0.04	0.69	NS	NS	NS	NS	NS	0.13
07SEP	SE	0.00	0.00	0.00	0.00	0.26	0.00	0.04	0.69						0.74
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.27	0.00	1.93	0.00	NS	NS	NS	NS	NS	0.28
20SEP	SE	0.00	0.00	0.00	0.00	0.27	0.00	1.54	0.00						1.56
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	1.36	0.53	0.56	0.00	NS	NS	NS	NS	NS	0.31
05OCT	SE	0.00	0.00	0.00	0.00	0.47	0.53	0.56	0.00						0.90
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-8 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-8 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS														AL	COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS		
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	33	0	0	0	0	0	0	0	0	0	33
22JUN	SE	0	0	0	33	0	0	0	0	0	0	0	0	0	33
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	38	0	500	0	0	0	0	0	0	0	0	537
29JUN	SE	0	0	38	0	500	0	0	0	0	0	0	0	0	501
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	373	192	0	807	213	NS	NS	NS	NS	NS	1586
12JUL	SE	0	0	0	373	129	0	790	213						909
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	61	634	0	155	0	NS	NS	NS	NS	NS	851
26JUL	SE	0	0	0	61	444	0	103	0						460
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	60	0	0	96	0	NS	NS	NS	NS	NS	157
09AUG	SE	0	0	0	60	0	0	64	0						87
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	267	1034	40	164	0	NS	NS	NS	NS	NS	1505
23AUG	SE	0	0	0	267	1034	40	77	0						1071
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	55	0	6	207	NS	NS	NS	NS	NS	268
07SEP	SE	0	0	0	0	55	0	6	207						214
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	57	0	270	0	NS	NS	NS	NS	NS	327
20SEP	SE	0	0	0	0	57	0	215	0						222
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	284	110	78	0	NS	NS	NS	NS	NS	472
05OCT	SE	0	0	0	0	99	110	78	0						167
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-9 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL -	DENSITY	0.00	0.25	0.00	2.82	4.38	26.92	5.51	0.56	2.00	0.06	0.00	0.00	0.00	3.27
08JUL	SE	0.00	0.25	0.00	1.14	2.09	9.93	2.11	0.39	1.27	0.06	0.00	0.00	0.00	10.52
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL -	DENSITY	0.00	0.00	0.20	1.29	1.67	1.69	2.83	0.21	0.00	0.00	0.00	0.00	0.00	0.61
20JUL	SE	0.00	0.00	0.13	0.62	0.53	0.98	2.08	0.18	0.00	0.00	0.00	0.00	0.00	2.45
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL -	DENSITY	0.00	0.05	1.51	4.13	0.42	2.27	3.37	0.02	0.14	5.17	1.22	0.00	0.00	1.41
03AUG	SE	0.00	0.03	0.58	2.56	0.33	1.16	1.46	0.02	0.09	3.12	0.64	0.00	0.00	4.55
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG -	DENSITY	0.00	0.15	0.65	0.27	0.07	0.30	0.74	0.00	0.02	1.39	2.09	0.00	0.09	0.44
17AUG	SE	0.00	0.12	0.39	0.27	0.03	0.19	0.29	0.00	0.02	0.92	1.87	0.00	0.09	2.17
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG -	DENSITY	0.00	0.00	0.00	0.00	0.05	0.71	0.01	0.27	0.00	0.23	0.07	0.00	0.00	0.10
31AUG	SE	0.00	0.00	0.00	0.00	0.03	0.58	0.01	0.27	0.00	0.16	0.07	0.00	0.00	0.66
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP -	DENSITY	0.08	0.08	0.12	0.49	0.12	0.61	0.40	0.01	0.04	0.35	0.00	0.00	0.00	0.18
14SEP	SE	0.05	0.04	0.12	0.28	0.05	0.30	0.12	0.01	0.02	0.27	0.00	0.00	0.00	0.53
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP -	DENSITY	0.04	0.00	0.08	1.06	0.11	0.02	0.46	0.00	0.00	0.35	0.00	0.00	0.00	0.16
28SEP	SE	0.04	0.00	0.06	0.23	0.09	0.02	0.17	0.00	0.00	0.15	0.00	0.00	0.00	0.34
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT -	DENSITY	0.00	0.00	0.32	0.05	0.01	0.29	0.59	0.00	0.32	0.68	0.32	0.00	0.00	0.20
12OCT	SE	0.00	0.00	0.24	0.04	0.01	0.22	0.40	0.00	0.32	0.09	0.24	0.00	0.00	0.66
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT -	DENSITY	0.00	0.02	0.83	0.11	0.07	0.01	0.35	0.13	0.02	0.18	0.07	0.00	0.00	0.14
26OCT	SE	0.00	0.02	0.78	0.05	0.04	0.01	0.11	0.05	0.02	0.11	0.05	0.00	0.00	0.80
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV -	DENSITY	0.67	0.71	0.41	0.00	0.02	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.14
10NOV	SE	0.19	0.24	0.20	0.00	0.02	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.37
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV -	DENSITY	0.72	0.14	0.12	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
01DEC	SE	0.26	0.05	0.06	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-10 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUL-	ST. CROP	0	58	0	417	912	5585	770	167	331	8	0	0	0	8247
08JUL	SE	0	58	0	169	435	2061	295	116	210	8	0	0	0	2148
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	63	190	349	350	396	63	0	0	0	0	0	1410
20JUL	SE	0	0	41	92	111	204	290	55	0	0	0	0	0	389
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	12	485	610	87	472	472	7	23	732	215	0	0	3115
03AUG	SE	0	8	187	379	68	241	204	5	15	442	113	0	0	701
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	35	209	39	14	62	103	0	3	196	369	0	7	1037
17AUG	SE	0	28	125	39	6	39	41	0	3	130	329	0	7	383
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	10	147	2	82	0	33	12	0	0	285
31AUG	SE	0	0	0	0	7	120	2	82	0	23	12	0	0	147
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	17	19	37	72	26	126	56	4	6	50	0	0	0	413
14SEP	SE	11	10	37	41	9	63	17	4	4	38	0	0	0	96
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	8	0	27	157	23	5	65	0	0	49	0	0	0	334
28SEP	SE	8	0	20	34	18	4	24	0	0	21	0	0	0	55
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	104	8	3	60	83	0	54	96	56	0	0	462
12OCT	SE	0	0	77	5	3	45	56	0	54	12	42	0	0	126
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	6	267	16	15	2	49	38	3	26	13	0	0	433
26OCT	SE	0	6	250	8	9	2	16	15	3	16	9	0	0	252
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	140	162	130	0	5	8	1	0	0	0	0	0	0	446
10NOV	SE	39	54	66	0	3	5	1	0	0	0	0	0	0	94
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	151	33	37	18	0	0	0	0	0	0	0	0	0	239
01DEC	SE	54	12	21	12	0	0	0	0	0	0	0	0	0	60
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-11 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	2.67	3.91	4.14	1.67	0.33	0.00	0.63	0.00	0.13	0.07	0.00	0.00	1.13
28JUN	SE	1.33	1.88	1.92	0.88	0.33	0.00	0.50	0.00	0.13	0.07	0.00	0.00	3.18
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	1.00	2.55	1.57	0.33	0.67	0.67	0.88	0.00	0.88	0.60	0.63	0.17	0.83
12JUL	SE	1.00	1.08	0.65	0.33	0.67	0.67	0.52	0.00	0.40	0.24	0.27	0.17	2.04
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	9.20	7.29	17.36	1.00	0.20	2.17	0.40	1.20	2.00	3.33	3.80	1.57	4.13
27JUL	SE	1.66	1.27	3.06	0.77	0.20	0.75	0.40	0.73	0.84	1.09	1.58	0.48	4.50
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	11.60	15.92	29.50	4.80	3.40	2.17	0.40	3.40	4.60	5.22	2.40	1.43	7.07
10AUG	SE	3.54	2.77	4.29	1.32	1.33	1.11	0.40	1.57	2.01	2.19	1.01	0.97	7.54
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	3.80	6.04	27.14	6.60	10.80	1.50	0.00	1.40	0.40	7.44	5.80	3.29	6.18
24AUG	SE	1.02	1.93	10.25	5.60	10.05	0.76	0.00	0.75	0.24	4.80	3.13	2.19	16.76
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	3.80	7.54	22.14	5.80	3.20	3.67	0.00	1.20	8.80	2.00	1.80	0.00	5.00
08SEP	SE	0.49	2.70	6.16	5.55	1.02	1.48	0.00	0.80	2.15	1.36	0.65	0.00	9.33
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	13.60	3.67	7.86	6.80	17.40	7.83	0.00	1.00	1.00	0.44	5.50	2.00	5.59
21SEP	SE	2.77	1.04	1.98	4.45	4.41	3.28	0.00	0.55	0.55	0.24	3.36	0.72	8.67
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	2.20	4.13	4.36	1.60	6.00	1.00	2.60	0.00	2.80	0.44	0.00	0.00	2.09
05OCT	SE	1.20	1.27	0.89	0.68	2.55	0.63	2.36	0.00	1.88	0.44	0.00	0.00	4.53
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	1.40	0.42	2.14	2.20	1.40	0.50	0.20	3.60	0.20	0.44	0.60	0.71	1.15
19OCT	SE	1.40	0.17	0.77	0.58	0.75	0.34	0.20	3.60	0.20	0.44	0.34	0.71	4.18
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-12 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	20	178	111	15	1	0	4	0	1	1	0	0	332
28JUN	SE	10	85	52	8	1	0	4	0	1	1	0	0	101
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	8	116	42	3	2	7	6	0	8	11	12	2	216
12JUL	SE	8	49	17	3	2	7	4	0	3	4	5	2	54
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	69	331	467	9	1	23	3	1	17	59	75	21	1076
27JUL	SE	12	58	82	7	1	8	3	1	7	19	31	7	109
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	87	723	793	44	9	23	3	4	40	92	47	19	1885
10AUG	SE	27	126	115	12	3	12	3	2	17	38	20	13	180
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	29	275	730	61	28	16	0	2	3	131	114	45	1433
24AUG	SE	8	88	276	52	26	8	0	1	2	84	62	30	314
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	29	343	595	53	8	39	0	1	76	35	35	0	1215
08SEP	SE	4	123	166	51	3	16	0	1	19	24	13	0	216
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	102	167	211	63	46	83	0	1	9	8	108	27	825
21SEP	SE	21	47	53	41	12	35	0	1	5	4	66	10	114
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	17	187	117	15	16	11	18	0	24	8	0	0	413
05OCT	SE	9	58	24	6	7	7	17	0	16	8	0	0	69
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	11	19	58	20	4	5	1	4	2	8	12	10	153
19OCT	SE	11	8	21	5	2	4	1	4	2	8	7	10	29
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-13 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	2.58	0.00	0.00	0.61	0.17	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.77	0.00	0.00	0.31	0.17	0.00	0.00						0.85
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.44	0.82	0.40	0.00	1.07	0.00	0.41	NS	NS	NS	NS	NS	NS
29MAR	SE	0.27	0.42	0.28	0.00	0.79	0.00	0.41						1.06
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.39	0.16	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.39	0.16	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.34	0.50	0.68	0.00	0.12	0.03	0.00	0.00	0.00	0.00	0.00	0.54
25MAY	SE	0.00	0.34	0.50	0.68	0.00	0.12	0.03	0.00	0.00	0.00	0.00	0.00	0.54
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	1.18	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-13 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.13	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00
22JUN	SE	0.00	0.13	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.28	0.04	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.28	0.04	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-14 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	539	0	0	91	36	0	0	NS	NS	NS	NS	NS	NS	665
22MAR	SE	161	0	0	45	36	0	0							171
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	92	188	129	0	224	0	58	NS	NS	NS	NS	NS	NS	690
29MAR	SE	57	97	91	0	164	0	58							226
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	89	51	83	0	0	0	0	0	0	0	0	0	223
06APR	SE	0	89	51	83	0	0	0	0	0	0	0	0	0	132
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	104	0	0	0	0	0	0	0	0	0	104
20APR	SE	0	0	0	40	0	0	0	0	0	0	0	0	0	40
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	52	0	0	0	0	0	0	0	0	0	52
27APR	SE	0	0	0	30	0	0	0	0	0	0	0	0	0	30
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	77	159	101	0	25	5	0	0	0	0	0	39	405
25MAY	SE	0	77	159	101	0	25	5	0	0	0	0	0	39	209
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	174	0	0	0	0	0	73	0	0	0	246
02JUN	SE	0	0	0	112	0	0	0	0	0	73	0	0	0	134
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-14 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
														AL	COMBINED
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	31	0	0	0	0	0	0	0	0	0	31
15JUN	SE	0	0	0	31	0	0	0	0	0	0	0	0	0	31
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	30	206	0	0	0	0	0	0	0	0	82	0	318
22JUN	SE	0	30	119	0	0	0	0	0	0	0	0	82	0	147
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	41	8	0	46	0	0	0	0	0	0	95
29JUN	SE	0	0	0	41	8	0	46	0	0	0	0	0	0	62
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	19	0	NS	NS	NS	NS	NS	19
12JUL	SE	0	0	0	0	0	0	12	0						12
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-15 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

