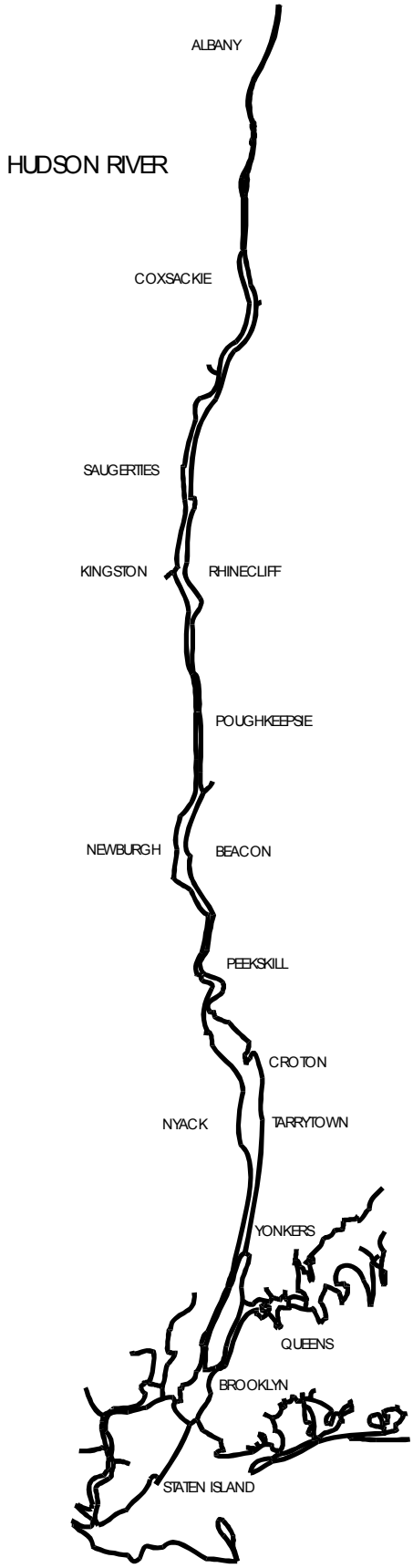

2009 YEAR CLASS REPORT

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 Analysis & Communication
Solutions through Science

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CONTENTS

CONTENTS (Continued)

LIST OF FIGURES

LIST OF FIGURES (Continued)

LIST OF FIGURES (Continued)

LIST OF FIGURES (Continued)

LIST OF FIGURES (Continued)

LIST OF FIGURES (Continued)

LIST OF FIGURES (Continued)

LIST OF TABLES

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 2009 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 2009. The 2009 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 2009.
- Describe the distribution and abundance of 16 selected species of fish (Table 1-1) in the Hudson River estuary in 2009.
- Describe the fish community of the Hudson River estuary in 2009.
- Describe patterns in growth for the 2009 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 2009 Hudson River Ichthyoplankton Laboratory Program and 2009 Fall Juvenile Survey;
- Appendix B – Physical/Chemical Parameters;
- Appendix C – Numbers of Fish Collected in the Long River (1988-2009), Fall Juvenile (1985-2009), and Beach Seine (1985-2009) Surveys;
- Appendix D – Annual Abundance Indices;
- Appendix E – Density and Standing Crop Estimates; and

- Appendix F – Length Frequency Distribution.

Link to Chapter 2

Table 1-1 Fish Species Treated in Depth in the 2009 Year Class Report

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

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 2009, 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 (16 March – 5 April) nor in the Hyde Park through Albany regions during the final seven sampling weeks of the LRS (13 July – 11 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 (26 October – 6 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 2009 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 2009 LRS was performed over a period of 30 weeks from 16 March to 11 October with all sampling prior to 25 May conducted during the day and all subsequent sampling conducted at night (Table 2-2 and Figure 2-3). For the first three sampling weeks, sampling was conducted between RM 1 and RM 61. For the next 13 weeks beginning 6 April, weekly sampling encompassed RM 1 to RM 152. In the final phase of sampling from 13 July through 11 October, sampling was conducted biweekly between RM 1 and RM 76.