															ALL REGIONS
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	DENSITY	0.00	0.00	0.07	0.04	0.31	0.01	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.06
	SE	0.00	0.00	0.04	0.04	0.31	0.01	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.43
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	0.00	0.00	0.12	0.03	0.00	0.00	< 0.005	0.01	0.00	0.00	0.00	0.46	0.00	0.05
	SE	0.00	0.00	0.12	0.03	0.00	0.00	< 0.005	0.01	0.00	0.00	0.00	0.46	0.00	0.47
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.12
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.06	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
	SE	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
	SE	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-16 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	0	0	21	6	64	2	0	0	0	42	0	0	0	135
08JUL	SE	0	0	12	6	64	2	0	0	0	42	0	0	0	78
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	38	4	0	0	1	4	0	0	0	73	0	120
20JUL	SE	0	0	38	4	0	0	1	4	0	0	0	73	0	83
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	68	0	0	0	0	0	3	0	0	0	0	71
03AUG	SE	0	0	39	0	0	0	0	0	3	0	0	0	0	39
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	0	1
17AUG	SE	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	0	3	0	0	8	0	0	0	11
14SEP	SE	0	0	0	0	0	0	2	0	0	8	0	0	0	8
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	4	0	0	0	0	0	0	0	0	0	0	0	0	4
10NOV	SE	4	0	0	0	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01DEC	SE	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-17 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.33	0.18	1.29	0.00	1.33	0.00	0.13	0.13	0.25	0.13	0.16	1.08	0.42
14JUN	SE	0.33	0.12	0.52	0.00	0.33	0.00	0.13	0.13	0.16	0.09	0.09	0.47	0.90
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.71	0.33	0.33	0.00	0.00	0.00	0.00	0.20	0.84	2.50	0.41
28JUN	SE	0.00	0.00	0.42	0.33	0.33	0.00	0.00	0.00	0.00	0.14	0.27	0.96	1.19
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.09	0.43	0.00	1.67	0.67	0.88	0.38	0.50	0.13	0.16	0.00	0.41
12JUL	SE	0.00	0.09	0.20	0.00	1.20	0.33	0.23	0.26	0.27	0.09	0.09	0.00	1.35
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.80	0.29	0.64	1.40	0.20	0.00	0.00	0.20	0.20	0.22	0.20	0.29	0.37
27JUL	SE	0.49	0.14	0.27	1.40	0.20	0.00	0.00	0.20	0.20	0.22	0.13	0.18	1.59
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.29	0.36	0.00	0.00	0.00	0.00	0.00	0.20	0.11	0.00	0.00	0.08
10AUG	SE	0.00	0.14	0.23	0.00	0.00	0.00	0.00	0.00	0.20	0.11	0.00	0.00	0.35
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.04	0.21	0.00	0.20	0.00	0.00	0.00	0.20	0.33	0.20	0.00	0.10
24AUG	SE	0.00	0.04	0.21	0.00	0.20	0.00	0.00	0.00	0.20	0.24	0.20	0.00	0.47
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.13	0.00	0.00	0.60	0.33	0.00	0.00	1.00	0.00	0.10	0.00	0.18
08SEP	SE	0.00	0.07	0.00	0.00	0.40	0.21	0.00	0.00	0.63	0.00	0.10	0.00	0.79
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.04	0.14	0.20	0.60	0.00	0.40	0.00	0.00	0.00	0.20	0.00	0.13
21SEP	SE	0.00	0.04	0.10	0.20	0.40	0.00	0.40	0.00	0.00	0.00	0.13	0.00	0.62
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.03
05OCT	SE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.04	0.00	0.00	0.20	0.17	0.00	0.00	0.00	0.00	0.00	0.14	0.05
19OCT	SE	0.00	0.04	0.00	0.00	0.20	0.17	0.00	0.00	0.00	0.00	0.00	0.14	0.30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-18 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	3	8	35	0	4	0	1	< 0.5	2	2	3	15	72
14JUN	SE	3	6	14	0	1	0	1	< 0.5	1	2	2	6	17
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	19	3	1	0	0	0	0	4	17	34	77
28JUN	SE	0	0	11	3	1	0	0	0	0	3	5	13	18
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	4	12	0	4	7	6	< 0.5	4	2	3	0	44
12JUL	SE	0	4	5	0	3	4	2	< 0.5	2	2	2	0	9
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	6	13	17	13	1	0	0	< 0.5	2	4	4	4	64
27JUL	SE	4	6	7	13	1	0	0	< 0.5	2	4	3	3	17
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	13	10	0	0	0	0	0	2	2	0	0	27
10AUG	SE	0	6	6	0	0	0	0	0	2	2	0	0	9
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	2	6	0	1	0	0	0	2	6	4	0	20
24AUG	SE	0	2	6	0	1	0	0	0	2	4	4	0	9
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	6	0	0	2	4	0	0	9	0	2	0	21
08SEP	SE	0	3	0	0	1	2	0	0	5	0	2	0	7
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	2	4	2	2	0	3	0	0	0	4	0	16
21SEP	SE	0	2	3	2	1	0	3	0	0	0	3	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	1	0	0	0	2	0	0	0	2
05OCT	SE	0	0	0	0	1	0	0	0	2	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	2	0	0	1	2	0	0	0	0	0	2	6
19OCT	SE	0	2	0	0	1	2	0	0	0	0	0	2	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-19 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.05
	SE	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.55
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.04
	SE	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00						0.31
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-20 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	160	0	212	0	0	0	0	NS	NS	NS	NS	NS	NS	372
	SE	67	0	117	0	0	0	0							135
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	152	64	33	0	0	0	NS	NS	NS	NS	NS	NS	249
	SE	0	117	64	33	0	0	0							137
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	34	0	0	0	0	0	0	0	34
	SE	0	0	0	0	0	34	0	0	0	0	0	0	0	34
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	29	0	0	0	0	0	0	29
	SE	0	0	0	0	0	0	29	0	0	0	0	0	0	29
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	31	0	0	0	0	0	0	31
	SE	0	0	0	0	0	0	31	0	0	0	0	0	0	31
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	34	0	0	0	0	0	34
	SE	0	0	0	0	0	0	0	34	0	0	0	0	0	34
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	60	0	0	0	0	0	0	60
	SE	0	0	0	0	0	0	60	0	0	0	0	0	0	60
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-20 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	51	0	0	0	0	0	0	0	0	84	0
15JUN	SE	0	0	51	0	0	0	0	0	0	0	0	84	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	100	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	100	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-21 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-22 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0	4
08JUL	SE	0	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0	4
20JUL	SE	0	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	0	0	0	0	0	4	0	0	0	0	0	4
03AUG	SE	0	0	0	0	0	0	0	4	0	0	0	0	0	4
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	16	0	0	0	0	0	0	0	0	0	0	16
12OCT	SE	0	0	16	0	0	0	0	0	0	0	0	0	0	16
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-23 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	< 0.005
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.25	0.03
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.25	0.26
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.07	0.00	0.00	0.02
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.07	0.00	0.00	0.14
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.01
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.17
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.40	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.05
08SEP	SE	0.24	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.08	0.07	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
21SEP	SE	0.00	0.06	0.07	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.08	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.02
05OCT	SE	0.00	0.08	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-24 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	1	0	1
14JUN	SE	0	0	0	0	0	0	0	0	0	0	1	0	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	1	3	4
28JUN	SE	0	0	0	0	0	0	0	0	0	0	1	3	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	1	1	0	0	2
12JUL	SE	0	0	0	0	0	0	0	0	1	1	0	0	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	2
10AUG	SE	0	0	0	0	0	2	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	3	0	0	0	0	2	0	0	0	0	0	0	5
08SEP	SE	2	0	0	0	0	2	0	0	0	0	0	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	4	2	2	0	0	0	0	0	0	0	0	8
21SEP	SE	0	3	2	2	0	0	0	0	0	0	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	4	2	0	0	0	0	0	0	0	2	0	8
05OCT	SE	0	4	2	0	0	0	0	0	0	0	2	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-25 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.74	47.99
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.37	36.95
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.62	56.74	95.09	17.89	116.09
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.51	15.20	41.42	16.42	59.16
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.31	0.00	0.00	0.00	0.00	1.12	0.11	0.00	0.25	73.73	162.71	918.16	447.87
03MAY	SE	0.31	0.00	0.00	0.00	0.00	0.98	0.11	0.00	0.25	25.84	90.45	54.66	184.92
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.51	4.55	214.46	121.80	65.98	675.73	431.96	9.26	4.03
10MAY	SE	0.00	0.00	0.00	0.00	0.51	4.30	214.32	120.78	57.08	603.05	56.37	8.27	4.03
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.63	4.80	22.49	13.12	3.30	197.69	1043.25	913.79
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.37	3.41	17.50	7.65	1.67	71.82	232.07	77.59
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.55	1.50	1.52	3.66	0.59	55.85	344.02	254.87	61.67	239.93
25MAY	SE	0.00	0.00	0.00	0.55	1.25	0.66	2.31	0.47	50.44	106.16	63.17	28.90	88.19
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	1.33	0.36	0.10	2.97	9.48	1.93	132.02	150.29	788.11	208.30
02JUN	SE	0.00	0.00	0.00	0.69	0.36	0.10	2.90	6.18	0.71	51.84	121.91	135.54	84.61
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-25 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	0.00	1.15	0.00	0.00	1.86	43.97	0.00	2.37	139.94	45.74	7.39	8.89	19.33
	SE	0.00	0.00	1.15	0.00	0.00	1.11	33.53	0.00	1.59	34.70	24.99	4.07	5.36	54.80
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.21	0.14	0.58	2.01	5.48	36.98	147.13	424.77	47.48
	SE	0.00	0.00	0.00	0.00	0.00	0.21	0.14	0.38	0.80	2.43	9.36	37.74	105.22	112.20
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.00	0.00	0.21	0.03	0.00	0.81	0.00	0.00	29.10	20.03	2.00	132.80	14.23
	SE	0.00	0.00	0.00	0.21	0.03	0.00	0.51	0.00	0.00	17.93	12.03	0.71	123.06	124.94
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.13	0.25	126.58	0.47	16.09	11.06
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.13	0.25	126.58	0.47	4.96	126.68
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-26 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	1405	3415	4820
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	1345	2629	2953
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	0	0	0	136	103	8027	16764	2875	8259	36165
27APR	SE	0	0	0	0	0	0	0	56	84	2150	7302	2640	4209	9091
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	65	0	0	0	0	233	15	0	41	10430	28685	147577	31865	218911
03MAY	SE	65	0	0	0	0	203	15	0	41	3656	15946	8786	13157	22759
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	0	0	106	944	29979	36311	10919	95595	76153	1489	286	251782
10MAY	SE	0	0	0	0	106	891	29960	36007	9446	85313	9938	1329	286	98301
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	0	0	0	0	0	130	671	6705	2170	466	34851	167684	65015	277693
17MAY	SE	0	0	0	0	0	77	476	5216	1266	236	12662	37301	5521	40141
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	0	0	0	82	312	314	512	176	9243	48668	44933	9913	17071	131223
25MAY	SE	0	0	0	82	260	138	323	139	8346	15019	11137	4645	6274	21919
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	0	197	75	21	415	2827	319	18677	26495	126675	14820	190521
02JUN	SE	0	0	0	102	75	21	406	1841	118	7334	21493	21786	6020	32096
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-26 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST.CROP	0	0	371	0	0	385	6146	0	392	19797	8064	1188	632	36975
08JUN	SE	0	0	371	0	0	231	4687	0	263	4909	4405	654	381	8142
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	0	0	0	0	0	43	19	172	333	775	6519	23649	30222	61733
15JUN	SE	0	0	0	0	0	43	19	112	132	343	1651	6065	7486	9783
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	0	0	0	32	7	0	113	0	0	4116	3532	322	9448	17569
22JUN	SE	0	0	0	32	7	0	71	0	0	2536	2121	115	8755	9360
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	0	0	0	0	0	0	44	0	21	35	22316	75	1145	23636
29JUN	SE	0	0	0	0	0	0	28	0	21	35	22316	75	353	22319
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-27 REGIONAL DENSITY (NO./1,000m³) OF WHITE PERCH YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.45	3.41	2.62	0.37	0.59
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.45	1.53	2.11	0.37	2.72
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	2.36	0.86	8.70	1.75	4.94	8.86	15.45	8.60	3.96
	SE	0.00	0.00	0.00	0.00	0.00	2.21	0.50	6.73	0.90	1.64	3.90	5.07	3.95	10.51
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.67	0.00	1.01	0.00	0.00	6.59	1.01	27.60	187.26	249.95	86.14	97.66	50.61
	SE	0.00	0.57	0.00	0.80	0.00	0.00	2.60	0.45	11.91	53.78	67.42	34.25	28.12	97.73
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.75	0.43	2.14	51.70	90.64	109.93	77.38	57.88	47.00	50.95	37.60
	SE	0.00	0.00	0.00	0.42	0.43	2.14	15.35	19.74	44.33	32.90	22.57	20.15	17.57	70.01
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.65	2.12	9.26	8.86	11.77	25.93	14.15	8.80	95.42	176.30	28.33	41.36	32.54
	SE	0.00	0.65	1.08	8.00	4.04	5.35	7.50	5.45	4.86	17.61	60.40	16.87	25.14	71.38
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	2.62	2.62	2.04	5.82	9.58	7.91	13.27	18.09	33.21	160.54	262.83	39.89
	SE	0.00	0.00	1.25	1.29	1.11	2.12	2.58	4.60	4.60	5.68	12.62	65.25	62.04	91.42
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-27 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.12	5.76	11.26	9.72	27.06	55.34	428.34	98.25	47.67	52.58
08JUN	SE	0.00	0.00	0.00	0.00	0.05	3.07	3.53	3.78	7.86	11.66	105.77	34.24	4.69	112.31
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.46	6.19	7.18	3.45	9.47	33.58	32.04	103.16	86.52	136.29	32.18
15JUN	SE	0.00	0.00	0.00	0.46	3.43	4.83	1.88	4.64	13.86	10.89	20.69	23.57	59.99	70.38
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.23	0.20	0.82	4.82	1.43	3.65	25.11	38.22	46.97	104.86	17.41
22JUN	SE	0.00	0.00	0.00	0.23	0.12	0.64	1.96	1.43	1.96	12.98	25.56	30.51	22.92	47.83
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.89	0.00	0.00	0.32	0.71	1.23	0.00	1.06	4.12	4.91	0.95	8.78	1.77
29JUN	SE	0.00	0.89	0.00	0.00	0.26	0.62	0.79	0.00	0.59	3.79	2.08	0.95	4.48	6.47
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-28 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	140	63	602	420	26	1252
27APR	SE	0	0	0	0	0	0	0	0	90	63	270	339	26	448
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	489	121	2592	289	700	1563	2484	612	8848
03MAY	SE	0	0	0	0	0	458	70	2006	148	231	688	815	281	2351
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	153	0	149	0	0	922	301	4568	26492	44065	13846	6948	97445
10MAY	SE	0	131	0	119	0	0	363	135	1971	7608	11886	5505	2000	15412
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	111	89	445	7227	27022	18191	10946	10203	7554	3625	85414
17MAY	SE	0	0	0	62	89	445	2146	5886	7335	4655	3979	3239	1250	11950
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	149	683	1368	1847	2441	3624	4219	1456	13500	31081	4554	2943	67864
25MAY	SE	0	149	347	1181	842	1109	1049	1624	805	2491	10649	2712	1789	11748
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	843	387	426	1208	1339	2359	2196	2559	5855	25804	18700	61675
02JUN	SE	0	0	401	190	231	440	360	1372	761	804	2225	10488	4414	11753
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-28 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	0	25	1194	1574	2897	4477	7829	75515	15792	3392
08JUN SE	0	0	0	0	10	637	494	1126	1300	1649	18646	5504	334
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	68	1289	1489	482	2824	5557	4532	18186	13907	9697
15JUN SE	0	0	0	68	716	1001	263	1382	2294	1540	3647	3788	4268
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	0	0	34	42	169	674	425	604	3552	6738	7549	7461
22JUN SE	0	0	0	34	26	133	274	425	325	1837	4506	4903	1631
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	203	0	0	67	147	173	0	176	583	866	153	624
29JUN SE	0	203	0	0	54	128	110	0	97	537	366	153	318
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-29 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.42	0.00	0.00	0.00	0.00	0.00	0.14
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.42	0.00	0.00	0.00	0.00	0.00	0.87
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.16	0.30	3.76	8.97	13.46	14.46	8.67	11.76	0.00	0.00	0.00	4.73
	SE	0.00	0.00	0.16	0.30	1.67	3.77	5.42	3.41	2.14	6.21	0.00	0.00	0.00	10.06
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.59	0.90	3.38	79.68	186.33	183.75	55.38	37.49	1.01	0.00	42.19
	SE	0.00	0.00	0.00	0.38	0.49	1.87	25.37	70.90	47.32	13.34	28.93	1.01	0.00	94.50
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	1.38	3.33	72.39	106.77	474.48	510.24	195.98	156.76	215.58	33.32	0.56	0.51	3.55	136.53
	SE	1.38	2.05	22.27	47.66	119.10	154.93	46.81	50.76	67.94	26.75	0.56	0.51	3.55	225.99
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	4.67	123.37	106.44	232.75	157.69	305.30	393.96	346.93	380.32	91.56	14.40	0.47	165.99
	SE	0.00	2.70	43.58	25.11	85.76	8.02	86.99	83.98	72.54	219.41	48.68	13.51	0.47	283.78
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-29 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN- 08JUN	DENSITY	1.17	0.87	1.20	22.32	152.36	161.04	419.05	267.13	562.70	1060.49	363.28	6.24	0.62	232.19
	SE	1.17	0.87	0.69	16.44	49.23	20.75	133.31	129.33	240.05	347.28	198.06	1.02	0.62	505.05
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- 15JUN	DENSITY	0.00	1.52	1.89	61.41	636.12	344.06	1039.66	259.00	246.48	586.02	149.98	0.00	0.42	255.89
	SE	0.00	1.52	0.94	8.28	137.07	155.02	464.23	24.99	83.77	355.54	143.29	0.00	0.42	642.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- 22JUN	DENSITY	0.00	2.83	68.08	141.75	151.54	198.87	241.11	236.24	114.64	430.52	150.61	300.21	4.73	157.01
	SE	0.00	1.80	17.41	28.43	34.46	56.89	32.14	83.05	46.35	182.40	86.84	102.93	2.72	258.90
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- 29JUN	DENSITY	6.54	18.15	91.41	199.08	63.46	269.91	452.02	327.20	331.56	1679.77	318.94	67.39	11.17	295.12
	SE	6.54	10.86	16.33	81.68	15.39	50.51	240.42	95.64	100.39	434.92	82.10	38.15	4.36	533.19
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- 12JUL	DENSITY	2.29	0.00	0.00	0.41	1.21	3.76	68.41	15.93	NS	NS	NS	NS	NS	11.50
	SE	2.29	0.00	0.00	0.41	1.14	1.36	25.56	7.74						26.87
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- 26JUL	DENSITY	0.00	0.00	0.00	0.83	1.45	3.25	19.70	8.09	NS	NS	NS	NS	NS	4.16
	SE	0.00	0.00	0.00	0.59	0.64	1.31	7.91	3.24						8.69
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- 09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.80	0.00	NS	NS	NS	NS	NS	0.11
	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.46	0.00						0.47
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- 23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- 07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- 20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- 05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-30 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	190	125	0	0	0	0	0	316
	SE	0	0	0	0	0	0	107	125	0	0	0	0	0	165
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	52	44	784	1862	1882	4312	1435	1664	0	0	0	12034
	SE	0	0	52	44	348	783	758	1016	354	879	0	0	0	1801
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	87	187	701	11139	55551	30408	7834	6610	163	0	112681
	SE	0	0	0	57	102	388	3547	21139	7831	1887	5101	163	0	23463
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	289	764	23297	15773	98852	105852	27396	46735	35675	4714	98	82	253	359781
	SE	289	470	7168	7041	24813	32141	6544	15133	11243	3784	98	82	253	46504
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	1072	39703	15726	48490	32715	42678	117453	57411	53803	16142	2314	34	427540
	SE	0	619	14026	3710	17866	1663	12160	25037	12005	31040	8582	2171	34	49935
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-30 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	244	200	386	3298	31742	33410	58580	79641	93118	150027	64044	1004	44	515737
08JUN	SE	244	200	222	2428	10255	4305	18635	38557	39724	49129	34917	164	44	84703
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	349	610	9073	132527	71377	145335	77217	40788	82904	26440	0	30	586649
15JUN	SE	0	349	303	1224	28556	32160	64895	7449	13862	50299	25262	0	30	97358
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	650	21909	20942	31572	41256	33706	70430	18971	60906	26552	48253	337	375484
22JUN	SE	0	412	5603	4200	7180	11803	4492	24759	7671	25804	15310	16543	194	45892
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	1368	4165	29416	29411	13220	55995	63188	97550	54868	237636	56228	10831	795	654670
29JUN	SE	1368	2492	5255	12067	3206	10478	33609	28514	16613	61529	14474	6132	310	80950
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	478	0	0	60	252	780	9563	4750	NS	NS	NS	NS	NS	15883
12JUL	SE	478	0	0	60	237	283	3573	2308						4297
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	122	301	675	2753	2413	NS	NS	NS	NS	NS	6265
26JUL	SE	0	0	0	87	133	271	1106	966						1502
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	20	112	0	NS	NS	NS	NS	NS	132
09AUG	SE	0	0	0	0	0	20	64	0						67
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-31 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-31 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.00	NS	NS	NS	NS	NS	0.25
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.80	0.00						1.80
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	NS	NS	NS	NS	NS	0.10
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00						0.67
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.44	0.00	0.00	0.28	0.24	NS	NS	NS	NS	NS	0.12
09AUG	SE	0.00	0.00	0.00	0.44	0.00	0.00	0.28	0.24						0.57
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	NS	NS	NS	NS	NS	0.03
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24						0.24
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	NS	NS	NS	NS	NS	0.03
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00						0.28
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	NS	NS	NS	NS	NS	0.05
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00						0.30
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-32 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-32 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	284	0	NS	NS	NS	NS	NS
12JUL- SE	0	0	0	0	0	0	251	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	0	0	0	0	110	0	NS	NS	NS	NS	NS
26JUL- SE	0	0	0	0	0	0	94	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	0	64	0	0	39	73	NS	NS	NS	NS	NS
09AUG- SE	0	0	0	64	0	0	39	73					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	0	0	0	0	0	0	0	72	NS	NS	NS	NS	NS
23AUG- SE	0	0	0	0	0	0	0	72					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP- SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	0	0	0	0	0	0	39	0	NS	NS	NS	NS	NS
20SEP- SE	0	0	0	0	0	0	39	0					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	0	0	0	0	0	0	56	0	NS	NS	NS	NS	NS
05OCT- SE	0	0	0	0	0	0	42	0					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-33 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.02	6.69	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.53
08JUL	SE	0.00	0.00	0.00	0.00	0.02	4.80	0.10	0.00	0.00	0.00	0.00	0.00	0.00	4.80
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.02	0.10	0.97	0.00	0.06	0.18	0.00	0.12	0.00	0.00	0.00	0.11
20JUL	SE	0.00	0.00	0.02	0.10	0.95	0.00	0.03	0.17	0.00	0.12	0.00	0.00	0.00	0.98
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.03	0.54	0.04	1.30	3.69	1.96	0.00	0.00	0.66
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.68	0.37	0.02	1.23	1.82	1.77	0.00	0.00	2.93
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.42	0.58	0.51	0.23	0.22	0.00	0.16
17AUG	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.24	0.45	0.35	0.23	0.22	0.00	0.70
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.02	< 0.005	0.00	0.09	0.79	0.45	0.00	0.00	0.10
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	< 0.005	0.00	0.04	0.52	0.29	0.00	0.00	0.60
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.21	0.08	0.18	0.51	0.71	0.09	0.00	0.00	0.14
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.20	0.04	0.10	0.16	0.44	0.09	0.00	0.00	0.52
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.08	0.47	2.02	0.00	0.00	0.00	0.20
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.04	0.25	0.73	0.00	0.00	0.00	0.78
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	11.71	0.18	0.11	0.07	2.32	0.13	0.00	0.00	1.12
12OCT	SE	0.00	0.00	0.00	0.00	0.01	11.70	0.09	0.08	0.05	1.03	0.13	0.00	0.00	11.75
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.00	0.02	0.03	0.13	0.24	2.03	0.39	0.39	1.40	0.24	0.08	0.00	0.38
26OCT	SE	0.00	0.00	0.02	0.03	0.09	0.13	0.47	0.13	0.14	0.27	0.10	0.05	0.00	0.61
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.04	0.48	0.66	0.09	0.06	0.61	0.11	0.10	0.08	0.03	0.00	0.00	0.17
10NOV	SE	0.00	0.03	0.38	0.36	0.03	0.03	0.16	0.06	0.04	0.05	0.03	0.00	0.00	0.56
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.03	0.15	0.20	1.30	0.83	0.21	0.56	0.14	0.03	0.00	0.00	0.00	0.00	0.26
01DEC	SE	0.03	0.06	0.11	0.46	0.25	0.05	0.10	0.05	0.02	0.00	0.00	0.00	0.00	0.56
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-34 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL-	ST. CROP	0	0	0	0	4	1387	20	0	0	0	0	0	0	1411
08JUL	SE	0	0	0	0	4	996	15	0	0	0	0	0	0	996
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	8	14	202	0	9	54	0	17	0	0	0	304
20JUL	SE	0	0	8	14	198	0	4	51	0	17	0	0	0	206
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	0	0	0	214	75	11	215	522	346	0	0	1383
03AUG	SE	0	0	0	0	0	141	51	6	203	258	313	0	0	478
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	3	0	9	124	95	72	40	36	0	380
17AUG	SE	0	0	0	0	3	0	5	73	75	50	40	36	0	128
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	3	1	0	15	111	79	0	0	209
31AUG	SE	0	0	0	0	0	2	1	0	6	73	52	0	0	90
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	43	11	54	84	100	15	0	0	307
14SEP	SE	0	0	0	0	0	42	6	31	26	62	15	0	0	86
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	3	6	24	78	286	0	0	0	396
28SEP	SE	0	0	0	0	0	2	4	11	42	104	0	0	0	112
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	0	0	1	2430	25	33	12	329	23	0	0	2852
12OCT	SE	0	0	0	0	1	2428	13	25	9	145	23	0	0	2432
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	6	4	27	51	284	118	65	197	41	13	0	806
26OCT	SE	0	0	6	4	19	28	65	40	23	38	18	8	0	97
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	9	154	97	19	12	86	33	17	11	5	0	0	443
10NOV	SE	0	6	121	54	7	6	23	19	6	7	5	0	0	137
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	5	34	64	192	173	44	78	41	5	0	0	0	0	637
01DEC	SE	5	14	34	68	52	11	14	15	3	0	0	0	0	97
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-35 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
28JUN	SE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.33	0.00	3.33	0.25	0.13	0.50	0.13	0.05	0.00	0.39
12JUL	SE	0.00	0.00	0.00	0.33	0.00	2.85	0.16	0.13	0.19	0.13	0.05	0.00	2.88
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.20	0.17	0.36	0.40	0.00	1.00	1.60	0.60	0.00	0.11	2.00	0.57	0.58
27JUL	SE	0.20	0.13	0.17	0.40	0.00	0.82	1.17	0.40	0.00	0.11	0.65	0.43	1.75
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	2.25	14.21	14.00	2.00	0.17	14.20	24.20	0.80	14.33	3.10	0.29	7.46
10AUG	SE	0.00	1.66	8.82	10.12	1.14	0.17	14.20	5.99	0.58	4.67	1.85	0.29	21.16
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.54	10.57	1.60	1.60	4.33	6.40	5.60	0.20	8.78	6.60	0.14	3.86
24AUG	SE	0.00	0.28	4.34	1.12	0.68	3.59	5.18	0.60	0.20	5.92	3.46	0.14	10.39
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.46	12.21	4.40	0.00	0.00	3.60	2.20	20.80	12.56	0.60	0.00	4.74
08SEP	SE	0.00	0.21	5.67	4.40	0.00	0.00	2.29	1.56	12.80	8.61	0.34	0.00	17.24
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.20	2.46	20.71	5.20	9.40	0.50	0.00	0.20	2.00	0.56	3.30	0.14	3.72
21SEP	SE	0.20	1.17	10.94	3.88	5.46	0.34	0.00	0.20	1.14	0.38	2.06	0.14	13.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	1.63	2.14	0.00	2.60	0.00	5.00	0.00	9.80	2.44	0.00	0.00	1.97
05OCT	SE	0.00	1.08	1.11	0.00	1.54	0.00	5.00	0.00	6.58	1.83	0.00	0.00	8.74
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.20	0.04	0.29	0.00	0.00	0.00	0.20	0.20	0.40	0.33	0.40	0.43	0.21
19OCT	SE	0.20	0.04	0.16	0.00	0.00	0.00	0.20	0.20	0.40	0.33	0.22	0.43	0.81
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-36 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	4	0	0	0	0	0	0	0	0	0	4
28JUN	SE	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	3	0	36	2	< 0.5	4	2	1	0	48
12JUL	SE	0	0	0	3	0	30	1	< 0.5	2	2	1	0	31
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	2	8	10	4	0	11	11	1	0	2	39	8	94
27JUL	SE	2	6	5	4	0	9	8	< 0.5	0	2	13	6	20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	102	382	129	5	2	101	30	7	252	61	4	1075
10AUG	SE	0	76	237	93	3	2	101	7	5	82	36	4	298
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	25	284	15	4	46	45	7	2	154	130	2	714
24AUG	SE	0	13	117	10	2	38	37	1	2	104	68	2	179
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	21	328	41	0	0	26	3	179	220	12	0	829
08SEP	SE	0	9	152	41	0	0	16	2	110	151	7	0	246
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	2	112	557	48	25	5	0	< 0.5	17	10	65	2	842
21SEP	SE	2	53	294	36	14	4	0	< 0.5	10	7	40	2	304
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	74	58	0	7	0	35	0	84	43	0	0	301
05OCT	SE	0	49	30	0	4	0	35	0	57	32	0	0	94
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	2	2	8	0	0	0	1	< 0.5	3	6	8	6	36
19OCT	SE	2	2	4	0	0	0	1	< 0.5	3	6	4	6	11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-37 REGIONAL DENSITY (NO./1,000m³) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.22	0.24	2.14	18.09	7.38	16.18	NS	NS	NS	NS	NS	NS	6.32
	SE	0.00	0.22	0.24	0.99	15.86	3.78	6.94							17.75
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.19	0.83	0.00	5.27	21.88	24.65	NS	NS	NS	NS	NS	NS	7.55
	SE	0.00	0.19	0.41	0.00	1.96	13.97	12.92							19.13
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.46	0.13	9.69	15.80	1.71	11.95	0.00	0.00	0.55	2.57	3.30
	SE	0.00	0.00	0.00	0.28	0.13	4.30	2.99	1.71	8.79	0.00	0.00	0.55	0.47	10.41
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.16	0.00	2.88	5.10	0.32	3.70	0.88	3.83	2.33	0.00	0.00	1.48
	SE	0.00	0.00	0.16	0.00	2.07	2.43	0.32	3.00	0.88	3.11	1.64	0.00	0.00	5.70
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.31	0.00	0.33	0.75	1.06	6.92	9.67	0.00	3.25	0.00	4.94	0.00	0.00	2.09
	SE	0.31	0.00	0.33	0.43	0.36	3.37	7.51	0.00	1.74	0.00	2.79	0.00	0.00	8.90
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.87	0.84	2.30	0.62	0.03	3.59	0.93	2.41	3.54	2.20	0.00	1.33
	SE	0.00	0.00	0.38	0.51	1.27	0.62	0.03	2.20	0.93	1.20	2.50	1.24	0.00	4.17
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	1.07	0.53	0.62	0.22	1.19	0.29	2.30	1.24	0.00	0.00	0.57
	SE	0.00	0.00	0.00	0.39	0.30	0.62	0.22	0.88	0.18	1.15	0.74	0.00	0.00	1.83
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.28	0.39	0.00	0.00	0.00	0.00	0.09
	SE	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.28	0.26	0.00	0.00	0.00	0.00	0.48
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.36	0.31	1.50	0.13	0.77	0.00	0.00	0.51	0.00	0.28
	SE	0.00	0.00	0.00	0.00	0.36	0.19	0.67	0.13	0.46	0.00	0.00	0.51	0.00	1.05
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	1.73	1.49	0.46	0.12	0.67	0.00	0.15	0.53	0.22	0.00	0.00	0.41
	SE	0.00	0.00	0.71	0.66	0.38	0.12	0.32	0.00	0.15	0.53	0.22	0.00	0.00	1.24
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.70	2.39	0.18	0.00	0.32	0.25	0.00	0.00	0.00	0.00	0.00	0.29
	SE	0.00	0.00	0.37	1.58	0.18	0.00	0.32	0.25	0.00	0.00	0.00	0.00	0.00	1.69
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-37 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.61	0.55	1.16	0.58	0.93	1.70	0.29	0.00	1.19	0.54
08JUN	SE	0.00	0.00	0.00	0.00	0.61	0.55	0.18	0.37	0.40	0.79	0.29	0.00	0.59	1.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.24	0.04	0.69	0.37	0.20	0.00	0.28	0.00	0.00	0.00	0.14
15JUN	SE	0.00	0.00	0.00	0.24	0.04	0.59	0.29	0.20	0.00	0.28	0.00	0.00	0.00	0.78
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.23	0.00	0.00	0.13	0.00	0.13	2.18	0.00	0.57	1.19	0.34
22JUN	SE	0.00	0.00	0.00	0.23	0.00	0.00	0.13	0.00	0.13	1.83	0.00	0.57	1.19	2.28
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.36	0.00	0.04	0.00	2.17	0.18	0.44	0.75	0.00	0.00	0.00	0.30
29JUN	SE	0.00	0.00	0.28	0.00	0.04	0.00	1.55	0.18	0.44	0.48	0.00	0.00	0.00	1.71
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.86	1.50	0.95	NS	NS	NS	NS	NS	0.41
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.55	0.90	0.74						1.29
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	1.67	0.00	0.00	0.52	0.77	0.90	0.23	NS	NS	NS	NS	NS	0.51
26JUL	SE	0.00	1.67	0.00	0.00	0.30	0.67	0.68	0.23						1.96
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.44	0.48	0.10	0.72	0.00	NS	NS	NS	NS	NS	0.22
09AUG	SE	0.00	0.00	0.00	0.44	0.48	0.10	0.52	0.00						0.84
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.66	NS	NS	NS	NS	NS	0.16
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.66						0.87
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.23	NS	NS	NS	NS	NS	0.07
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.23						0.36
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.27	0.00	1.22	0.00	NS	NS	NS	NS	NS	0.19
05OCT	SE	0.00	0.00	0.00	0.00	0.27	0.00	0.74	0.00						0.78
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-38 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	0	0	0	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	11						
20MAR-	ST. CROP	0	51	77	316	3769	1532	2262	NS	NS	NS	NS	NS	NS
22MAR	SE	0	51	77	146	3305	783	971						
	NO. TOWS	10	10	11	11	10	10	12						
27MAR-	ST. CROP	0	43	266	0	1099	4540	3445	NS	NS	NS	NS	NS	NS
29MAR	SE	0	43	133	0	409	2899	1806						
	NO. TOWS	10	10	11	11	10	10	12						
03APR-	ST. CROP	0	0	0	68	27	2011	2209	511	1978	0	0	88	183
06APR	SE	0	0	0	41	27	893	418	511	1455	0	0	88	34
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	ST. CROP	0	0	50	0	601	1057	45	1102	145	542	411	0	0
13APR	SE	0	0	50	0	431	505	45	895	145	440	290	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	ST. CROP	64	0	105	111	222	1435	1352	0	538	0	872	0	0
20APR	SE	64	0	105	64	76	700	1050	0	288	0	492	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	ST. CROP	0	0	280	125	478	129	4	1072	154	340	624	353	0
27APR	SE	0	0	123	75	265	129	4	656	154	170	441	199	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	ST. CROP	0	0	0	158	110	129	30	354	48	325	218	0	0
03MAY	SE	0	0	0	57	62	129	30	263	30	162	131	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	ST. CROP	0	0	0	0	0	105	0	84	64	0	0	0	0
10MAY	SE	0	0	0	0	0	61	0	84	42	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	ST. CROP	0	0	0	0	75	65	210	40	127	0	0	81	0
17MAY	SE	0	0	0	0	75	39	94	40	76	0	0	81	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	ST. CROP	0	0	555	220	95	25	94	0	25	75	39	0	0
25MAY	SE	0	0	228	97	79	25	45	0	25	75	39	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	ST. CROP	0	0	224	352	37	0	45	74	0	0	0	0	0
02JUN	SE	0	0	120	234	37	0	45	74	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-38 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	0	0	0	127	113	162	173	153	240	52	0	84	1106
08JUN	SE	0	0	0	0	127	113	25	111	66	111	52	0	42	251
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	36	8	143	51	59	0	39	0	0	0	335
15JUN	SE	0	0	0	36	8	123	41	59	0	39	0	0	0	152
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	34	0	0	19	0	21	308	0	91	85	559
22JUN	SE	0	0	0	34	0	0	19	0	21	259	0	91	85	291
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	117	0	8	0	303	54	73	107	0	0	0	662
29JUN	SE	0	0	89	0	8	0	217	54	73	68	0	0	0	260
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	179	210	282	NS	NS	NS	NS	NS	672
12JUL	SE	0	0	0	0	0	114	125	222						279
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	382	0	0	108	159	126	69	NS	NS	NS	NS	NS	845
26JUL	SE	0	382	0	0	62	139	95	69						428
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	65	101	20	100	0	NS	NS	NS	NS	NS	285
09AUG	SE	0	0	0	65	101	20	73	0						141
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	89	197	NS	NS	NS	NS	NS	286
07SEP	SE	0	0	0	0	0	0	78	197						212
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	50	68	NS	NS	NS	NS	NS	118
20SEP	SE	0	0	0	0	0	0	39	68						78
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	56	0	171	0	NS	NS	NS	NS	NS	227
05OCT	SE	0	0	0	0	56	0	103	0						117
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-39 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUL-	DENSITY	0.00	0.00	0.34	0.43	0.48	0.38	0.42	0.43	0.43	0.46	0.07	0.21	0.63	0.33
08JUL	SE	0.00	0.00	0.30	0.25	0.31	0.24	0.14	0.25	0.30	0.31	0.07	0.11	0.30	0.83
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.03	0.00	0.07	0.80	0.46	0.00	0.59	0.27	0.56	0.30	0.06	0.46	0.00	0.28
20JUL	SE	0.03	0.00	0.07	0.32	0.33	0.00	0.32	0.19	0.35	0.16	0.06	0.46	0.00	0.84
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.30	0.30	0.91	0.00	0.33	0.27	0.25	1.05	1.21	0.55	0.00	0.40
03AUG	SE	0.00	0.00	0.16	0.15	0.40	0.00	0.10	0.20	0.08	0.46	0.86	0.46	0.00	1.20
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.27	0.00	0.19	0.10	0.20	0.31	0.20	0.18	2.45	3.56	0.00	0.00	0.58
17AUG	SE	0.00	0.18	0.00	0.09	0.04	0.16	0.09	0.05	0.06	1.35	1.84	0.00	0.00	2.30
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.03	0.07	0.14	0.31	0.09	0.93	0.32	1.71	0.28	0.30
31AUG	SE	0.00	0.00	0.00	0.00	0.03	0.05	0.05	0.27	0.05	0.38	0.19	0.52	0.28	0.78
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.03	0.00	0.05	0.06	0.52	0.91	0.42	2.03	2.16	0.12	2.24	0.66
14SEP	SE	0.00	0.00	0.03	0.00	0.02	0.03	0.19	0.27	0.17	0.76	0.36	0.12	1.36	1.65
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.03	0.04	0.03	0.22	0.31	0.62	0.31	0.29	0.25	0.00	0.35	0.19
28SEP	SE	0.00	0.00	0.03	0.04	0.02	0.09	0.12	0.19	0.16	0.11	0.10	0.00	0.15	0.37
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.03	0.31	0.11	0.43	0.07	1.45	0.38	0.36	0.00	0.24
12OCT	SE	0.00	0.00	0.00	0.00	0.03	0.28	0.06	0.09	0.04	0.38	0.16	0.36	0.00	0.63
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.14	0.02	0.30	0.34	0.15	8.28	1.19	2.03	4.97	1.26	0.17	0.00	1.45
26OCT	SE	0.00	0.10	0.02	0.11	0.19	0.09	1.51	0.27	0.66	1.59	0.28	0.09	0.00	2.34
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.07	1.05	6.02	1.21	0.41	0.06	0.87	0.24	0.77	0.31	0.15	0.00	0.00	0.86
10NOV	SE	0.05	0.20	1.05	0.16	0.11	0.03	0.22	0.08	0.15	0.11	0.08	0.00	0.00	1.13
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.60	2.20	1.61	4.36	0.76	0.24	1.38	0.75	0.47	0.54	0.66	0.16	0.00	1.06
01DEC	SE	0.28	0.47	0.65	1.81	0.23	0.06	0.56	0.10	0.12	0.13	0.18	0.12	0.00	2.11
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-40 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL -	ST. CROP	0	0	110	64	99	78	59	129	72	65	12	34	45	768
08JUL	SE	0	0	97	37	65	50	20	74	50	43	12	17	22	170
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL -	ST. CROP	7	0	24	118	95	0	82	81	93	43	11	73	0	627
20JUL	SE	7	0	24	47	68	0	45	56	57	22	11	73	0	148
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL -	ST. CROP	0	0	98	45	189	0	46	81	42	149	214	88	0	951
03AUG	SE	0	0	51	23	84	0	14	59	14	65	152	74	0	216
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG -	ST. CROP	0	63	0	29	21	42	43	61	31	347	627	0	0	1263
17AUG	SE	0	42	0	14	9	34	12	16	9	190	324	0	0	381
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG -	ST. CROP	0	0	0	0	6	15	20	93	15	131	56	275	20	631
31AUG	SE	0	0	0	0	6	10	7	80	8	53	34	83	20	134
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP -	ST. CROP	0	0	8	0	10	12	73	271	69	288	381	19	160	1291
14SEP	SE	0	0	8	0	5	5	27	81	28	107	64	19	97	183
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP -	ST. CROP	0	0	10	6	6	46	43	184	51	41	45	0	25	457
28SEP	SE	0	0	10	6	3	18	17	58	27	16	18	0	11	74
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT -	ST. CROP	0	0	0	0	6	65	16	128	12	205	67	57	0	556
12OCT	SE	0	0	0	0	6	58	9	28	7	54	29	57	0	107
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT -	ST. CROP	0	32	6	44	70	31	1157	354	337	703	221	27	0	2982
26OCT	SE	0	23	6	16	40	19	211	81	110	225	49	15	0	345
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV -	ST. CROP	14	241	1937	178	85	13	121	72	128	44	26	0	0	2859
10NOV	SE	10	45	338	23	24	6	31	24	24	16	14	0	0	346
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV -	ST. CROP	125	505	519	644	159	51	193	222	78	76	116	25	0	2713
01DEC	SE	58	108	209	268	47	12	78	30	21	18	31	19	0	377
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-41 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.33	0.73	2.14	2.67	7.33	0.33	15.50	16.63	5.50	8.80	6.79	4.25	5.92
14JUN	SE	0.33	0.27	0.94	2.19	3.28	0.33	6.81	3.90	2.88	1.50	1.82	0.91	9.64
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.67	2.73	40.29	2.00	4.67	0.00	3.50	0.38	7.63	5.40	4.42	4.33	6.33
28JUN	SE	0.67	0.87	35.17	1.00	4.67	0.00	0.82	0.18	2.39	1.34	1.07	1.30	35.66
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	2.45	3.29	2.67	13.33	8.00	4.63	7.75	22.75	6.80	2.05	3.33	6.42
12JUL	SE	0.00	0.99	1.25	1.67	5.24	2.08	1.44	2.05	7.94	1.48	0.53	1.77	10.58
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	3.40	3.46	10.86	0.60	7.80	2.00	3.60	1.60	1.00	9.56	7.00	8.29	4.93
27JUL	SE	2.71	0.58	2.30	0.24	4.59	1.29	2.23	0.68	0.63	3.66	2.40	2.37	8.14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	1.60	6.08	19.21	3.80	2.40	0.33	1.80	5.80	2.40	7.11	5.20	0.29	4.67
10AUG	SE	0.40	1.53	7.06	2.62	1.50	0.21	1.36	2.31	1.03	1.60	1.91	0.29	8.72
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.40	1.79	1.71	1.80	0.60	1.33	0.40	5.00	1.60	3.11	3.20	0.29	1.77
24AUG	SE	0.40	0.59	0.92	1.32	0.24	0.61	0.40	1.52	1.36	1.05	1.86	0.18	3.53
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.20	0.33	4.43	0.40	1.00	2.33	1.00	1.20	6.00	3.67	2.50	0.00	1.92
08SEP	SE	0.20	0.19	1.57	0.40	0.45	2.14	0.45	0.58	2.12	1.97	0.96	0.00	4.16
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.80	1.42	3.14	3.60	2.00	0.33	0.80	4.60	1.60	0.22	1.30	2.71	1.88
21SEP	SE	0.80	0.67	2.00	3.36	1.14	0.33	0.37	2.01	0.75	0.22	0.99	1.52	5.09
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.25	2.79	0.00	4.40	0.67	0.00	0.80	0.80	3.44	0.90	0.00	1.17
05OCT	SE	0.00	0.12	1.30	0.00	3.49	0.49	0.00	0.58	0.49	1.86	0.48	0.00	4.29
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.13	0.00	3.80	0.40	0.00	0.20	0.00	1.40	0.33	0.50	0.43	0.60
19OCT	SE	0.00	0.09	0.00	3.07	0.40	0.00	0.20	0.00	1.17	0.33	0.22	0.30	3.36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-42 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	3	33	58	25	19	4	110	21	47	154	134	58	664
14JUN	SE	3	12	25	20	9	4	48	5	25	26	36	12	80
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	5	124	1083	18	12	0	25	< 0.5	66	95	87	59	1575
28JUN	SE	5	40	946	9	12	0	6	< 0.5	21	24	21	18	948
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	112	88	25	35	85	33	10	196	119	40	45	788
12JUL	SE	0	45	34	15	14	22	10	3	68	26	10	24	101
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	26	157	292	6	21	21	26	2	9	168	138	113	976
27JUL	SE	20	26	62	2	12	14	16	1	5	64	47	32	114
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	12	276	517	35	6	4	13	7	21	125	102	4	1122
10AUG	SE	3	70	190	24	4	2	10	3	9	28	38	4	209
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	3	81	46	17	2	14	3	6	14	55	63	4	307
24AUG	SE	3	27	25	12	1	7	3	2	12	18	37	3	58
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	2	15	119	4	3	25	7	1	52	64	49	0	341
08SEP	SE	2	9	42	4	1	23	3	1	18	35	19	0	66
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	6	64	85	33	5	4	6	6	14	4	26	37	288
21SEP	SE	6	30	54	31	3	4	3	2	6	4	19	21	76
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	11	75	0	12	7	0	1	7	60	18	0	191
05OCT	SE	0	6	35	0	9	5	0	1	4	33	9	0	50
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	6	0	35	1	0	1	0	12	6	10	6	77
19OCT	SE	0	4	0	28	1	0	1	0	10	6	4	4	32
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-43 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	1.69	0.30	2.42	6.09	5.22	1.34	2.06	NS	NS	NS	NS	NS	NS	2.73
	SE	0.58	0.23	0.84	5.16	3.79	1.08	1.21							6.69
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	1.06	1.23	0.00	34.64	6.78	1.22	NS	NS	NS	NS	NS	NS	6.42
	SE	0.00	0.74	0.42	0.00	32.33	2.35	0.43							32.43
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.21	0.19	0.32	1.58	0.53	0.88	0.56	0.00	0.65	0.00	0.00	0.55	9.95	1.19
	SE	0.21	0.19	0.18	0.73	0.30	0.40	0.56	0.00	0.65	0.00	0.00	0.55	1.95	2.39
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.89	0.00	0.00	1.21	0.49	0.64	0.00	0.00	0.81	0.00	0.00	0.00	0.31
	SE	0.00	0.89	0.00	0.00	0.71	0.49	0.64	0.00	0.00	0.81	0.00	0.00	0.00	1.61
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	1.18	0.73	0.71	1.32	1.23	0.00	0.91	0.00	0.54	0.00	1.76	0.33	0.00	0.67
	SE	0.41	0.43	0.46	0.88	0.73	0.00	0.91	0.00	0.32	0.00	1.76	0.33	0.00	2.45
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.43	0.29	3.89	0.00	0.00	0.03	0.00	0.00	0.00	0.75	0.00	0.00	0.41
	SE	0.00	0.43	0.17	1.61	0.00	0.00	0.03	0.00	0.00	0.00	0.75	0.00	0.00	1.83
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.62	0.19	0.33	0.49	0.00	0.00	0.00	0.41	1.70	0.78	0.43	0.56	0.00	0.42
	SE	0.31	0.19	0.23	0.23	0.00	0.00	0.00	0.41	1.24	0.39	0.43	0.56	0.00	1.61
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.40	1.35	0.89	0.72	0.38	0.00	0.00	0.00	0.00	0.29
	SE	0.00	0.00	0.00	0.00	0.40	1.10	0.89	0.22	0.16	0.00	0.00	0.00	0.00	1.50
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.45	0.00	0.00	0.54	1.42	0.32	2.46	0.25	2.47	0.00	0.22	1.01	0.00	0.70
	SE	0.45	0.00	0.00	0.35	0.77	0.19	0.89	0.16	0.65	0.00	0.22	0.51	0.00	1.58
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.56	0.00	0.00	0.04	0.00	1.19	0.00	1.61	0.78	0.22	1.45	11.37	1.32
	SE	0.00	0.30	0.00	0.00	0.04	0.00	0.87	0.00	0.14	0.50	0.22	0.87	6.54	6.68
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.43	0.97	0.00	0.00	1.87	1.84	0.57	1.82	0.43	4.36	0.00	0.95
	SE	0.00	0.00	0.31	0.77	0.00	0.00	0.97	1.09	0.45	1.14	0.43	4.36	0.00	4.84
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-43 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	1.09	0.89	0.00	0.61	0.00	0.15	0.19	0.26	0.25	0.00	0.00	0.40	0.30
	SE	0.00	0.90	0.66	0.00	0.61	0.00	0.15	0.19	0.16	0.25	0.00	0.00	0.40	1.38
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.32	0.68	0.00	0.00	0.82	0.00	0.27	0.85	0.89	0.00	1.01	0.37
	SE	0.00	0.00	0.32	0.68	0.00	0.00	0.41	0.00	0.16	0.55	0.30	0.00	0.73	1.30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.73	3.01	1.38	0.25	0.10	1.91	0.00	0.59	3.19	1.07	0.00	2.33	1.12
	SE	0.00	0.54	1.25	0.60	0.14	0.10	0.83	0.00	0.47	1.56	0.74	0.00	1.59	2.94
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.41	0.73	1.00	0.00	1.49	0.68	0.39	3.13	0.55	2.63	0.43	0.88
	SE	0.00	0.00	0.31	0.53	0.89	0.00	0.76	0.68	0.26	0.82	0.32	1.42	0.43	2.29
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.00	0.99	0.11	3.29	0.00	NS	NS	NS	NS	NS	0.55
	SE	0.00	0.00	0.00	0.00	0.70	0.11	2.77	0.00						2.86
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.28	0.00	NS	NS	NS	NS	NS	0.04
	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.28	0.00						0.28
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.85	0.28	0.00	0.13	0.84	NS	NS	NS	NS	NS	0.26
	SE	0.00	0.00	0.00	0.85	0.28	0.00	0.13	0.16						0.92
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.70	0.67	0.00	NS	NS	NS	NS	NS	0.17
	SE	0.00	0.00	0.00	0.00	0.00	0.50	0.63	0.00						0.80
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.02
	SE	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00						0.14
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.44	0.64	0.00	0.40	0.23	NS	NS	NS	NS	NS	0.21
	SE	0.00	0.00	0.00	0.44	0.38	0.00	0.29	0.23						0.68
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-44 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	0	0	0	0	0	0	0						0
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	ST. CROP	352	68	778	899	1087	278	287	NS	NS	NS	NS	NS	NS
22MAR	SE	122	54	271	763	789	224	169						1172
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	ST. CROP	0	243	397	0	7218	1406	170	NS	NS	NS	NS	NS	NS
29MAR	SE	0	170	137	0	6737	487	60						6758
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	ST. CROP	44	44	102	234	110	182	78	0	107	0	0	88	708
06APR	SE	44	44	59	108	63	83	78	0	107	0	0	88	138
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	ST. CROP	0	204	0	0	252	101	89	0	0	114	0	0	0
13APR	SE	0	204	0	0	148	101	89	0	0	114	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	ST. CROP	247	169	229	196	257	0	127	0	89	0	310	53	0
20APR	SE	86	98	150	130	151	0	127	0	53	0	310	53	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	ST. CROP	0	98	93	575	0	0	4	0	0	0	132	0	0
27APR	SE	0	98	54	238	0	0	4	0	0	0	132	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	ST. CROP	130	43	105	72	0	0	0	122	281	110	75	90	0
03MAY	SE	65	43	74	34	0	0	0	122	206	55	75	90	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	ST. CROP	0	0	0	0	83	280	124	214	63	0	0	0	0
10MAY	SE	0	0	0	0	83	229	124	67	26	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	ST. CROP	93	0	0	80	295	67	344	75	409	0	39	163	0
17MAY	SE	93	0	0	51	160	39	124	47	108	0	39	81	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	ST. CROP	0	129	0	0	9	0	166	0	267	110	39	233	809
25MAY	SE	0	68	0	0	9	0	121	0	24	71	39	140	465
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	ST. CROP	0	0	139	144	0	0	262	549	95	257	76	700	0
02JUN	SE	0	0	99	113	0	0	135	324	75	161	76	700	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-44 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	250	286	0	127	0	21	58	44	35	0	0	28	850
08JUN	SE	0	206	211	0	127	0	21	58	27	35	0	0	28	331
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	103	101	0	0	115	0	44	121	157	0	72	713
15JUN	SE	0	0	103	101	0	0	57	0	27	78	53	0	52	191
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	167	968	204	53	22	267	0	97	452	189	0	166	2586
22JUN	SE	0	123	401	89	29	22	116	0	78	221	130	0	113	532
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	131	108	208	0	208	204	64	443	97	423	31	1916
29JUN	SE	0	0	100	78	185	0	106	204	43	116	56	229	31	418
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	206	23	460	0	NS	NS	NS	NS	NS	688
12JUL	SE	0	0	0	0	146	23	387	0						414
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	7	0	39	0	NS	NS	NS	NS	NS	46
26JUL	SE	0	0	0	0	7	0	39	0						40
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	126	58	0	18	252	NS	NS	NS	NS	NS	454
23AUG	SE	0	0	0	126	58	0	18	47						148
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	145	94	0	NS	NS	NS	NS	NS	238
07SEP	SE	0	0	0	0	0	104	88	0						136
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	29	0	0	0	NS	NS	NS	NS	NS	29
20SEP	SE	0	0	0	0	29	0	0	0						29
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	64	132	0	55	69	NS	NS	NS	NS	NS	321
05OCT	SE	0	0	0	64	78	0	40	69						129
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-45 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	DENSITY	0.00	0.41	0.49	0.98	0.56	0.23	0.26	0.30	0.82	0.66	1.08	0.47	0.45	0.52
08JUL	SE	0.00	0.16	0.17	0.30	0.16	0.19	0.09	0.19	0.47	0.34	0.82	0.47	0.29	1.24
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.27	0.42	1.32	4.23	0.25	0.33	0.94	0.22	0.28	0.89	2.37	0.91	0.00	0.96
20JUL	SE	0.19	0.15	0.62	0.93	0.11	0.21	0.25	0.08	0.09	0.43	1.68	0.91	0.00	2.30
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.17	0.84	1.35	1.24	0.27	0.02	0.80	0.86	1.02	3.39	2.43	1.11	0.09	1.05
03AUG	SE	0.11	0.54	0.42	0.63	0.14	0.02	0.38	0.59	0.45	1.74	0.91	0.50	0.09	2.39
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.15	0.39	0.11	0.26	0.14	0.39	0.52	0.38	2.82	4.73	0.55	0.37	0.83
17AUG	SE	0.00	0.10	0.23	0.06	0.10	0.09	0.11	0.23	0.27	0.45	2.47	0.40	0.15	2.59
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.04	0.00	0.42	0.19	0.47	0.03	0.89	0.43	0.09	1.02	1.35	0.34	0.09	0.41
31AUG	SE	0.04	0.00	0.31	0.07	0.34	0.02	0.47	0.25	0.04	0.58	0.66	0.20	0.09	1.16
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.04	0.07	0.17	0.03	0.36	0.21	0.91	0.52	0.38	1.83	1.71	0.89	2.91	0.77
14SEP	SE	0.04	0.05	0.07	0.03	0.12	0.06	0.37	0.14	0.18	0.56	0.76	0.45	1.30	1.73
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.11	0.37	0.17	0.36	0.05	0.21	0.51	0.49	1.68	1.66	0.11	0.41	0.47
28SEP	SE	0.00	0.05	0.13	0.08	0.26	0.02	0.09	0.19	0.21	0.74	0.63	0.11	0.30	1.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.08	0.76	1.07	0.03	0.15	0.31	0.58	1.16	0.09	0.94	1.00	0.48	0.64	0.56
12OCT	SE	0.05	0.28	0.56	0.03	0.09	0.28	0.40	0.46	0.03	0.25	0.32	0.48	0.31	1.16
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.19	2.23	1.86	0.81	0.22	0.07	2.24	0.87	0.82	1.39	0.37	0.03	0.00	0.85
26OCT	SE	0.07	0.43	0.79	0.35	0.08	0.03	0.68	0.21	0.27	0.38	0.14	0.03	0.00	1.30
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.53	2.56	6.72	1.26	0.32	0.01	0.26	0.16	0.56	0.39	0.16	0.04	0.05	1.00
10NOV	SE	0.15	0.40	0.99	0.26	0.16	0.01	0.08	0.07	0.14	0.12	0.07	0.04	0.05	1.14
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	2.22	4.86	2.07	1.23	0.28	0.03	0.21	0.03	0.05	0.46	0.06	0.00	0.00	0.88
01DEC	SE	0.76	0.99	1.15	0.51	0.12	0.02	0.10	0.02	0.03	0.13	0.04	0.00	0.00	1.79
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-46 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL - 08JUL	ST. CROP	0	94	158	145	117	49	36	91	135	94	190	75	32	1215
	SE	0	36	54	44	32	39	13	58	77	48	144	75	20	217
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	ST. CROP	57	97	423	625	51	68	131	67	47	126	419	147	0	2258
	SE	40	34	200	137	23	45	35	25	15	60	297	147	0	424
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	ST. CROP	36	194	435	182	56	5	111	255	168	480	429	179	7	2536
	SE	22	125	136	93	29	3	53	177	74	247	161	80	7	421
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	ST. CROP	0	35	127	16	54	28	55	155	62	399	834	89	26	1881
	SE	0	23	74	9	22	18	16	67	44	64	435	65	11	460
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	ST. CROP	8	0	135	28	98	7	125	129	14	144	238	55	7	988
	SE	8	0	101	11	72	5	66	76	6	82	117	32	7	217
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	ST. CROP	8	16	55	4	76	45	127	154	63	260	301	142	207	1458
	SE	8	12	24	4	25	12	52	42	30	79	133	72	92	211
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	ST. CROP	0	26	120	25	76	10	29	153	80	238	293	18	29	1097
	SE	0	11	42	12	54	5	13	56	34	104	111	18	22	183
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	ST. CROP	17	174	344	4	32	64	81	346	15	132	176	77	46	1506
	SE	11	64	180	4	19	58	56	137	4	36	56	77	22	270
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	ST. CROP	40	511	599	119	46	15	313	261	136	197	66	5	0	2307
	SE	15	98	255	51	17	7	95	63	45	54	25	5	0	311
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	ST. CROP	110	586	2161	186	67	2	37	46	93	55	28	7	4	3382
	SE	31	91	318	39	33	2	11	21	24	17	12	7	4	338
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	ST. CROP	464	1115	665	181	58	6	29	10	8	65	10	0	0	2613
	SE	158	228	372	75	25	4	14	7	4	18	7	0	0	471
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-47 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.33	0.27	0.29	0.33	0.67	0.00	2.00	0.25	0.25	0.73	0.53	0.67	0.53
14JUN	SE	0.33	0.14	0.18	0.33	0.67	0.00	1.00	0.16	0.25	0.28	0.32	0.22	1.43
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	1.00	1.36	4.43	0.67	1.00	0.00	2.00	0.38	1.63	1.47	1.00	2.42	1.45
28JUN	SE	0.58	0.49	2.50	0.33	1.00	0.00	1.21	0.18	0.86	0.52	0.55	0.74	3.36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	4.00	2.27	1.14	2.67	1.00	0.67	1.25	0.50	6.00	1.33	0.63	1.58	1.92
12JUL	SE	0.58	0.47	0.70	0.67	1.00	0.67	0.53	0.38	2.73	0.52	0.37	0.43	3.38
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	6.00	4.67	2.36	0.20	3.40	1.17	1.00	0.80	0.80	1.89	2.80	2.86	2.33
27JUL	SE	2.98	1.54	0.73	0.20	1.86	1.17	0.45	0.58	0.58	0.75	1.31	0.96	4.56
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	8.80	4.04	6.93	0.20	0.60	0.50	1.20	3.60	1.20	2.33	0.60	0.00	2.50
10AUG	SE	2.22	1.63	4.68	0.20	0.40	0.34	0.80	2.16	0.73	1.18	0.34	0.00	6.10
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	2.80	3.08	0.64	0.40	1.00	0.17	1.60	0.40	0.20	0.78	2.10	0.14	1.11
24AUG	SE	1.83	1.58	0.39	0.40	1.00	0.17	1.60	0.24	0.20	0.43	1.78	0.14	3.64
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	4.40	0.46	5.93	1.40	0.60	4.33	1.00	0.60	5.60	1.00	0.90	0.00	2.19
08SEP	SE	2.64	0.25	4.57	0.68	0.40	4.33	0.32	0.24	1.63	0.76	0.71	0.00	7.16
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	7.80	2.04	1.57	1.80	0.60	0.17	0.00	2.00	0.00	0.22	0.40	1.29	1.49
21SEP	SE	2.87	0.68	0.81	0.97	0.60	0.17	0.00	1.14	0.00	0.15	0.16	0.52	3.51
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.63	1.00	0.80	1.60	1.83	0.80	1.40	0.20	1.78	0.30	0.57	0.91
05OCT	SE	0.00	0.25	0.42	0.37	0.68	1.14	0.49	0.87	0.20	0.60	0.21	0.57	1.97
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	2.00	0.25	0.64	0.40	0.40	0.00	0.40	0.40	2.60	0.33	0.50	0.57	0.71
19OCT	SE	2.00	0.14	0.34	0.40	0.40	0.00	0.40	0.24	1.60	0.24	0.34	0.20	2.73
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-48 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	3	12	8	3	2	0	14	< 0.5	2	13	10	9	76
14JUN	SE	3	6	5	3	2	0	7	< 0.5	2	5	6	3	15
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	8	62	119	6	3	0	14	< 0.5	14	26	20	33	304
28JUN	SE	4	22	67	3	3	0	9	< 0.5	7	9	11	10	74
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	30	103	31	25	3	7	9	1	52	23	12	22	317
12JUL	SE	4	21	19	6	3	7	4	< 0.5	24	9	7	6	41
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	45	212	63	2	9	12	7	1	7	33	55	39	486
27JUL	SE	22	70	20	2	5	12	3	1	5	13	26	13	84
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	66	184	186	2	2	5	9	4	10	41	12	0	521
10AUG	SE	17	74	126	2	1	4	6	3	6	21	7	0	149
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	21	140	17	4	3	2	11	< 0.5	2	14	41	2	257
24AUG	SE	14	72	10	4	3	2	11	< 0.5	2	8	35	2	83
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	33	21	159	13	2	46	7	1	48	18	18	0	365
08SEP	SE	20	11	123	6	1	46	2	< 0.5	14	13	14	0	136
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	59	93	42	17	2	2	0	2	0	4	8	17	245
21SEP	SE	22	31	22	9	2	2	0	1	0	3	3	7	45
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	28	27	7	4	20	6	2	2	31	6	8	140
05OCT	SE	0	11	11	3	2	12	3	1	2	10	4	8	25
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	15	11	17	4	1	0	3	< 0.5	22	6	10	8	98
19OCT	SE	15	6	9	4	1	0	3	< 0.5	14	4	7	3	25
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-49 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-49 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-50 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-50 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-51 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR- 10MAR	DENSITY	0.00	0.00	1.24	36.64	32.64	9.34	1.18	NS	NS	NS	NS	NS	NS	11.58
	SE	0.00	0.00	0.88	24.08	23.62	3.76	0.59							33.96
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR- 22MAR	DENSITY	0.00	0.00	0.21	0.77	0.00	1.20	0.00	NS	NS	NS	NS	NS	NS	0.31
	SE	0.00	0.00	0.21	0.55	0.00	0.64	0.00							0.87
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR- 29MAR	DENSITY	0.00	0.00	0.00	0.00	1.49	0.00	0.00	NS	NS	NS	NS	NS	NS	0.21
	SE	0.00	0.00	0.00	0.00	1.49	0.00	0.00							1.49
	NO. TOWS	10	10	11	11	10	10	12							74
03APR- 06APR	DENSITY	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
	SE	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR- 13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR- 20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR- 27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY- 03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY- 10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY- 17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY- 25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY- 02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-51 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-52 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	398	5413	6800	1938	164	NS	NS	NS	NS	NS	NS	14713
10MAR	SE	0	0	283	3558	4921	780	82							6129
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	67	114	0	248	0	NS	NS	NS	NS	NS	NS	430
22MAR	SE	0	0	67	82	0	132	0							169
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	311	0	0	NS	NS	NS	NS	NS	NS	311
29MAR	SE	0	0	0	0	311	0	0							311
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	10	0	0	0	0	0	0	0	0	10
06APR	SE	0	0	0	0	10	0	0	0	0	0	0	0	0	10
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-52 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-53 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR- 10MAR	DENSITY	0.00	3.77	23.30	102.37	52.02	0.00	0.00	NS	NS	NS	NS	NS	NS	25.92
	SE	0.00	2.83	11.47	40.28	43.40	0.00	0.00							60.38
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR- 22MAR	DENSITY	4.78	18.39	8.00	37.78	5.09	0.00	0.25	NS	NS	NS	NS	NS	NS	10.61
	SE	1.33	9.18	1.06	20.36	2.51	0.00	0.25							22.54
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR- 29MAR	DENSITY	0.59	4.98	11.30	72.97	138.81	0.98	3.43	NS	NS	NS	NS	NS	NS	33.29
	SE	0.43	1.57	8.06	36.10	92.17	0.88	3.11							99.39
	NO. TOWS	10	10	11	11	10	10	12							74
03APR- 06APR	DENSITY	13.64	80.70	18.18	19.25	38.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.13
	SE	3.95	42.43	5.26	3.29	5.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.44
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR- 13APR	DENSITY	6.16	43.48	11.62	7.14	49.67	61.11	0.08	0.00	0.00	0.00	0.00	0.00	0.00	13.79
	SE	1.57	12.08	6.30	2.13	21.64	37.22	0.05	0.00	0.00	0.00	0.00	0.00	0.00	45.24
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR- 20APR	DENSITY	131.23	23.11	23.88	17.48	36.82	29.81	0.35	0.00	0.00	0.00	0.00	0.00	0.00	20.21
	SE	87.09	9.46	10.29	4.71	10.12	20.98	0.23	0.00	0.00	0.00	0.00	0.00	0.00	91.35
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR- 27APR	DENSITY	26.53	15.47	1.60	175.94	42.21	1.54	0.68	0.00	0.00	0.00	0.00	0.00	0.00	20.30
	SE	23.92	5.30	0.57	107.65	39.66	1.06	0.68	0.00	0.00	0.00	0.00	0.00	0.00	117.32
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY- 03MAY	DENSITY	9.27	3.14	32.02	40.83	21.15	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.33
	SE	2.51	1.89	13.53	23.86	4.72	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.07
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY- 10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY- 17MAY	DENSITY	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY- 25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY- 02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-53 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
22JUN	SE	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-54 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-10MAR	ST. CROP	0	864	7500	15124	10837	0	0	NS	NS	NS	NS	NS	NS
	SE	0	650	3690	5952	9042	0	0						
	NO. TOWS	10	10	11	11	10	10	11						
20MAR-22MAR	ST. CROP	999	4219	2576	5581	1060	0	35	NS	NS	NS	NS	NS	NS
	SE	278	2107	341	3007	523	0	35						
	NO. TOWS	10	10	11	11	10	10	12						
27MAR-29MAR	ST. CROP	124	1143	3638	10780	28919	203	479	NS	NS	NS	NS	NS	NS
	SE	89	360	2593	5334	19203	182	434						
	NO. TOWS	10	10	11	11	10	10	12						
03APR-06APR	ST. CROP	2850	18515	5851	2843	8106	0	0	0	0	0	0	0	0
	SE	826	9734	1692	486	1198	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-13APR	ST. CROP	1287	9975	3738	1055	10348	12678	11	0	0	0	0	0	0
	SE	327	2772	2028	315	4507	7722	7	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-20APR	ST. CROP	27428	5301	7685	2583	7671	6184	48	0	0	0	0	0	0
	SE	18204	2171	3311	696	2109	4351	32	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-27APR	ST. CROP	5544	3549	515	25992	8793	319	95	0	0	0	0	0	0
	SE	5000	1215	183	15904	8263	220	95	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-03MAY	ST. CROP	1937	720	10304	6033	4406	387	0	0	0	0	0	0	0
	SE	525	433	4354	3526	983	387	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-17MAY	ST. CROP	0	0	0	27	0	0	0	0	0	0	0	0	0
	SE	0	0	0	27	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-54 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	21	0	0	0	0	0	0	0	0	21
22JUN	SE	0	0	0	0	21	0	0	0	0	0	0	0	0	21
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-55 REGIONAL DENSITY (NO./1,000m³) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	7.73	9.57	0.15	10.73	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	2.18
	SE	6.44	2.83	0.15	7.22	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	10.09
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	19.45	3.86	11.90	15.06	3.01	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15
	SE	8.37	2.38	2.89	7.49	0.94	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.89
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	3.92	2.62	0.43	0.28	1.27	79.34	0.36	0.00	0.38	0.00	0.00	0.00	0.00	6.82
	SE	3.92	1.02	0.43	0.28	1.27	39.39	0.23	0.00	0.38	0.00	0.00	0.00	0.00	39.63
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	6.19	5.87	10.04	3.12	27.52	20.25	9.70	0.00	0.32	0.00	0.00	0.00	0.00	6.39
	SE	4.25	3.01	4.31	1.39	20.90	16.49	3.93	0.00	0.18	0.00	0.00	0.00	0.00	27.78
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	11.83	42.05	29.63	17.46	15.79	6.93	3.27	0.00	0.00	0.00	0.00	0.00	0.00	9.77
	SE	4.13	12.88	7.49	4.38	7.54	3.93	2.54	0.00	0.00	0.00	0.00	0.00	0.00	18.36
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	3.43	13.41	43.95	21.98	1.88	1.09	2.23	0.61	0.00	0.00	0.00	0.00	0.00	6.81
	SE	2.29	8.77	28.11	5.90	1.26	0.82	1.00	0.49	0.00	0.00	0.00	0.00	0.00	30.17
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-55 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN- 08JUN	DENSITY	4.95	11.32	19.81	12.20	18.51	3.19	0.91	0.78	0.13	0.00	0.00	0.00	0.00	5.52
	SE	1.02	8.55	8.52	5.29	5.63	1.12	0.49	0.78	0.13	0.00	0.00	0.00	0.00	14.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- 15JUN	DENSITY	1.67	18.95	18.82	13.41	6.36	3.88	1.67	0.37	0.00	0.00	0.00	0.00	0.00	5.01
	SE	1.67	6.54	4.61	11.09	2.48	1.83	0.64	0.21	0.00	0.00	0.00	0.00	0.00	14.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- 22JUN	DENSITY	9.51	6.76	17.92	3.30	0.10	0.94	0.66	0.00	0.13	0.00	0.00	0.00	0.00	3.02
	SE	2.23	5.21	4.79	0.63	0.10	0.56	0.32	0.00	0.13	0.00	0.00	0.00	0.00	7.48
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- 29JUN	DENSITY	5.86	2.73	0.24	2.70	2.86	2.91	0.62	0.36	0.00	0.00	0.00	0.00	0.00	1.41
	SE	3.86	1.17	0.14	1.34	1.04	1.60	0.32	0.21	0.00	0.00	0.00	0.00	0.00	4.68
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- 12JUL	DENSITY	0.00	2.85	0.70	1.59	2.23	2.90	1.17	0.23	NS	NS	NS	NS	NS	1.46
	SE	0.00	2.85	0.70	0.03	1.09	1.41	0.77	0.23						3.53
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- 26JUL	DENSITY	0.00	7.85	8.21	0.71	2.37	1.19	0.05	0.00	NS	NS	NS	NS	NS	2.55
	SE	0.00	1.37	1.81	0.41	0.59	0.69	0.05	0.00						2.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- 09AUG	DENSITY	0.00	0.00	0.00	0.58	1.93	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.31
	SE	0.00	0.00	0.00	0.58	1.93	0.00	0.00	0.00						2.01
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- 23AUG	DENSITY	0.00	0.00	0.76	0.00	0.00	0.00	0.66	0.00	NS	NS	NS	NS	NS	0.18
	SE	0.00	0.00	0.76	0.00	0.00	0.00	0.66	0.00						1.01
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- 07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	NS	NS	NS	NS	NS	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00						0.11
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- 20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- 05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-56 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	1615	2195	48	1586	0	0	28	0	0	0	0	0	0	5472
27APR	SE	1347	649	48	1067	0	0	28	0	0	0	0	0	0	1837
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	4066	886	3830	2225	628	129	0	0	0	0	0	0	0	11764
03MAY	SE	1750	547	931	1106	195	129	0	0	0	0	0	0	0	2347
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	820	602	137	42	264	16460	50	0	63	0	0	0	0	18438
10MAY	SE	820	233	137	42	264	8172	32	0	63	0	0	0	0	8222
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	1294	1347	3232	461	5734	4202	1356	0	53	0	0	0	0	17678
17MAY	SE	888	691	1386	206	4355	3420	549	0	30	0	0	0	0	5848
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	2472	9647	9536	2579	3290	1438	457	0	0	0	0	0	0	29420
25MAY	SE	864	2955	2410	646	1570	816	354	0	0	0	0	0	0	4355
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	717	3077	14143	3248	391	226	311	183	0	0	0	0	0	22297
02JUN	SE	479	2013	9045	871	262	170	140	145	0	0	0	0	0	9327
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-56 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS														AL	COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS		
05JUN-	ST. CROP	1035	2598	6375	1802	3857	662	128	232	22	0	0	0	0	16711
08JUN	SE	214	1961	2743	782	1174	232	68	232	22	0	0	0	0	3677
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	348	4348	6057	1981	1325	805	233	110	0	0	0	0	0	15208
15JUN	SE	348	1500	1484	1638	517	379	89	63	0	0	0	0	0	2771
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	1988	1550	5766	488	21	195	93	0	21	0	0	0	0	10123
22JUN	SE	465	1195	1543	93	21	116	45	0	21	0	0	0	0	2012
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	1226	626	76	399	596	604	87	107	0	0	0	0	0	3720
29JUN	SE	807	270	47	197	217	332	45	62	0	0	0	0	0	964
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	654	225	236	465	602	163	69	NS	NS	NS	NS	NS	2414
12JUL	SE	0	654	225	5	228	292	107	69						795
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	1801	2642	105	494	246	6	0	NS	NS	NS	NS	NS	5294
26JUL	SE	0	314	582	61	123	144	6	0						691
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	85	402	0	0	0	NS	NS	NS	NS	NS	487
09AUG	SE	0	0	0	85	402	0	0	0						411
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	245	0	0	0	92	0	NS	NS	NS	NS	NS	337
23AUG	SE	0	0	245	0	0	0	92	0						262
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	23	0	0	NS	NS	NS	NS	NS	23
07SEP	SE	0	0	0	0	0	23	0	0						23
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-57 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	1.46	1.92	0.63	0.77	3.45	1.07	0.06	0.21	0.10	0.00	0.00	0.00	0.00
08JUL	SE	0.79	0.80	0.21	0.27	1.40	0.54	0.04	0.07	0.04	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	4.58	1.45	0.88	2.99	5.86	2.95	0.09	0.07	0.00	0.00	0.06	0.00	0.00
20JUL	SE	1.57	0.99	0.26	0.98	2.97	0.66	0.04	0.04	0.00	0.00	0.06	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.14	0.37	0.08	0.29	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.09	0.20	0.05	0.14	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	2.17	0.05	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	1.25	0.05	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.12	0.08	0.00	0.00	0.00	0.02	0.00	0.08	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.06	0.06	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.03	0.00	0.00	0.00	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.03	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.08	0.06	0.02	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.05	0.04	0.02	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.02	0.02	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.02	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.06	0.00	0.01	0.02	0.02	0.02	0.00	0.04	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.04	0.00	0.01	0.02	0.02	0.02	0.00	0.04	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

< 0.005

TABLE E-58 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	304	441	203	114	718	222	9	63	16	0	0	0	0	2091
08JUL	SE	166	183	68	40	291	112	5	22	7	0	0	0	0	406
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	958	332	285	442	1221	612	13	22	0	0	11	0	0	3896
20JUL	SE	329	227	83	144	618	137	6	13	0	0	11	0	0	768
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	30	84	25	42	10	0	0	0	0	0	0	0	0	191
03AUG	SE	20	47	18	20	5	0	0	0	0	0	0	0	0	58
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	454	12	21	0	4	0	0	0	0	0	0	0	0	490
17AUG	SE	262	12	21	0	4	0	0	0	0	0	0	0	0	263
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	59	0	0	0	0	0	0	8	0	0	0	0	0	68
31AUG	SE	19	0	0	0	0	0	0	8	0	0	0	0	0	21
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	25	19	0	0	0	4	0	23	0	0	0	0	0	71
14SEP	SE	12	14	0	0	0	3	0	10	0	0	0	0	0	22
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	6	0	0	0	0	3	12	0	0	0	0	0	0	21
28SEP	SE	6	0	0	0	0	3	8	0	0	0	0	0	0	11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	16	14	8	0	3	9	0	0	0	0	0	0	0	50
12OCT	SE	11	10	8	0	3	4	0	0	0	0	0	0	0	17
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	6	7	0	5	2	0	0	0	0	0	0	0	19
26OCT	SE	0	6	7	0	3	2	0	0	0	0	0	0	0	10
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	0	19	0	3	4	3	6	0	6	0	0	0	40
10NOV	SE	0	0	13	0	3	4	3	6	0	6	0	0	0	16
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	0	6	0	2	0	0	0	0	0	0	0	0	8
01DEC	SE	0	0	6	0	2	0	0	0	0	0	0	0	0	7
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-59 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	1.67	1.27	0.14	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
14JUN	SE	0.88	0.63	0.14	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
28JUN	SE	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
08SEP	SE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
05OCT	SE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
19OCT	SE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-60 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	13	58	4	6	0	0	0	0	0	0	0	0	80
14JUN	SE	7	29	4	6	0	0	0	0	0	0	0	0	30
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	4
28JUN	SE	0	4	0	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	4	0	0	0	0	0	0	0	0	0	4
08SEP	SE	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	2	0	0	0	0	0	0	0	0	0	0	2
05OCT	SE	0	2	0	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	2	0	0	0	0	0	0	0	0	0	2
19OCT	SE	0	0	2	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-61 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-61 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-62 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED		
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL		
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	11							73	
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130	
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	

TABLE E-62 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-63 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
31AUG	SE	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.12	0.15	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.04	0.00	0.00	0.00	0.03
26OCT	SE	0.06	0.06	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.04	0.00	0.00	0.00	0.10
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.05	0.02	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
10NOV	SE	0.03	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.10	0.06	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01
01DEC	SE	0.06	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-64 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	16	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	16	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	24	34	0	0	2	0	0	0	3	6	0	0	0
26OCT	SE	12	15	0	0	2	0	0	0	3	6	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	10	5	42	0	0	0	0	0	0	0	0	0	0
10NOV	SE	7	5	23	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	21	14	0	0	0	0	3	0	0	0	0	0	0
01DEC	SE	12	8	0	0	0	0	3	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-65 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-66 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-67 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.15	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
27APR	SE	0.00	0.00	0.00	0.15	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	1481.27	32.05	18.40	10.03	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	118.69
10MAY	SE	883.69	11.92	13.82	9.28	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	883.93
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	2267.74	2838.59	12.20	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	393.84
17MAY	SE	499.19	1174.56	6.58	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1276.25
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	1253.64	755.30	0.00	0.95	0.00	0.00	0.36	0.00	0.00	0.00	0.87	0.00	0.00	154.70
25MAY	SE	514.24	342.77	0.00	0.69	0.00	0.00	0.36	0.00	0.00	0.00	0.87	0.00	0.00	618.01
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	23984.43	20608.31	0.17	1.00	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	3430.37
02JUN	SE	7816.18	15314.53	0.17	1.00	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	17193.82
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-67 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	197.21	3651.78	3802.56	306.50	1060.89	0.00	0.00	0.00	0.13	0.00	0.45	2.11	4.06
08JUN	SE	62.72	1640.62	1553.02	194.97	598.86	0.00	0.00	0.00	0.13	0.00	0.45	2.11	3.36
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	10013.00	19159.01	18.74	5.20	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	4883.63	7463.33	9.45	5.20	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	13555.99	6952.91	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00
22JUN	SE	3551.20	4624.23	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	488.43	6.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	446.99	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	20737.22	27647.75	5515.00	1957.45	52.86	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	8393.26	10014.46	2466.92	1084.46	51.01	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	11238.58	6880.46	583.64	14.69	0.37	0.00	0.08	0.00	NS	NS	NS	NS	NS
26JUL	SE	2958.60	3137.08	200.25	7.55	0.37	0.00	0.08	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	3306.76	47384.16	14567.63	2577.72	1488.86	4.46	0.00	1.43	NS	NS	NS	NS	NS
09AUG	SE	2154.49	17615.49	5687.01	731.79	714.52	2.81	0.00	0.72					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	430.49	509.41	36.17	0.00	0.83	0.39	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	409.27	298.35	36.17	0.00	0.83	0.27	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-68 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	22	72	0	0	0	0	0	0	0	0	94
27APR	SE	0	0	0	22	72	0	0	0	0	0	0	0	0	75
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	309603	7353	5921	1482	244	0	0	0	0	0	0	0	0	324604
10MAY	SE	184703	2735	4449	1371	244	0	0	0	0	0	0	0	0	184782
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	473987	651231	3927	0	281	0	0	0	0	0	0	0	0	1129426
17MAY	SE	104337	269468	2117	0	281	0	0	0	0	0	0	0	0	288970
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	262027	173280	0	140	0	0	51	0	0	0	153	0	0	435652
25MAY	SE	107483	78637	0	103	0	0	51	0	0	0	153	0	0	133178
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	5013048	4727965	56	148	0	0	120	0	0	0	0	0	0	9741336
02JUN	SE	1633679	3513465	56	148	0	0	120	0	0	0	0	0	0	3874706
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-68 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST.CROP	41220	837792	1223706	45281	221023	0	0	0	21	0	80	339	289	2369750
08JUN	SE	13109	376392	499778	28804	124765	0	0	0	21	0	80	339	239	638762
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	2092846	4395466	6032	768	22	0	0	0	0	0	0	0	0	6495135
15JUN	SE	1020741	1712240	3040	768	22	0	0	0	0	0	0	0	0	1993411
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	2833377	1595138	372	0	0	0	0	0	0	0	48	0	0	4428935
22JUN	SE	742246	1060892	195	0	0	0	0	0	0	0	48	0	0	1294766
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	102089	1438	0	0	0	0	0	0	0	0	0	0	0	103527
29JUN	SE	93427	1040	0	0	0	0	0	0	0	0	0	0	0	93433
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	4334346	6342956	1774791	289187	11012	0	0	0	NS	NS	NS	NS	NS	12752292
12JUL	SE	1754300	2297521	793884	160214	10627	0	0	0						3002033
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	2349007	1578517	187823	2170	76	0	12	0	NS	NS	NS	NS	NS	4117605
26JUL	SE	618385	719711	64443	1116	76	0	12	0						951072
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	691156	10870888	4688030	380824	310184	926	0	426	NS	NS	NS	NS	NS	16942433
09AUG	SE	450316	4041350	1830145	108112	148860	582	0	213						4463023
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	89977	116869	11640	0	172	82	0	0	NS	NS	NS	NS	NS	218740
23AUG	SE	85543	68448	11640	0	172	56	0	0						110174
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	166	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	166
20SEP	SE	166	0	0	0	0	0	0	0						166
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	234	0	0	0	0	0	0	NS	NS	NS	NS	NS	234
05OCT	SE	0	234	0	0	0	0	0	0						234
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-69 REGIONAL DENSITY (NO./1,000m³) OF BAY ANCHOVY YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-69 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
08JUN	SE	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	14.88	18.61	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	4.19
12JUL	SE	0.00	0.00	8.44	9.55	0.00	0.00	0.00	0.00						12.74
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-70 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-70 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	ST. CROP	731	0	0	0	0	0	0	0	0	0	0	0	0	731
08JUN	SE	731	0	0	0	0	0	0	0	0	0	0	0	0	731
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	4788	2749	0	0	0	0	NS	NS	NS	NS	NS	7537
12JUL	SE	0	0	2715	1411	0	0	0	0						3060
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-71 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.54	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	SE	0.00	0.38	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.30	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	SE	0.30	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	SE	0.00	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-71 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
08JUN	SE	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	3.48	29.74	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.87
15JUN	SE	1.74	9.61	2.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.10
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	76.02	29.77	14.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.24
22JUN	SE	56.40	18.27	9.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.11
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	191.18	202.61	42.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.57
29JUN	SE	32.71	24.04	20.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	1383.54	690.82	326.39	144.14	121.05	5.74	1.47	0.00	NS	NS	NS	NS	NS	334.14
12JUL	SE	481.01	416.98	148.04	37.29	14.76	1.98	0.70	0.00						654.81
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	1125.04	1742.37	695.79	876.83	732.80	101.89	5.19	1.96	NS	NS	NS	NS	NS	660.23
26JUL	SE	425.91	613.44	122.34	219.31	166.93	22.92	1.94	1.41						805.71
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	1195.16	908.50	1803.11	2764.32	1298.62	275.00	196.78	54.92	NS	NS	NS	NS	NS	1062.05
09AUG	SE	416.28	133.23	523.88	547.15	262.37	87.75	121.31	36.12						925.97
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	2086.80	2237.39	4158.36	1717.06	2379.52	409.48	184.49	1.21	NS	NS	NS	NS	NS	1646.79
23AUG	SE	545.66	1128.86	701.33	178.41	647.86	182.74	14.98	0.67						1596.60
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	1264.44	2303.73	1504.69	1867.44	2086.09	105.72	192.31	15.81	NS	NS	NS	NS	NS	1167.53
07SEP	SE	263.27	802.68	290.72	431.59	486.28	29.29	118.88	5.19						1111.70
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	814.11	1796.97	898.70	700.98	1097.35	19.75	78.57	43.21	NS	NS	NS	NS	NS	681.20
20SEP	SE	315.61	1240.39	286.78	75.70	311.02	6.78	17.04	10.26						1350.31
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	265.00	480.48	323.11	289.79	266.99	66.06	39.35	20.09	NS	NS	NS	NS	NS	218.86
05OCT	SE	82.72	92.87	73.06	44.87	80.09	18.93	11.81	11.77						172.83
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-72 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL		
														REGIONS		
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED	
08MAR - ST. CROP		0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	10MAR SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	11								
20MAR - ST. CROP		0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	22MAR SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12								
27MAR - ST. CROP		0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	29MAR SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12								
03APR - ST. CROP		0	0	53	0	0	0	0	0	0	0	0	0	0	53	
	06APR SE	0	0	53	0	0	0	0	0	0	0	0	0	0	53	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
10APR - ST. CROP		0	0	0	21	0	0	0	0	0	0	0	0	0	21	
	13APR SE	0	0	0	21	0	0	0	0	0	0	0	0	0	21	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
17APR - ST. CROP		0	123	90	0	0	0	0	0	0	0	0	0	0	213	
	20APR SE	0	87	90	0	0	0	0	0	0	0	0	0	0	125	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
24APR - ST. CROP		0	0	48	0	0	0	0	0	0	0	0	0	0	48	
	27APR SE	0	0	48	0	0	0	0	0	0	0	0	0	0	48	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130	
01MAY - ST. CROP		63	0	92	0	0	0	0	0	0	0	0	0	0	155	
	03MAY SE	63	0	92	0	0	0	0	0	0	0	0	0	0	111	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
08MAY - ST. CROP		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10MAY SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
15MAY - ST. CROP		0	986	0	0	0	0	0	0	0	0	0	0	0	986	
	17MAY SE	0	797	0	0	0	0	0	0	0	0	0	0	0	797	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
22MAY - ST. CROP		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	25MAY SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
30MAY - ST. CROP		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	02JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	