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 2009 LRS sampling program was scheduled as 6 separate multi-week efforts. The first sampling effort, performed in March and early April, 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 and early July, 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 allocation of sampling effort among regions and strata is presented in Table 2-3. Of the 3,522 ichthyoplankton samples scheduled for collection during 2009, 3,522 samples were collected, accounting for 100 percent of the scheduled total.

Two distinct gear types were used for field collections during the 2009 LRS:

- 1.0-m^2 Tucker trawl (Figure 2-4 and Table 2-4) to sample the shoal and channel strata (non-bottom), and
- 1.0-m^2 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 (microsieman/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 2009 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 2009 LRS, 3,520 physical/chemical measurements were scheduled and 3,469 measurements were actually recorded, accounting for 98.6 percent of the scheduled total.

2.2.2 Laboratory Methods

In 2009, 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 2009 was 2,442, comprising 69.3 percent of the collected samples.

In 2009, 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 2009 CSP-1 Quality Control Program are contained in Appendix A.

2.3 FALL JUVENILE SURVEY

2.3.1 Field Methods

The 2009 FJS biweekly sampling program extended from RM 1 to 152 and covered 22 weeks from 6 July to 6 December (Figure 2-3). Samples were collected at night for the first 8 river runs from 6 July through 18 October, and during the day for last 3 river runs from 19 October through 6 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, 2,130 were actually collected, yielding 100 percent completion.

A 1.0-m^2 Tucker trawl and a 3.0-m beam trawl were used to collect YOY fish in the 2009 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 19 October through 6 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 2009 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 2009 FJS, of the 2,002 samples scheduled for collection, 2,002 were actually collected, yielding 100 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 2009 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:

Sampling Program	Region
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
- American shad
- Atlantic sturgeon
- Atlantic tomcod
- Bay anchovy
- Blueback herring
- Shortnose sturgeon
- Spottail shiner
- Striped bass
- Weakfish
- White catfish
- White perch.

2.4 BEACH SEINE SURVEY

2.4.1 Field Methods

The 2009 BSS utilized a 30.5-m (nominal 100 ft) 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 m^2 (TI 1981). All BSS samples were collected on a diurnal schedule during alternate weeks of the FJS.

The 2009 BSS biweekly sampling program was conducted from 15 June through 25 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 2009 BSS is presented in Table 2-10. Of the 1,000 samples projected for collection in 2009, 1,000 were collected, yielding 100 percent completion.

Measurements of water temperature (°C), dissolved oxygen (mg/L), and specific conductance (microsieman/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 2009 BSS, all of the 1,000 scheduled water quality samples were collected.

YOY fishes collected during the first four beach seine river runs in 2009 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. Sturgeon 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 (microsieman/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).

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

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 (millisieman/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. For the LRS and FJS, the number of fish (by species and life stage) captured in individual samples was first converted to density (no./m^3 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:

If This Stratum Was Not Sampled	Its Volume Was Added To This Stratum
Shoal	Bottom
Bottom	Channel
Channel	Bottom

$$D_{ikrw} = \frac{C_{ikrw}}{V_{ikrw}} \tag{4}$$

where

D_{ikrw} = Density (for a life stage and species)/m^3 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 (m^3) by sample i in stratum k in region r during week w.

$$D_{krw} = \frac{1}{n_{krw}} \sum_{i=1}^{n_{krw}} D_{ikrw} \tag{5}$$

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.

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

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.

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

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:

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

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.

* 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.

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

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. 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).

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

** 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.

$SE(SC_w)$ = 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).

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

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).