TABLE E-72 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	317	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	317	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	727	6823	1312	0	0	0	0	0	0	0	0	0	0
15JUN	SE	364	2206	821	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	15890	6829	4600	0	0	0	0	0	0	0	0	0	0
22JUN	SE	11789	4191	3197	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	39958	46482	13715	0	0	0	0	0	0	0	0	0	0
29JUN	SE	6836	5514	6719	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	289179	158488	105036	21295	25220	1191	205	0	NS	NS	NS	NS	NS
12JUL	SE	100538	95664	47641	5510	3075	410	98	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	235147	399734	223913	129540	152669	21138	725	584	NS	NS	NS	NS	NS
26JUL	SE	89021	140735	39369	32400	34778	4756	271	420					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	249803	208427	580261	408392	270550	57051	27508	16374	NS	NS	NS	NS	NS
09AUG	SE	87007	30565	168589	80834	54661	18205	16958	10768					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	436167	513304	1338208	253673	495740	84948	25790	359	NS	NS	NS	NS	NS
23AUG	SE	114050	258984	225697	26357	134973	37911	2095	200					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	264285	528522	484226	275889	434608	21931	26883	4713	NS	NS	NS	NS	NS
07SEP	SE	55028	184151	93557	63762	101310	6077	16619	1547					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	170159	412262	289211	103561	228619	4096	10983	12883	NS	NS	NS	NS	NS
20SEP	SE	65966	284571	92290	11183	64797	1407	2381	3060					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	55388	110232	103980	42812	55623	13705	5500	5990	NS	NS	NS	NS	NS
05OCT	SE	17289	21307	23513	6628	16685	3927	1651	3509					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-73 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.20	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.03
29MAR	SE	0.00	0.00	0.20	0.00	0.00	0.00	0.00							0.20
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
13APR	SE	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.09	0.16	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
20APR	SE	0.00	0.09	0.16	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
27APR	SE	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
03MAY	SE	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.05
25MAY	SE	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.33
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
02JUN	SE	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-73 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
22JUN	SE	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.47	15.91	1.01	0.00	0.31	0.00	NS	NS	NS	NS	NS	2.21
26JUL	SE	0.00	0.00	0.47	6.63	0.70	0.00	0.27	0.00						6.69
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	23.80	238.99	105.62	17.23	66.88	16.55	NS	NS	NS	NS	NS	58.63
09AUG	SE	0.00	0.00	9.18	62.87	25.48	12.59	59.03	16.55						92.75
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	114.75	238.78	428.08	97.98	6.35	27.19	183.21	0.41	NS	NS	NS	NS	NS	137.09
23AUG	SE	38.48	82.41	90.06	40.88	3.36	12.15	113.71	0.21						176.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	24.15	133.90	314.03	84.16	35.98	6.69	140.13	19.10	NS	NS	NS	NS	NS	94.77
07SEP	SE	13.45	39.22	163.58	31.88	23.58	1.99	44.27	8.02						179.10
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	12.01	29.17	143.78	305.91	54.17	40.37	124.38	11.08	NS	NS	NS	NS	NS	90.11
20SEP	SE	3.49	7.67	36.83	74.61	28.03	28.01	42.95	9.93						102.51
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	14.13	26.96	123.64	489.75	177.17	65.19	89.35	31.93	NS	NS	NS	NS	NS	127.27
05OCT	SE	9.16	11.68	27.23	78.99	60.89	30.08	36.43	22.34						116.79
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-74 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	65	0	0	0	0	NS	NS	NS	NS	NS	NS	65
29MAR	SE	0	0	65	0	0	0	0							65
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	95	0	0	0	0	0	0	0	0	0	0	95
13APR	SE	0	0	95	0	0	0	0	0	0	0	0	0	0	95
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	21	51	21	0	0	0	0	0	0	0	0	0	93
20APR	SE	0	21	51	21	0	0	0	0	0	0	0	0	0	59
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	23	0	0	0	0	0	0	0	0	0	23
27APR	SE	0	0	0	23	0	0	0	0	0	0	0	0	0	23
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	74	0	0	0	0	0	0	0	0	0	0	0	74
03MAY	SE	0	74	0	0	0	0	0	0	0	0	0	0	0	74
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	134	0	0	0	0	0	0	0	40	0	0	173
25MAY	SE	0	0	77	0	0	0	0	0	0	0	40	0	0	87
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	75	0	0	0	0	0	0	0	0	0	0	75
02JUN	SE	0	0	75	0	0	0	0	0	0	0	0	0	0	75
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-74 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	30	0	0	0	0	0	0	0	0	0	0	0
22JUN SE	0	30	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	150	2350	211	0	44	0	NS	NS	NS	NS	NS
26JUL SE	0	0	150	980	146	0	38	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	7658	35307	22004	3574	9349	4935	NS	NS	NS	NS	NS
09AUG SE	0	0	2954	9288	5309	2612	8251	4935					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	23985	54780	137761	14475	1323	5641	25612	122	NS	NS	NS	NS	NS
23AUG SE	8042	18906	28983	6040	701	2520	15896	61					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	5049	30720	101060	12434	7495	1389	19589	5695	NS	NS	NS	NS	NS
07SEP SE	2812	8998	52641	4709	4912	413	6188	2391					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	2511	6692	46270	45194	11286	8374	17387	3302	NS	NS	NS	NS	NS
20SEP SE	730	1759	11852	11023	5840	5811	6004	2961					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	2954	6185	39789	72354	36911	13524	12490	9520	NS	NS	NS	NS	NS
05OCT SE	1915	2681	8763	11670	12686	6240	5092	6659					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-75 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	1.67	28.42	2.76	2.23	0.00	0.32	0.38	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	1.43	28.10	1.37	1.24	0.00	0.30	0.38	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	11.36	18.09	153.13	134.88	227.72	0.60	7.78	0.44	0.00	0.34	1.77	0.55	0.00
03AUG	SE	5.08	5.15	48.23	34.03	134.89	0.38	3.94	0.30	0.00	0.29	1.77	0.46	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	50.21	288.92	731.44	484.21	106.66	19.64	118.36	16.48	12.66	24.88	0.82	0.00	0.00
17AUG	SE	23.39	83.64	204.41	135.05	26.91	4.76	55.79	5.19	3.82	16.75	0.82	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	71.80	62.29	103.71	199.07	86.93	97.63	185.76	32.83	22.15	7.85	0.00	0.00	0.00
31AUG	SE	30.22	15.87	44.48	27.22	14.65	27.81	35.91	11.94	6.40	3.33	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	44.93	44.29	12.94	26.34	22.33	14.88	41.65	53.84	14.11	26.88	34.21	6.35	15.08
14SEP	SE	15.76	14.79	3.77	8.28	7.80	3.45	24.79	14.21	4.34	14.05	24.88	2.16	8.57
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	27.78	64.26	110.63	79.74	28.67	40.48	75.01	33.93	28.87	31.26	5.95	17.47	0.00
28SEP	SE	15.07	12.54	21.74	16.69	10.19	11.34	20.42	11.34	9.09	17.32	5.76	5.46	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	134.12	170.98	69.44	10.15	37.79	32.37	352.25	75.98	16.55	36.76	0.00	0.46	0.00
12OCT	SE	46.75	71.88	20.53	3.33	11.59	7.11	173.51	25.00	4.46	27.95	0.00	0.46	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.30	1.12	0.94	0.70	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.10	0.23	0.54	0.46	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.06	0.16	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.03	0.08	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-76 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	0	0	0	0	147	0	0	0	0	0	0	0	0	147
08JUL	SE	0	0	0	0	81	0	0	0	0	0	0	0	0	81
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	383	9147	407	465	0	44	112	0	0	0	0	0	10558
20JUL	SE	0	327	9043	202	258	0	42	112	0	0	0	0	0	9056
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	2375	4150	49279	19927	47442	124	1088	132	0	48	312	88	0	124965
03AUG	SE	1062	1181	15521	5028	28102	78	551	90	0	41	312	74	0	32539
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	10494	66284	235385	71536	22220	4074	16545	4912	2095	3519	144	0	0	437210
17AUG	SE	4889	19189	65781	19952	5607	988	7798	1548	633	2370	144	0	0	72242
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	15006	14291	33375	29410	18111	20253	25968	9786	3665	1110	0	0	0	170976
31AUG	SE	6317	3641	14314	4021	3052	5769	5020	3560	1059	471	0	0	0	18869
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	9392	10162	4164	3891	4653	3087	5822	16053	2336	3803	6031	1020	1073	71487
14SEP	SE	3295	3394	1212	1223	1625	716	3465	4237	718	1987	4386	348	610	9091
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	5805	14743	35601	11781	5974	8397	10486	10115	4778	4422	1048	2808	0	115958
28SEP	SE	3149	2878	6997	2465	2124	2353	2854	3380	1504	2450	1015	878	0	10626
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	28032	39227	22347	1500	7873	6716	49241	22652	2738	5200	0	73	0	185600
12OCT	SE	9770	16490	6607	492	2414	1474	24256	7453	738	3954	0	73	0	32854
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	62	257	304	103	9	0	3	0	0	0	0	0	0	739
26OCT	SE	20	53	173	69	7	0	3	0	0	0	0	0	0	194
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	13	37	49	0	0	0	0	0	0	0	0	0	0	99
10NOV	SE	7	18	49	0	0	0	0	0	0	0	0	0	0	53
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	14	0	0	0	0	0	0	0	0	0	0	0	0	14
01DEC	SE	8	0	0	0	0	0	0	0	0	0	0	0	0	8
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-77 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
12JUL	SE	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.40	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.07
27JUL	SE	0.00	0.00	0.00	0.40	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.49
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.40	3.08	0.14	13.80	0.00	0.00	0.00	0.40	0.00	0.11	0.00	0.00	1.49
10AUG	SE	0.40	1.69	0.14	13.80	0.00	0.00	0.00	0.40	0.00	0.11	0.00	0.00	13.92
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.13	0.00	0.00	19.40	0.00	0.00	0.00	10.40	0.00	0.00	0.14	2.51
24AUG	SE	0.00	0.09	0.00	0.00	17.47	0.00	0.00	0.00	10.40	0.00	0.00	0.14	20.33
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	25.80	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20
08SEP	SE	6.55	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.56
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	4.20	2.75	0.00	0.00	95.40	1.00	0.00	0.00	3.80	0.00	5.90	0.00	9.42
21SEP	SE	2.24	1.60	0.00	0.00	95.40	1.00	0.00	0.00	3.56	0.00	4.40	0.00	95.61
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.42	0.21	5.40	4.60	1.00	72.80	16.40	7.80	0.00	10.60	8.71	10.66
05OCT	SE	0.00	0.23	0.15	3.34	2.27	0.68	72.80	16.40	4.75	0.00	7.50	8.71	75.77
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	11.79	0.07	3.20	29.20	16.33	292.00	14.80	1.80	0.00	6.80	0.00	31.33
19OCT	SE	0.00	5.77	0.07	1.93	29.20	8.89	181.70	11.18	1.56	0.00	5.19	0.00	184.76
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-78 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	17	0	0	0	0	0	0	0	0	0	0	17
12JUL	SE	0	17	0	0	0	0	0	0	0	0	0	0	17
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	4	0	0	1	0	2	0	0	0	7
27JUL	SE	0	0	0	4	0	0	1	0	2	0	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	3	140	4	127	0	0	0	< 0.5	0	2	0	0	277
10AUG	SE	3	77	4	127	0	0	0	< 0.5	0	2	0	0	149
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	6	0	0	51	0	0	0	90	0	0	2	148
24AUG	SE	0	4	0	0	46	0	0	0	90	0	0	2	101
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	194	25	0	0	0	0	0	0	0	0	0	0	219
08SEP	SE	49	13	0	0	0	0	0	0	0	0	0	0	51
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	32	125	0	0	251	11	0	0	33	0	116	0	567
21SEP	SE	17	73	0	0	251	11	0	0	31	0	87	0	278
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	19	6	50	12	11	517	20	67	0	209	118	1028
05OCT	SE	0	11	4	31	6	7	517	20	41	0	148	118	553
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	536	2	29	77	174	2072	18	15	0	134	0	3058
19OCT	SE	0	262	2	18	77	95	1289	14	13	0	102	0	1325
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-79 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.27	0.64	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.13
	SE	0.27	0.32	0.00	0.00	0.00	0.00	0.00							0.42
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.26	0.22	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.07
	SE	0.00	0.26	0.22	0.00	0.00	0.00	0.00							0.34
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.61	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.09
	SE	0.00	0.00	0.45	0.00	0.00	0.00	0.00							0.45
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.66	0.38	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	SE	0.38	0.31	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	SE	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	8.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
	SE	7.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.80
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	3.72	2.46	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
	SE	1.67	1.06	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.34
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	4.50	1.98	1.97	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
	SE	0.00	1.72	1.98	1.57	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.08
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	10.74	16.35	4.81	4.53	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81
	SE	5.80	7.16	2.39	2.18	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.77
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	27.24	46.21	14.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.80
	SE	11.83	15.43	5.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.19
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	40.68	52.62	8.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.80
	SE	13.64	11.24	6.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.79
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-79 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	1.31	27.90	56.89	30.47	23.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.79
	SE	1.31	17.95	24.15	5.73	6.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.28
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	7.41	33.85	20.29	12.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.69
	SE	2.55	11.96	7.05	5.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.29
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	7.97	59.54	15.95	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.45
	SE	4.79	12.19	5.65	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.27
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	41.86	12.29	12.48	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.21
	SE	14.62	3.59	3.24	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	1.74	25.79	25.92	22.17	7.86	0.00	0.00	0.00	NS	NS	NS	NS	NS	10.43
	SE	1.74	15.91	9.59	5.43	4.81	0.00	0.00	0.00						20.02
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	5.27	38.02	9.21	3.29	1.76	0.00	0.00	0.00	NS	NS	NS	NS	NS	7.19
	SE	3.89	15.20	3.68	1.54	0.78	0.00	0.00	0.00						16.21
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	6.79	19.74	44.85	11.45	1.56	0.00	0.33	0.00	NS	NS	NS	NS	NS	10.59
	SE	4.56	7.61	13.21	2.95	0.86	0.00	0.17	0.00						16.21
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	4.53	4.04	8.24	0.00	0.28	0.20	0.00	0.00	NS	NS	NS	NS	NS	2.16
	SE	4.53	2.12	4.48	0.00	0.28	0.12	0.00	0.00						6.72
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	8.40	3.39	3.60	1.48	0.41	1.12	0.00	NS	NS	NS	NS	NS	2.30
	SE	0.00	3.29	2.03	2.57	1.13	0.16	0.74	0.00						4.84
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	9.47	7.85	10.17	5.69	0.18	0.20	0.00	0.00	NS	NS	NS	NS	NS	4.19
	SE	7.32	2.92	2.92	2.35	0.15	0.20	0.00	0.00						8.73
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	13.60	10.63	17.89	4.22	2.61	0.63	0.64	0.00	NS	NS	NS	NS	NS	6.28
	SE	8.47	0.99	6.38	0.93	1.12	0.54	0.64	0.00						10.78
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-80 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	REGIONS COMBINED
08MAR - 10MAR	ST. CROP	57	146	0	0	0	0	0	NS	NS	NS	NS	NS	NS	203
	SE	57	73	0	0	0	0	0							93
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	59	70	0	0	0	0	NS	NS	NS	NS	NS	NS	129
	SE	0	59	70	0	0	0	0							92
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	195	0	0	0	0	NS	NS	NS	NS	NS	NS	195
	SE	0	0	144	0	0	0	0							144
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	137	87	0	0	28	0	0	0	0	0	0	0	0	252
	SE	79	71	0	0	28	0	0	0	0	0	0	0	0	110
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	120	0	0	0	0	0	0	0	0	0	0	0	120
	SE	0	120	0	0	0	0	0	0	0	0	0	0	0	120
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	1732	0	0	0	0	0	0	0	0	0	0	0	0	1732
	SE	1630	0	0	0	0	0	0	0	0	0	0	0	0	1630
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	777	565	697	0	0	0	0	0	0	0	0	0	0	2039
	SE	350	244	402	0	0	0	0	0	0	0	0	0	0	586
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	1033	638	292	83	0	0	0	0	0	0	0	0	2046
	SE	0	395	638	232	83	0	0	0	0	0	0	0	0	790
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	2244	3751	1548	670	24	0	0	0	0	0	0	0	0	8236
	SE	1213	1643	768	321	24	0	0	0	0	0	0	0	0	2206
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	5694	10602	4806	0	0	0	0	0	0	0	0	0	0	21103
	SE	2473	3540	1750	0	0	0	0	0	0	0	0	0	0	4660
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	8502	12072	2594	0	0	0	0	0	0	0	0	0	0	23168
	SE	2851	2578	2056	0	0	0	0	0	0	0	0	0	0	4359
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-80 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	274	6401	18308	4501	4939	0	0	0	0	0	0	0	0	34424
08JUN	SE	274	4118	7773	847	1294	0	0	0	0	0	0	0	0	8935
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	1549	7765	6529	1838	0	0	0	0	0	0	0	0	0	17681
15JUN	SE	534	2744	2268	868	0	0	0	0	0	0	0	0	0	3703
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	1667	13659	5132	67	0	0	0	0	0	0	0	0	0	20525
22JUN	SE	1002	2797	1818	67	0	0	0	0	0	0	0	0	0	3483
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	8750	2819	4017	158	0	0	0	0	0	0	0	0	0	15744
29JUN	SE	3056	823	1041	113	0	0	0	0	0	0	0	0	0	3333
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	363	5916	8340	3276	1638	0	0	0	NS	NS	NS	NS	NS	19532
12JUL	SE	363	3649	3087	802	1003	0	0	0						4963
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	1102	8723	2965	486	366	0	0	0	NS	NS	NS	NS	NS	13642
26JUL	SE	814	3488	1183	228	162	0	0	0						3782
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	1419	4528	14432	1692	325	0	46	0	NS	NS	NS	NS	NS	22442
09AUG	SE	953	1747	4251	436	180	0	24	0						4718
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	947	926	2650	0	58	42	0	0	NS	NS	NS	NS	NS	4623
23AUG	SE	947	487	1441	0	58	24	0	0						1793
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	1928	1089	532	307	85	156	0	NS	NS	NS	NS	NS	4098
07SEP	SE	0	756	653	380	236	34	104	0						1100
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	1979	1801	3272	841	38	41	0	0	NS	NS	NS	NS	NS	7972
20SEP	SE	1530	670	938	347	31	41	0	0						1947
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	2844	2439	5758	624	544	130	90	0	NS	NS	NS	NS	NS	12428
05OCT	SE	1771	227	2054	138	233	112	90	0						2739
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-81 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006															ALL
															REGIONS
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	DENSITY	1.96	15.41	2.26	7.29	8.29	1.11	0.28	0.00	0.00	0.00	0.00	0.00	0.00	2.82
	SE	1.09	10.19	0.81	2.66	3.06	0.51	0.28	0.00	0.00	0.00	0.00	0.00	0.00	11.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	49.13	62.11	8.18	2.92	1.88	0.21	0.00	0.23	0.33	0.00	0.00	0.00	0.00	9.61
	SE	15.53	26.54	5.60	1.02	0.75	0.21	0.00	0.19	0.33	0.00	0.00	0.00	0.00	31.28
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	4.81	10.12	3.80	1.28	1.10	0.00	0.03	0.00	0.00	0.29	0.00	0.00	0.00	1.65
	SE	3.73	3.48	1.41	0.71	0.68	0.00	0.03	0.00	0.00	0.29	0.00	0.00	0.00	5.39
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	2.66	6.76	4.21	0.25	0.36	0.20	0.29	0.00	0.00	0.32	0.00	0.00	0.00	1.16
	SE	1.03	1.22	2.55	0.22	0.30	0.19	0.29	0.00	0.00	0.32	0.00	0.00	0.00	3.06
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	0.07	0.07	0.00	0.21	0.00	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	SE	0.05	0.05	0.00	0.21	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	3.57	1.52	0.11	0.03	0.33	0.60	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.50
	SE	2.69	1.49	0.04	0.03	0.33	0.32	0.33	0.00	0.00	0.00	0.00	0.00	0.00	3.13
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	1.39	0.34	1.41	0.76	0.25	0.49	0.27	0.01	0.00	0.00	0.00	0.00	0.00	0.38
	SE	1.04	0.11	0.66	0.34	0.25	0.36	0.26	0.01	0.00	0.00	0.00	0.00	0.00	1.38
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.51	1.37	0.03	0.02	0.41	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
	SE	0.40	0.58	0.03	0.02	0.39	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.37	4.63	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
	SE	0.12	1.29	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.04	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	SE	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-82 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	410	3536	727	1077	1726	231	39	0	0	0	0	0	0	7748
08JUL	SE	227	2338	261	393	638	105	39	0	0	0	0	0	0	2482
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	10269	14249	2632	431	392	44	0	67	54	0	0	0	0	28139
20JUL	SE	3246	6088	1804	150	155	44	0	56	54	0	0	0	0	7135
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	1005	2323	1223	189	228	0	4	0	0	41	0	0	0	5013
03AUG	SE	779	797	454	104	142	0	4	0	0	41	0	0	0	1217
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	556	1552	1355	37	76	41	41	0	0	45	0	0	0	3703
17AUG	SE	216	279	819	32	63	40	41	0	0	45	0	0	0	898
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	15	16	0	31	0	3	5	0	0	0	0	0	0	71
31AUG	SE	10	11	0	31	0	2	4	0	0	0	0	0	0	35
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	746	349	35	4	68	125	52	0	0	0	0	0	0	1380
14SEP	SE	562	342	14	4	68	66	47	0	0	0	0	0	0	667
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	291	78	454	112	51	102	38	4	0	0	0	0	0	1130
28SEP	SE	218	25	212	50	51	74	36	4	0	0	0	0	0	324
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	107	315	8	3	85	157	0	0	0	0	0	0	0	675
12OCT	SE	84	132	8	3	82	82	0	0	0	0	0	0	0	195
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	78	1062	19	0	0	0	0	0	0	0	0	0	0	1159
26OCT	SE	26	296	19	0	0	0	0	0	0	0	0	0	0	298
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	9	0	64	0	0	0	0	0	0	0	0	0	0	73
10NOV	SE	6	0	34	0	0	0	0	0	0	0	0	0	0	34
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-83 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	16.67	5.27	5.86	219.67	1.33	0.00	0.25	0.00	0.00	0.00	0.00	0.00	20.75
14JUN	SE	7.45	2.67	5.07	217.67	1.33	0.00	0.25	0.00	0.00	0.00	0.00	0.00	217.87
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	38.33	18.45	0.00	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.93
28JUN	SE	12.33	8.12	0.00	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.88
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	3.00	7.91	6.43	5.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92
12JUL	SE	3.00	3.33	2.10	3.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.94
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.40	0.50	0.07	6.20	0.00	0.00	0.20	0.60	0.20	0.00	0.10	0.00	0.69
27JUL	SE	0.24	0.17	0.07	2.13	0.00	0.00	0.20	0.60	0.20	0.00	0.10	0.00	2.25
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	1.00	1.58	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
10AUG	SE	0.63	0.72	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
21SEP	SE	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
05OCT	SE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.02
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-84 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	126	240	158	2024	4	0	2	0	0	0	0	0	2552
14JUN	SE	56	121	136	2006	4	0	2	0	0	0	0	0	2015
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	289	838	0	22	0	0	0	0	0	0	0	0	1149
28JUN	SE	93	369	0	17	0	0	0	0	0	0	0	0	381
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	23	359	173	52	0	0	0	0	0	0	0	0	607
12JUL	SE	23	151	57	30	0	0	0	0	0	0	0	0	166
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	3	23	2	57	0	0	1	1	2	0	2	0	91
27JUL	SE	2	8	2	20	0	0	1	1	2	0	2	0	21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	8	72	0	2	0	0	0	0	0	0	0	0	81
10AUG	SE	5	33	0	2	0	0	0	0	0	0	0	0	33
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	8	0	0	0	0	0	0	0	0	0	0	8
21SEP	SE	0	8	0	0	0	0	0	0	0	0	0	0	8
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	2	0	0	0	0	0	0	0	0	0	0	2
05OCT	SE	0	2	0	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
19OCT	SE	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-85 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	1.21
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.90
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.18	6.50	0.00	24.96
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.76	4.79	0.00	14.18
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	6.30	13.14	14.12
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	3.21	4.89	8.49
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.38	0.00	1.01
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.38	0.00	1.01
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.91	20.14	50.90
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.67	5.78	6.36
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.54	1.12	0.47	1.62
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.44	1.12	0.47	0.93
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.75	0.22	15.48	0.55
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.22	13.37	0.55
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-85 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.00	0.00	0.00	0.15
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00	0.00	1.21
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.95	3.25	10.28	1.12
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.95	1.86	6.31	6.65
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.58	1.74	0.00	2.59	0.61
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.58	1.07	0.00	2.21	4.34
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-86 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	377	86	463
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	192	64	202
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	0	0	0	0	0	1724	1146	0	1776	4646
27APR	SE	0	0	0	0	0	0	0	0	0	956	845	0	1009	1627
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	374	1111	2113	1004	4602
03MAY	SE	0	0	0	0	0	0	0	0	0	192	566	786	604	1157
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	48	68	0	72	187
10MAY	SE	0	0	0	0	0	0	0	0	0	48	68	0	72	110
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	0	0	0	0	0	0	0	0	26	0	160	3237	3621	7044
17MAY	SE	0	0	0	0	0	0	0	0	26	0	118	930	453	1041
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	4603	197	75	115	4990
25MAY	SE	0	0	0	0	0	0	0	0	0	2043	197	75	66	2055
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	673	38	2488	39	3238
02JUN	SE	0	0	0	0	0	0	0	0	0	434	38	2149	39	2193
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-86 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	280	0	0	0	280
08JUN	SE	0	0	0	0	0	0	0	0	0	171	0	0	0	171
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	0	0	0	0	0	0	0	0	22	0	168	522	732	1444
15JUN	SE	0	0	0	0	0	0	0	0	22	0	168	300	449	566
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	506	306	0	184	997
22JUN	SE	0	0	0	0	0	0	0	0	0	506	188	0	157	562
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-87 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.05
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.44
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	2.06	0.90	0.25
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.93	0.70	1.21
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	2.90	2.53	0.51	0.50
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.49	2.53	0.51	3.60
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.78	0.44	0.00	0.00	0.11
	SE	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.78	0.44	0.00	0.00	0.92
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	2.92	5.36	0.68
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	1.95	1.98	2.84
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-87 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.04
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.53
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.05
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.03
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-88 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR -	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR -	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR -	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR -	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR -	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR -	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR -	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY -	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	51	51
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	31	31
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY -	ST. CROP	0	0	0	0	0	0	0	0	0	47	0	330	64	442
10MAY	SE	0	0	0	0	0	0	0	0	0	47	0	149	50	164
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY -	ST. CROP	0	0	0	0	0	0	0	0	0	72	512	407	36	1026
17MAY	SE	0	0	0	0	0	0	0	0	0	41	439	407	36	601
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY -	ST. CROP	0	0	0	32	0	0	0	0	0	111	77	0	0	220
25MAY	SE	0	0	0	32	0	0	0	0	0	111	77	0	0	139
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY -	ST. CROP	0	0	0	0	0	0	0	0	0	84	0	469	382	934
02JUN	SE	0	0	0	0	0	0	0	0	0	84	0	313	141	354
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-88 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
														AL	COMBINED
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	85	0	85
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	85	0	85
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	44	44
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	44	44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	30	30
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	30	30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-89 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	2.45	4.04	0.59	0.59
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	2.45	2.03	0.59	3.28
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.79	0.51	0.00	0.24
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.32	0.51	0.00	1.61
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.59	11.28	0.00	0.00	0.93
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.59	6.37	0.00	0.00	6.40
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-89 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.89	0.84	0.00	16.36	0.55	0.00	1.49
15JUN	SE	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.73	0.60	0.00	16.36	0.55	0.00	16.41
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.23	0.00	0.00	0.18	0.71	1.60	13.49	3.82	6.61	4.18	2.37
22JUN	SE	0.00	0.00	0.00	0.23	0.00	0.00	0.18	0.71	1.35	13.20	2.70	5.31	4.18	15.15
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	5.83	4.49	0.00	0.81
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	5.55	3.21	0.00	6.42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-90 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	166	0	0	431	649	42	1288
	SE	0	0	0	0	0	0	0	166	0	0	431	327	42	567
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	111	316	82	0	509
	SE	0	0	0	0	0	0	0	0	0	111	232	82	0	270
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	31	0	0	84	1989	0	0	2103
	SE	0	0	0	0	0	0	31	0	0	84	1123	0	0	1127
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-90 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	110	0	0	0	264	140	0	2884	88	0	3486
15JUN	SE	0	0	0	80	0	0	0	218	99	0	2884	88	0	2897
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	34	0	0	25	212	265	1909	673	1062	297	4477
22JUN	SE	0	0	0	34	0	0	25	212	223	1868	476	853	297	2151
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	35	1028	721	0	1784
29JUN	SE	0	0	0	0	0	0	0	0	0	35	979	516	0	1107
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-91 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-91 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	1.55	0.00	0.14
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	1.55	0.00	1.57
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	NS	NS	NS	NS	NS	0.03
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00						0.27
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	NS	NS	NS	NS	NS	0.06
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23						0.23
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	NS	NS	NS	NS	NS	0.02
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19						0.19
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	NS	NS	NS	NS	NS	0.03
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22						0.22
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-92 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-92 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	47	249	0	296
29JUN	SE	0	0	0	0	0	0	0	0	0	0	47	249	0	253
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	38	0	NS	NS	NS	NS	NS	38
26JUL	SE	0	0	0	0	0	0	38	0						38
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	138	NS	NS	NS	NS	NS	138
09AUG	SE	0	0	0	0	0	0	0	69						69
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	57	NS	NS	NS	NS	NS	57
23AUG	SE	0	0	0	0	0	0	0	57						57
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	66	NS	NS	NS	NS	NS	66
07SEP	SE	0	0	0	0	0	0	0	66						66
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-93 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.53	0.07	0.03	1.33	0.75	1.05	0.32	0.28	0.33
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.38	0.04	0.02	0.84	0.38	0.84	< 0.005	0.28	1.34
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL -	DENSITY	0.00	0.00	0.00	0.00	0.36	0.00	0.93	0.02	0.33	0.91	0.92	1.85	0.28	0.43
20JUL	SE	0.00	0.00	0.00	0.00	0.34	0.00	0.62	0.02	0.33	0.39	0.80	0.95	0.28	1.55
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	1.02	0.00	0.08
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.92
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.04
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.44
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.11	0.18	0.03
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.11	0.18	0.23
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.06	0.00	0.00	0.01
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.06	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV -	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-94 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	109	10	8	221	106	185	51	20
08JUL	SE	0	0	0	0	0	79	5	5	140	54	149	< 0.5	20
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	75	0	130	7	55	129	163	297	20
20JUL	SE	0	0	0	0	71	0	87	7	55	55	142	153	20
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	164	0
03AUG	SE	0	0	0	0	0	2	0	0	0	0	0	148	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	87	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	72	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	22	18	13
31AUG	SE	0	0	0	0	0	0	0	0	0	0	13	18	13
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	7
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	7
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	3	4	0	0	0	11	0	0
12OCT	SE	0	0	0	0	0	2	4	0	0	0	11	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	0	0	5	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	5	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-95 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.09	0.00	0.00	0.00	0.00	0.88	0.00	1.25	4.40	0.37	1.50	0.71
28JUN	SE	0.00	0.09	0.00	0.00	0.00	0.00	0.88	0.00	0.56	2.06	0.16	1.25	2.63
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.29	0.00	0.00	4.67	6.00	1.25	1.38	1.60	1.37	0.17	1.39
12JUL	SE	0.00	0.00	0.18	0.00	0.00	2.33	1.84	0.41	0.89	1.15	0.58	0.17	3.39
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.21	0.00	0.00	1.00	3.60	3.60	0.40	0.56	2.70	1.71	1.15
27JUL	SE	0.00	0.00	0.15	0.00	0.00	0.52	3.36	1.36	0.24	0.44	1.30	0.92	4.03
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.29	0.21	2.60	0.20	1.33	0.00	1.60	4.20	3.00	2.70	0.86	1.42
10AUG	SE	0.00	0.21	0.21	2.60	0.20	0.80	0.00	0.93	2.20	0.65	0.76	0.46	3.80
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.60	1.00	0.83	0.00	1.20	0.80	0.22	1.60	0.00	0.52
24AUG	SE	0.00	0.00	0.00	0.60	0.32	0.31	0.00	0.97	0.80	0.22	0.56	0.00	1.58
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.08	0.00	0.00	0.00	0.17	0.20	1.00	4.20	1.11	2.40	0.00	0.76
08SEP	SE	0.00	0.06	0.00	0.00	0.00	0.17	0.20	0.45	1.66	0.70	0.45	0.00	1.92
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	2.60	4.17	2.20	0.00	0.00	0.33	0.60	1.86	0.98
21SEP	SE	0.00	0.00	0.00	0.00	1.08	2.20	1.96	0.00	0.00	0.24	0.31	0.80	3.26
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	1.20	0.20	1.00	0.20	0.00	0.20	0.89	0.30	0.43	0.37
05OCT	SE	0.00	0.00	0.00	0.97	0.20	0.45	0.20	0.00	0.20	0.51	0.30	0.30	1.30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.17	0.14	0.40	0.60	2.17	0.60	1.00	0.00	0.11	0.00	0.00	0.43
19OCT	SE	0.00	0.08	0.14	0.24	0.24	0.48	0.40	0.45	0.00	0.11	0.00	0.00	0.86
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-96 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	1	0	0	1
14JUN	SE	0	0	0	0	0	0	0	0	0	1	0	0	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	4	0	0	0	0	6	0	11	77	7	20	126
28JUN	SE	0	4	0	0	0	0	6	0	5	36	3	17	41
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	8	0	0	50	43	2	12	28	27	2	171
12JUL	SE	0	0	5	0	0	25	13	1	8	20	11	2	38
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	6	0	0	11	26	4	3	10	53	23	136
27JUL	SE	0	0	4	0	0	6	24	2	2	8	26	12	39
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	13	6	24	1	14	0	2	36	53	53	12	213
10AUG	SE	0	10	6	24	1	9	0	1	19	11	15	6	39
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	6	3	9	0	1	7	4	31	0	61
24AUG	SE	0	0	0	6	1	3	0	1	7	4	11	0	15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	4	0	0	0	2	1	1	36	20	47	0	111
08SEP	SE	0	3	0	0	0	2	1	1	14	12	9	0	21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	7	44	16	0	0	6	12	25	110
21SEP	SE	0	0	0	0	3	23	14	0	0	4	6	11	30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	11	1	11	1	0	2	16	6	6	53
05OCT	SE	0	0	0	9	1	5	1	0	2	9	6	4	15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	8	4	4	2	23	4	1	0	2	0	0	47
19OCT	SE	0	4	4	2	1	5	3	1	0	2	0	0	8
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-97 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-97 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-98 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	37	0	0	0	0	0	0	0	0	0	0	0	37
02JUN	SE	0	37	0	0	0	0	0	0	0	0	0	0	0	37
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-98 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-99 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-100 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-101 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-102 REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-103 REGIONAL DENSITY (NO./1,000m³) OF ALOSA SPP. EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.02
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.07	35.54	4.05
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.73	34.74	38.56
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.44	68.02	12.20	158.84	18.81
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.46	64.54	12.20	79.86	103.43
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.57	101.49	115.06	16.81
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.15	65.46	45.88	79.95
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.32	0.00	0.00	1.35	0.00	23.09	0.33	1.40	17.02	8.54	5.16	4.40
	SE	0.00	0.00	0.32	0.00	0.00	0.74	0.00	23.09	0.33	1.40	6.29	7.15	3.54	25.28
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	4.10	107.60	2261.73	182.57
	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	3.02	25.77	560.39	560.99
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	1.29	4.82	6.01	75.92	6.78
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.78	3.44	3.18	36.62	36.93
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	22.53	48.17	5.45
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	11.07	24.03	26.46
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-103 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	2.46	39.55
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	1.78	18.02
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-104 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	19	19
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	19	19
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	2744	2528	5272
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	2689	2472	3652
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	0	0	0	0	0	770	11992	1961	11302	26024
27APR	SE	0	0	0	0	0	0	0	0	0	349	11379	1961	5682	12873
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	54	276	16312	8187	24829
03MAY	SE	0	0	0	0	0	0	0	0	0	54	202	10521	3265	11018
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	105	0	0	281	0	6884	55	197	3001	1373	367	12264
10MAY	SE	0	0	105	0	0	153	0	6884	55	197	1109	1149	252	7077
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	0	0	0	0	9	0	0	0	0	0	723	17294	160920	178946
17MAY	SE	0	0	0	0	9	0	0	0	0	0	533	4142	39871	40089
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	0	0	0	0	0	0	16	0	0	183	849	966	5402	7416
25MAY	SE	0	0	0	0	0	0	16	0	0	111	607	512	2605	2726
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	36	3621	3427	7084
02JUN	SE	0	0	0	0	0	0	0	0	0	0	36	1780	1710	2468
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-104 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
05JUN- ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	116	116
08JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	116	116
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- ST.CROP	0	0	0	0	0	0	0	0	22	0	0	395	2814	3231
15JUN SE	0	0	0	0	0	0	0	0	22	0	0	286	1282	1314
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	41	41
29JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	41	41
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT SE	0	0	0	0	0	0	0	0						0
NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-105 REGIONAL DENSITY (NO./1,000m³) OF ALOSA SPP. YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.16	0.98	0.29	6.43	5.40	2.04	10.60	0.00	1.99
	SE	0.00	0.00	0.00	0.00	0.00	0.16	0.98	0.18	2.32	3.43	1.22	5.90	0.00	7.38
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.39	2.18	1.32	3.17	3.10	3.92	1.41	1.19
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.80	0.57	2.13	0.87	1.88	0.76	3.23
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	2.67	0.37	0.00	0.00	0.00	0.49	0.15	1.88	2.91	1.46	4.77	3.84	1.43
	SE	0.00	1.81	0.37	0.00	0.00	0.00	0.43	0.15	1.09	1.18	0.81	1.92	1.48	3.57
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.11	0.97	0.26	0.00	0.13	0.92	7.20	5.88	1.55	26.34	241.51	25.38	23.86
	SE	0.00	0.11	0.77	0.26	0.00	0.13	0.92	2.85	3.53	0.70	11.14	158.26	20.57	160.05
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.30	0.00	0.11	1.59	1.95	1.19	118.62	325.59	159.61	116.80	55.83
	SE	0.00	0.00	0.00	0.30	0.00	0.11	0.76	1.11	0.94	67.98	168.54	104.15	59.67	217.80
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.04	0.20	0.47	0.12	1.27	0.27	4.15	8.90	19.44	2.68
	SE	0.00	0.00	0.00	0.00	0.04	0.11	0.29	0.12	0.82	0.27	2.59	6.49	7.93	10.61
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-105 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	11.96	99.70	0.00	0.00	1.84	0.64	0.60	0.00	0.40	2.60	161.11	188.66	35.01	38.66
08JUN	SE	8.49	54.73	0.00	0.00	1.80	0.56	0.60	0.00	0.40	2.37	73.45	27.67	10.50	96.69
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	1.34	0.00	0.00	0.00	0.00	73.29	0.00	4.31	1.19	6.55	46.26	26.88	12.29
15JUN	SE	0.00	1.34	0.00	0.00	0.00	0.00	73.20	0.00	2.90	0.85	4.83	10.22	6.96	74.47
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.45	33.23	2.90
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	25.15	25.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	NS	NS	NS	NS	NS	0.01
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00						0.10
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-106 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	32	137	85	1064	763	360	1704	0	4146
27APR	SE	0	0	0	0	0	32	137	52	384	485	215	949	0	1162
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	54	651	219	448	546	630	100	2648
03MAY	SE	0	0	0	0	0	0	33	239	94	302	153	302	54	525
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	612	120	0	0	0	69	44	311	412	257	767	273	2865
10MAY	SE	0	416	120	0	0	0	60	44	181	167	142	309	105	617
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	25	312	39	0	26	129	2146	972	219	4643	38818	1806	49136
17MAY	SE	0	25	247	39	0	26	129	849	584	98	1964	25438	1463	25578
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	44	0	23	223	581	198	16782	57400	25654	8310	109214
25MAY	SE	0	0	0	44	0	23	107	332	156	9617	29713	16741	4246	35690
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	9	41	66	35	210	38	731	1430	1383	3943
02JUN	SE	0	0	0	0	9	24	40	35	137	38	457	1043	564	1281
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-106 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	2500	22874	0	0	383	134	84	0	66	368	28403	30324	2491	87626
08JUN	SE	1774	12557	0	0	375	115	84	0	66	335	12949	4447	747	18685
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	307	0	0	0	0	10245	0	713	169	1156	7435	1912	21936
15JUN	SE	0	307	0	0	0	0	10233	0	481	120	852	1643	495	10427
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	716	2364	3080
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	329	1789	1819
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	20	0	0	NS	NS	NS	NS	NS	20
09AUG	SE	0	0	0	0	0	20	0	0						20
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-107 REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.28	0.00	0.00	0.40	0.00	3.41	0.83	0.76	0.00	0.00	0.44
	SE	0.00	0.00	0.00	0.28	0.00	0.00	0.40	0.00	1.84	0.59	0.54	0.00	0.00	2.06
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.16	0.63	0.00	17.61	58.04	7.77	0.92	0.86	1.20	0.00	6.71
	SE	0.00	0.00	0.00	0.16	0.58	0.00	4.85	22.84	4.42	0.92	0.86	0.69	0.00	23.82
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.42	0.50	0.00	3.09	6.71	29.40	93.15	17.85	17.02	3.18	6.22	0.76	13.72
	SE	0.00	0.42	0.38	0.00	1.58	2.14	11.95	28.97	9.44	5.50	1.21	2.49	0.76	33.42
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	1.87	10.37	1.33	1.02	3.58	0.19	50.37	17.48	24.54	31.01	979.71	94.47	0.42	93.57
	SE	1.44	4.95	0.62	0.48	2.66	0.19	22.11	5.20	10.15	10.52	150.76	81.38	0.42	173.54
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.60	3.21	8.00	42.57	208.78	210.75	429.90	212.66	153.50	16.59	2.50	99.16
	SE	0.00	0.00	0.40	1.37	3.21	15.14	108.19	45.35	88.13	117.04	102.83	7.16	1.85	214.70
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	1.80	1.44	6.29	49.08	27.13	110.38	942.94	550.76	494.59	265.21	64.99	19.48	194.93
	SE	0.00	1.52	0.62	2.74	10.60	11.99	21.55	425.14	136.54	105.71	67.00	38.13	7.31	466.14
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-107 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN- 08JUN	DENSITY	10.74	8.90	1.88	14.74	55.31	137.92	481.85	411.01	2482.37	1788.52	1313.14	337.14	29.43	544.07
	SE	5.20	4.00	1.47	4.11	18.37	58.82	83.43	163.53	514.99	367.06	196.26	89.97	13.62	695.92
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- 15JUN	DENSITY	38.04	19.79	0.72	17.64	53.14	287.00	608.27	359.01	127.93	239.85	48.48	15.46	5.55	140.07
	SE	25.61	12.00	0.72	7.39	11.32	82.90	246.37	81.71	40.20	130.36	29.64	3.66	3.72	307.81
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- 22JUN	DENSITY	9.62	8.34	8.83	10.92	20.06	163.42	222.29	187.31	112.67	186.69	37.88	517.52	829.39	178.07
	SE	2.24	6.10	4.70	3.09	4.91	43.99	66.66	43.33	18.01	70.98	13.86	129.04	250.75	305.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- 29JUN	DENSITY	4.12	2.39	3.66	10.80	24.09	56.74	134.31	133.73	395.67	1424.66	308.22	183.18	875.14	273.59
	SE	2.33	1.34	1.21	3.82	6.52	8.10	34.95	27.12	264.29	608.28	15.15	37.59	278.59	721.94
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- 12JUL	DENSITY	0.00	0.00	0.00	0.00	1.38	3.60	14.32	38.76	NS	NS	NS	NS	NS	7.26
	SE	0.00	0.00	0.00	0.00	1.15	2.42	3.42	17.81						18.33
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- 26JUL	DENSITY	0.00	0.38	0.00	0.37	0.00	0.00	3.72	7.87	NS	NS	NS	NS	NS	1.54
	SE	0.00	0.38	0.00	0.37	0.00	0.00	1.83	5.69						6.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- 09AUG	DENSITY	0.00	0.00	10.50	0.00	0.03	2.31	3.78	12.78	NS	NS	NS	NS	NS	3.68
	SE	0.00	0.00	10.50	0.00	0.03	2.22	1.49	3.72						11.46
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- 23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	NS	NS	NS	NS	NS	0.12
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79						0.79
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- 07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	NS	NS	NS	NS	NS	0.03
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23						0.23
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- 20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- 05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-108 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	41	0	0	56	0	564	117	134	0	0	911
	SE	0	0	0	41	0	0	56	0	304	83	95	0	0	337
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	23	130	0	2462	17304	1285	131	151	192	0	21678
	SE	0	0	0	23	120	0	678	6811	731	131	151	111	0	6888
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	96	161	0	644	1391	4110	27772	2954	2408	560	999	54	41150
	SE	0	96	121	0	329	445	1670	8638	1562	779	213	401	54	8999
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	391	2379	428	151	745	38	7041	5212	4060	4387	172718	15184	30	212766
	SE	302	1135	199	71	554	38	3090	1551	1680	1488	26579	13080	30	29937
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	194	474	1667	8832	29186	62831	71141	30085	27061	2666	178	234315
	SE	0	0	129	202	668	3141	15123	13522	14584	16558	18129	1151	131	35196
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	413	465	930	10224	5629	15430	281122	91142	69969	46755	10446	1386	533911
	SE	0	348	201	404	2209	2488	3013	126748	22596	14954	11811	6128	520	130372
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-108 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	2245	2041	605	2178	11524	28612	67358	122536	410794	253021	231500	54189	2094
08JUN	SE	1087	918	473	607	3827	12202	11663	48755	85223	51928	34601	14461	969
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	7951	4540	232	2606	11071	59540	85030	107032	21170	33932	8546	2485	395
15JUN	SE	5353	2754	232	1091	2358	17197	34441	24361	6653	18442	5225	588	265
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	2011	1912	2842	1613	4180	33903	31074	55845	18645	26411	6678	83182	59011
22JUN	SE	469	1398	1512	457	1023	9125	9319	12919	2981	10042	2443	20740	17841
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	862	549	1178	1596	5020	11772	18775	39869	65477	201546	54337	29442	62266
29JUN	SE	487	306	389	565	1359	1681	4886	8086	43735	86053	2671	6042	19822
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	287	747	2002	11556	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	241	501	477	5309					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	87	0	55	0	0	520	2347	NS	NS	NS	NS	NS
26JUL	SE	0	87	0	55	0	0	256	1697					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	3378	0	7	480	529	3811	NS	NS	NS	NS	NS
09AUG	SE	0	0	3378	0	7	461	209	1110					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	287	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	237					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	69	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	69					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-109 REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-109 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-110 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	333	0	0	0	0	0	333
02JUN	SE	0	0	0	0	0	0	0	333	0	0	0	0	0	333
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-110 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-111 REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.35	6.58	2.43	11.14	23.16	4.52	2.83	0.47	0.10
08JUL	SE	0.00	0.00	0.00	0.00	0.31	1.28	0.64	3.42	10.30	0.87	0.29	0.47	0.10
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.04	0.40	0.00	0.92	5.05	2.55	3.55	3.96	7.03	9.30	4.28	1.23
20JUL	SE	0.00	0.04	0.40	0.00	0.66	1.58	0.85	1.08	3.92	2.05	2.92	1.20	0.61
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.74	0.07	1.44	0.13	2.22	0.36
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.52	0.04	0.45	0.13	1.14	0.15
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-112 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL- ST. CROP	0	0	0	0	73	1365	339	3322	3832	640	499	75	7
08JUL SE	0	0	0	0	65	266	90	1018	1705	124	51	75	7
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL- ST. CROP	0	8	130	0	191	1048	356	1059	655	994	1640	687	87
20JUL SE	0	8	130	0	137	328	119	322	650	291	515	193	44
NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL- ST. CROP	0	0	0	0	0	0	13	221	12	204	22	357	25
03AUG SE	0	0	0	0	0	0	6	156	6	63	22	184	11
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-113 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.07	0.00	0.00	0.02
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.07	0.00	0.00	0.14
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	5.63	5.40	4.42	6.50	1.89
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	5.21	3.16	2.89	6.06	9.10
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.67	0.67	16.33	6.00	0.63	8.88	4.93	6.42	0.92	3.79
12JUL	SE	0.00	0.00	0.00	0.67	0.33	15.34	3.08	0.63	6.91	2.02	2.44	0.74	17.44
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.04	0.00	0.60	0.00	0.00	0.20	0.00	0.80	0.00	2.70	82.86	7.27
27JUL	SE	0.00	0.04	0.00	0.40	0.00	0.00	0.20	0.00	0.80	0.00	1.04	45.98	46.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.01
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-114 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	1	1	0	0	2
14JUN	SE	0	0	0	0	0	0	0	0	1	1	0	0	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	5	0	48	95	87	88	324
28JUN	SE	0	0	0	0	0	0	5	0	45	55	57	82	123
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	6	2	174	43	1	76	87	126	12	527
12JUL	SE	0	0	0	6	1	163	22	1	60	35	48	10	186
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	2	0	6	0	0	1	0	7	0	53	1126	1195
27JUL	SE	0	2	0	4	0	0	1	0	7	0	21	625	625
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	2	0	0	2
10AUG	SE	0	0	0	0	0	0	0	0	0	2	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-115 REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-115 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.12	0.00	0.40	0.00	0.00	0.55	0.27	0.00	0.00	0.10
29JUN	SE	0.00	0.00	0.00	0.00	0.12	0.00	0.31	0.00	0.00	0.55	0.27	0.00	0.00	0.70
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.11	2.68	2.61	NS	NS	NS	NS	NS	0.67
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.11	1.46	2.20						2.64
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.13	0.11	6.62	3.54	NS	NS	NS	NS	NS	1.30
26JUL	SE	0.00	0.00	0.00	0.00	0.13	0.11	2.18	2.29						3.17
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	3.95	0.47	NS	NS	NS	NS	NS	0.55
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.24						1.99
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.09	NS	NS	NS	NS	NS	0.24
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.09						1.18
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.21	NS	NS	NS	NS	NS	0.03
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.21						0.22
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.28	0.23	NS	NS	NS	NS	NS	0.07
05OCT	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.28	0.23						0.36
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-116 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-116 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	25	0	57	0	0	78	47	0	0	207
29JUN	SE	0	0	0	0	25	0	44	0	0	78	47	0	0	104
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	23	374	778	NS	NS	NS	NS	NS	1175
12JUL	SE	0	0	0	0	0	23	205	655						686
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	27	22	925	1054	NS	NS	NS	NS	NS	2029
26JUL	SE	0	0	0	0	27	22	305	684						749
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	552	140	NS	NS	NS	NS	NS	692
09AUG	SE	0	0	0	0	0	0	277	70						286
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	114	324	NS	NS	NS	NS	NS	438
23AUG	SE	0	0	0	0	0	0	65	324						331
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	6	63	NS	NS	NS	NS	NS	69
20SEP	SE	0	0	0	0	0	0	6	63						64
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	7	0	39	69	NS	NS	NS	NS	NS	116
05OCT	SE	0	0	0	0	7	0	39	69						80
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-117 REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL - 08JUL	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.19 0.19	0.01 0.01	0.00 0.00	0.00 0.00	0.00 0.00	0.81 0.81	0.00 0.00	0.00 0.00	0.08 0.83
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.03 0.02	0.00 0.00	1.61 0.94	0.38 0.24	0.00 0.00	1.95 0.80	0.13 0.08	2.27 0.92	0.00 0.00	0.49 1.56
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.35 0.35	1.05 0.65	1.78 0.80	0.51 0.30	0.37 0.35	1.09 0.59	2.73 0.77	0.00 0.00	0.00 0.00	0.61 1.53
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.01 0.01	0.32 0.29	0.21 0.17	0.00 0.00	0.19 0.19	0.24 0.09	0.55 0.11	0.09 0.09	0.12 0.43
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.02 0.02	0.23 0.13	0.31 0.12	0.34 0.20	0.10 0.10	0.08 0.28
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.39 0.33	0.00 0.00	0.14 0.14	0.10 0.10	0.05 0.37
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.03 0.03	0.00 0.00	0.00 0.00	0.00 0.00	0.25 0.11	0.49 0.40	0.00 0.00	0.06 0.41
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.01 0.01	0.04 0.03	0.03 0.02	0.00 0.00	0.00 0.00	0.06 0.06	0.00 0.00	0.00 0.00	0.01 0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY SE	0.00 0.00	0.00 0.00	0.02 0.02	0.00 0.00	0.01 0.01	0.00 0.00	0.01 0.01	0.00 0.00	0.00 0.00	0.08 0.05	0.00 0.00	0.00 0.00	0.00 0.00	0.01 0.06
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY SE	0.00 0.00	0.00 0.00	0.00 0.00	0.06 0.06	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	< 0.005 0.06
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY SE	0.00 0.00	0.02 0.02	0.00 0.00	0.06 0.06	0.01 0.01	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.01 0.07
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-118 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	0	0	0	0	0	39	2	0	0	0	142	0	0	184
08JUL	SE	0	0	0	0	0	39	2	0	0	0	142	0	0	148
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	0	0	6	0	225	113	0	276	23	365	0	1009
20JUL	SE	0	0	0	0	5	0	132	71	0	113	13	147	0	239
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	0	0	72	219	248	151	61	154	480	0	0	1386
03AUG	SE	0	0	0	0	72	136	112	89	58	84	137	0	0	270
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	0	2	45	64	0	27	42	89	6	274
17AUG	SE	0	0	0	0	0	2	41	52	0	27	16	18	6	76
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	3	33	55	55	7	153
31AUG	SE	0	0	0	0	0	0	0	0	3	19	21	32	7	43
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	56	0	22	7	85
14SEP	SE	0	0	0	0	0	0	0	0	0	46	0	22	7	52
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	0	4	0	0	0	45	79	0	128
28SEP	SE	0	0	0	0	0	0	4	0	0	0	19	64	0	67
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	0	0	0	2	5	9	0	0	11	0	0	26
12OCT	SE	0	0	0	0	0	2	4	6	0	0	11	0	0	13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	6	0	2	0	2	0	0	11	0	0	0	20
26OCT	SE	0	0	6	0	2	0	2	0	0	7	0	0	0	9
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	0	0	9	0	0	0	0	0	0	0	0	0	9
10NOV	SE	0	0	0	9	0	0	0	0	0	0	0	0	0	9
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	5	0	9	3	0	0	0	0	0	0	0	0	17
01DEC	SE	0	5	0	9	3	0	0	0	0	0	0	0	0	11
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-119 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.17	0.02
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.17	0.18
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.14	2.67	0.67	11.33	0.13	0.00	0.88	0.80	0.21	0.00	1.40
12JUL	SE	0.00	0.00	0.14	1.76	0.33	10.84	0.13	0.00	0.74	0.46	0.14	0.00	11.02
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.17	0.14	0.80	0.00	0.00	1.60	0.00	3.40	0.22	0.60	3.71	0.89
27JUL	SE	0.00	0.17	0.10	0.80	0.00	0.00	1.36	0.00	3.40	0.22	0.34	2.34	4.44
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.25	0.71	0.20	0.00	0.83	0.00	0.00	1.80	1.33	2.40	1.00	0.71
10AUG	SE	0.00	0.14	0.45	0.20	0.00	0.83	0.00	0.00	1.80	0.55	1.28	1.00	2.67
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.30	0.29	0.07
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.21	0.18	0.35
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.01
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.08	16.50	0.00	0.00	0.50	0.00	0.00	0.00	0.11	0.00	0.14	1.44
21SEP	SE	0.00	0.06	11.76	0.00	0.00	0.50	0.00	0.00	0.00	0.11	0.00	0.14	11.77
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.57	0.73
05OCT	SE	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.57	7.61
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-120 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	1	0	2	3
28JUN	SE	0	0	0	0	0	0	0	0	0	1	0	2	3
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	4	25	2	121	1	0	8	14	4	0	177
12JUL	SE	0	0	4	16	1	115	1	0	6	8	3	0	117
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	8	4	7	0	0	11	0	29	4	12	50	126
27JUL	SE	0	8	3	7	0	0	10	0	29	4	7	32	46
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	11	19	2	0	9	0	0	15	23	47	14	141
10AUG	SE	0	6	12	2	0	9	0	0	15	10	25	14	38
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	2	0	6	4	12
24AUG	SE	0	0	0	0	0	0	0	0	2	0	4	3	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	2	0	2
08SEP	SE	0	0	0	0	0	0	0	0	0	0	2	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	4	444	0	0	5	0	0	0	2	0	2	457
21SEP	SE	0	3	316	0	0	5	0	0	0	2	0	2	316
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	31	0	0	0	0	0	0	0	0	103	134
05OCT	SE	0	0	21	0	0	0	0	0	0	0	0	103	105
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-121 REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.83	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.63	0.00	0.00	0.00	0.00	0.00	0.00						0.63
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.35	0.20	0.00	0.19	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.35	0.20	0.00	0.19	0.00	0.00						0.44
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.28	0.00	0.00	0.16	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.28	0.00	0.00	0.16	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.18
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.23	0.43	0.04	0.00	0.42	0.66	0.00	0.00	0.44	0.00	0.00
25MAY	SE	0.00	0.00	0.23	0.31	0.04	0.00	0.42	0.56	0.00	0.00	0.44	0.00	0.91
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.16
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-121 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
08JUN	SE	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.91	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.09
15JUN	SE	0.91	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.92
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.02
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.27
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.02
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.27
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-122 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	0	0	0	0	0	0	0						0
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	ST. CROP	174	0	0	0	0	0	0	NS	NS	NS	NS	NS	174
22MAR	SE	132	0	0	0	0	0	0						132
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	ST. CROP	0	79	65	0	40	0	0	NS	NS	NS	NS	NS	185
29MAR	SE	0	79	65	0	40	0	0						110
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	ST. CROP	58	0	0	24	27	0	0	0	0	0	0	0	110
06APR	SE	58	0	0	24	27	0	0	0	0	0	0	0	69
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	126
17APR-	ST. CROP	0	0	0	0	31	0	0	0	0	0	0	0	31
20APR	SE	0	0	0	0	31	0	0	0	0	0	0	0	31
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	126
24APR-	ST. CROP	0	0	0	0	10	0	0	0	0	0	0	0	10
27APR	SE	0	0	0	0	10	0	0	0	0	0	0	0	10
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	130
01MAY-	ST. CROP	0	0	0	0	36	0	5	0	0	0	0	0	41
03MAY	SE	0	0	0	0	36	0	5	0	0	0	0	0	36
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	135
08MAY-	ST. CROP	0	0	124	0	0	0	0	0	0	0	0	0	124
10MAY	SE	0	0	124	0	0	0	0	0	0	0	0	0	124
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	135
15MAY-	ST. CROP	0	0	0	0	12	0	0	0	0	0	0	0	12
17MAY	SE	0	0	0	0	12	0	0	0	0	0	0	0	12
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	126
22MAY-	ST. CROP	0	0	74	64	9	0	59	197	0	0	77	0	481
25MAY	SE	0	0	74	45	9	0	59	167	0	0	77	0	212
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	48	0	0	0	0	48
02JUN	SE	0	0	0	0	0	0	0	48	0	0	0	0	48
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	126

TABLE E-122 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	0	0	0	180	0	0	0	0	0	0	0	0	180
08JUN	SE	0	0	0	0	172	0	0	0	0	0	0	0	0	172
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	189	0	0	0	0	0	37	0	0	0	0	0	0	226
15JUN	SE	189	0	0	0	0	0	23	0	0	0	0	0	0	191
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	48	0	0	48
22JUN	SE	0	0	0	0	0	0	0	0	0	0	48	0	0	48
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	48	0	0	48
29JUN	SE	0	0	0	0	0	0	0	0	0	0	48	0	0	48
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-123 REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL - 08JUL	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.19
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	0.00	0.00	0.03	0.00	0.00	0.01	0.04	0.03	0.00	0.00	0.19	0.10	0.00	0.03
	SE	0.00	0.00	0.03	0.00	0.00	0.01	0.03	0.03	0.00	0.00	0.19	0.10	0.00	0.22
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.12	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.00	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.12	0.33	0.00	0.04
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.12	0.33	0.00	0.36
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.27	0.39	0.05
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.27	0.28	0.39
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.00	0.07	0.00	0.11	0.00	0.02
	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.00	0.07	0.00	0.11	0.00	0.14
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.01
	SE	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.06
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-124 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	3	0	0	63	0	0	0	0	0
08JUL	SE	0	0	0	0	3	0	0	55	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	8	0	0	2	5	8	0	0	34	16	0
20JUL	SE	0	0	8	0	0	2	4	8	0	0	34	16	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	4	0	16	0	0	0
03AUG	SE	0	0	0	0	0	0	0	4	0	9	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	8	21	54	0
17AUG	SE	0	0	0	0	0	0	0	0	0	8	21	54	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	4	0	0	11	0	0
31AUG	SE	0	0	0	0	0	0	0	4	0	0	11	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	3	0	0	44	28
14SEP	SE	0	0	0	0	0	0	0	0	3	0	0	44	20
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	12	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	12	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	2	8	0	0	9	0	18	0
12OCT	SE	0	0	0	0	0	2	8	0	0	9	0	18	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	10	0	0	0	0	0	0	0	11	0	0	0
26OCT	SE	0	7	0	0	0	0	0	0	0	7	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-125 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.43	0.00	0.00	1.33	0.00	0.13	0.75	0.07	0.11	0.00	0.23
14JUN	SE	0.00	0.00	0.43	0.00	0.00	1.33	0.00	0.13	0.53	0.07	0.07	0.00	1.50
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	1.14	0.00	0.00	0.00	0.25	0.00	0.00	0.27	0.58	0.83	0.26
28JUN	SE	0.00	0.00	0.59	0.00	0.00	0.00	0.25	0.00	0.00	0.27	0.32	0.59	0.97
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.14	3.00	0.00	0.33	0.00	0.13	0.00	0.00	0.05	0.00	0.30
12JUL	SE	0.00	0.00	0.14	3.00	0.00	0.33	0.00	0.13	0.00	0.00	0.05	0.00	3.02
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.06
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.70
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-126 REGIONAL STANDING CROP (IN THOUSANDS) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	12	0	0	14	0	< 0.5	6	1	2	0	36
14JUN	SE	0	0	12	0	0	14	0	< 0.5	5	1	1	0	19
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	31	0	0	0	2	0	0	5	11	11	60
28JUN	SE	0	0	16	0	0	0	2	0	0	5	6	8	20
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	4	28	0	4	0	< 0.5	0	0	1	0	36
12JUL	SE	0	0	4	28	0	4	0	< 0.5	0	0	1	0	28
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	14	0	14
21SEP	SE	0	0	0	0	0	0	0	0	0	0	14	0	14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-127 REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-127 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.00	0.24
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28	0.00	1.28
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05	NS	NS	NS	NS	NS	0.38
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43						1.43
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	NS	NS	NS	NS	NS	0.26
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55						1.55
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.76	1.26	NS	NS	NS	NS	NS	0.38
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.75						1.91
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.86	NS	NS	NS	NS	NS	1.23
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.69						6.69
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	NS	NS	NS	NS	NS	0.30
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01						1.01
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.28	0.95	NS	NS	NS	NS	NS	0.17
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.28	0.75						0.81
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-128 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-128 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	491	0	491
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	206	0	206
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	909	NS	NS	NS	NS	NS	909
26JUL	SE	0	0	0	0	0	0	0	427						427
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	623	NS	NS	NS	NS	NS	623
09AUG	SE	0	0	0	0	0	0	0	463						463
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	245	374	NS	NS	NS	NS	NS	620
23AUG	SE	0	0	0	0	0	0	245	225						333
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	2938	NS	NS	NS	NS	NS	2938
07SEP	SE	0	0	0	0	0	0	0	1994						1994
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	726	NS	NS	NS	NS	NS	726
20SEP	SE	0	0	0	0	0	0	0	302						302
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	22	38	282	NS	NS	NS	NS	NS	343
05OCT	SE	0	0	0	0	0	22	38	224						228
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-129 REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.07	0.00	0.00	0.01
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.07	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.20	1.99	0.18	0.19
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.20	1.01	0.18	1.04
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.30	0.12	3.51	0.84	5.24	25.23	7.19	2.20	3.43
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.24	0.05	2.00	0.42	1.79	18.86	1.58	1.01	19.14
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.44	1.15	6.22	5.34	9.00	2.66	1.95
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.21	0.69	2.33	1.29	1.76	0.96	3.43
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	1.50	0.16	1.76	2.20	4.82	9.02	1.50
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	1.11	0.08	0.35	0.72	1.72	4.03	4.59
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	1.39	0.19	2.94	2.53	0.59
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.55	0.19	1.30	1.33	1.99
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.06	1.01	0.51	2.36	0.41	0.48
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.69	0.45	0.19	0.92	0.30	1.44
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.02	0.14	0.63	1.59	0.07	1.68	2.74	3.88	2.55	1.02
12OCT	SE	0.00	0.00	0.00	0.00	0.02	0.05	0.30	0.61	0.04	0.94	2.49	3.65	1.16	4.72
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.00	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
26OCT	SE	0.00	0.00	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-130 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	ST. CROP	0	0	0	0	0	0	2	0	0	0	13	0	0	15
08JUL	SE	0	0	0	0	0	0	2	0	0	0	13	0	0	13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	0	0	0	0	0	4	0	9	35	320	13	381
20JUL	SE	0	0	0	0	0	0	0	4	0	9	35	162	13	166
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	0	0	0	62	17	1046	138	741	4447	1155	156	7763
03AUG	SE	0	0	0	0	0	50	7	596	70	253	3324	254	72	3398
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	0	0	85	131	190	880	941	1446	189	3863
17AUG	SE	0	0	0	0	0	0	51	64	115	329	227	284	68	515
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	0	8	448	27	249	389	774	641	2537
31AUG	SE	0	0	0	0	0	0	5	330	14	49	127	277	287	535
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	97	196	34	472	180	980
14SEP	SE	0	0	0	0	0	0	0	0	62	78	34	209	95	253
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	0	0	251	175	142	90	380	29	1067
28SEP	SE	0	0	0	0	0	0	0	191	114	63	33	149	22	277
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	0	0	4	28	88	475	12	238	482	624	182	2132
12OCT	SE	0	0	0	0	3	10	41	181	6	133	439	587	83	773
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	25	0	0	0	2	0	0	0	0	0	0	26
26OCT	SE	0	0	25	0	0	0	2	0	0	0	0	0	0	25
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-131 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.63	0.07	0.05	0.00	0.40
12JUL	SE	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.11	0.07	0.05	0.00	2.91
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.40	0.00	0.00	5.60	0.00	1.40	0.00	2.10	4.86	1.20
27JUL	SE	0.00	0.00	0.00	0.24	0.00	0.00	5.60	0.00	1.40	0.00	1.17	2.60	6.44
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.07	0.40	0.00	0.33	0.00	4.80	46.60	43.56	53.30	5.14	12.85
10AUG	SE	0.00	0.00	0.07	0.40	0.00	0.33	0.00	3.20	20.39	40.46	28.35	3.07	53.63
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	9.00	1.89	13.20	81.29	8.81
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	5.78	1.77	8.11	59.51	60.36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	10.20	8.00	1.40	0.44	3.50	0.00	1.96
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	7.78	5.83	1.17	0.44	1.66	0.00	9.94
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.43	0.00	0.00	6.00	0.00	0.60	4.60	0.00	3.40	17.29	2.69
21SEP	SE	0.00	0.00	0.36	0.00	0.00	4.01	0.00	0.60	2.79	0.00	2.29	9.85	11.25
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.80	1.00	0.40	0.40	1.40	9.11	0.80	41.00	4.58
05OCT	SE	0.00	0.00	0.00	0.00	0.80	0.68	0.40	0.40	0.87	8.01	0.39	37.19	38.08
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.29	0.21	1.00	122.60	0.67	6.60	54.40	0.00	0.00	4.50	0.29	15.88
19OCT	SE	0.00	0.20	0.15	0.77	122.60	0.67	4.19	51.21	0.00	0.00	3.28	0.18	132.98
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-132 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	21	0	0	23	1	1	0	46
12JUL	SE	0	0	0	0	0	21	0	0	18	1	1	0	28
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	4	0	0	40	0	12	0	41	66	163
27JUL	SE	0	0	0	2	0	0	40	0	12	0	23	35	59
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	2	4	0	4	0	6	401	765	1049	70	2300
10AUG	SE	0	0	2	4	0	4	0	4	176	710	558	42	921
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	< 0.5	77	33	260	1104	1475
24AUG	SE	0	0	0	0	0	0	0	< 0.5	50	31	160	808	826
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	72	10	12	8	69	0	171
08SEP	SE	0	0	0	0	0	0	55	7	10	8	33	0	66
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	12	0	0	64	0	1	40	0	67	235	418
21SEP	SE	0	0	10	0	0	43	0	1	24	0	45	134	150
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	2	11	3	< 0.5	12	160	16	557	761
05OCT	SE	0	0	0	0	2	7	3	< 0.5	8	141	8	505	525
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	13	6	9	323	7	47	67	0	0	89	4	565
19OCT	SE	0	9	4	7	323	7	30	64	0	0	64	3	337
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-133 REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.49	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.07
	SE	0.30	0.00	0.00	0.00	0.00	0.00	0.00							0.30
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	3.31	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.47
	SE	0.00	0.00	2.99	0.00	0.00	0.00	0.00							2.99
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	SE	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.05
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.36
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.13
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.20	0.00	0.00	1.00	0.00	1.84	0.15	1.64	1.75	0.45	1.62	0.66
	SE	0.00	0.00	0.20	0.00	0.00	0.39	0.00	1.23	0.15	0.73	0.74	0.45	0.01	1.73
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	1.62	0.00	0.97	0.00	0.26
	SE	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	1.02	0.00	0.48	0.00	1.37
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-133 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.29	1.87	0.00	0.27
	SE	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.29	1.25	0.00	1.33
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.07
	SE	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.60
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.04
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.57
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.05
	SE	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00						0.42
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-134 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	103	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	64	0	0	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	11						
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
22MAR	SE	0	0	0	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	12						
27MAR-	ST. CROP	0	0	1065	0	0	0	0	NS	NS	NS	NS	NS	NS
29MAR	SE	0	0	963	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	12						
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	ST. CROP	0	0	0	0	0	19	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	19	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	ST. CROP	0	0	0	0	90	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	57	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	94	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	58	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	21	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	21	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	ST. CROP	0	0	63	0	0	207	0	547	25	232	309	72	115
25MAY	SE	0	0	63	0	0	80	0	365	25	104	131	72	< 0.5
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	ST. CROP	0	0	0	0	0	162	0	0	0	229	0	155	0
02JUN	SE	0	0	0	0	0	162	0	0	0	145	0	78	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-134 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	78	0	0	0	0	0	0	0	144	52	301	0	575
08JUN	SE	0	78	0	0	0	0	0	0	0	3	52	202	0	222
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	64	0	0	0	0	0	100	0	0	164
15JUN	SE	0	0	0	0	44	0	0	0	0	0	100	0	0	109
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	91	0	91
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	91	0	91
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	62	0	0	0	0	NS	NS	NS	NS	NS	62
12JUL	SE	0	0	0	62	0	0	0	0						62
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-135 REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-136 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-137 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	1.00	3.45	0.29	0.00	0.33	0.00	0.25	0.13	0.25	0.20	0.05	0.00	0.50
14JUN	SE	1.00	2.53	0.29	0.00	0.33	0.00	0.25	0.13	0.25	0.14	0.05	0.00	2.78
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.14	0.33	0.00	0.00	0.00	0.00	0.25	0.00	0.11	0.00	0.07
28JUN	SE	0.00	0.00	0.14	0.33	0.00	0.00	0.00	0.00	0.16	0.00	0.11	0.00	0.41
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
27JUL	SE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-138 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	8	157	8	0	1	0	2	< 0.5	2	4	1	0	182
14JUN	SE	8	115	8	0	1	0	2	< 0.5	2	3	1	0	115
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	4	3	0	0	0	0	2	0	2	0	11
28JUN	SE	0	0	4	3	0	0	0	0	1	0	2	0	6
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	2	0	0	0	0	0	0	0	0	0	0	2
27JUL	SE	0	2	0	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-139 REGIONAL DENSITY (NO./1,000m3) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

															ALL REGIONS
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-140 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-141 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
27JUL	SE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
10AUG	SE	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	4.20	0.00	0.00	0.00	0.00	0.14	0.36
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	4.20	0.00	0.00	0.00	0.00	0.14	4.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-142 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	2	0	0	0	0	0	0	0	0	0	2
27JUL	SE	0	0	2	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	2	0	0	0	0	0	0	0	0	0	0	2
10AUG	SE	0	2	0	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	30	0	0	0	0	2	32
05OCT	SE	0	0	0	0	0	0	30	0	0	0	0	2	30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-143 REGIONAL DENSITY (NO./1,000m3) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-144 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	2	0	0	0	0	5	0	0	0
26OCT	SE	0	0	0	0	2	0	0	0	0	5	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	3	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	3	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-145 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.08	0.02
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.08	0.15
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.14	0.03
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.14	0.22
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.02
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.10	1.43	0.14
24AUG	SE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.10	0.95	0.97
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.02
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.50	0.71	0.13
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.31	0.47	0.69
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.01
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.02
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-146 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	1	2
14JUN	SE	0	0	0	0	0	0	1	0	0	0	0	1	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	1	0	0	1
28JUN	SE	0	0	0	0	0	0	0	0	0	1	0	0	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	2	4
27JUL	SE	0	0	0	0	0	2	0	0	0	0	0	2	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	4	4
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	4	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	1	0	0	0	0	0	2	19	22
24AUG	SE	0	0	0	0	1	0	0	0	0	0	2	13	13
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	1
08SEP	SE	0	0	0	0	0	0	1	0	0	0	0	0	1
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	3	0	0	0	10	10	22
21SEP	SE	0	0	0	0	0	0	3	0	0	0	6	6	9
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	2	0	2
05OCT	SE	0	0	0	0	0	0	0	0	0	0	2	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	1
19OCT	SE	0	0	0	0	0	0	1	0	0	0	0	0	1
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-147 REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-147 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006														
														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-148 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-148 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	REGIONS
															COMBINED
05JUN- 08JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- 15JUN	ST. CROP	0	0	0	0	0	0	6	0	0	0	0	0	0	6
	SE	0	0	0	0	0	0	6	0	0	0	0	0	0	6
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- 22JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- 29JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- 12JUL	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- 26JUL	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- 09AUG	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- 23AUG	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- 07SEP	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- 20SEP	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- 05OCT	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-149 REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-149 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-150 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED		
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL		
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	11							73	
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130	
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	

TABLE E-150 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-151 REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-152 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL	
														REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-153 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-154 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-155 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-155 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	1.50	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
	SE	1.50	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	12.46	189.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.53
	SE	6.38	126.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	126.53
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	1398.08	150.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	119.12
	SE	584.26	119.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596.30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	69.37	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.37
	SE	69.37	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.37
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	58.98	737.55	5.53	0.00	0.15	0.00	0.00	0.00	NS	NS	NS	NS	NS	100.27
	SE	46.88	298.28	5.53	0.00	0.15	0.00	0.00	0.00	NS	NS	NS	NS	NS	301.99
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	584.36	31771.71	14.00	0.30	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	4046.30
	SE	219.81	19963.67	4.81	0.30	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	19964.88
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	4.67	11.91	755.99	101.36	30.67	0.00	0.00	0.00	NS	NS	NS	NS	NS	113.07
	SE	3.42	7.80	655.56	44.95	20.75	0.00	0.00	0.00	NS	NS	NS	NS	NS	657.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	84.96	5.02	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	11.25
	SE	81.91	4.37	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	82.03
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-156 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
08MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST.CROP	445	0	0	0	0	0	0	0	0	0	0	0	0	445
13APR	SE	313	0	0	0	0	0	0	0	0	0	0	0	0	313
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST.CROP	402	0	0	0	0	0	0	0	0	0	0	0	0	402
25MAY	SE	402	0	0	0	0	0	0	0	0	0	0	0	0	402
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-156 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST.CROP	313	0	0	0	0	21	0	0	0	0	0	0	0	334
08JUN	SE	313	0	0	0	0	21	0	0	0	0	0	0	0	314
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST.CROP	2604	43455	0	0	0	0	0	0	0	0	0	0	0	46059
15JUN	SE	1332	28991	0	0	0	0	0	0	0	0	0	0	0	29022
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST.CROP	292216	34516	0	0	0	0	0	0	0	0	0	0	0	326731
22JUN	SE	122117	27352	0	0	0	0	0	0	0	0	0	0	0	125143
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST.CROP	14498	104	0	0	0	0	0	0	0	0	0	0	0	14602
29JUN	SE	14498	104	0	0	0	0	0	0	0	0	0	0	0	14499
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST.CROP	12327	169208	1778	0	31	0	0	0	NS	NS	NS	NS	NS	183343
12JUL	SE	9799	68431	1778	0	31	0	0	0						69152
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST.CROP	122139	7289074	4505	45	0	0	0	0	NS	NS	NS	NS	NS	7415764
26JUL	SE	45944	4580070	1547	45	0	0	0	0						4580301
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST.CROP	976	2732	243285	14975	6390	0	0	0	NS	NS	NS	NS	NS	268356
09AUG	SE	715	1790	210965	6640	4323	0	0	0						211123
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST.CROP	17758	1152	0	0	0	0	0	0	NS	NS	NS	NS	NS	18910
23AUG	SE	17121	1003	0	0	0	0	0	0						17150
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-157 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-157 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	18.08	1.15	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	2.40
26JUL	SE	0.00	18.08	0.83	0.00	0.00	0.00	0.00	0.00						18.10
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	2.42	0.67	1.90	0.00	0.00	NS	NS	NS	NS	NS	0.62
09AUG	SE	0.00	0.00	0.00	1.83	0.67	0.68	0.00	0.00						2.06
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-158 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-158 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	4149	369	0	0	0	0	0	NS	NS	NS	NS	NS	4518
26JUL	SE	0	4149	269	0	0	0	0	0						4158
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	357	139	394	0	0	NS	NS	NS	NS	NS	890
09AUG	SE	0	0	0	270	139	140	0	0						335
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-159 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-159 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.87	2.11	1.04	0.62	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.87	2.08	0.92	0.62	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	1.37	1.45	0.75	1.72	2.06	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	1.37	1.45	0.75	0.86	1.90	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-160 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-160 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	129	439	215	87	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	129	432	190	87	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	440	215	156	356	288	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	440	215	156	178	265	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-161 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-161 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.24	NS	NS	NS	NS	NS	0.10
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.24						0.61
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	3.33	0.22	NS	NS	NS	NS	NS	0.44
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.77	0.22						1.78
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.21	1.31	0.66	NS	NS	NS	NS	NS	0.27
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.12	0.69	0.66						0.96
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	NS	NS	NS	NS	NS	0.01
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00						0.10
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.02	1.00	0.00	NS	NS	NS	NS	NS	0.25
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.54	0.70	0.00						0.88
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-162 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-162 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL- SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
24JUL- ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL- SE	0	0	0	0	0	0	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
07AUG- ST. CROP	0	0	0	0	0	0	79	73	NS	NS	NS	NS	NS
09AUG- SE	0	0	0	0	0	0	79	73					
NO. TOWS	6	11	13	14	13	8	10	6					
21AUG- ST. CROP	0	0	0	0	0	0	466	65	NS	NS	NS	NS	NS
23AUG- SE	0	0	0	0	0	0	247	65					
NO. TOWS	6	11	13	14	13	8	10	6					
05SEP- ST. CROP	0	0	0	0	0	44	183	197	NS	NS	NS	NS	NS
07SEP- SE	0	0	0	0	0	25	97	197					
NO. TOWS	6	11	13	14	13	8	10	6					
18SEP- ST. CROP	0	0	0	0	0	20	0	0	NS	NS	NS	NS	NS
20SEP- SE	0	0	0	0	0	20	0	0					
NO. TOWS	6	11	13	14	13	8	10	6					
03OCT- ST. CROP	0	0	0	0	0	212	139	0	NS	NS	NS	NS	NS
05OCT- SE	0	0	0	0	0	112	98	0					
NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-163 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
17AUG	SE	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.70	0.00	0.00	0.01	0.01	0.03	0.18	0.00	0.00	0.00	0.00	0.00	0.07
31AUG	SE	0.00	0.70	0.00	0.00	0.01	0.01	0.03	0.10	0.00	0.00	0.00	0.00	0.00	0.70
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.62	0.03	1.06	1.24	0.12	0.00	1.08	0.24	0.00	0.34
14SEP	SE	0.00	0.00	0.00	0.00	0.43	0.03	0.91	0.60	0.10	0.00	0.92	0.24	0.00	1.51
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.19	0.71	0.08	0.66	0.24	0.20	0.00	0.00	0.16
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.08	0.52	0.05	0.40	0.17	0.07	0.00	0.00	0.69
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.07	0.00	0.00	0.00	0.28	0.04	0.61	1.14	0.07	0.00	0.00	0.00	0.17
12OCT	SE	0.00	0.07	0.00	0.00	0.00	0.12	0.03	0.37	1.14	0.07	0.00	0.00	0.00	1.21
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.02	0.00	0.05	0.36	0.85	0.15	0.02	0.03	0.00	0.04	0.00	0.00	0.12
26OCT	SE	0.00	0.02	0.00	0.03	0.18	0.29	0.06	0.02	0.02	0.00	0.04	0.00	0.00	0.35
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.00	0.12	1.80	0.93	0.08	0.51	0.11	0.08	0.00	0.00	0.00	0.00	0.28
10NOV	SE	0.00	0.00	0.08	0.62	0.34	0.03	0.17	0.05	0.04	0.00	0.00	0.00	0.00	0.73
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.00	0.40	0.00	0.13	1.02	0.09	0.58	0.00	0.02	0.00	0.00	0.00	0.00	0.17
01DEC	SE	0.00	0.40	0.00	0.08	0.48	0.03	0.13	0.00	0.02	0.00	0.00	0.00	0.00	0.65
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-164 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	6	0	0	0	0	0	1	0	0	0	0	0	0
17AUG	SE	6	0	0	0	0	0	1	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	159	0	0	3	2	4	54	0	0	0	0	0
31AUG	SE	0	159	0	0	3	2	4	30	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	130	5	148	371	20	0	190	38	0
14SEP	SE	0	0	0	0	89	5	128	180	17	0	162	38	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	40	99	23	110	34	35	0	0
28SEP	SE	0	0	0	0	0	17	73	13	66	24	12	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	16	0	0	0	58	5	181	189	9	0	0	0
12OCT	SE	0	16	0	0	0	25	4	111	189	9	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	5	0	8	75	177	21	5	5	0	6	0	0
26OCT	SE	0	5	0	5	37	60	9	5	3	0	6	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	37	266	193	17	72	33	14	0	0	0	0
10NOV	SE	0	0	26	91	71	6	24	15	7	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	91	0	19	213	18	81	0	3	0	0	0	0
01DEC	SE	0	91	0	12	101	6	18	0	3	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-165 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
10AUG	SE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.02
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.02
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.20	0.20	0.22	0.00	0.00	0.09
21SEP	SE	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.20	0.20	0.15	0.00	0.00	0.51
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.01
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.17
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
19OCT	SE	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-166 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	2	0	0	0	0	0	0	0	0	0	2
10AUG	SE	0	0	2	0	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
24AUG	SE	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	1
08SEP	SE	0	0	0	0	0	0	1	0	0	0	0	0	1
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	4	0	0	0	< 0.5	2	4	0	0	10
21SEP	SE	0	0	0	4	0	0	0	< 0.5	2	3	0	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	2
05OCT	SE	0	0	0	0	0	2	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	4
19OCT	SE	0	0	0	2	0	0	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-167 REGIONAL DENSITY (NO./1,000m³) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.34	0.36	0.00	0.00	NS	NS	NS	NS	NS	NS	0.10
	SE	0.00	0.00	0.00	0.34	0.18	0.00	0.00							0.38
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.61	0.00	0.00	NS	NS	NS	NS	NS	NS	0.09
	SE	0.00	0.00	0.00	0.00	0.61	0.00	0.00							0.61
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.48	1.11	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.14
	SE	0.00	0.00	0.30	1.11	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	1.18
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.27	0.00	0.16	0.00	0.66	0.12	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.11
	SE	0.27	0.00	0.16	0.00	0.13	0.12	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.45
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	4.76	3.39	1.93	1.87	4.77	0.00	0.92	0.00	0.35	0.00	0.00	1.38
	SE	0.00	0.00	3.06	2.00	0.96	0.76	2.43	0.00	0.92	0.00	0.35	0.00	0.00	4.66
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	1.21	0.57	1.02	0.76	0.78	0.60	0.30	0.00	0.76	0.77	0.00	0.00	0.52
	SE	0.00	0.82	0.33	0.47	0.45	0.41	0.38	0.18	0.00	0.38	0.39	0.00	0.00	1.36
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.47	2.94	1.46	0.16	0.22	0.42	1.12	0.37	0.38	0.00	0.00	0.58
	SE	0.00	0.00	0.35	1.48	0.64	0.16	0.22	0.17	0.96	0.37	0.38	0.00	0.00	2.01
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.52	2.10	0.00	0.89	1.18	0.89	0.00	0.12	0.00	0.00	0.00	0.00	0.44
	SE	0.00	0.52	1.62	0.00	0.63	0.34	0.63	0.00	0.12	0.00	0.00	0.00	0.00	1.95
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	9.63	6.19	4.02	3.10	5.39	0.12	0.15	0.00	0.00	1.00	0.59	2.32
	SE	0.00	0.00	2.48	2.14	2.34	1.22	1.31	0.12	0.15	0.00	0.00	0.50	0.59	4.47
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	6.52	11.05	11.05	4.09	0.00	2.37	0.23	0.00	0.53	0.88	0.00	0.00	2.83
	SE	0.00	5.89	3.37	2.86	3.15	0.00	1.60	0.15	0.00	0.30	0.41	0.00	0.00	8.19
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	11.78	3.98	3.79	0.05	0.00	1.62	0.16	0.16	0.28	0.00	0.00	0.00	1.68
	SE	0.00	10.62	1.73	1.30	0.05	0.00	1.45	0.16	0.16	0.28	0.00	0.00	0.00	10.94
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-167 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	2.34	5.15	0.37	0.93	0.59	0.48	0.39	0.13	0.68	0.29	0.45	0.00	0.91
08JUN	SE	0.00	1.62	2.40	0.37	0.63	0.59	0.48	0.39	0.13	0.68	0.29	0.45	0.00	3.22
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	5.17	4.60	0.73	0.00	0.10	0.41	0.00	0.00	0.27	0.00	0.50	0.00	0.91
15JUN	SE	0.00	4.50	1.29	0.73	0.00	0.10	0.28	0.00	0.00	0.27	0.00	0.50	0.00	4.78
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.92	3.63	3.03	0.45	0.11	0.00	0.00	0.00	0.00	0.00	0.29	0.00	1.12	0.73
22JUN	SE	0.92	2.07	1.13	0.28	0.08	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.56	2.63
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.41	0.00	1.08	0.75	0.00	0.28	0.00	0.00	0.00	0.00	0.98	0.00	0.27
29JUN	SE	0.00	0.41	0.00	1.08	0.37	0.00	0.28	0.00	0.00	0.00	0.00	0.49	0.00	1.34
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	1.22	0.00	NS	NS	NS	NS	NS	0.17
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.59	0.00						0.60
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	2.19	0.40	0.00	0.00	0.21	0.00	0.00	NS	NS	NS	NS	NS	0.35
26JUL	SE	0.00	1.43	0.40	0.00	0.00	0.21	0.00	0.00						1.50
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.37	0.00	0.00	0.04	0.24	NS	NS	NS	NS	NS	0.08
09AUG	SE	0.00	0.00	0.00	0.37	0.00	0.00	0.04	0.24						0.44
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.83	0.00	0.86	0.00	NS	NS	NS	NS	NS	0.21
23AUG	SE	0.00	0.00	0.00	0.00	0.83	0.00	0.47	0.00						0.95
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.60	0.39	0.56	0.00	NS	NS	NS	NS	NS	0.19
07SEP	SE	0.00	0.00	0.00	0.00	0.60	0.16	0.28	0.00						0.68
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	1.42	0.00	0.26	0.00	NS	NS	NS	NS	NS	0.21
20SEP	SE	0.00	0.00	0.00	0.00	0.98	0.00	0.26	0.00						1.01
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.53	0.64	0.00	NS	NS	NS	NS	NS	0.15
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.53	0.64	0.00						0.83
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-168 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	0	0	0	0	0	0	0						0
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	ST. CROP	0	0	0	50	74	0	0	NS	NS	NS	NS	NS	125
22MAR	SE	0	0	0	50	37	0	0						63
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	ST. CROP	0	0	0	0	127	0	0	NS	NS	NS	NS	NS	127
29MAR	SE	0	0	0	0	127	0	0						127
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	ST. CROP	0	0	153	164	0	0	0	73	0	0	0	0	0
06APR	SE	0	0	98	164	0	0	0	73	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	ST. CROP	56	0	50	0	137	26	0	0	0	40	0	0	0
13APR	SE	56	0	50	0	26	26	0	0	0	40	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	ST. CROP	0	0	1532	500	401	388	667	0	152	0	62	0	0
20APR	SE	0	0	984	296	199	158	340	0	152	0	62	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	ST. CROP	0	277	184	151	158	162	83	89	0	108	136	0	0
27APR	SE	0	187	106	70	95	84	53	55	0	54	68	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	ST. CROP	0	0	151	434	303	34	30	125	185	53	67	0	0
03MAY	SE	0	0	112	219	133	34	30	51	159	53	67	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	ST. CROP	0	118	675	0	186	245	125	0	21	0	0	0	0
10MAY	SE	0	118	522	0	132	70	88	0	21	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	ST. CROP	0	0	3100	914	837	642	754	36	25	0	0	160	42
17MAY	SE	0	0	798	316	487	252	183	36	25	0	0	80	42
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	ST. CROP	0	1497	3557	1633	852	0	331	70	0	74	155	0	0
25MAY	SE	0	1352	1084	422	657	0	223	44	0	43	72	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	ST. CROP	0	2703	1282	560	9	0	227	48	26	39	0	0	0
02JUN	SE	0	2437	557	193	9	0	203	48	26	39	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-168 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	536	1659	55	194	121	67	116	21	96	52	73	0
08JUN	SE	0	371	771	55	132	121	67	116	21	96	52	73	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	1186	1481	107	0	21	58	0	0	39	0	80	0
15JUN	SE	0	1032	414	107	0	21	39	0	0	39	0	80	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	192	832	974	67	22	0	0	0	0	0	51	0	79
22JUN	SE	192	476	365	41	16	0	0	0	0	0	51	0	40
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	95	0	160	157	0	40	0	0	0	0	158	0
29JUN	SE	0	95	0	160	78	0	40	0	0	0	0	79	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	21	171	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	21	82	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	503	130	0	0	43	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	329	130	0	0	43	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	55	0	0	6	71	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	55	0	0	6	71					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	172	0	120	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	172	0	66	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	125	81	78	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	125	33	39	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	296	0	36	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	204	0	36	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	110	90	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	110	90	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-169 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL - 08JUL	DENSITY	0.18	11.83	0.85	1.18	1.02	0.48	0.18	0.00	0.05	0.36	0.28	0.00	0.00	1.26
	SE	0.08	3.61	0.25	0.46	0.49	0.17	0.08	0.00	0.03	0.30	0.16	0.00	0.00	3.71
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	4.04	11.32	0.71	0.62	0.30	1.06	2.15	0.24	0.05	0.06	0.44	0.46	0.00	1.65
	SE	1.37	3.28	0.38	0.18	0.17	0.32	0.83	0.19	0.03	0.06	0.44	0.46	0.00	3.75
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	4.20	3.81	1.13	1.97	0.68	0.60	2.15	0.15	0.28	0.29	0.82	0.00	0.00	1.24
	SE	1.75	1.52	0.30	0.44	0.30	0.36	0.57	0.06	0.17	0.22	0.57	0.00	0.00	2.57
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	0.37	6.24	1.68	1.57	4.17	1.82	1.67	0.42	0.32	0.06	0.00	0.00	0.00	1.41
	SE	0.21	2.43	0.34	0.28	2.13	0.97	0.79	0.15	0.16	0.06	0.00	0.00	0.00	3.51
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	1.66	0.38	2.02	0.31	0.79	0.76	2.52	1.46	0.09	0.00	0.56	0.23	0.00	0.83
	SE	0.81	0.19	1.29	0.13	0.44	0.35	1.64	1.22	0.05	0.00	0.32	0.11	0.00	2.64
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	0.43	0.12	1.44	0.42	2.76	1.69	6.44	5.56	1.07	2.26	4.41	0.71	0.48	2.14
	SE	0.18	0.09	0.27	0.15	1.30	0.44	3.45	3.09	0.27	0.89	0.12	0.71	0.29	4.99
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	0.07	0.84	3.08	1.72	0.53	4.07	10.38	0.98	0.95	2.00	0.76	0.38	0.00	1.98
	SE	0.04	0.29	1.34	0.60	0.23	1.95	5.70	0.32	0.44	1.02	0.76	0.38	0.00	6.38
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.14	0.57	1.11	1.26	0.81	4.23	1.57	1.58	0.26	4.46	0.00	0.00	0.10	1.24
	SE	0.10	0.24	0.56	1.21	0.43	2.24	0.69	0.69	0.08	2.46	0.00	0.00	0.10	3.75
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.09	4.10	4.21	2.66	7.30	8.61	13.29	1.17	1.71	1.28	1.38	0.04	0.00	3.52
	SE	0.04	1.40	1.48	0.93	3.03	1.87	3.21	0.41	0.62	0.51	0.81	0.04	0.00	5.43
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.04	0.29	11.35	17.52	8.89	4.92	8.75	2.09	1.47	0.45	0.33	0.00	0.00	4.32
	SE	0.03	0.14	2.05	4.01	3.08	1.64	2.00	0.40	0.29	0.29	0.22	0.00	0.00	6.07
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.02	0.18	4.89	5.83	3.91	3.37	8.69	0.52	1.81	0.04	0.03	0.00	0.00	2.25
	SE	0.02	0.09	1.46	1.52	1.86	1.45	2.40	0.20	0.84	0.04	0.03	0.00	0.00	4.07
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-170 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	ST. CROP	38	2715	273	175	212	99	25	0	8	51	49	0	0	3644
	SE	16	829	80	69	101	35	11	0	6	43	28	0	0	844
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	ST. CROP	844	2598	230	91	63	219	301	70	9	8	77	73	0	4583
	SE	286	753	121	26	36	67	116	55	4	8	77	73	0	835
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	ST. CROP	878	875	363	290	142	125	301	45	46	41	145	0	0	3250
	SE	366	348	97	65	63	75	80	19	27	32	100	0	0	544
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	ST. CROP	78	1431	541	231	869	377	233	125	52	8	0	0	0	3946
	SE	44	558	109	41	443	202	110	45	26	8	0	0	0	761
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	ST. CROP	346	86	651	46	164	158	352	434	14	0	98	37	0	2387
	SE	169	43	414	20	92	72	229	365	9	0	57	18	0	636
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	ST. CROP	91	27	464	62	574	350	900	1656	177	320	778	114	34	5548
	SE	38	21	88	22	272	92	482	922	44	126	21	114	21	1098
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	ST. CROP	14	192	991	254	110	845	1451	291	157	282	135	62	0	4783
	SE	9	66	431	89	47	405	797	96	72	144	135	62	0	1028
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	ST. CROP	29	131	356	187	170	878	219	470	44	630	0	0	7	3121
	SE	21	55	180	179	89	465	96	206	13	348	0	0	7	682
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	ST. CROP	18	940	1356	394	1520	1785	1857	348	282	181	244	6	0	8932
	SE	8	322	477	138	631	388	449	121	102	72	143	6	0	1073
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	ST. CROP	9	67	3654	2589	1852	1021	1224	622	243	63	59	0	0	11404
	SE	6	32	659	592	642	340	280	119	48	40	39	0	0	1188
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	ST. CROP	5	42	1575	862	814	700	1214	156	299	5	5	0	0	5678
	SE	5	21	470	225	387	301	335	58	140	5	5	0	0	805
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-171 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.14	15.33	0.00	0.00	0.00	0.13	0.00	0.07	0.00	0.00	1.31
14JUN	SE	0.00	0.00	0.14	14.34	0.00	0.00	0.00	0.13	0.00	0.07	0.00	0.00	14.35
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.08	0.01
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.08	0.10
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.07	0.05	0.00	0.04
12JUL	SE	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.07	0.05	0.00	0.34
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.03
27JUL	SE	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.22
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	1.00	0.42	0.29	0.20	0.20	0.00	0.00	0.60	0.20	0.33	0.00	0.14	0.28
10AUG	SE	0.45	0.17	0.16	0.20	0.20	0.00	0.00	0.40	0.20	0.24	0.00	0.14	0.78
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.07	0.00	0.40	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.06
24AUG	SE	0.00	0.00	0.07	0.00	0.40	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.46
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.04	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
08SEP	SE	0.00	0.04	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.40	0.46	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
21SEP	SE	0.24	0.30	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.20	0.04	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
05OCT	SE	0.20	0.04	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
19OCT	SE	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-172 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	4	141	0	0	0	< 0.5	0	1	0	0	146
14JUN	SE	0	0	4	132	0	0	0	< 0.5	0	1	0	0	132
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	1	1	2
28JUN	SE	0	0	0	0	0	0	0	0	0	0	1	1	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	1	0	0	0	0	1	1	0	3
12JUL	SE	0	0	0	0	1	0	0	0	0	1	1	0	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	2	0	0	0	0	0	0	0	0	0	2	0	3
27JUL	SE	2	0	0	0	0	0	0	0	0	0	2	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	8	19	8	2	1	0	0	1	2	6	0	2	47
10AUG	SE	3	8	4	2	1	0	0	< 0.5	2	4	0	2	11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	2	0	1	0	0	0	0	4	0	0	7
24AUG	SE	0	0	2	0	1	0	0	0	0	4	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	2	0	6	0	0	0	0	0	0	0	0	7
08SEP	SE	0	2	0	4	0	0	0	0	0	0	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	3	21	0	9	0	0	0	0	0	0	0	0	33
21SEP	SE	2	14	0	7	0	0	0	0	0	0	0	0	16
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	2	2	0	2	1	0	0	0	0	0	0	0	6
05OCT	SE	2	2	0	2	1	0	0	0	0	0	0	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	4
19OCT	SE	0	0	0	4	0	0	0	0	0	0	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-173 REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-173 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	NS	NS	NS	NS	NS	0.01
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00						0.08
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-174 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR- ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR- SE	0	0	0	0	0	0	0						
NO. TOWS	10	10	11	11	10	10	11						
20MAR- ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
22MAR- SE	0	0	0	0	0	0	0						
NO. TOWS	10	10	11	11	10	10	12						
27MAR- ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
29MAR- SE	0	0	0	0	0	0	0						
NO. TOWS	10	10	11	11	10	10	12						
03APR- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY- ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN- SE	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-174 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	12	0	NS	NS	NS	NS	NS	12
26JUL	SE	0	0	0	0	0	0	12	0						12
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-175 REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.00	0.01
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	< 0.005
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	< 0.005
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.19	0.00	0.00	0.00	0.02
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.10	0.00	0.00	0.00	0.10
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
10NOV	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.01
01DEC	SE	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.09
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-176 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	ST. CROP	0	0	0	0	0	0	2	0	0	8	0	0	0	10
03AUG	SE	0	0	0	0	0	0	2	0	0	8	0	0	0	9
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	8	0	0	0	8
17AUG	SE	0	0	0	0	0	0	0	0	0	8	0	0	0	8
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	7	0	0	0	7
14SEP	SE	0	0	0	0	0	0	0	0	0	7	0	0	0	7
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	ST. CROP	0	0	0	0	0	0	6	5	0	27	0	0	0	38
26OCT	SE	0	0	0	0	0	0	4	5	0	14	0	0	0	15
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	ST. CROP	0	0	0	0	3	0	0	0	0	0	0	0	0	3
10NOV	SE	0	0	0	0	3	0	0	0	0	0	0	0	0	3
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	ST. CROP	0	0	0	0	18	0	0	0	0	0	5	0	0	24
01DEC	SE	0	0	0	0	18	0	0	0	0	0	5	0	0	19
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-177 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.18	0.71	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
28JUN	SE	0.00	0.18	0.47	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.33	2.33	1.38	0.38	0.38	0.13	0.68	0.17	0.48
12JUL	SE	0.00	0.00	0.00	0.00	0.33	1.86	0.65	0.26	0.26	0.09	0.38	0.11	2.07
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.20	0.20	0.50	3.00	1.20	5.40	0.44	2.40	3.14	1.37
27JUL	SE	0.00	0.00	0.00	0.20	0.20	0.50	1.55	0.58	3.31	0.24	1.58	1.56	4.36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.04	1.29	7.40	0.80	0.00	16.00	22.60	0.20	16.56	47.90	3.14	9.66
10AUG	SE	0.00	0.04	0.93	7.15	0.49	0.00	10.40	9.83	0.20	10.57	24.45	1.56	31.13
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	3.20	0.00	3.60	3.00	1.80	14.11	0.90	0.57	2.27
24AUG	SE	0.00	0.00	0.00	0.00	2.06	0.00	2.71	1.90	1.80	9.41	0.38	0.43	10.35
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	1.50	1.60	1.80	0.00	8.80	5.20	1.60	18.56	0.30	0.00	3.28
08SEP	SE	0.00	0.00	1.35	1.60	1.11	0.00	6.18	2.75	1.60	7.97	0.15	0.00	10.84
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.43	0.20	13.40	0.17	1.40	1.80	1.00	2.00	3.50	11.57	2.96
21SEP	SE	0.00	0.00	0.43	0.20	5.41	0.17	0.98	1.11	0.55	1.54	2.05	8.80	10.77
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	2.20	0.00	9.40	1.20	14.20	12.22	1.10	0.71	3.42
05OCT	SE	0.00	0.00	0.00	0.00	1.24	0.00	5.40	0.49	8.55	5.82	0.71	0.71	11.78
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	1.60	0.00	0.40	0.80	1.00	2.22	3.40	0.14	0.80
19OCT	SE	0.00	0.00	0.00	0.00	1.36	0.00	0.40	0.58	1.00	1.06	1.28	0.14	2.48
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-178 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	8	19	0	1	0	0	0	0	0	0	0	28
28JUN	SE	0	8	13	0	1	0	0	0	0	0	0	0	15
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	1	25	10	< 0.5	3	2	13	2	57
12JUL	SE	0	0	0	0	1	20	5	< 0.5	2	2	7	2	22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	2	1	5	21	1	46	8	47	43	175
27JUL	SE	0	0	0	2	1	5	11	1	29	4	31	21	49
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	2	35	68	2	0	114	28	2	291	942	43	1526
10AUG	SE	0	2	25	66	1	0	74	12	2	186	481	21	526
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	8	0	26	4	15	248	18	8	326
24AUG	SE	0	0	0	0	5	0	19	2	15	165	7	6	167
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	40	15	5	0	62	6	14	326	6	0	474
08SEP	SE	0	0	36	15	3	0	44	3	14	140	3	0	153
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	12	2	35	2	10	2	9	35	69	157	332
21SEP	SE	0	0	12	2	14	2	7	1	5	27	40	120	131
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	6	0	67	1	122	215	22	10	442
05OCT	SE	0	0	0	0	3	0	38	1	74	102	14	10	133
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	4	0	3	1	9	39	67	2	125
19OCT	SE	0	0	0	0	4	0	3	1	9	19	25	2	33
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-179 REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	NS	NS	NS	NS	NS	NS	0.01
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04							0.04
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.05	0.00	0.00	NS	NS	NS	NS	NS	NS	0.01
29MAR	SE	0.00	0.00	0.00	0.00	0.05	0.00	0.00							0.05
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.02
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.03
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.03
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.37
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.51	0.00	0.06
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.51	0.00	0.61
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.02
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.27
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.44	0.47	1.08	0.17
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.44	0.47	0.54	0.88
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-179 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.23	0.00	0.57	0.07
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.23	0.00	0.57	0.63
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.04
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.57
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.57	0.57	0.15
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.57	0.57	0.96
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.60	0.07
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.60	0.65
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	NS	NS	NS	NS	NS	0.01
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00						0.08
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	NS	NS	NS	NS	NS	0.01
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00						0.04
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-180 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	6	NS	NS	NS	NS	NS	NS	6
	SE	0	0	0	0	0	0	6							6
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	10	0	0	NS	NS	NS	NS	NS	NS	10
	SE	0	0	0	0	10	0	0							10
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	51	0	0	51
	SE	0	0	0	0	0	0	0	0	0	0	51	0	0	51
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	24	24
	SE	0	0	0	0	0	0	0	0	0	0	0	0	24	24
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	53	0	0	0	53
	SE	0	0	0	0	0	0	0	0	0	53	0	0	0	53
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	47	0	81	0	128
	SE	0	0	0	0	0	0	0	0	0	47	0	81	0	94
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	38	0	0	0	38
	SE	0	0	0	0	0	0	0	0	0	38	0	0	0	38
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	36	78	75	77	266
	SE	0	0	0	0	0	0	0	0	0	36	78	75	38	120
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	9	0	0	0	0	0	0	9
	SE	0	0	0	0	0	0	9	0	0	0	0	0	0	9
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-180 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	41	0	0	40	0	40	122
08JUN	SE	0	0	0	0	0	0	0	41	0	0	40	0	40	70
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	100	0	0	100
15JUN	SE	0	0	0	0	0	0	0	0	0	0	100	0	0	100
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	116	0	91	41	248
22JUN	SE	0	0	0	0	0	0	0	0	0	74	0	91	41	124
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	35	0	0	43	78
29JUN	SE	0	0	0	0	0	0	0	0	0	35	0	0	43	56
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	12	0	NS	NS	NS	NS	NS	12
26JUL	SE	0	0	0	0	0	0	12	0						12
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	6	0	NS	NS	NS	NS	NS	6
09AUG	SE	0	0	0	0	0	0	6	0						6
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-181 REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL - 08JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.04	0.43	0.14	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.06	0.08	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL - 20JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.01	0.02	0.37	0.06	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.02	0.30	0.06	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL - 03AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.05	1.30	0.00	0.20	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.03	1.30	0.00	0.20	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG - 17AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.57	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.50	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG - 31AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP - 14SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.00	0.00	0.19
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.00	0.00	0.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP - 28SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT - 12OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.12
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.12
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT - 26OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.02	0.00	0.72	0.23	0.21	0.09
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.52	0.07	0.09	0.09
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV - 10NOV	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV - 01DEC	DENSITY	0.00	0.00	0.00	0.00	0.05	0.00	0.04	0.02	0.00	0.14	0.07	0.05	0.17
	SE	0.00	0.00	0.00	0.00	0.05	0.00	0.03	0.02	0.00	0.08	0.04	0.05	0.08
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-182 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	ST. CROP	0	0	0	0	0	0	3	0	6	60	25	0	0	94
	SE	0	0	0	0	0	0	1	0	6	9	14	0	0	18
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	ST. CROP	0	0	0	0	0	0	28	4	3	53	11	0	0	99
	SE	0	0	0	0	0	0	12	4	3	42	11	0	0	46
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	ST. CROP	0	0	0	0	0	0	6	9	9	183	0	32	0	239
	SE	0	0	0	0	0	0	2	6	4	183	0	32	0	186
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	ST. CROP	0	0	0	0	0	0	0	4	0	81	0	0	0	85
	SE	0	0	0	0	0	0	0	4	0	71	0	0	0	71
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	ST. CROP	0	0	0	0	0	0	0	4	0	0	0	0	0	4
	SE	0	0	0	0	0	0	0	4	0	0	0	0	0	4
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	ST. CROP	0	0	0	0	0	0	0	5	0	7	0	0	14	26
	SE	0	0	0	0	0	0	0	5	0	7	0	0	8	12
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	ST. CROP	0	0	0	0	0	0	0	0	0	16	0	0	0	16
	SE	0	0	0	0	0	0	0	0	0	9	0	0	0	9
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	ST. CROP	0	0	0	0	0	0	2	0	0	0	0	0	9	11
	SE	0	0	0	0	0	0	2	0	0	0	0	0	9	9
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	ST. CROP	0	0	0	0	0	0	22	6	0	102	41	34	7	211
	SE	0	0	0	0	0	0	9	6	0	74	13	15	7	77
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	SE	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	ST. CROP	0	0	0	0	10	0	5	5	0	20	12	8	12	73
	SE	0	0	0	0	10	0	4	5	0	11	8	8	6	21
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-183 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	11.75	18.38	4.00	4.80	13.68	7.00	4.97
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	5.45	5.16	3.44	0.97	2.46	4.33	9.70
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.38	2.50	4.50	5.73	12.53	3.42	2.42
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.36	1.40	1.40	3.24	1.53	4.34
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	2.67	4.00	8.00	5.00	9.50	3.07	6.74	4.17	3.59
12JUL	SE	0.00	0.00	0.00	0.00	1.45	2.00	2.98	1.12	3.30	0.86	1.52	1.90	5.81
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.04	0.14	0.00	0.00	0.33	3.40	7.20	0.60	2.78	3.60	8.14	2.19
27JUL	SE	0.00	0.04	0.14	0.00	0.00	0.33	1.29	4.68	0.60	0.85	1.86	4.47	6.94
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	1.43	0.60	0.00	0.00	4.60	3.00	0.00	5.67	10.90	5.86	2.67
10AUG	SE	0.00	0.00	1.08	0.60	0.00	0.00	3.16	1.76	0.00	3.99	5.31	4.31	8.79
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.08	0.00	0.00	0.20	0.00	2.20	4.80	0.00	5.11	0.10	0.29	1.07
24AUG	SE	0.00	0.06	0.00	0.00	0.20	0.00	1.32	2.13	0.00	4.29	0.10	0.18	4.97
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.20	0.00	0.00	2.20	3.80	0.60	2.44	0.00	0.00	0.77
08SEP	SE	0.00	0.00	0.00	0.20	0.00	0.00	1.43	1.07	0.60	1.43	0.00	0.00	2.37
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.07	1.40	0.00	0.00	0.20	1.20	0.20	0.22	2.20	3.57	0.76
21SEP	SE	0.00	0.00	0.07	1.40	0.00	0.00	0.20	0.73	0.20	0.15	1.05	2.45	3.12
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.33	5.20	1.80	1.60	3.56	0.20	0.29	1.08
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.33	2.27	0.92	0.81	1.92	0.13	0.29	3.25
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.07	0.00	0.20	0.00	1.20	0.40	0.40	0.56	1.30	2.00	0.51
19OCT	SE	0.00	0.00	0.07	0.00	0.20	0.00	0.73	0.24	0.40	0.38	0.56	0.79	1.37
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-184 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	83	23	34	84	269	95	589
14JUN	SE	0	0	0	0	0	0	39	6	30	17	48	59	92
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	3	3	39	101	246	46	438
28JUN	SE	0	0	0	0	0	0	3	2	12	25	64	21	73
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	7	43	57	6	82	54	133	57	437
12JUL	SE	0	0	0	0	4	21	21	1	28	15	30	26	59
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	2	4	0	0	4	24	9	5	49	71	111	278
27JUL	SE	0	2	4	0	0	4	9	6	5	15	37	61	74
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	38	6	0	0	33	4	0	99	214	80	474
10AUG	SE	0	0	29	6	0	0	22	2	0	70	104	59	144
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	4	0	0	1	0	16	6	0	90	2	4	121
24AUG	SE	0	3	0	0	1	0	9	3	0	75	2	3	76
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	2	0	0	16	5	5	43	0	0	70
08SEP	SE	0	0	0	2	0	0	10	1	5	25	0	0	28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	2	13	0	0	1	1	2	4	43	49	115
21SEP	SE	0	0	2	13	0	0	1	1	2	3	21	33	41
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	4	37	2	14	62	4	4	127
05OCT	SE	0	0	0	0	0	4	16	1	7	34	3	4	39
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	2	0	1	0	9	< 0.5	3	10	26	27	77
19OCT	SE	0	0	2	0	1	0	5	< 0.5	3	7	11	11	18
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-185 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-185 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-08JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.32
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-15JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-22JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-29JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-12JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-05OCT	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-186 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL	
														REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-186 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	45	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	45	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0		NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0						
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-187 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-187 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-188 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED		
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL		
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	11							73	
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130	
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	