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

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 2009 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 1974-2009, whereas the time period for the FJS extended from 1979 (when the FJS sampled the river from RM 12 to RM 152) through 2009. Temporal and geographic indices for bay anchovy from the LRS used the period from 1988 to 2009, 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:

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

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):

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

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

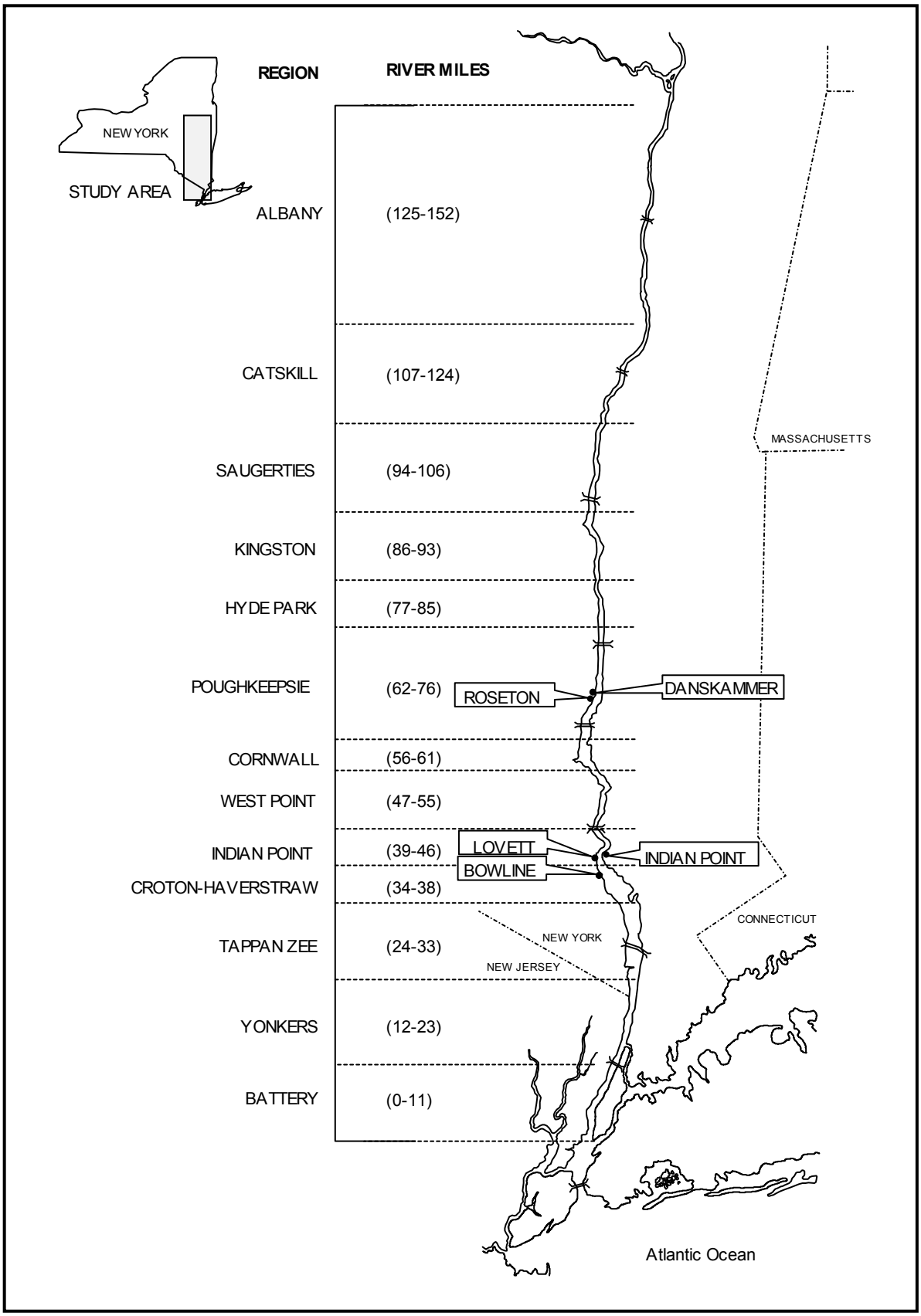


Figure 2-1. Location of 13 geographic regions (with river mile boundaries) sampled during the 2009 biological monitoring program in the Hudson River estuary.