TABLE E-188 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-189 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-190 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	0	0	0	0	0	3	0	0	0	0
20JUL	SE	0	0	0	0	0	0	0	0	3	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	2	5	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	2	4	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	4	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	4	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	5	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	5	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	0	6	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	4	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	3	3	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	3	2	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-191 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-192 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-193 REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.02
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.26
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-193 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
15JUN	SE	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-194 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRNOSE STURGEON YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED		
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL		
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	11							73	
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	
	SE	0	0	0	0	0	0	0							0	0
	NO. TOWS	10	10	11	11	10	10	12							74	
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126	
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130	
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135	
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	37	0	0	0	37	
	SE	0	0	0	0	0	0	0	0	0	37	0	0	0	37	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126	

TABLE E-194 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRIVER STURGEON YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	0	0	19	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	19	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-195 REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.05
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.59
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.03
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-195 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-196 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRNOSE STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	42	42
	SE	0	0	0	0	0	0	0	0	0	0	0	0	42	42
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	29	29
	SE	0	0	0	0	0	0	0	0	0	0	0	0	29	29
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-196 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRIVER STURGEON POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
12JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
26JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
20SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-197 REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.01
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.12
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-197 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-198 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRIVER STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	36	0	0	0	0	0	36
	SE	0	0	0	0	0	0	0	36	0	0	0	0	0	36
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-198 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRIVER STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-199 REGIONAL DENSITY (NO./1,000m3) OF SHORTRNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUL- DENSITY	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
08JUL SE	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL- DENSITY	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.01
20JUL SE	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.06
NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL- DENSITY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.01
03AUG SE	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG- DENSITY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.12	0.00	0.00	0.00	0.01
17AUG SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.12	0.00	0.00	0.00	0.12
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG- DENSITY	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
31AUG SE	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP- DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.05	0.08	0.00	0.00	0.01
14SEP SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.05	0.08	0.00	0.00	0.10
NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP- DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	< 0.005
28SEP SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT- DENSITY	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
12OCT SE	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT- DENSITY	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
26OCT SE	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV- DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV- DENSITY	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
01DEC SE	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-200 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORINOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	4	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	4	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	8	0	0	0	0	14	3	0	0	0	0
20JUL	SE	0	0	8	0	0	0	0	14	3	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	5	0	0	0	0	0	17	0
03AUG	SE	0	0	0	0	0	3	0	0	0	0	0	17	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	3	0	4	0	17	0	0	0
17AUG	SE	0	0	0	0	0	2	0	4	0	17	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	3	3	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	3	2	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	2	0	4	0	7	14	0	0
14SEP	SE	0	0	0	0	0	2	0	4	0	7	14	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	2	0	4	0	0	0	0	0
28SEP	SE	0	0	0	0	0	2	0	4	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	8	5	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	8	5	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	6	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	6	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	4	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-201 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF SHORTRIVER STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-202 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTRNOSE STURGEON THAN-YEARLING AND OLDER-IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-203 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-203 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
22JUN	SE	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.72	NS	NS	NS	NS	NS	0.10
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.72						0.73
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.60	0.31	0.00	NS	NS	NS	NS	NS	0.11
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.60	0.27	0.00						0.66
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	NS	NS	NS	NS	NS	0.03
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00						0.27
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	NS	NS	NS	NS	NS	0.03
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00						0.28
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-204 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-204 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS														AL	COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS		
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	33	0	0	0	0	0	0	0	0	0	33
22JUN	SE	0	0	0	33	0	0	0	0	0	0	0	0	0	33
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	0	0	23	0	214	NS	NS	NS	NS	NS	237
12JUL	SE	0	0	0	0	0	23	0	214						215
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	0	0	0	0	124	43	0	NS	NS	NS	NS	NS	168
26JUL	SE	0	0	0	0	0	124	38	0						130
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	0	0	0	0	38	0	NS	NS	NS	NS	NS	38
23AUG	SE	0	0	0	0	0	0	38	0						38
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	0	0	0	0	0	39	0	NS	NS	NS	NS	NS	39
20SEP	SE	0	0	0	0	0	0	39	0						39
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-205 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.25	0.31	0.01	0.00	0.06	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.22	0.30	0.01	0.00	0.06	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.17	0.13	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.13	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.11	0.92	0.08	0.13	1.93	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.40	0.04	0.07	0.87	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.07	0.00	0.24	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.24	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.32	0.05	0.26	0.09	0.12	0.19
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.09	0.03	0.15	0.09	0.12	0.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.04	0.02	0.00	0.25	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.02	0.02	0.00	0.25	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.03	0.20	0.33	0.00	0.07	0.12	0.24	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.01	0.02	0.08	0.26	0.00	0.07	0.12	0.24	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.22	0.08	0.07	0.13	0.02	0.05	0.04	0.03	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.09	0.04	0.02	0.07	0.02	0.03	0.04	0.03	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.04	0.12	0.04	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.04	0.04	0.02	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.14	0.04	0.14	0.03	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.07	0.02	0.05	0.02	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-206 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED													
DATE	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL- ST. CROP	0	0	0	0	0	0	2	0	0	0	0	0	0
08JUL SE	0	0	0	0	0	0	2	0	0	0	0	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL- ST. CROP	0	0	0	0	0	51	43	4	0	8	0	0	0
20JUL SE	0	0	0	0	0	46	42	4	0	8	0	0	0
NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL- ST. CROP	0	0	0	0	0	0	0	0	6	24	22	0	0
03AUG SE	0	0	0	0	0	0	0	0	4	15	22	0	0
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG- ST. CROP	0	0	0	0	0	2	16	274	14	18	341	0	0
17AUG SE	0	0	0	0	0	2	5	118	7	10	152	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG- ST. CROP	0	0	0	0	0	2	12	20	0	34	0	0	0
31AUG SE	0	0	0	0	0	2	8	11	0	34	0	0	0
NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP- ST. CROP	0	0	0	0	0	0	27	96	9	37	15	19	14
14SEP SE	0	0	0	0	0	0	19	26	4	21	15	19	8
NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP- ST. CROP	0	0	0	0	0	1	8	11	3	0	44	0	0
28SEP SE	0	0	0	0	0	1	7	6	3	0	44	0	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT- ST. CROP	0	0	0	0	3	5	28	97	0	9	22	38	0
12OCT SE	0	0	0	0	3	4	11	76	0	9	22	38	0
NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT- ST. CROP	0	0	0	33	16	14	18	5	7	5	6	0	0
26OCT SE	0	0	0	13	8	4	9	5	5	5	6	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV- ST. CROP	0	0	14	18	9	0	6	6	0	0	0	0	0
10NOV SE	0	0	14	6	5	0	4	6	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV- ST. CROP	0	0	0	0	29	8	20	10	0	0	0	0	0
01DEC SE	0	0	0	0	14	4	7	7	0	0	0	0	0
NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-207 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-208 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-209 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.19	0.00	0.00	NS	NS	NS	NS	NS	NS	0.03
	SE	0.00	0.00	0.00	0.00	0.19	0.00	0.00							0.19
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.57	0.00	0.22	0.00	0.00	0.00	0.00	0.07
	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.28	0.00	0.22	0.00	0.00	0.00	0.00	0.37
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.52	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	SE	0.00	0.00	0.00	0.00	0.37	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.15	2.01	2.42	0.00	0.34	0.00	0.00	0.00	0.00	0.38
	SE	0.00	0.00	0.00	0.00	0.15	0.75	1.32	0.00	0.34	0.00	0.00	0.00	0.00	1.57
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.15	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	SE	0.00	0.00	0.00	0.15	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.15	1.07	0.54	0.00	0.22	0.29	0.00	0.00	0.00	0.00	0.00	0.17
	SE	0.00	0.00	0.15	0.60	0.31	0.00	0.22	0.18	0.00	0.00	0.00	0.00	0.00	0.75
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.40	1.52	0.89	0.15	0.00	0.00	0.00	0.00	0.00	0.23
	SE	0.00	0.00	0.00	0.00	0.40	1.52	0.89	0.15	0.00	0.00	0.00	0.00	0.00	1.81
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.06	0.26	0.49	0.25	0.00	0.00	0.00	0.00	0.00	0.08
	SE	0.00	0.00	0.00	0.00	0.06	0.15	0.28	0.16	0.00	0.00	0.00	0.00	0.00	0.36
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.45	1.04	0.04	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.17
	SE	0.00	0.00	0.45	0.81	0.04	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.95
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	1.18	0.18	0.00	1.16	0.25	0.00	0.00	0.00	0.00	0.00	0.21
	SE	0.00	0.00	0.00	0.54	0.18	0.00	0.70	0.25	0.00	0.00	0.00	0.00	0.00	0.93
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-209 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.24	0.00	0.23	0.04	0.00	0.23	0.20	0.00	0.00	0.00	0.00	0.00	0.07
15JUN	SE	0.00	0.24	0.00	0.23	0.04	0.00	0.16	0.20	0.00	0.00	0.00	0.00	0.00	0.42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
22JUN	SE	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	1.97	0.00	0.13	0.00	0.29	0.00	0.00	0.19
29JUN	SE	0.00	0.00	0.00	0.00	0.04	0.00	1.11	0.00	0.13	0.00	0.29	0.00	0.00	1.16
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.74	0.00	NS	NS	NS	NS	NS	0.10
12JUL	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.65	0.00						0.65
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	NS	NS	NS	NS	NS	0.01
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00						0.11
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-210 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
10MAR	SE	0	0	0	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	11						
20MAR-	ST. CROP	0	0	0	0	39	0	0	NS	NS	NS	NS	NS	NS
22MAR	SE	0	0	0	0	39	0	0						
	NO. TOWS	10	10	11	11	10	10	12						
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS
29MAR	SE	0	0	0	0	0	0	0						
	NO. TOWS	10	10	11	11	10	10	12						
03APR-	ST. CROP	0	0	0	0	0	20	79	0	36	0	0	0	0
06APR	SE	0	0	0	0	0	20	40	0	36	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	ST. CROP	0	0	0	0	108	67	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	77	44	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	ST. CROP	0	0	0	0	31	418	339	0	57	0	0	0	0
20APR	SE	0	0	0	0	31	156	185	0	57	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	ST. CROP	0	0	0	22	311	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	22	266	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	ST. CROP	0	0	48	159	112	0	30	86	0	0	0	0	0
03MAY	SE	0	0	48	89	65	0	30	53	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	ST. CROP	0	0	0	0	83	314	124	45	0	0	0	0	0
10MAY	SE	0	0	0	0	83	314	124	45	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	ST. CROP	0	0	0	0	12	55	69	76	0	0	0	0	0
17MAY	SE	0	0	0	0	12	32	40	48	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	ST. CROP	0	0	145	153	9	0	89	0	0	0	0	0	0
25MAY	SE	0	0	145	120	9	0	30	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	ST. CROP	0	0	0	174	37	0	162	74	0	0	0	0	0
02JUN	SE	0	0	0	79	37	0	97	74	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-210 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	56	0	34	8	0	31	59	0	0	0	0	0
15JUN	SE	0	56	0	34	8	0	23	59	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	141	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	141	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	8	0	275	0	21	0	50	0	0
29JUN	SE	0	0	0	0	8	0	156	0	21	0	50	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	8	0	103	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	8	0	91	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	22	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	22	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-211 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006															ALL
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	REGIONS
															COMBINED
05JUL - 08JUL	DENSITY	0.00	0.00	0.05	0.06	0.02	0.01	< 0.005	0.39	0.00	0.06	0.14	0.00	0.00	0.06
	SE	0.00	0.00	0.03	0.04	0.02	0.01	< 0.005	0.37	0.00	0.06	0.08	0.00	0.00	0.39
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	DENSITY	0.00	0.00	0.03	0.03	0.05	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.03	0.03	0.04	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	DENSITY	0.00	0.00	0.05	0.03	0.05	0.01	0.00	0.00	0.02	0.35	0.00	0.46	0.00	0.07
	SE	0.00	0.00	0.04	0.03	0.02	0.01	0.00	0.00	0.02	0.30	0.00	0.46	0.00	0.55
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	DENSITY	0.00	0.00	0.00	0.07	0.07	0.01	0.30	0.01	0.00	0.00	0.12	0.00	0.00	0.04
	SE	0.00	0.00	0.00	0.05	0.05	0.01	0.30	0.01	0.00	0.00	0.12	0.00	0.00	0.33
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	DENSITY	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.01
	SE	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.12
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	DENSITY	0.00	0.00	0.00	0.03	0.10	0.01	0.00	0.00	0.02	0.84	0.10	0.14	0.29	0.12
	SE	0.00	0.00	0.00	0.03	0.06	0.01	0.00	0.00	0.02	0.72	0.10	0.14	0.29	0.80
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	DENSITY	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.06	0.00	0.38	0.09	0.04
	SE	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.06	0.00	0.38	0.09	0.40
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	DENSITY	0.00	0.02	0.07	0.05	0.01	0.00	< 0.005	0.00	0.00	0.14	0.00	0.24	0.07	0.05
	SE	0.00	0.02	0.07	0.04	0.01	0.00	< 0.005	0.00	0.00	0.14	0.00	0.24	0.07	0.30
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	DENSITY	0.00	0.02	0.21	0.05	0.00	0.00	0.27	0.09	0.08	0.07	0.00	0.03	0.00	0.06
	SE	0.00	0.02	0.10	0.03	0.00	0.00	0.18	0.05	0.04	0.05	0.00	0.03	0.00	0.23
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	DENSITY	0.00	0.04	0.48	0.19	0.03	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.06
	SE	0.00	0.03	0.44	0.09	0.02	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.45
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	DENSITY	0.00	0.00	0.08	0.07	0.02	0.01	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.03	0.07	0.01	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-212 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

SURVEY, 2006														ALL REGIONS	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	COMBINED
05JUL - 08JUL	ST. CROP	0	0	15	9	4	2	1	115	0	9	25	0	0	178
	SE	0	0	10	6	4	2	1	111	0	9	14	0	0	113
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL - 20JUL	ST. CROP	0	0	8	4	10	44	0	0	0	0	0	0	0	67
	SE	0	0	8	4	7	44	0	0	0	0	0	0	0	46
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL - 03AUG	ST. CROP	0	0	17	4	10	3	0	0	3	50	0	74	0	161
	SE	0	0	12	4	4	3	0	0	3	42	0	74	0	86
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG - 17AUG	ST. CROP	0	0	0	10	14	2	42	4	0	0	21	0	0	93
	SE	0	0	0	7	11	2	42	4	0	0	21	0	0	48
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG - 31AUG	ST. CROP	0	0	0	5	4	0	0	0	0	0	21	0	0	30
	SE	0	0	0	5	3	0	0	0	0	0	21	0	0	22
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP - 14SEP	ST. CROP	0	0	0	5	20	2	0	0	3	119	17	22	21	208
	SE	0	0	0	5	12	2	0	0	3	102	17	22	21	108
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP - 28SEP	ST. CROP	0	0	0	0	5	0	0	4	0	8	0	62	6	85
	SE	0	0	0	0	3	0	0	4	0	8	0	62	6	63
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT - 12OCT	ST. CROP	0	5	23	8	3	0	1	0	0	20	0	38	5	104
	SE	0	5	23	6	3	0	1	0	0	20	0	38	5	50
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT - 26OCT	ST. CROP	0	5	68	8	0	0	38	26	13	10	0	5	0	173
	SE	0	5	32	5	0	0	25	14	6	6	0	5	0	45
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV - 10NOV	ST. CROP	0	9	155	28	7	0	6	6	0	0	0	0	0	210
	SE	0	6	141	13	4	0	4	6	0	0	0	0	0	142
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV - 01DEC	ST. CROP	0	0	25	10	5	2	4	5	2	0	0	0	0	53
	SE	0	0	10	10	3	2	3	5	2	0	0	0	0	16
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-213 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.03
14JUN	SE	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.34
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.00	0.00	0.00	0.08	0.04
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.16	0.00	0.00	0.00	0.08	0.22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.01
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.01
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.02
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.10	0.14	0.05
21SEP	SE	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.10	0.14	0.30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.01
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-214 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	3	0	0	0	0	0	0	0	0	0	1	0	4
14JUN	SE	3	0	0	0	0	0	0	0	0	0	1	0	3
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	1	< 0.5	0	0	0	1	2
12JUL	SE	0	0	0	0	0	0	1	< 0.5	0	0	0	1	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	2	0	0	2
27JUL	SE	0	0	0	0	0	0	0	0	0	2	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	2	0	0	2
24AUG	SE	0	0	0	0	0	0	0	0	0	2	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
08SEP	SE	0	0	0	0	0	0	0	< 0.5	0	0	0	0	< 0.5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	6	0	0	0	0	0	0	2	2	2	12
21SEP	SE	0	0	6	0	0	0	0	0	0	2	2	2	7
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	2	0	0	2
19OCT	SE	0	0	0	0	0	0	0	0	0	2	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-215 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-215 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	DENSITY	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
12JUL	SE	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	DENSITY	0.00	1.04	0.00	0.41	0.26	0.00	0.00	0.00	NS	NS	NS	NS	NS
26JUL	SE	0.00	0.86	0.00	0.41	0.26	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	DENSITY	0.00	0.00	0.00	0.43	0.68	0.00	0.00	0.00	NS	NS	NS	NS	NS
09AUG	SE	0.00	0.00	0.00	0.43	0.68	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	DENSITY	0.00	0.00	5.98	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS
23AUG	SE	0.00	0.00	5.98	0.00	0.00	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.73	0.00	0.28	0.00	NS	NS	NS	NS	NS
07SEP	SE	0.00	0.00	0.00	0.00	0.73	0.00	0.28	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	DENSITY	0.88	0.67	1.54	0.82	0.28	0.00	0.00	0.00	NS	NS	NS	NS	NS
20SEP	SE	0.88	0.54	1.11	0.82	0.16	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	DENSITY	4.59	0.66	1.23	0.00	1.69	0.00	0.00	0.00	NS	NS	NS	NS	NS
05OCT	SE	4.59	0.66	1.23	0.00	1.08	0.00	0.00	0.00					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-216 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-216 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	0	61	0	0	0	0	NS	NS	NS	NS	NS	61
12JUL	SE	0	0	0	61	0	0	0	0						61
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	238	0	61	54	0	0	0	NS	NS	NS	NS	NS	352
26JUL	SE	0	197	0	61	54	0	0	0						213
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	64	142	0	0	0	NS	NS	NS	NS	NS	206
09AUG	SE	0	0	0	64	142	0	0	0						156
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	1923	0	0	0	0	0	NS	NS	NS	NS	NS	1923
23AUG	SE	0	0	1923	0	0	0	0	0						1923
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	153	0	39	0	NS	NS	NS	NS	NS	192
07SEP	SE	0	0	0	0	153	0	39	0						158
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	184	154	497	122	59	0	0	0	NS	NS	NS	NS	NS	1016
20SEP	SE	184	123	358	122	34	0	0	0						440
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	959	151	397	0	353	0	0	0	NS	NS	NS	NS	NS	1860
05OCT	SE	959	151	397	0	226	0	0	0						1073
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-217 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED														
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-08JUL	DENSITY	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-20JUL	DENSITY	0.00	0.04	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.03	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-03AUG	DENSITY	0.56	0.36	0.00	0.06	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.25	0.15	0.00	0.04	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-17AUG	DENSITY	0.27	0.17	0.16	0.04	0.94	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.16	0.10	0.13	0.04	0.36	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-31AUG	DENSITY	0.73	0.94	0.04	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.36	0.22	0.04	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-14SEP	DENSITY	0.38	0.15	0.06	0.00	0.07	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.15	0.07	0.04	0.00	0.03	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-28SEP	DENSITY	0.62	0.06	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.17	0.04	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-12OCT	DENSITY	4.37	0.38	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	3.35	0.21	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-26OCT	DENSITY	3.46	0.47	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.95	0.14	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-10NOV	DENSITY	0.06	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-01DEC	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-218 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	71	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	63	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	10	83	0	0	0	0	0	0	0	0	0	0
20JUL	SE	0	7	62	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	117	83	0	8	23	0	0	0	0	0	0	0	0
03AUG	SE	52	35	0	5	19	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	56	38	50	6	195	11	0	0	0	0	0	0	0
17AUG	SE	33	22	41	6	75	11	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	152	217	14	0	22	0	0	0	0	0	0	0	0
31AUG	SE	76	51	14	0	10	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	79	33	18	0	14	15	9	0	0	0	0	0	0
14SEP	SE	31	16	11	0	7	6	9	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	129	14	10	6	0	0	0	0	0	0	0	0	0
28SEP	SE	35	9	10	6	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	913	88	43	0	0	0	0	0	0	0	0	0	0
12OCT	SE	701	48	43	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	722	109	25	0	0	0	0	0	0	0	0	0	0
26OCT	SE	199	32	25	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	11	39	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	8	17	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-219 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-220 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-221 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-221 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
15JUN	SE	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-222 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

SURVEY, 2006														ALL REGIONS COMBINED	
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR - 10MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR - 22MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR - 29MAR	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR - 06APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR - 13APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR - 20APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR - 27APR	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY - 03MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY - 10MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY - 17MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY - 25MAY	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY - 02JUN	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-222 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
12JUN-	ST. CROP	0	56	0	0	0	0	0	0	0	0	0	0	0
15JUN	SE	0	56	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
19JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
12JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
26JUL	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
09AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
23AUG	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
07SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
20SEP	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS
05OCT	SE	0	0	0	0	0	0	0	0					
	NO. TOWS	6	11	13	14	13	8	10	6					

TABLE E-223 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUL-	DENSITY	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
08JUL	SE	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
20JUL	SE	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
26OCT	SE	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE E-224 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	22	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	19	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0
20JUL	SE	0	0	0	4	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
03AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
17AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
31AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	10	5	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	7	5	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-225 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-226 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
14JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
28JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-227 REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE E-227 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
15JUN	SE	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
22JUN	SE	0.00	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.71	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
29JUN	SE	0.71	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.04
12JUL	SE	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00						0.34
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.63	0.43	0.00	0.51	0.58	0.00	0.00	NS	NS	NS	NS	NS	0.27
26JUL	SE	0.00	0.63	0.43	0.00	0.51	0.58	0.00	0.00						1.09
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.76	0.00	0.00	0.00	0.04	0.00	NS	NS	NS	NS	NS	0.10
23AUG	SE	0.00	0.00	0.76	0.00	0.00	0.00	0.04	0.00						0.76
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	NS	NS	NS	NS	NS	0.08
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00						0.65
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.16	0.31	0.39	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.11
20SEP	SE	0.00	0.16	0.31	0.39	0.00	0.00	0.00	0.00						0.52
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-228 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
10MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
22MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
29MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25MAY	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-228 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
														AL	
05JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	ST. CROP	0	0	0	61	0	0	0	0	0	0	0	0	0	61
15JUN	SE	0	0	0	37	0	0	0	0	0	0	0	0	0	37
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	ST. CROP	0	225	0	0	0	0	0	0	0	0	0	0	0	225
22JUN	SE	0	225	0	0	0	0	0	0	0	0	0	0	0	225
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	ST. CROP	148	0	75	0	0	0	0	0	0	0	0	0	0	223
29JUN	SE	148	0	75	0	0	0	0	0	0	0	0	0	0	166
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	ST. CROP	0	0	110	0	0	0	0	0	NS	NS	NS	NS	NS	110
12JUL	SE	0	0	110	0	0	0	0	0						110
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	ST. CROP	0	146	139	0	106	121	0	0	NS	NS	NS	NS	NS	512
26JUL	SE	0	146	139	0	106	121	0	0						258
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
09AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	ST. CROP	0	0	245	0	0	0	6	0	NS	NS	NS	NS	NS	251
23AUG	SE	0	0	245	0	0	0	6	0						245
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	ST. CROP	0	0	0	0	0	135	0	0	NS	NS	NS	NS	NS	135
07SEP	SE	0	0	0	0	0	135	0	0						135
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	ST. CROP	0	37	100	57	0	0	0	0	NS	NS	NS	NS	NS	194
20SEP	SE	0	37	100	57	0	0	0	0						121
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
05OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-229 REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.00	0.37	0.08	0.18	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.37	0.08	0.18	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.04	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.04	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.05	0.74	0.00	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.05	0.40	0.00	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.00	0.03	0.00	0.00	0.01	0.00	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.00	0.03	0.00	0.00	0.01	0.00	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.00	0.30	0.00	0.00	0.31	0.03	0.00	0.20	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.30	0.00	0.00	0.31	0.02	0.00	0.20	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-230 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	ST. CROP	0	86	26	27	60	0	0	0	0	0	0	0	0
20JUL	SE	0	86	26	27	59	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	ST. CROP	8	13	7	0	0	0	0	0	0	0	0	0	0
03AUG	SE	8	8	7	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	ST. CROP	11	170	0	33	0	2	0	0	0	0	0	0	0
17AUG	SE	11	92	0	33	0	2	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	ST. CROP	0	6	0	0	1	0	1	0	0	0	0	0	0
31AUG	SE	0	6	0	0	1	0	1	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	ST. CROP	0	70	0	0	65	5	0	59	0	0	0	0	0
14SEP	SE	0	70	0	0	65	4	0	59	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	ST. CROP	0	6	11	0	0	0	0	0	0	0	0	0	0
28SEP	SE	0	6	11	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	ST. CROP	0	0	0	0	0	49	0	0	0	0	0	0	0
12OCT	SE	0	0	0	0	0	49	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
26OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
10NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
01DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8

TABLE E-231 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS COMBINED	
													AL	
12JUN-	CPUE	0.00	0.09	0.29	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
14JUN	SE	0.00	0.09	0.18	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	CPUE	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
28JUN	SE	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	CPUE	0.33	0.64	0.71	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
12JUL	SE	0.33	0.39	0.29	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	CPUE	1.20	0.25	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
27JUL	SE	0.97	0.11	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	CPUE	0.60	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
10AUG	SE	0.24	0.08	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	CPUE	1.60	0.13	0.79	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
24AUG	SE	0.93	0.09	0.39	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	CPUE	1.20	0.92	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
08SEP	SE	0.37	0.56	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	CPUE	5.00	0.79	0.14	0.40	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
21SEP	SE	4.51	0.55	0.10	0.24	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	CPUE	0.00	0.13	0.29	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
05OCT	SE	0.00	0.07	0.16	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	CPUE	0.00	0.04	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
19OCT	SE	0.00	0.04	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-232 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM
BEACH SEINE SURVEY, 2006

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	ALL REGIONS	
													AL	COMBINED
12JUN-	ST. CROP	0	4	8	3	0	0	0	0	0	0	0	0	15
14JUN	SE	0	4	5	3	0	0	0	0	0	0	0	0	7
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
26JUN-	ST. CROP	0	12	0	0	0	0	0	0	0	0	0	0	12
28JUN	SE	0	6	0	0	0	0	0	0	0	0	0	0	6
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
10JUL-	ST. CROP	3	29	19	3	0	0	0	0	0	0	0	0	54
12JUL	SE	3	18	8	3	0	0	0	0	0	0	0	0	20
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
24JUL-	ST. CROP	9	11	4	0	0	0	0	0	0	0	0	0	24
27JUL	SE	7	5	4	0	0	0	0	0	0	0	0	0	10
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
07AUG-	ST. CROP	5	9	6	0	0	0	0	0	0	0	0	0	20
10AUG	SE	2	4	6	0	0	0	0	0	0	0	0	0	7
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21AUG-	ST. CROP	12	6	21	4	1	0	0	0	0	0	0	0	44
24AUG	SE	7	4	11	2	1	0	0	0	0	0	0	0	14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05SEP-	ST. CROP	9	42	4	0	0	0	0	0	0	0	0	0	55
08SEP	SE	3	25	3	0	0	0	0	0	0	0	0	0	26
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
18SEP-	ST. CROP	38	36	4	4	2	0	0	0	0	0	0	0	83
21SEP	SE	34	25	3	2	1	0	0	0	0	0	0	0	42
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
02OCT-	ST. CROP	0	6	8	2	1	0	0	0	0	0	0	0	16
05OCT	SE	0	3	4	2	1	0	0	0	0	0	0	0	6
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
16OCT-	ST. CROP	0	2	4	0	0	0	0	0	0	0	0	0	6
19OCT	SE	0	2	3	0	0	0	0	0	0	0	0	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

Appendix F

Length Frequency Distribution

APPENDIX F
LIST OF TABLES

<u>Number</u>	<u>Title</u>
F-1	Length frequency distribution of larval and young-of-year striped bass in Hudson River estuary determined from Long River Survey, 2006.
F-2	Length frequency distribution of young-of-year striped bass in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-3	Length frequency distribution of young-of-year striped bass in Hudson River estuary determined from Beach Seine Survey, 2006.
F-4	Length frequency distribution of larval and young-of-year white perch in Hudson River estuary determined from Long River Survey, 2006.
F-5	Length frequency distribution of young-of-year white perch in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-6	Length frequency distribution of young-of-year white perch in Hudson River estuary determined from Beach Seine Survey, 2006.
F-7	Length frequency distribution of larval and young-of-year Atlantic tomcod in Hudson River estuary determined from Long River Survey, 2006.
F-8	Length frequency distribution of young-of-year Atlantic tomcod in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-9	Length frequency distribution of young-of-year Atlantic tomcod in Hudson River estuary determined from Beach Seine Survey, 2006.
F-10	Length frequency distribution of larval and young-of-year bay anchovy in Hudson River estuary determined from Long River Survey, 2006.
F-11	Length frequency distribution of young-of-year bay anchovy in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-12	Length frequency distribution of young-of-year bay anchovy in Hudson River estuary determined from Beach Seine Survey, 2006.
F-13	Length frequency distribution of larval and young-of-year American shad in Hudson River estuary determined from Long River Survey, 2006.
F-14	Length frequency distribution of young-of-year American shad in Hudson River estuary determined from Fall Juvenile Survey, 2006.