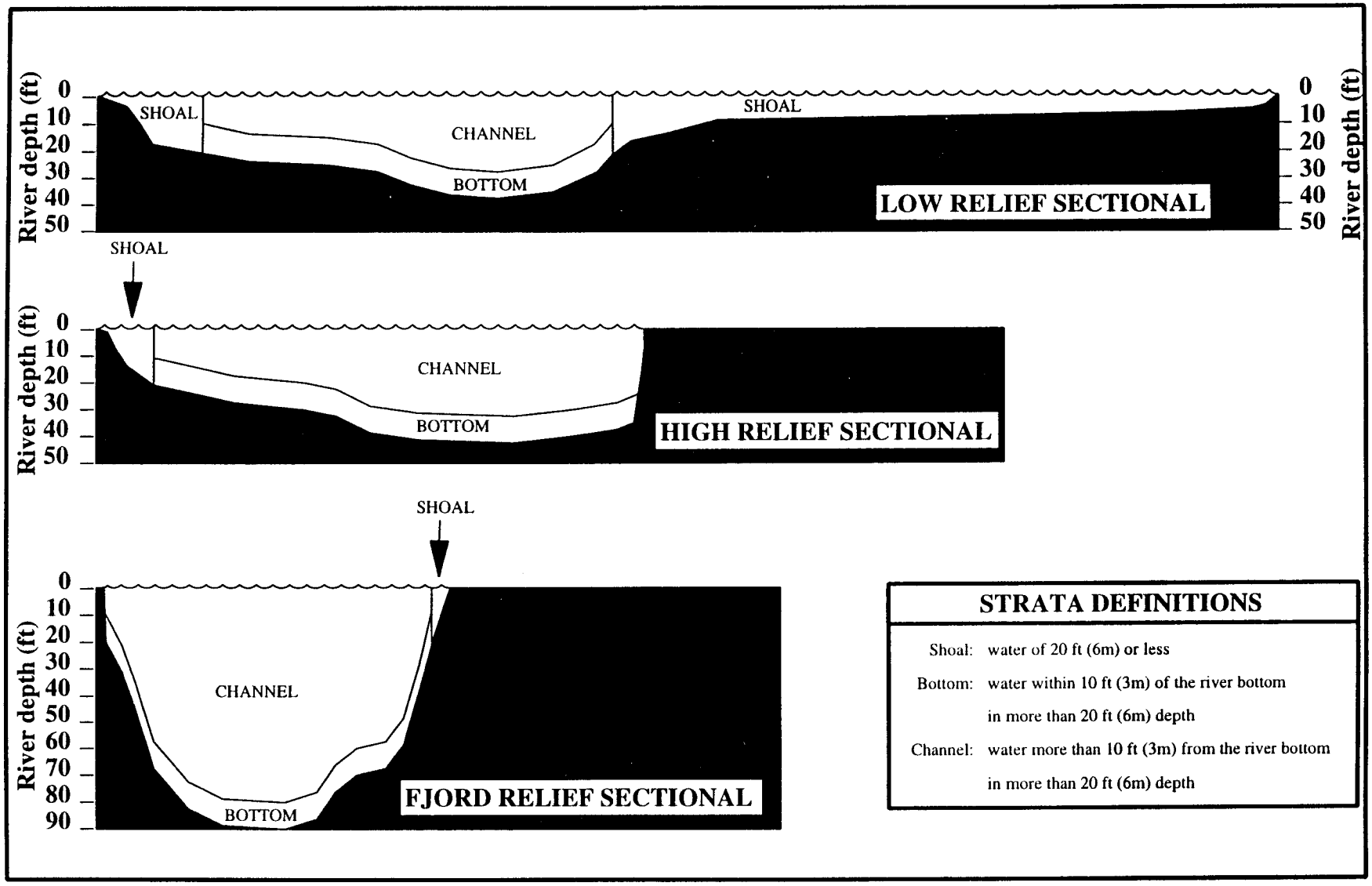


Figure 2-2. Cross sections of the Hudson River estuary showing locations and typical proportional relationships of the shoal, bottom, and channel strata.