APPENDIX F

LIST OF TABLES (CONTINUED)

<u>Number</u>	<u>Title</u>
F-15	Length frequency distribution of young-of-year American shad in Hudson River estuary determined from Beach Seine Survey, 2006.
F-16	Length frequency distribution of young-of-year alewife in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-17	Length frequency distribution of young-of-year alewife in Hudson River estuary determined from Beach Seine Survey, 2006.
F-18	Length frequency distribution of young-of-year blueback herring in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-19	Length frequency distribution of young-of-year blueback herring in Hudson River estuary determined from Beach Seine Survey, 2006.
F-20	Length frequency distribution of young-of-year spottail shiner in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-21	Length frequency distribution of young-of-year spottail shiner in Hudson River estuary determined from Beach Seine Survey, 2006.
F-22	Length frequency distribution of young-of-year white catfish in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-23	Length frequency distribution of young-of-year white catfish in Hudson River estuary determined from Beach Seine Survey, 2006.
F-24	Length frequency distribution of young-of-year weakfish in Hudson River estuary determined from Fall Juvenile Survey, 2006.
F-25	Length frequency distribution of young-of-year weakfish in Hudson River estuary determined from Beach Seine Survey, 2006.

Table F-1 Length Frequency Distribution of Larval and Young-of-Year Striped Bass in Hudson River Estuary Determined from Long River Survey, 2006

DATES	0.0- 1.9	2.0- 3.9	4.0- 5.9	6.0- 7.9	8.0- 9.9	10.0- 11.9	12.0- 13.9	14.0- 15.9	16.0- 17.9	18.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03APR - 06APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10APR - 13APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17APR - 20APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24APR - 27APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01MAY - 03MAY	0	2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08MAY - 10MAY	0	10	50	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15MAY - 17MAY	0	43	552	207	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22MAY - 25MAY	0	16	552	1285	10	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAY - 02JUN	0	57	757	1329	70	2	0	0	0	0	0	0	0	0	0	0	0	0
05JUN - 08JUN	0	95	590	880	95	17	2	0	0	0	0	0	0	0	0	0	0	0
12JUN - 15JUN	0	46	1017	705	228	48	21	2	1	0	0	0	0	0	0	0	0	0
19JUN - 22JUN	0	17	809	1407	268	111	35	10	2	1	0	1	0	0	0	0	0	0
26JUN - 29JUN	0	17	599	1360	500	192	73	52	21	4	6	11	2	0	0	0	0	0
10JUL - 12JUL	0	0	15	19	51	111	47	37	5	5	5	17	8	6	0	1	0	0
24JUL - 26JUL	0	0	15	21	28	51	36	14	5	3	3	3	3	3	7	3	2	3
07AUG - 09AUG	0	0	0	0	0	0	0	0	0	1	4	1	4	1	0	1	2	0
21AUG - 23AUG	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	4	3	1
05SEP - 07SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
18SEP - 20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2
03OCT - 05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	303	4998	7244	1250	532	214	115	34	14	18	34	18	11	10	11	8	6
DATES	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9+	N	MEAN	MIN	MED	MAX	SD
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0					
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0					
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0					
03APR - 06APR	0	0	0	0	0	0	0	0	0	0	0	0	0					
10APR - 13APR	0	0	0	0	0	0	0	0	0	0	0	0	0					
17APR - 20APR	0	0	0	0	0	0	0	0	0	0	0	0	0					
24APR - 27APR	0	0	0	0	0	0	0	0	0	0	0	0	0					
01MAY - 03MAY	0	0	0	0	0	0	0	0	0	0	0	0	44	4.6	3.5	4.7	5.7	0.5
08MAY - 10MAY	0	0	0	0	0	0	0	0	0	0	0	0	91	5.3	2.9	5.6	6.7	1.0
15MAY - 17MAY	0	0	0	0	0	0	0	0	0	0	0	0	802	5.3	2.7	5.3	7.5	0.9
22MAY - 25MAY	0	0	0	0	0	0	0	0	0	0	0	0	1863	6.2	3.0	6.3	9.3	0.7
30MAY - 02JUN	0	0	0	0	0	0	0	0	0	0	0	0	2215	6.2	2.2	6.2	10.8	1.0
05JUN - 08JUN	0	0	0	0	0	0	0	0	0	0	0	0	1679	6.0	2.2	6.1	13.5	1.3
12JUN - 15JUN	0	0	0	0	0	0	0	0	0	0	0	0	2068	6.3	2.5	5.9	17.0	1.6
19JUN - 22JUN	0	0	0	0	0	0	0	0	0	0	0	0	2661	6.8	3.0	6.4	25.0	1.7
26JUN - 29JUN	0	0	0	0	0	0	0	0	0	0	0	0	2837	7.6	3.3	6.9	32.0	2.7
10JUL - 12JUL	0	0	0	0	0	0	0	0	0	0	0	0	327	13.2	4.1	11.4	48.0	6.7
24JUL - 26JUL	0	0	0	0	0	0	0	0	0	0	0	0	200	14.5	4.3	11.4	58.0	10.8
07AUG - 09AUG	0	0	0	0	0	0	0	0	0	0	0	0	14	32.3	18.0	31.0	52.0	10.5
21AUG - 23AUG	0	0	0	0	0	0	0	0	0	0	0	0	11	45.1	28.0	48.0	56.0	8.9
05SEP - 07SEP	0	1	1	0	0	0	0	0	0	0	0	0	3	61.0	42.0	67.0	74.0	16.8
18SEP - 20SEP	1	0	1	0	0	1	0	0	0	0	0	0	9	58.1	42.0	56.0	86.0	13.8
03OCT - 05OCT	2	2	1	3	0	0	0	0	0	0	0	0	9	67.1	42.0	69.0	79.0	10.9
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	3	3	3	3	0	1	0	0	0	0	0	0	14833					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-2 Length Frequency Distribution of Young-of-Year Striped Bass in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9
05JUL-08JUL	28	10	17	18	13	8	2	0	0	0	0	0	0	0	0	0	0
17JUL-20JUL	6	5	8	10	16	14	8	6	0	1	1	0	0	0	0	0	0
31JUL-03AUG	7	3	5	10	30	16	22	12	9	8	2	4	0	0	0	0	0
14AUG-17AUG	0	0	0	2	1	12	17	20	11	7	3	5	2	0	1	0	0
28AUG-31AUG	0	0	0	0	1	3	3	4	7	4	4	2	3	1	0	0	0
11SEP-14SEP	0	0	0	0	0	0	3	5	7	10	10	10	6	2	0	1	2
25SEP-28SEP	0	0	0	0	0	0	0	3	4	6	5	13	10	5	5	4	1
09OCT-12OCT	0	0	0	0	0	0	0	1	3	8	6	8	13	4	3	1	4
23OCT-26OCT	0	0	0	0	0	0	0	0	0	2	6	4	8	10	9	5	1
06NOV-10NOV	0	0	0	0	0	0	0	0	1	2	5	6	5	13	5	3	3
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	2	4	5	2	2	3	2
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	41	18	30	40	61	53	55	51	42	48	44	56	52	37	25	17	13
DATES	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9	130.0- 134.9	135.0- 139.9	140.0- 144.9	145.0- 149.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	0	0	0	0	96	22.8	10.0	22.5	40.0	8.5
17JUL-20JUL	0	0	0	0	0	0	0	0	0	0	0	75	31.5	12.0	32.0	64.0	10.7
31JUL-03AUG	0	0	0	0	0	0	0	0	0	0	0	131	38.5	12.0	38.0	67.0	12.7
14AUG-17AUG	0	0	0	0	0	0	0	0	0	0	0	81	48.3	27.0	47.0	80.0	10.3
28AUG-31AUG	0	0	0	0	0	0	0	0	0	0	0	33	54.0	32.0	53.0	76.0	11.3
11SEP-14SEP	4	3	1	0	1	0	0	0	0	0	0	66	67.1	41.0	63.0	115.0	17.3
25SEP-28SEP	1	1	0	0	1	0	0	0	0	0	0	61	69.8	45.0	67.0	118.0	13.5
09OCT-12OCT	1	0	1	0	0	0	1	0	0	0	0	58	69.9	45.0	68.0	126.0	14.4
23OCT-26OCT	1	3	1	0	1	0	0	0	0	0	0	52	78.1	58.0	77.0	119.0	13.2
06NOV-10NOV	4	3	4	1	3	2	0	0	1	0	0	62	84.0	53.0	78.5	136.0	18.7
27NOV-01DEC	9	3	1	2	1	1	0	0	0	0	1	38	89.9	62.0	90.5	145.0	18.7
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	20	13	8	3	7	3	1	0	1	0	1	753					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-3 Length Frequency Distribution of Young-of-Year Striped Bass in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	11	12	26	8	3	0	0	0	0	0	0	0	0	0	0
10JUL-12JUL	0	0	9	6	18	16	3	6	5	0	0	0	0	0	0	0
24JUL-27JUL	0	0	1	9	9	15	19	16	12	12	8	2	0	0	0	0
07AUG-10AUG	0	0	6	10	10	9	17	17	23	22	11	4	4	3	2	0
21AUG-24AUG	0	0	0	1	1	4	6	7	11	16	22	17	12	14	3	2
05SEP-08SEP	0	0	0	0	0	0	2	5	8	13	8	16	18	21	15	7
18SEP-21SEP	0	0	0	0	0	0	1	0	1	8	11	26	22	23	23	7
02OCT-05OCT	0	0	0	0	0	0	0	1	2	14	10	19	5	6	13	10
16OCT-19OCT	0	0	0	0	0	0	0	2	0	4	5	8	11	6	11	15
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	11	28	52	46	47	48	54	62	89	75	92	72	73	67	41
DATES	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9	130.0- 134.9	135.0- 139.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	60	25.5	15.0	26.0	35.0	5.0
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	63	34.8	21.0	34.0	52.0	8.3
24JUL-27JUL	0	0	0	0	0	0	0	0	0	0	105	44.4	22.0	43.0	66.0	10.9
07AUG-10AUG	0	0	0	0	0	0	0	0	0	0	142	48.5	21.0	50.0	80.0	13.4
21AUG-24AUG	2	1	0	0	0	0	0	0	0	0	120	62.2	29.0	62.5	95.0	12.8
05SEP-08SEP	5	5	1	1	0	0	0	0	0	0	129	71.3	42.0	72.0	108.0	13.6
18SEP-21SEP	9	5	2	2	0	0	0	0	0	0	143	75.0	42.0	74.0	106.0	11.7
02OCT-05OCT	12	4	6	1	2	2	0	0	0	0	110	76.5	49.0	75.5	117.0	15.9
16OCT-19OCT	6	5	1	1	2	0	2	0	1	0	82	80.3	48.0	81.0	131.0	16.1
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	34	20	10	5	4	2	2	0	1	0	954					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-4 Length Frequency Distribution of Larval and Young-of-Year White Perch in Hudson River Estuary Determined from Long River Survey, 2006

DATES	0.0- 1.9	2.0- 3.9	4.0- 5.9	6.0- 7.9	8.0- 9.9	10.0- 11.9	12.0- 13.9	14.0- 15.9	16.0- 17.9	18.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03APR - 06APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10APR - 13APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17APR - 20APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24APR - 27APR	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01MAY - 03MAY	0	110	56	0	0	0	0	0	0	0	0	0	0	0	0	0
08MAY - 10MAY	0	705	264	4	0	0	0	0	0	0	0	0	0	0	0	0
15MAY - 17MAY	0	560	584	2	0	0	0	0	0	0	0	0	0	0	0	0
22MAY - 25MAY	0	595	1450	71	0	0	0	0	0	0	0	0	0	0	0	0
30MAY - 02JUN	1	583	1519	550	9	0	0	0	0	0	0	0	0	0	0	0
05JUN - 08JUN	0	719	792	366	71	4	0	0	0	0	0	0	0	0	0	0
12JUN - 15JUN	0	647	911	448	156	60	9	3	0	2	0	0	0	0	0	0
19JUN - 22JUN	0	549	997	699	249	94	7	2	0	0	3	0	0	0	0	0
26JUN - 29JUN	0	189	1095	766	262	84	23	2	1	0	0	0	0	0	0	0
10JUL - 12JUL	0	1	24	34	64	60	14	10	4	1	13	1	0	0	0	0
24JUL - 26JUL	0	0	12	13	25	29	25	6	7	1	1	2	1	1	0	0
07AUG - 09AUG	0	0	0	0	0	0	2	4	8	7	2	0	0	0	0	0
21AUG - 23AUG	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05SEP - 07SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18SEP - 20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03OCT - 05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	1	4677	7704	2953	836	331	80	27	20	12	19	3	1	1	0	0
DATES	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9+	N	MEAN	MIN	MED	MAX	SD	
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0						
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0						
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0						
03APR - 06APR	0	0	0	0	0	0	0	0	0	0						
10APR - 13APR	0	0	0	0	0	0	0	0	0	0						
17APR - 20APR	0	0	0	0	0	0	0	0	0	0						
24APR - 27APR	0	0	0	0	0	0	0	0	0	19	3.2	2.5	3.2	3.6	0.2	
01MAY - 03MAY	0	0	0	0	0	0	0	0	0	166	3.7	2.5	3.7	4.6	0.5	
08MAY - 10MAY	0	0	0	0	0	0	0	0	0	973	3.7	2.5	3.6	7.1	0.5	
15MAY - 17MAY	0	0	0	0	0	0	0	0	0	1146	3.9	2.3	4.0	6.8	0.5	
22MAY - 25MAY	0	0	0	0	0	0	0	0	0	2116	4.4	2.6	4.2	7.1	0.7	
30MAY - 02JUN	0	0	0	0	0	0	0	0	0	2662	4.9	1.9	4.8	9.0	1.1	
05JUN - 08JUN	0	0	0	0	0	0	0	0	0	1952	4.8	2.0	4.3	11.7	1.5	
12JUN - 15JUN	0	0	0	0	0	0	0	0	0	2236	5.3	2.2	4.9	19.2	2.0	
19JUN - 22JUN	0	0	0	0	0	0	0	0	0	2600	5.8	2.2	5.5	21.0	2.0	
26JUN - 29JUN	0	0	0	0	0	0	0	0	0	2422	6.1	2.8	5.8	17.2	1.9	
10JUL - 12JUL	0	0	0	0	0	0	0	0	0	226	10.3	3.5	9.5	26.0	4.2	
24JUL - 26JUL	0	0	0	0	0	0	0	0	0	123	11.2	4.2	10.7	36.0	5.0	
07AUG - 09AUG	1	0	0	0	0	0	0	0	0	24	18.5	12.5	17.3	51.0	7.2	
21AUG - 23AUG	0	0	0	0	0	0	0	0	0	1	18.0	18.0	18.0	18.0		
05SEP - 07SEP	0	0	0	0	0	0	0	0	0	0						
18SEP - 20SEP	0	1	0	0	0	0	0	0	0	1	56.0	56.0	56.0	56.0		
03OCT - 05OCT	0	1	0	1	1	1	0	0	0	4	68.0	56.0	68.5	79.0	9.5	
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====						
	1	2	0	1	1	1	0	0	0	16671						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-5 Length Frequency Distribution of Young-of-Year White Perch in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
DATES													
05JUL -08JUL	9	11	3	0	0	0	0	0	0	0	0	0	0
17JUL -20JUL	5	6	2	1	1	0	0	0	0	0	0	0	0
31JUL -03AUG	0	9	5	2	5	5	4	1	0	0	0	0	0
14AUG -17AUG	0	0	18	7	3	1	1	3	0	4	1	0	0
28AUG -31AUG	0	0	0	1	5	10	2	1	0	1	1	1	0
11SEP -14SEP	0	0	0	0	4	7	11	3	4	2	3	3	0
25SEP -28SEP	0	0	0	0	0	2	5	9	6	2	4	3	1
09OCT -12OCT	0	0	0	0	0	1	7	3	8	4	8	4	4
23OCT -26OCT	0	0	0	0	0	0	3	9	11	15	7	4	12
06NOV -10NOV	0	0	0	0	0	0	3	4	7	8	4	11	8
27NOV -01DEC	0	0	0	0	0	0	2	2	5	8	9	16	13
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	14	26	28	11	18	26	38	35	41	44	37	42	38
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9+	N	MEAN	MIN	MED	MAX	SD	
05JUL -08JUL	0	0	0	0	0	0	24	14.9	9.0	15.0	22.0	3.6	
17JUL -20JUL	0	0	0	0	0	0	16	17.3	9.0	16.0	34.0	6.1	
31JUL -03AUG	0	0	0	0	0	0	31	28.3	15.0	28.0	45.0	9.9	
14AUG -17AUG	0	0	0	0	0	0	38	31.2	20.0	25.5	61.0	12.7	
28AUG -31AUG	0	0	0	0	0	0	22	39.3	29.0	36.0	67.0	10.3	
11SEP -14SEP	1	0	0	0	0	0	39	47.2	31.0	42.0	78.0	11.8	
25SEP -28SEP	1	0	0	0	0	0	35	52.8	37.0	51.0	78.0	10.1	
09OCT -12OCT	2	2	0	0	0	0	43	58.1	38.0	57.0	83.0	11.7	
23OCT -26OCT	8	11	11	0	0	0	92	66.1	42.0	64.5	88.0	13.9	
06NOV -10NOV	11	7	9	3	1	0	77	69.4	43.0	70.0	98.0	13.9	
27NOV -01DEC	19	16	11	2	1	0	107	71.6	42.0	73.0	95.0	11.7	
	=====	=====	=====	=====	=====	=====	=====						
	42	36	31	5	2	0	524						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-6 Length Frequency Distribution of Young-of-Year White Perch in Hudson River Estuary Determined from Beach Seine Survey, 2006

	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	0	1	0	0	0	0	0	0	0	0	0	0
10JUL-12JUL	0	3	8	1	5	4	0	0	0	0	0	0	0
24JUL-27JUL	0	1	3	11	13	12	2	3	1	0	0	0	0
07AUG-10AUG	0	0	1	7	9	17	11	26	13	12	2	0	0
21AUG-24AUG	0	0	1	1	5	9	8	14	14	16	12	10	7
05SEP-08SEP	0	0	0	1	5	5	8	6	12	15	8	9	5
18SEP-21SEP	0	0	0	0	2	1	0	6	7	12	22	26	15
02OCT-05OCT	0	0	0	0	0	0	0	2	5	6	4	19	16
16OCT-19OCT	0	0	0	0	0	0	0	0	2	2	1	4	2
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	4	14	21	39	48	29	57	54	63	49	68	45
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9+	N	MEAN	MIN	MED	MAX	SD	
12JUN-14JUN	0	0	0	0	0	0	0						
26JUN-28JUN	0	0	0	0	0	0	1	20.0	20.0	20.0	20.0		
10JUL-12JUL	0	0	0	0	0	0	21	26.9	18.0	24.0	38.0	7.2	
24JUL-27JUL	0	0	0	0	0	0	47	33.7	19.0	34.0	60.0	8.0	
07AUG-10AUG	0	0	0	0	0	0	98	43.6	24.0	45.0	62.0	9.0	
21AUG-24AUG	1	0	0	0	0	0	100	52.9	23.0	52.5	75.0	11.8	
05SEP-08SEP	3	1	0	0	0	0	81	54.6	28.0	56.0	81.0	12.6	
18SEP-21SEP	6	6	1	0	0	0	108	63.7	30.0	64.5	85.0	9.9	
02OCT-05OCT	14	5	0	0	0	0	74	67.8	46.0	69.0	84.0	8.6	
16OCT-19OCT	2	0	2	4	1	0	20	74.6	52.0	71.5	96.0	13.9	
	=====	=====	=====	=====	=====	=====	=====						
	26	12	3	4	1	0	550						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-7 Length Frequency Distribution of Larval and Young-of-Year Atlantic Tomcod in Hudson River Estuary Determined from Long River Survey, 2006

DATES	0.0- 1.9	2.0- 3.9	4.0- 5.9	6.0- 7.9	8.0- 9.9	10.0- 11.9	12.0- 13.9	14.0- 15.9	16.0- 17.9	18.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9
08MAR - 10MAR	0	0	7	227	129	1	0	0	0	0	0	0	0	0	0	0	0	0
20MAR - 22MAR	0	0	0	50	146	59	2	1	1	0	0	0	0	0	0	0	0	0
27MAR - 29MAR	0	0	0	12	94	163	54	7	2	0	0	0	0	0	0	0	0	0
03APR - 06APR	0	0	0	3	14	111	224	96	38	19	1	0	0	0	0	0	0	0
10APR - 13APR	0	0	0	0	4	10	61	114	126	79	90	14	1	0	0	0	0	0
17APR - 20APR	0	0	0	0	1	1	24	60	117	123	196	51	8	0	0	0	0	0
24APR - 27APR	0	0	0	0	0	0	2	4	9	23	102	137	58	31	0	0	0	0
01MAY - 03MAY	0	0	0	0	0	0	1	4	2	4	71	192	146	83	33	0	0	0
08MAY - 10MAY	0	0	0	0	0	0	0	0	0	0	0	0	7	38	24	13	1	1
15MAY - 17MAY	0	0	0	0	0	0	0	0	0	0	1	0	1	5	38	81	63	31
22MAY - 25MAY	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	17	69	147
30MAY - 02JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	17
05JUN - 08JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
12JUN - 15JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
19JUN - 22JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26JUN - 29JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL - 12JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL - 26JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG - 09AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21AUG - 23AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05SEP - 07SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18SEP - 20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03OCT - 05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	7	292	388	345	368	286	295	248	461	394	222	157	95	112	140	199
DATES	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9+	N	MEAN	MIN	MED	MAX	SD
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0	0	0	364	7.6	5.2	7.6	10.9	0.9
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0	0	0	259	9.1	6.1	9.1	16.6	1.4
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0	0	0	332	10.7	6.5	10.8	17.9	1.6
03APR - 06APR	0	0	0	0	0	0	0	0	0	0	0	0	506	13.3	7.0	13.1	20.6	2.1
10APR - 13APR	0	0	0	0	0	0	0	0	0	0	0	0	499	17.3	9.3	16.7	30.7	3.5
17APR - 20APR	0	0	0	0	0	0	0	0	0	0	0	0	581	19.8	9.5	19.4	32.3	3.8
24APR - 27APR	0	0	0	0	0	0	0	0	0	0	0	0	366	26.6	13.0	26.3	39.0	5.2
01MAY - 03MAY	0	0	0	0	0	0	0	0	0	0	0	0	536	30.2	13.5	29.8	44.0	5.3
08MAY - 10MAY	0	0	0	0	0	0	0	0	0	0	0	0	84	39.7	31.0	38.5	55.0	4.5
15MAY - 17MAY	1	0	0	0	0	0	0	0	0	0	0	0	224	48.7	23.2	48.0	61.0	5.4
22MAY - 25MAY	58	46	15	0	0	0	0	0	0	0	0	0	389	58.3	32.0	58.0	74.0	5.8
30MAY - 02JUN	51	75	63	20	10	0	0	0	0	0	0	0	258	66.9	45.0	67.0	84.0	6.4
05JUN - 08JUN	6	41	61	32	27	10	1	0	0	0	0	0	183	73.3	53.0	73.0	90.0	6.6
12JUN - 15JUN	1	11	44	66	40	20	12	3	0	0	0	0	199	78.0	58.0	77.0	99.0	6.9
19JUN - 22JUN	0	4	14	38	38	36	23	10	0	1	0	0	164	82.9	66.0	83.0	106.0	7.3
26JUN - 29JUN	0	0	2	13	18	26	17	2	2	1	0	0	81	85.7	72.0	86.0	105.0	6.5
10JUL - 12JUL	0	0	3	1	4	15	9	6	2	3	1	0	44	90.3	74.0	88.5	110.0	8.6
24JUL - 26JUL	0	0	0	2	6	18	14	9	3	3	2	0	57	91.6	78.0	91.0	113.0	7.5
07AUG - 09AUG	0	0	0	0	0	0	3	2	0	0	0	0	5	94.2	92.0	94.0	97.0	1.9
21AUG - 23AUG	0	0	0	0	0	0	0	1	1	0	0	0	2	99.5	97.0	99.5	102.0	3.5
05SEP - 07SEP	0	0	0	0	1	0	0	0	0	0	0	0	1	82.0	82.0	82.0	82.0	
18SEP - 20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0					
03OCT - 05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	117	177	202	172	144	125	79	33	8	8	3	0	5134					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-8 Length Frequency Distribution of Young-of-Year Atlantic Tomcod in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9
05JUL -08JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	7	17	30	30	24	16
17JUL -20JUL	0	0	0	0	0	0	0	0	0	0	0	0	4	5	20	34	18	17	10
31JUL -03AUG	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6	8	7	2	4
14AUG -17AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	4	3	1
28AUG -31AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
11SEP -14SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
25SEP -28SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
09OCT -12OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23OCT -26OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06NOV -10NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27NOV -01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	0	0	0	0	1	0	4	13	45	76	61	47	34
DATES	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9	130.0- 134.9	135.0- 139.9	140.0- 144.9	145.0- 149.9	150.0- 154.9	155.0- 159.9	160.0- 164.9+	N	MEAN	MIN	MED	MAX	SD	
05JUL -08JUL	3	3	2	0	0	0	0	0	0	0	0	0	132	91.9	75.0	91.5	116.0	8.2	
17JUL -20JUL	3	3	0	0	0	0	0	0	0	0	0	0	114	89.8	72.0	89.0	114.0	8.6	
31JUL -03AUG	2	0	0	0	0	0	0	0	0	0	0	0	31	89.7	62.0	88.0	109.0	9.6	
14AUG -17AUG	3	4	4	1	0	0	0	0	0	0	0	0	25	101.7	82.0	102.0	124.0	12.6	
28AUG -31AUG	0	2	1	2	2	0	0	0	0	0	0	0	10	113.5	91.0	114.0	129.0	12.6	
11SEP -14SEP	2	3	0	1	2	0	0	2	0	0	0	0	13	114.9	88.0	111.0	143.0	16.4	
25SEP -28SEP	1	1	1	1	0	0	1	0	0	0	0	0	6	115.7	92.0	116.0	138.0	15.5	
09OCT -12OCT	0	1	2	2	1	1	0	2	2	0	0	0	11	130.2	113.0	129.0	148.0	13.0	
23OCT -26OCT	0	0	0	1	2	1	0	1	0	0	0	0	5	130.0	122.0	125.0	144.0	9.0	
06NOV -10NOV	0	0	0	0	0	1	1	1	2	2	2	0	9	146.3	130.0	147.0	155.0	8.3	
27NOV -01DEC	0	0	0	0	0	0	0	0	1	0	1	0	2	152.5	149.0	152.5	156.0	4.9	
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	
	14	17	10	8	7	3	2	6	5	2	3	0	358						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-9 Length Frequency Distribution of Young-of-Year Atlantic Tomcod in Hudson River Estuary Determined from Beach Seine Survey, 2006

	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	1	0	0	6	4	8
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10JUL - 12JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL - 27JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG - 10AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21AUG - 24AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05SEP - 08SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18SEP - 21SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02OCT - 05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT - 19OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	0	0	0	1	0	0	6	4	9
DATES	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9+	N	MEAN	MIN	MED	MAX	SD	
12JUN-14JUN	2	0	0	0	0	0	0	0	21	77.5	59.0	79.0	87.0	6.6	
26JUN-28JUN	0	0	0	0	0	0	0	0	1	81.0	81.0	81.0	81.0		
10JUL - 12JUL	0	0	0	0	0	0	0	0	0						
24JUL - 27JUL	0	0	0	0	0	0	0	0	0						
07AUG - 10AUG	0	0	0	0	0	0	0	0	0						
21AUG - 24AUG	0	0	0	0	0	0	0	0	0						
05SEP - 08SEP	0	0	0	0	0	1	1	0	2	115.0	112.0	115.0	118.0	4.2	
18SEP - 21SEP	0	0	0	0	0	0	0	0	0						
02OCT - 05OCT	0	0	0	0	0	1	0	0	1	114.0	114.0	114.0	114.0		
16OCT - 19OCT	0	0	0	0	0	0	1	0	1	119.0	119.0	119.0	119.0		
	=====	=====	=====	=====	=====	=====	=====	=====	=====						
	2	0	0	0	0	2	2	0	26						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-10 Length Frequency Distribution of Larval and Young-of-Year Bay Anchovy in Hudson River Estuary Determined from Long River Survey, 2006

DATES	0.0- 1.9	2.0- 3.9	4.0- 5.9	6.0- 7.9	8.0- 9.9	10.0- 11.9	12.0- 13.9	14.0- 15.9	16.0- 17.9	18.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9
08MAR - 10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20MAR - 22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27MAR - 29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03APR - 06APR	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10APR - 13APR	0	0	0	0	0	0	0	0	0	0	0	0	2	1
17APR - 20APR	0	0	0	0	0	0	0	0	0	1	0	0	2	3
24APR - 27APR	0	0	0	0	0	0	0	0	0	0	0	0	2	0
01MAY - 03MAY	0	0	0	0	0	0	0	0	0	0	0	0	2	0
08MAY - 10MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15MAY - 17MAY	0	0	4	1	0	0	0	0	0	0	0	0	0	0
22MAY - 25MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30MAY - 02JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05JUN - 08JUN	0	5	0	0	0	0	0	0	0	0	0	0	0	0
12JUN - 15JUN	0	2	20	10	0	0	0	0	0	0	0	0	0	0
19JUN - 22JUN	0	0	17	84	54	4	0	0	0	0	0	0	0	0
26JUN - 29JUN	0	1	16	88	129	149	97	32	7	6	3	0	0	0
10JUL - 12JUL	0	115	91	235	243	204	109	56	47	51	40	0	0	0
24JUL - 26JUL	0	72	114	150	257	260	235	178	170	114	158	44	15	4
07AUG - 09AUG	0	24	125	229	240	296	205	150	138	168	287	157	91	36
21AUG - 23AUG	0	0	25	106	222	323	314	226	108	168	286	148	99	111
05SEP - 07SEP	0	0	8	120	430	361	226	175	195	156	177	102	77	45
18SEP - 20SEP	0	0	0	10	110	210	322	341	224	152	278	99	127	101
03OCT - 05OCT	0	0	0	0	2	16	64	155	241	217	417	138	108	189
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	219	420	1033	1687	1823	1572	1313	1130	1033	1646	688	526	491
DATES	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9+	N	MEAN	MIN	MED	MAX	SD	
08MAR - 10MAR	0	0	0	0	0	0	0	0						
20MAR - 22MAR	0	0	0	0	0	0	0	0						
27MAR - 29MAR	1	0	0	0	0	0	0	1	41.0	41.0	41.0	41.0		
03APR - 06APR	0	0	0	0	0	0	0	1	30.5	30.5	30.5	30.5		
10APR - 13APR	0	0	0	0	0	0	0	3	34.4	33.0	33.3	37.0	2.2	
17APR - 20APR	0	0	1	0	0	0	0	7	34.5	19.8	35.0	51.0	9.2	
24APR - 27APR	0	0	0	0	0	0	0	2	33.0	32.0	33.0	34.0	1.4	
01MAY - 03MAY	1	0	0	0	0	0	0	3	36.8	31.9	34.4	44.0	6.4	
08MAY - 10MAY	0	0	0	0	0	0	0	0						
15MAY - 17MAY	0	0	0	0	0	0	0	5	4.9	4.0	4.8	6.2	0.8	
22MAY - 25MAY	1	1	0	0	0	0	0	3	41.3	36.0	41.0	47.0	5.5	
30MAY - 02JUN	1	0	0	0	0	0	0	1	44.0	44.0	44.0	44.0		
05JUN - 08JUN	0	0	0	0	0	0	0	5	3.5	3.4	3.4	3.8	0.2	
12JUN - 15JUN	0	0	0	0	0	0	0	32	5.6	3.2	5.7	7.2	1.1	
19JUN - 22JUN	0	0	0	0	0	0	0	159	7.5	4.4	7.3	11.4	1.3	
26JUN - 29JUN	0	0	0	0	0	0	0	528	10.4	3.8	10.3	23.4	2.8	
10JUL - 12JUL	0	0	0	0	0	0	0	1191	9.8	2.1	9.1	23.8	4.5	
24JUL - 26JUL	0	0	0	0	0	0	0	1771	13.0	2.3	12.1	36.0	5.9	
07AUG - 09AUG	13	2	0	0	0	0	0	2161	15.5	2.5	13.5	47.0	8.0	
21AUG - 23AUG	46	20	6	2	0	0	0	2210	18.0	4.2	14.9	57.0	9.3	
05SEP - 07SEP	41	32	23	18	0	1	0	2187	16.8	5.2	13.3	66.0	10.1	
18SEP - 20SEP	65	62	26	12	1	0	0	2141	20.4	6.5	16.5	63.0	10.4	
03OCT - 05OCT	183	151	57	19	7	2	0	1969	27.6	9.3	22.7	67.0	11.8	
	=====	=====	=====	=====	=====	=====	=====	=====						
	352	268	113	51	8	3	0	14380						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-11 Length Frequency Distribution of Young-of-Year Bay Anchovy in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	2	0	1	1	1	0	0	0	0	0	5	35.6	26.0	36.0	48.0	9.3
17JUL-20JUL	1	1	4	0	0	0	0	0	0	0	0	0	0	6	19.5	12.0	21.0	22.0	3.9
31JUL-03AUG	0	22	33	10	0	0	0	0	0	0	0	0	0	65	21.0	15.0	21.0	29.0	3.3
14AUG-17AUG	0	13	51	27	14	8	0	0	0	0	0	0	0	113	24.7	16.0	24.0	38.0	5.2
28AUG-31AUG	1	8	25	36	31	53	27	7	1	0	0	0	0	189	32.3	13.0	33.0	54.0	7.6
11SEP-14SEP	0	13	46	29	38	18	8	9	15	1	0	0	0	177	31.0	17.0	30.0	59.0	10.1
25SEP-28SEP	2	7	32	43	28	18	28	12	9	8	1	0	0	188	33.3	11.0	31.0	61.0	10.8
09OCT-12OCT	0	5	24	26	22	42	27	19	22	3	2	1	0	193	36.8	16.0	37.0	65.0	10.6
23OCT-26OCT	0	0	8	21	32	45	32	26	11	10	1	1	0	189	38.9	21.0	38.0	66.0	9.2
06NOV-10NOV	0	0	1	2	6	12	8	15	10	3	3	0	0	62	44.0	21.0	45.0	62.0	9.3
27NOV-01DEC	0	0	0	1	2	0	4	3	3	0	0	0	0	13	42.4	28.0	44.0	53.0	8.5
	0	0	0	1	0	3	0	0	0	0	0	0	0	4	35.5	29.0	37.0	39.0	4.5
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	4	69	224	198	173	200	135	92	71	25	7	2	0	1204					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-12 Length Frequency Distribution of Young-of-Year Bay Anchovy in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
24JUL-27JUL	0	0	0	1	1	1	0	0	1	0	0	0	0	4	35.5	26.0	33.0	50.0	10.3
07AUG-10AUG	0	0	0	2	8	12	7	8	0	0	0	0	0	37	38.5	26.0	38.0	48.0	5.7
21AUG-24AUG	0	0	0	2	2	0	7	15	1	0	0	0	0	27	42.8	26.0	45.0	50.0	6.3
05SEP-08SEP	0	1	15	9	1	2	4	1	0	0	0	0	0	33	27.6	17.0	25.0	46.0	7.6
18SEP-21SEP	0	0	9	15	8	7	5	6	11	6	4	0	0	72	39.4	20.0	36.5	63.0	13.1
02OCT-05OCT	0	0	0	7	10	15	11	12	23	11	2	1	0	93	44.3	26.0	46.0	65.0	10.0
16OCT-19OCT	0	0	0	1	9	15	23	22	14	13	7	1	0	107	46.1	28.0	46.0	65.0	9.0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	0	1	24	37	39	52	57	64	50	30	13	2	0	373					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-13 Length Frequency Distribution of Larval and Young-of-Year American Shad in Hudson River Estuary Determined from Long River Survey, 2006