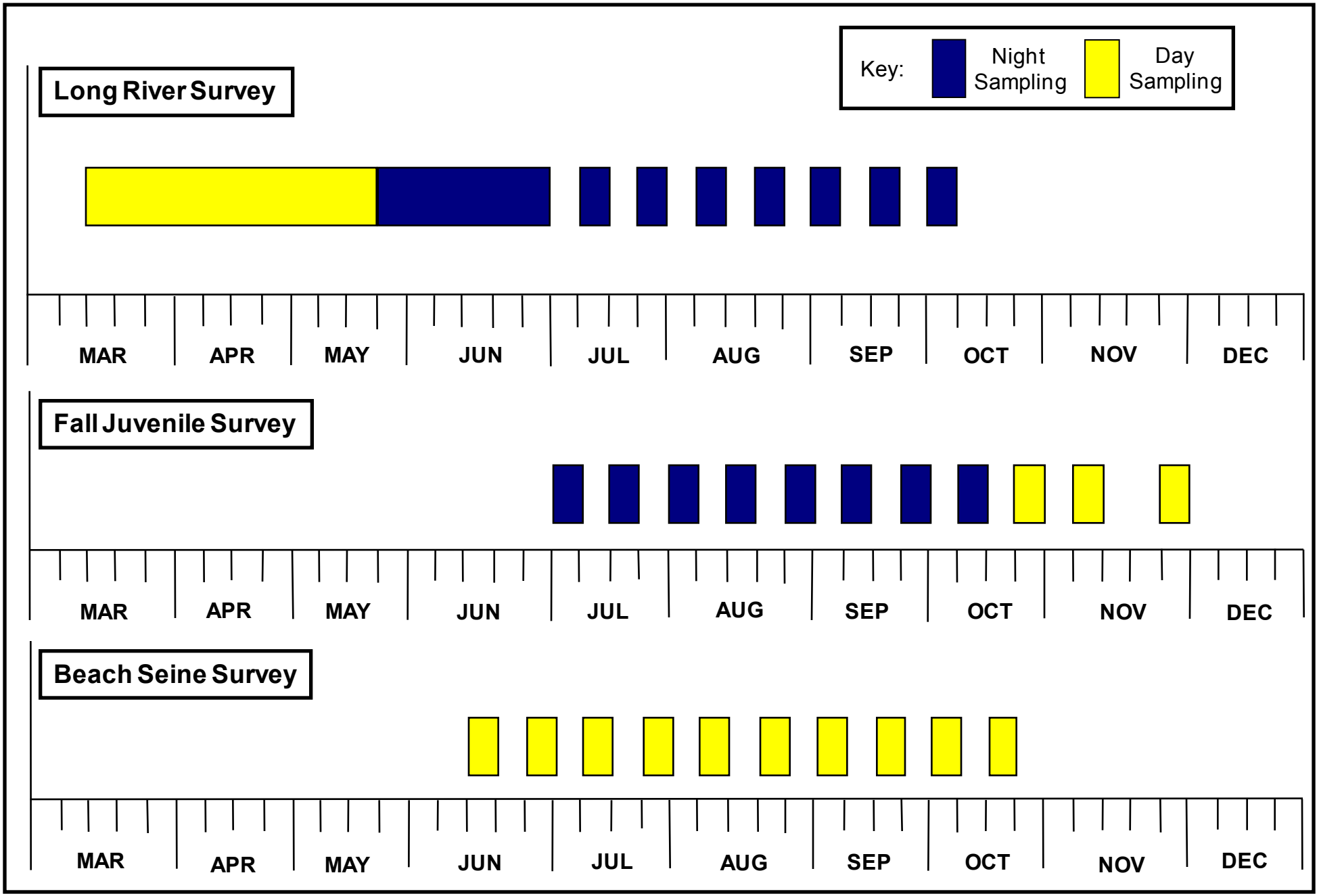


Figure 2-3. Completed sampling schedule for 2009.