DATES	0.0- 1.9	2.0- 3.9	4.0- 5.9	6.0- 7.9	8.0- 9.9	10.0- 11.9	12.0- 13.9	14.0- 15.9	16.0- 17.9	18.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9
08MAR-10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20MAR-22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27MAR-29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03APR-06APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10APR-13APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17APR-20APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24APR-27APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01MAY-03MAY	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
08MAY-10MAY	0	0	0	0	2	5	2	0	0	0	0	0	0	0	0	0	0	0	0
15MAY-17MAY	0	0	0	0	4	16	2	0	0	0	0	0	0	0	0	0	0	0	0
22MAY-25MAY	0	0	0	1	0	13	1	2	0	0	0	0	0	0	0	0	0	0	0
30MAY-02JUN	0	0	0	1	7	13	10	6	1	1	0	0	0	0	0	0	0	0	0
05JUN-08JUN	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12JUN-15JUN	0	0	0	0	1	0	3	3	5	5	10	0	0	0	0	0	0	0	0
19JUN-22JUN	0	0	0	0	5	7	2	14	10	12	14	5	1	0	0	0	0	0	0
26JUN-29JUN	0	0	0	0	0	0	0	0	1	5	8	3	2	2	0	0	0	0	0
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL-26JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG-09AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21AUG-23AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05SEP-07SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18SEP-20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	2	20	56	20	25	17	23	32	8	3	2	0	0	0	0	0
DATES	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9+	N	MEAN	MIN	MED	MAX	SD	
08MAR-10MAR	0	0	0	0	0	0	0	0	0	0	0	0	0						
20MAR-22MAR	0	0	0	0	0	0	0	0	0	0	0	0	0						
27MAR-29MAR	0	0	0	0	0	0	0	0	0	0	0	0	0						
03APR-06APR	0	0	0	0	0	0	0	0	0	0	0	0	0						
10APR-13APR	0	0	0	0	0	0	0	0	0	0	0	0	0						
17APR-20APR	0	0	0	0	0	0	0	0	0	0	0	0	0						
24APR-27APR	0	0	0	0	0	0	0	0	0	0	0	0	0						
01MAY-03MAY	0	0	0	0	0	0	0	0	0	0	0	0	2	10.8	10.5	10.8	11.0	0.4	
08MAY-10MAY	0	0	0	0	0	0	0	0	0	0	0	0	9	11.0	8.3	11.3	12.5	1.4	
15MAY-17MAY	0	0	0	0	0	0	0	0	0	0	0	0	22	10.7	9.0	10.7	12.7	0.9	
22MAY-25MAY	0	0	0	0	0	0	0	0	0	0	0	0	17	11.1	7.6	10.8	15.0	1.6	
30MAY-02JUN	0	0	0	0	0	0	0	0	0	0	0	0	39	12.0	7.9	11.7	18.5	2.3	
05JUN-08JUN	0	0	0	0	0	0	0	0	0	0	0	0	1	8.9	8.9	8.9	8.9		
12JUN-15JUN	0	0	0	0	0	0	0	0	0	0	0	0	27	18.1	9.3	18.7	23.6	3.5	
19JUN-22JUN	0	0	0	0	0	0	0	0	0	0	0	0	70	17.4	9.1	17.5	30.0	5.0	
26JUN-29JUN	0	0	0	0	0	0	0	0	0	0	0	0	21	24.3	17.7	22.5	36.0	5.6	
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	0	0	0						
24JUL-26JUL	1	0	0	0	0	0	0	0	0	0	0	0	1	67.0	67.0	67.0	67.0		
07AUG-09AUG	1	1	0	0	0	0	0	0	0	0	0	0	2	68.0	65.0	68.0	71.0	4.2	
21AUG-23AUG	0	0	0	0	0	1	0	0	0	0	0	0	1	90.0	90.0	90.0	90.0		
05SEP-07SEP	0	0	0	0	0	0	0	0	0	0	1	0	1	118.0	118.0	118.0	118.0		
18SEP-20SEP	0	0	0	0	0	0	0	0	0	0	0	0	0						
03OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0						
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====						
	2	1	0	0	0	1	0	0	0	0	1	0	213						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-14 Length Frequency Distribution of Young-of-Year American Shad in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9
05JUL-08JUL	0	0	3	8	5	2	5	4	0	0	0	0	0	0	0	0
17JUL-20JUL	0	0	2	3	8	6	6	3	2	1	0	0	0	0	0	0
31JUL-03AUG	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	0
14AUG-17AUG	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
28AUG-31AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
11SEP-14SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25SEP-28SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09OCT-12OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23OCT-26OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06NOV-10NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	5	11	13	8	11	7	2	3	0	1	2	0	2	2
DATES	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9	130.0- 134.9	135.0- 139.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	0	0	0	27	33.3	21.0	30.0	47.0	7.9
17JUL-20JUL	0	0	0	0	0	0	0	0	0	0	31	37.2	22.0	37.0	58.0	8.5
31JUL-03AUG	0	0	0	0	0	0	0	0	0	0	4	62.3	56.0	61.0	71.0	7.1
14AUG-17AUG	0	0	0	0	0	0	0	0	0	0	2	75.0	70.0	75.0	80.0	7.1
28AUG-31AUG	0	1	1	0	0	0	0	0	0	0	5	91.4	82.0	89.0	104.0	8.7
11SEP-14SEP	0	0	0	0	0	0	0	0	0	0	0					
25SEP-28SEP	0	0	1	0	0	0	0	0	0	0	1	103.0	103.0	103.0	103.0	
09OCT-12OCT	0	0	0	0	0	2	1	0	1	0	4	122.0	116.0	120.5	131.0	7.0
23OCT-26OCT	0	0	1	0	0	2	0	0	0	0	3	111.7	103.0	115.0	117.0	7.6
06NOV-10NOV	0	0	0	0	0	0	0	0	0	0	0					
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	0	1	3	0	0	4	1	0	1	0	77					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-15 Length Frequency Distribution of Young-of-Year American Shad in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9
12JUN-14JUN	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	0	0	7	16	9	0	0	0	0	0	0	0	0	0
10JUL-12JUL	0	0	0	2	12	12	9	9	8	4	0	0	0	0	0
24JUL-27JUL	0	0	0	0	1	2	6	8	10	4	2	2	2	0	0
07AUG-10AUG	0	0	0	0	0	0	0	1	8	5	5	5	7	12	6
21AUG-24AUG	0	0	0	0	0	0	0	0	1	1	1	1	5	18	6
05SEP-08SEP	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
18SEP-21SEP	0	0	0	0	0	0	0	1	0	1	2	2	1	1	0
02OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT-19OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	9	30	23	15	19	27	15	10	11	15	31	15
DATES	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0	0	1	30.0	30.0	30.0	30.0	
26JUN-28JUN	0	0	0	0	0	0	0	0	0	32	31.8	25.0	32.0	37.0	3.3
10JUL-12JUL	0	0	0	0	0	0	0	0	0	56	41.5	28.0	41.0	57.0	8.3
24JUL-27JUL	0	0	0	0	0	0	0	0	0	38	50.8	31.0	50.0	72.0	9.4
07AUG-10AUG	0	0	0	0	0	0	0	0	0	50	67.5	47.0	69.5	82.0	10.5
21AUG-24AUG	4	1	1	0	0	0	0	0	0	40	77.4	54.0	78.0	98.0	8.6
05SEP-08SEP	8	10	1	2	0	1	0	0	0	26	90.4	68.0	90.5	114.0	8.4
18SEP-21SEP	7	17	19	10	3	0	0	0	0	64	91.7	45.0	94.5	107.0	12.1
02OCT-05OCT	1	3	6	11	7	1	0	0	0	29	100.4	85.0	101.0	110.0	5.3
16OCT-19OCT	0	2	1	6	11	7	5	1	0	33	107.7	91.0	108.0	122.0	6.9
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	20	33	28	29	21	9	5	1	0	369					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-16 Length Frequency Distribution of Young-of-Year Alewife in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9
05JUL-08JUL	0	0	0	0	0	0	1	1	1	0	0	0	0	0
17JUL-20JUL	0	0	0	0	0	0	23	19	4	3	0	0	0	0
31JUL-03AUG	0	0	0	0	0	0	3	6	15	12	7	7	0	0
14AUG-17AUG	0	0	0	0	0	0	0	0	0	1	1	8	7	2
28AUG-31AUG	0	0	0	0	0	0	0	0	0	0	0	1	1	1
11SEP-14SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	1
25SEP-28SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09OCT-12OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23OCT-26OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06NOV-10NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	27	26	20	16	8	16	8	4
DATES	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	0	3	46.3	43.0	45.0	51.0	4.2
17JUL-20JUL	0	0	0	0	0	0	0	0	49	45.6	41.0	45.0	57.0	4.1
31JUL-03AUG	0	0	0	0	0	0	0	0	53	55.9	40.0	56.0	68.0	6.8
14AUG-17AUG	1	0	0	0	0	0	0	0	20	69.7	57.0	69.5	80.0	5.4
28AUG-31AUG	5	5	1	0	0	0	0	0	14	82.4	69.0	83.0	92.0	6.1
11SEP-14SEP	0	2	0	1	0	0	0	0	4	86.8	78.0	87.0	95.0	7.1
25SEP-28SEP	0	0	3	2	1	1	0	0	7	97.6	93.0	97.0	105.0	4.4
09OCT-12OCT	0	0	1	2	0	2	1	1	7	104.4	94.0	105.0	115.0	8.2
23OCT-26OCT	0	0	1	1	1	2	0	0	5	100.6	90.0	101.0	107.0	6.8
06NOV-10NOV	0	0	1	0	0	0	0	0	1	91.0	91.0	91.0	91.0	
27NOV-01DEC	0	0	0	0	1	0	2	0	3	107.7	103.0	110.0	110.0	4.0
	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	6	7	7	6	3	5	3	1	166					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-17 Length Frequency Distribution of Young-of-Year Alewife in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9	75.0- 79.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	0	0	0	0	0	2	1	0	0	0	0	0	0
10JUL-12JUL	0	0	0	0	0	0	21	16	4	1	0	1	1	0
24JUL-27JUL	0	0	0	0	0	0	7	11	11	7	3	0	1	0
07AUG-10AUG	0	0	0	0	0	0	0	2	5	6	7	9	8	3
21AUG-24AUG	0	0	0	0	0	0	0	0	0	1	1	0	0	1
05SEP-08SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18SEP-21SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT-19OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	30	30	20	15	11	10	10	5
DATES	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	0	0	0	3	44.3	43.0	44.0	46.0	1.5
10JUL-12JUL	0	0	0	0	0	0	0	0	44	45.9	41.0	45.0	70.0	6.0
24JUL-27JUL	0	0	0	0	0	0	0	0	40	51.0	41.0	50.0	70.0	6.8
07AUG-10AUG	1	1	0	0	0	0	0	0	42	64.8	46.0	65.5	87.0	9.1
21AUG-24AUG	0	0	0	0	0	0	0	0	3	65.0	58.0	62.0	75.0	8.9
05SEP-08SEP	0	0	0	1	0	0	0	0	1	98.0	98.0	98.0	98.0	
18SEP-21SEP	0	7	5	3	8	0	0	0	24	93.4	79.0	92.0	104.0	6.8
02OCT-05OCT	0	1	3	5	2	3	1	0	15	98.8	88.0	99.0	114.0	6.8
16OCT-19OCT	0	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	1	9	8	9	10	3	1	0	172					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-18 Length Frequency Distribution of Young-of-Year Blueback Herring in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
05JUL-08JUL	0	0	0	0	0	0	2	0	0	0	0	0	0
17JUL-20JUL	0	0	0	0	0	0	10	5	0	0	0	0	0
31JUL-03AUG	0	0	0	0	0	0	13	22	13	4	2	0	0
14AUG-17AUG	0	0	0	0	0	0	0	5	5	7	18	5	4
28AUG-31AUG	0	0	0	0	0	0	0	0	2	0	2	10	13
11SEP-14SEP	0	0	0	0	0	0	0	0	0	1	0	1	0
25SEP-28SEP	0	0	0	0	0	0	0	0	0	0	0	1	2
09OCT-12OCT	0	0	0	0	0	0	0	0	0	0	0	0	2
23OCT-26OCT	0	0	0	0	0	0	0	0	0	0	0	0	0
06NOV-10NOV	0	0	0	0	0	0	0	0	0	0	0	0	0
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	25	32	20	12	22	17	21
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	2	41.0	41.0	41.0	41.0	0.0
17JUL-20JUL	0	0	0	0	0	0	0	15	43.2	41.0	42.0	48.0	2.3
31JUL-03AUG	0	0	0	0	0	0	0	54	48.4	41.0	48.0	64.0	5.5
14AUG-17AUG	0	1	0	0	0	0	0	46	60.3	45.0	62.0	80.0	7.5
28AUG-31AUG	8	4	0	0	0	0	0	39	70.9	51.0	71.0	82.0	6.5
11SEP-14SEP	11	4	4	1	0	0	0	22	78.5	58.0	77.5	91.0	7.2
25SEP-28SEP	8	10	4	2	0	0	0	27	80.8	68.0	81.0	94.0	6.2
09OCT-12OCT	15	15	22	12	6	3	0	75	85.7	74.0	85.0	101.0	7.0
23OCT-26OCT	0	0	0	2	0	0	0	2	92.0	90.0	92.0	94.0	2.8
06NOV-10NOV	0	0	0	0	0	0	0	0					
27NOV-01DEC	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====					
	42	34	30	17	6	3	0	282					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-19 Length Frequency Distribution of Young-of-Year Blueback Herring in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL-12JUL	0	0	0	0	0	0	13	4	0	0	0	0	0
24JUL-27JUL	0	0	0	0	1	0	15	15	1	1	0	0	0
07AUG-10AUG	0	0	0	0	0	0	13	7	6	2	1	1	0
21AUG-24AUG	0	0	0	0	0	0	0	0	6	9	3	2	1
05SEP-08SEP	0	0	0	0	0	0	0	0	1	3	1	9	17
18SEP-21SEP	0	0	0	0	0	0	0	0	0	0	0	2	11
02OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	2	4
16OCT-19OCT	0	0	0	0	0	0	0	0	0	0	0	1	2
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	1	0	41	26	14	15	5	17	35
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	0	0	0					
10JUL-12JUL	0	0	0	0	0	0	0	17	43.1	41.0	42.0	49.0	2.6
24JUL-27JUL	0	0	0	0	0	0	0	33	44.7	32.0	45.0	58.0	4.3
07AUG-10AUG	0	0	0	0	0	0	0	30	47.4	41.0	46.0	65.0	6.7
21AUG-24AUG	3	0	0	0	0	0	0	26	59.8	50.0	57.5	77.0	7.7
05SEP-08SEP	6	3	0	1	0	0	0	41	70.9	54.0	71.0	90.0	7.2
18SEP-21SEP	20	13	2	0	0	0	0	49	77.0	60.0	77.0	87.0	5.2
02OCT-05OCT	3	10	10	2	0	0	0	31	81.4	68.0	83.0	90.0	6.0
16OCT-19OCT	12	20	25	4	3	2	0	69	84.0	69.0	84.0	104.0	6.6
	=====	=====	=====	=====	=====	=====	=====	=====					
	44	46	37	7	3	2	0	296					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-20 Length Frequency Distribution of Young-of-Year Spottail Shiner in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9
05JUL-08JUL	0	0	0	0	0	0	0	0	0	0	0	0
17JUL-20JUL	0	0	0	0	0	0	0	0	0	0	0	0
31JUL-03AUG	0	0	0	0	1	1	1	0	1	0	0	0
14AUG-17AUG	0	0	0	0	0	0	0	0	0	1	0	0
28AUG-31AUG	0	0	0	0	0	0	0	0	0	0	0	0
11SEP-14SEP	0	0	0	0	0	0	0	0	0	0	0	1
25SEP-28SEP	0	0	0	0	0	0	0	0	0	0	0	0
09OCT-12OCT	0	0	0	0	0	0	0	0	0	0	0	0
23OCT-26OCT	0	0	0	0	0	0	0	0	0	0	0	1
06NOV-10NOV	0	0	0	0	0	0	0	0	0	0	0	1
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	1	1	1	0	1	1	0	3
DATES	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9+	N	MEAN	MIN	MED	MAX	SD	
05JUL-08JUL	0	0	0	0	0	0						
17JUL-20JUL	0	0	0	0	0	0						
31JUL-03AUG	0	0	0	0	0	4	40.8	33.0	39.0	52.0	8.2	
14AUG-17AUG	0	0	0	0	0	1	57.0	57.0	57.0	57.0		
28AUG-31AUG	0	0	0	0	0	0						
11SEP-14SEP	0	0	0	0	0	1	68.0	68.0	68.0	68.0		
25SEP-28SEP	0	0	0	0	0	0						
09OCT-12OCT	0	0	0	0	0	0						
23OCT-26OCT	3	2	1	0	0	8	72.4	60.0	73.0	84.0	7.3	
06NOV-10NOV	0	0	0	0	0	1	67.0	67.0	67.0	67.0		
27NOV-01DEC	0	0	4	2	0	6	84.2	80.0	84.0	88.0	3.0	
	=====	=====	=====	=====	=====	=====						
	3	2	5	2	0	21						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-21 Length Frequency Distribution of Young-of-Year Spottail Shiner in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	1	1	4	2	0	0	0	0	0	0
10JUL-12JUL	0	0	9	12	15	4	1	0	0	0	0
24JUL-27JUL	0	0	0	7	12	10	6	3	1	0	0
07AUG-10AUG	0	0	0	0	4	16	18	9	8	9	3
21AUG-24AUG	0	0	0	0	0	1	2	11	10	16	10
05SEP-08SEP	0	0	0	0	0	0	0	5	9	16	16
18SEP-21SEP	0	0	0	0	0	0	1	0	4	3	8
02OCT-05OCT	0	0	0	0	0	0	0	0	0	4	5
16OCT-19OCT	0	0	0	0	0	0	0	0	0	2	4
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	1	10	23	33	31	28	28	32	50	46
DATES	65.0- 69.9	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	8	26.9	18.0	28.5	32.0	4.6
10JUL-12JUL	0	0	0	0	0	41	28.8	20.0	28.0	40.0	4.8
24JUL-27JUL	0	0	0	0	0	39	35.5	25.0	35.0	51.0	6.5
07AUG-10AUG	0	0	0	0	0	68	45.2	32.0	43.0	62.0	8.3
21AUG-24AUG	1	0	0	0	0	53	54.3	39.0	55.0	66.0	6.2
05SEP-08SEP	9	8	1	0	0	67	60.6	45.0	61.0	75.0	7.0
18SEP-21SEP	11	20	15	1	0	69	68.0	43.0	70.0	80.0	7.5
02OCT-05OCT	23	8	8	3	0	53	68.4	55.0	69.0	82.0	6.1
16OCT-19OCT	8	9	5	1	0	30	68.9	57.0	69.5	80.0	6.0
	=====	=====	=====	=====	=====	=====					
	52	45	29	5	0	428					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-22 Length Frequency Distribution of Young-of-Year White Catfish in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
05JUL-08JUL	1	0	0	0	0	0	0	0	0	0	0	0	0
17JUL-20JUL	0	3	4	1	0	0	0	0	0	0	0	0	0
31JUL-03AUG	0	0	2	3	2	0	0	0	0	0	0	0	0
14AUG-17AUG	0	1	1	0	2	6	3	7	5	5	1	1	0
28AUG-31AUG	0	0	0	0	0	0	0	0	0	2	4	3	2
11SEP-14SEP	0	0	0	0	1	0	0	1	3	1	3	4	8
25SEP-28SEP	0	0	0	0	0	0	0	0	0	1	1	3	2
09OCT-12OCT	0	0	0	0	0	0	0	0	0	1	0	7	3
23OCT-26OCT	0	0	0	0	0	0	0	0	0	1	2	5	5
06NOV-10NOV	0	0	0	0	0	0	0	0	0	1	2	1	2
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	2	3	4
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	1	4	7	4	5	6	3	8	8	12	15	27	26
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	1	14.0	14.0	14.0	14.0	
17JUL-20JUL	0	0	0	0	0	0	0	8	20.8	17.0	21.0	28.0	3.5
31JUL-03AUG	0	0	0	0	0	0	0	7	27.3	21.0	26.0	34.0	4.7
14AUG-17AUG	0	0	0	0	0	0	0	32	45.4	18.0	47.5	65.0	11.5
28AUG-31AUG	1	0	0	0	0	0	0	12	65.3	56.0	65.0	79.0	7.0
11SEP-14SEP	7	5	3	2	0	0	0	39	70.9	33.0	72.0	92.0	12.7
25SEP-28SEP	2	2	5	0	0	0	0	16	76.7	57.0	78.5	88.0	10.1
09OCT-12OCT	4	4	2	3	2	1	0	27	78.1	57.0	78.0	100.0	11.2
23OCT-26OCT	8	4	4	4	0	1	0	34	77.0	55.0	75.5	104.0	10.4
06NOV-10NOV	2	0	6	0	0	0	0	14	77.1	59.0	78.0	89.0	10.6
27NOV-01DEC	6	1	4	4	0	0	0	24	78.6	61.0	78.5	94.0	9.3
	=====	=====	=====	=====	=====	=====	=====	=====					
	30	16	24	13	2	2	0	214					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-23 Length Frequency Distribution of Young-of-Year White Catfish in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9+	N	MEAN	MIN	MED	MAX	SD
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0					
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	0	0					
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	0	0					
24JUL-27JUL	0	0	0	0	0	0	0	0	0	0	0	0					
07AUG-10AUG	0	0	0	0	0	0	0	0	0	0	0	0					
21AUG-24AUG	0	0	0	0	0	0	0	0	0	0	0	0					
05SEP-08SEP	0	0	0	0	0	0	0	0	0	0	0	0					
18SEP-21SEP	0	0	0	0	0	0	0	0	0	0	0	0					
02OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0					
16OCT-19OCT	0	0	0	0	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====					
	0	0	0	0	0	0	0	0	0	0	0	0					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-24 Length Frequency Distribution of Young-of-Year Weakfish in Hudson River Estuary Determined from Fall Juvenile Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9	70.0- 74.9
05JUL-08JUL	0	0	1	0	0	0	0	0	0	0	0	0	0
17JUL-20JUL	0	0	0	1	0	1	1	2	0	0	0	0	0
31JUL-03AUG	0	0	1	0	1	7	4	3	7	3	3	2	1
14AUG-17AUG	1	1	1	0	0	0	0	3	4	4	1	3	5
28AUG-31AUG	0	0	0	1	4	4	7	9	2	2	0	0	0
11SEP-14SEP	0	0	0	1	1	1	1	0	1	1	1	7	4
25SEP-28SEP	0	0	0	1	4	1	1	1	1	0	0	1	0
09OCT-12OCT	0	0	2	0	3	0	1	1	3	0	1	1	5
23OCT-26OCT	0	0	0	0	1	0	0	1	1	4	2	5	2
06NOV-10NOV	0	0	0	0	0	1	0	0	0	0	1	0	0
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	1	1	5	4	14	15	15	20	19	14	9	19	17
DATES	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9	95.0- 99.9	100.0- 104.9	105.0- 109.9	110.0- 114.9	115.0- 119.9	120.0- 124.9	125.0- 129.9	130.0- 134.9	135.0- 139.9
05JUL-08JUL	0	0	0	0	0	0	0	0	0	0	0	0	0
17JUL-20JUL	0	0	0	0	0	1	0	0	0	0	0	0	0
31JUL-03AUG	1	1	0	0	0	0	0	0	0	0	0	0	0
14AUG-17AUG	3	2	2	6	3	2	0	1	0	0	0	0	0
28AUG-31AUG	1	2	3	1	1	0	1	0	0	0	3	1	1
11SEP-14SEP	3	2	1	0	1	1	1	0	0	1	0	0	1
25SEP-28SEP	3	0	2	0	5	2	0	0	0	0	0	0	0
09OCT-12OCT	2	0	3	3	2	7	1	1	4	1	0	0	0
23OCT-26OCT	2	0	1	2	2	5	1	2	6	3	0	0	0
06NOV-10NOV	0	3	1	1	0	0	0	0	0	1	0	2	0
27NOV-01DEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	15	10	13	13	14	18	4	4	10	6	3	3	2
DATES	140.0- 144.9	145.0- 149.9	150.0- 154.9	155.0- 159.9	160.0- 164.9	165.0- 169.9	170.0- 174.9+	N	MEAN	MIN	MED	MAX	SD
05JUL-08JUL	0	0	0	0	0	0	0	3	13.0	8.0	9.0	22.0	7.8
17JUL-20JUL	0	0	0	0	0	0	0	6	50.5	27.0	45.0	103.0	26.9
31JUL-03AUG	0	0	0	0	0	0	0	35	50.6	22.0	50.0	80.0	13.3
14AUG-17AUG	0	0	0	0	0	0	0	45	70.0	13.0	71.0	110.0	22.1
28AUG-31AUG	0	0	0	0	0	0	0	44	62.2	28.0	47.0	137.0	31.4
11SEP-14SEP	0	0	0	0	0	0	0	29	73.0	28.0	70.0	136.0	24.4
25SEP-28SEP	0	0	0	0	0	0	0	22	67.4	26.0	76.0	101.0	28.0
09OCT-12OCT	0	0	0	0	0	0	0	41	80.0	23.0	85.0	120.0	28.4
23OCT-26OCT	0	0	1	0	0	0	0	42	87.8	33.0	94.0	151.0	26.9
06NOV-10NOV	0	0	0	0	0	0	1	11	98.6	39.0	87.0	170.0	37.2
27NOV-01DEC	0	0	0	0	0	0	0	0					
	=====	=====	=====	=====	=====	=====	=====	=====					
	0	0	1	0	0	0	1	278					

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Table F-25 Length Frequency Distribution of Young-of-Year Weakfish in Hudson River Estuary Determined from Beach Seine Survey, 2006

DATES	10.0- 14.9	15.0- 19.9	20.0- 24.9	25.0- 29.9	30.0- 34.9	35.0- 39.9	40.0- 44.9	45.0- 49.9	50.0- 54.9	55.0- 59.9	60.0- 64.9	65.0- 69.9
12JUN-14JUN	0	0	0	0	0	0	0	0	0	0	0	0
26JUN-28JUN	0	0	0	0	0	0	0	0	0	0	0	0
10JUL-12JUL	0	0	0	0	0	0	0	0	0	0	0	0
24JUL-27JUL	0	0	0	0	0	0	0	0	0	0	0	0
07AUG-10AUG	0	0	0	0	0	0	0	0	0	0	0	0
21AUG-24AUG	0	0	0	0	0	0	0	0	0	0	0	0
05SEP-08SEP	0	0	0	0	0	0	0	0	0	0	0	0
18SEP-21SEP	0	0	0	0	0	0	0	0	0	0	0	0
02OCT-05OCT	0	0	0	0	0	0	0	0	0	0	0	0
16OCT-19OCT	0	0	0	0	0	0	0	0	0	0	0	0
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	0	0	0	0	0	0	0	0	0	0	0	0
DATES	70.0- 74.9	75.0- 79.9	80.0- 84.9	85.0- 89.9	90.0- 94.9+	N	MEAN	MIN	MED	MAX	SD	
12JUN-14JUN	0	0	0	0	0	0						
26JUN-28JUN	0	0	0	0	0	0						
10JUL-12JUL	0	0	0	0	0	0						
24JUL-27JUL	0	0	0	0	0	0						
07AUG-10AUG	0	0	0	0	0	0						
21AUG-24AUG	0	0	0	0	0	0						
05SEP-08SEP	0	0	0	0	0	0						
18SEP-21SEP	0	0	0	0	0	0						
02OCT-05OCT	0	0	0	0	0	0						
16OCT-19OCT	0	0	0	0	0	0						
	=====	=====	=====	=====	=====	=====						
	0	0	0	0	0	0						

NOTE: Lengths are total lengths in mm, N = Number of lengths, MEAN = Mean length, MIN = Minimum length, MED = Median length, MAX = Maximum length, SD = Standard deviation

Appendix G

Density Estimates for Atlantic Croaker

APPENDIX G

LIST OF TABLES

<u>Number</u>	<u>Title</u>
G-1	Regional density (no./1,000 m ³) of Atlantic croaker eggs in Hudson River estuary determined from Long River Survey, 2006
G-2	Regional density (no./1,000 m ³) of Atlantic croaker yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
G-3	Regional density (no./1,000 m ³) of Atlantic croaker post yolk-sac larvae in Hudson River estuary determined from Long River Survey, 2006
G-4	Regional density (no./1,000 m ³) of Atlantic croaker young-of-year in Hudson River estuary determined from Long River Survey, 2006
G-5	Regional density (no./1,000 m ³) of Atlantic croaker young-of-year in Hudson River estuary determined from Fall Juvenile Survey, 2006
G-6	Regional density (no./1,000 m ³) of Atlantic croaker yearling and older in Hudson River estuary determined from Long River Survey, 2006
G-7	Regional density (no./1,000 m ³) of Atlantic croaker yearling and older in Hudson River estuary determined from Fall Juvenile Survey, 2006

TABLE G-1 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

														ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
10MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	11						73
20MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
22MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
27MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS
29MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	10	10	11	11	10	10	12						74
03APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE G-1 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	3.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.38
20SEP	SE	3.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00						3.02
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE G-1 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
13NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
14NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42
04DEC-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
05DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42

* Sampling was conducted systematically every 5 miles during these weeks instead of using the stratified, random sampling design as during other weeks.

TABLE G-2 REGIONAL DENSITY (NO./1,000m³) OF ATLANTIC CROAKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE G-2 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
26JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE G-2 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
13NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
14NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42
04DEC-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
05DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42

* Sampling was conducted systematically every 5 miles during these weeks instead of using the stratified, random sampling design as during other weeks.

TABLE G-3 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	0.00	0.09	0.00	0.00	0.20	0.00	0.00	NS	NS	NS	NS	NS	NS	0.04
	SE	0.00	0.09	0.00	0.00	0.20	0.00	0.00							0.22
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	0.97	0.34	0.45	0.91	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.38
	SE	0.41	0.27	0.23	0.51	0.00	0.00	0.00							0.74
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	0.00	0.00	0.00	0.21	1.11	0.00	0.00	NS	NS	NS	NS	NS	NS	0.19
	SE	0.00	0.00	0.00	0.21	0.81	0.00	0.00							0.83
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	0.49	0.00	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	SE	0.29	0.00	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	0.32	0.00	0.15	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	SE	0.32	0.00	0.15	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.69	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
	SE	0.00	0.55	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	SE	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.34	0.96	9.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
	SE	0.00	0.34	0.61	5.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.58
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.60	0.47	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.12
	SE	0.00	0.00	0.60	0.33	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.84
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE G-3 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006															
															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
08JUN	SE	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
22JUN	SE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.06
26JUL	SE	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00						0.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	2.05	0.00	0.00	0.58	0.00	1.23	0.00	NS	NS	NS	NS	NS	0.48
20SEP	SE	0.00	2.05	0.00	0.00	0.58	0.00	0.61	0.00						2.21
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	90.84	56.30	15.50	8.81	7.28	3.56	0.00	0.00	NS	NS	NS	NS	NS	22.79
05OCT	SE	41.22	20.57	4.45	4.42	2.66	1.06	0.00	0.00						46.58
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE G-3 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
13NOV-	DENSITY	67.63	47.64	45.09	377.48	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	76.84
14NOV	SE	34.59	29.85	10.57	19.73	0.00	0.00	0.00							50.88
	NO. TOWS*	6	8	8	4	8	4	4							42
04DEC-	DENSITY	58.43	16.48	99.82	0.00	0.27	0.00	0.00	NS	NS	NS	NS	NS	NS	25.00
05DEC	SE	51.00	9.01	73.51	0.00	0.27	0.00	0.00							89.93
	NO. TOWS*	6	8	8	4	8	4	4							42

* Sampling was conducted systematically every 5 miles during these weeks instead of using the stratified, random sampling design as during other weeks.

TABLE G-4 REGIONAL DENSITY (NO./1,000m³) OF ATLANTIC CROAKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED														
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
08MAR-10MAR	DENSITY	8.68	25.78	36.20	7.87	0.91	0.00	0.00	NS	NS	NS	NS	NS	NS
	SE	5.58	2.65	24.91	2.28	0.70	0.00	0.00						
	NO. TOWS	10	10	11	11	10	10	11						
20MAR-22MAR	DENSITY	28.47	7.51	11.25	23.80	0.89	0.00	0.46	NS	NS	NS	NS	NS	NS
	SE	8.31	3.78	5.76	8.40	0.72	0.00	0.46						
	NO. TOWS	10	10	11	11	10	10	12						
27MAR-29MAR	DENSITY	7.56	5.18	1.06	3.99	14.71	1.38	0.65	NS	NS	NS	NS	NS	NS
	SE	5.01	2.01	0.58	0.75	9.04	0.56	0.49						
	NO. TOWS	10	10	11	11	10	10	12						
03APR-06APR	DENSITY	13.63	5.06	2.09	1.48	3.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	5.81	3.11	0.77	0.70	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
10APR-13APR	DENSITY	14.40	4.61	1.56	1.84	4.44	11.31	0.00	0.00	0.00	0.00	0.00	0.00	0.26
	SE	5.24	2.32	0.98	0.92	2.06	8.64	0.00	0.00	0.00	0.00	0.00	0.00	0.26
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
17APR-20APR	DENSITY	2.15	4.44	5.36	3.65	3.77	11.12	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	SE	1.01	2.11	1.70	0.44	2.07	10.99	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9
24APR-27APR	DENSITY	1.95	2.20	2.70	7.47	7.34	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	1.95	0.53	0.99	3.37	6.75	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5
01MAY-03MAY	DENSITY	0.00	0.59	5.02	8.15	7.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.37	2.98	5.34	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
08MAY-10MAY	DENSITY	0.00	0.00	0.43	0.00	0.63	6.25	0.10	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.43	0.00	0.63	2.88	0.10	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10
15MAY-17MAY	DENSITY	0.00	0.00	0.35	0.00	1.10	0.63	3.40	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.20	0.00	1.10	0.31	1.83	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
22MAY-25MAY	DENSITY	0.00	5.14	4.61	10.98	0.42	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
	SE	0.00	4.92	0.75	6.04	0.42	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6
30MAY-02JUN	DENSITY	0.00	0.00	2.84	0.25	0.00	0.10	0.24	0.24	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	1.79	0.25	0.00	0.10	0.24	0.24	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6

TABLE G-4 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN- 08JUN	DENSITY	0.00	0.00	0.31	1.22	2.76	1.29	0.58	0.00	0.13	0.00	0.00	0.00	0.00	0.48
	SE	0.00	0.00	0.31	1.22	2.06	1.04	0.42	0.00	0.13	0.00	0.00	0.00	0.00	2.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN- 15JUN	DENSITY	0.00	0.00	0.00	0.23	3.96	0.00	0.27	0.00	0.00	0.28	0.00	0.00	0.00	0.36
	SE	0.00	0.00	0.00	0.23	2.75	0.00	0.17	0.00	0.00	0.28	0.00	0.00	0.00	2.78
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN- 22JUN	DENSITY	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	SE	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN- 29JUN	DENSITY	0.00	0.00	0.00	1.11	0.64	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	SE	0.00	0.00	0.00	1.11	0.38	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL- 12JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL- 26JUL	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG- 09AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG- 23AUG	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP- 07SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP- 20SEP	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	NS	NS	NS	NS	NS	0.01
	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00						0.10
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT- 05OCT	DENSITY	0.00	7.14	0.00	0.00	0.24	0.61	0.28	0.00	NS	NS	NS	NS	NS	1.03
	SE	0.00	4.97	0.00	0.00	0.16	0.40	0.28	0.00						4.99
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE G-4 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
13NOV-	DENSITY	91.93	279.45	379.92	2145.64	0.54	0.00	0.09	NS	NS	NS	NS	NS	NS	413.94
14NOV	SE	81.09	250.40	337.96	18.60	0.54	0.00	0.09							428.77
	NO. TOWS*	6	8	8	4	8	4	4							42
04DEC-	DENSITY	1979.25	823.64	353.13	13.09	0.53	0.00	0.00	NS	NS	NS	NS	NS	NS	452.80
05DEC	SE	1076.61	560.32	189.54	0.11	0.53	0.00	0.00							1228.41
	NO. TOWS*	6	8	8	4	8	4	4							42

* Sampling was conducted systematically every 5 miles during these weeks instead of using the stratified, random sampling design as during other weeks.

TABLE G-5 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
17JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8	211
31JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.50	0.06	0.00	0.00	0.00	0.05
03AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.16	0.06	0.00	0.00	0.00	0.17
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
14AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.20	0.47	0.06	0.00	0.00	0.00	0.06
17AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.07	0.22	0.06	0.00	0.00	0.00	0.25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.01
31AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8	209
11SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8	210
25SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
09OCT-	DENSITY	383.51	106.44	12.99	2.48	15.91	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.10
12OCT	SE	177.69	53.89	3.40	1.27	6.90	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.85
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
23OCT-	DENSITY	6.66	0.18	0.19	3.24	0.96	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
26OCT	SE	1.25	0.08	0.12	1.36	0.30	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
06NOV-	DENSITY	15.36	11.77	3.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.38
10NOV	SE	1.71	2.42	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
27NOV-	DENSITY	14.79	6.25	3.65	1.74	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06
01DEC	SE	3.46	1.85	1.65	0.56	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.30
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150

TABLE G-6 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

ALL REGIONS COMBINED															
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
08MAR-10MAR	DENSITY	2.53	1.33	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.55
	SE	1.26	0.67	0.00	0.00	0.00	0.00	0.00							1.43
	NO. TOWS	10	10	11	11	10	10	11							73
20MAR-22MAR	DENSITY	2.63	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.38
	SE	1.32	0.00	0.00	0.00	0.00	0.00	0.00							1.32
	NO. TOWS	10	10	11	11	10	10	12							74
27MAR-29MAR	DENSITY	1.96	1.64	0.20	0.00	0.19	0.00	0.00	NS	NS	NS	NS	NS	NS	0.57
	SE	1.20	0.85	0.20	0.00	0.19	0.00	0.00							1.50
	NO. TOWS	10	10	11	11	10	10	12							74
03APR-06APR	DENSITY	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	SE	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
10APR-13APR	DENSITY	2.31	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
	SE	1.37	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
17APR-20APR	DENSITY	0.00	0.00	0.47	0.18	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	SE	0.00	0.00	0.31	0.18	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
24APR-27APR	DENSITY	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	SE	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	5	130
01MAY-03MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
08MAY-10MAY	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
15MAY-17MAY	DENSITY	0.00	0.00	0.18	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	SE	0.00	0.00	0.18	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
22MAY-25MAY	DENSITY	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	SE	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
30MAY-02JUN	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE G-6 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

															ALL REGIONS COMBINED
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	
05JUN-	DENSITY	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
08JUN	SE	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
12JUN-	DENSITY	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
15JUN	SE	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
19JUN-	DENSITY	0.00	0.00	0.00	0.45	0.00	0.44	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.08
22JUN	SE	0.00	0.00	0.00	0.28	0.00	0.32	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
26JUN-	DENSITY	0.00	0.45	0.00	0.00	0.00	0.67	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.09
29JUN	SE	0.00	0.45	0.00	0.00	0.00	0.67	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.81
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
10JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
12JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
24JUL-	DENSITY	0.00	0.63	0.40	0.76	0.17	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.25
26JUL	SE	0.00	0.63	0.40	0.44	0.14	0.00	0.00	0.00						0.88
	NO. TOWS	6	11	13	14	13	8	10	6						81
07AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	NS	NS	NS	NS	NS	0.07
09AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00						0.28
	NO. TOWS	6	11	13	14	13	8	10	6						81
21AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
05SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
07SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
18SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
20SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81
03OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
05OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE G-6 (CONT.) REGIONAL DENSITY (NO./1,000m³) OF ATLANTIC CROAKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2006

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
------	--	----	----	----	----	----	----	----	----	----	----	----	----	----	----------------------------

13NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
14NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42
04DEC-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
05DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00
	NO. TOWS*	6	8	8	4	8	4	4							42

* Sampling was conducted systematically every 5 miles during these weeks instead of using the stratified, random sampling design as during other weeks.

TABLE G-7 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC CROAKER YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2006

ALL REGIONS COMBINED														
DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
05JUL-	DENSITY	0.00	0.00	0.09	0.92	0.45	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
08JUL	SE	0.00	0.00	0.06	0.41	0.32	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
17JUL-	DENSITY	0.12	0.30	0.16	1.77	0.12	0.00	0.40	0.03	0.02	0.00	0.00	0.00	0.00
20JUL	SE	0.06	0.11	0.11	0.55	0.06	0.00	0.23	0.02	0.02	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	23	22	22	22	14	10	6	6	8
31JUL-	DENSITY	0.65	1.44	0.62	0.91	0.11	0.01	0.12	0.01	0.00	0.00	0.00	0.00	0.00
03AUG	SE	0.33	0.63	0.29	0.40	0.04	0.01	0.08	0.01	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
14AUG-	DENSITY	0.19	0.28	0.12	0.19	0.21	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
17AUG	SE	0.11	0.17	0.06	0.09	0.11	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
28AUG-	DENSITY	0.84	0.60	0.12	0.03	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31AUG	SE	0.31	0.19	0.08	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	21	22	22	14	10	6	6	8
11SEP-	DENSITY	0.08	0.09	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14SEP	SE	0.05	0.07	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	11	5	6	8
25SEP-	DENSITY	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28SEP	SE	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
09OCT-	DENSITY	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12OCT	SE	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8
23OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
06NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8
27NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01DEC	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8