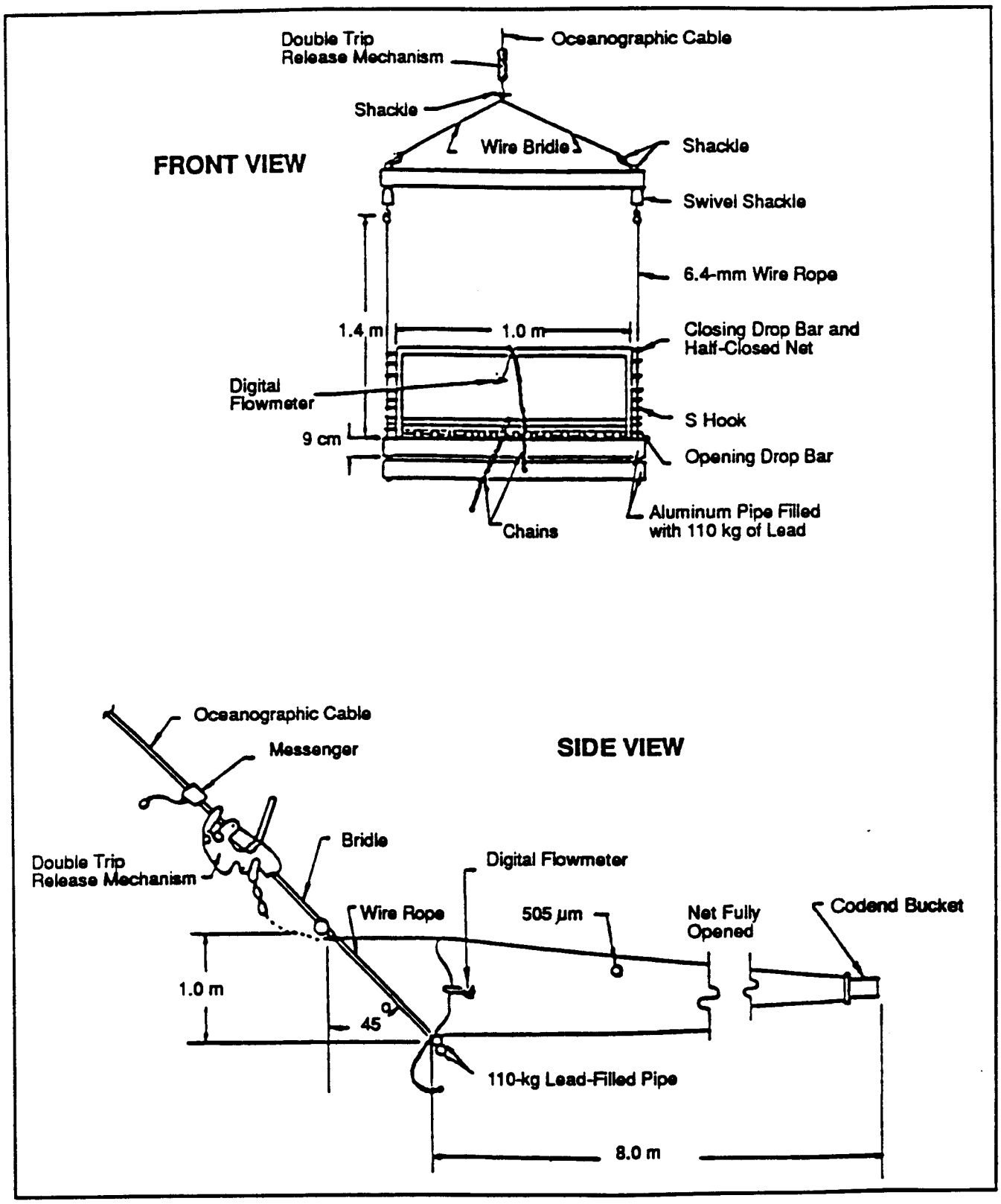


Figure 2-4. Design and dimensions of 1.0-m^2 Tucker trawl.

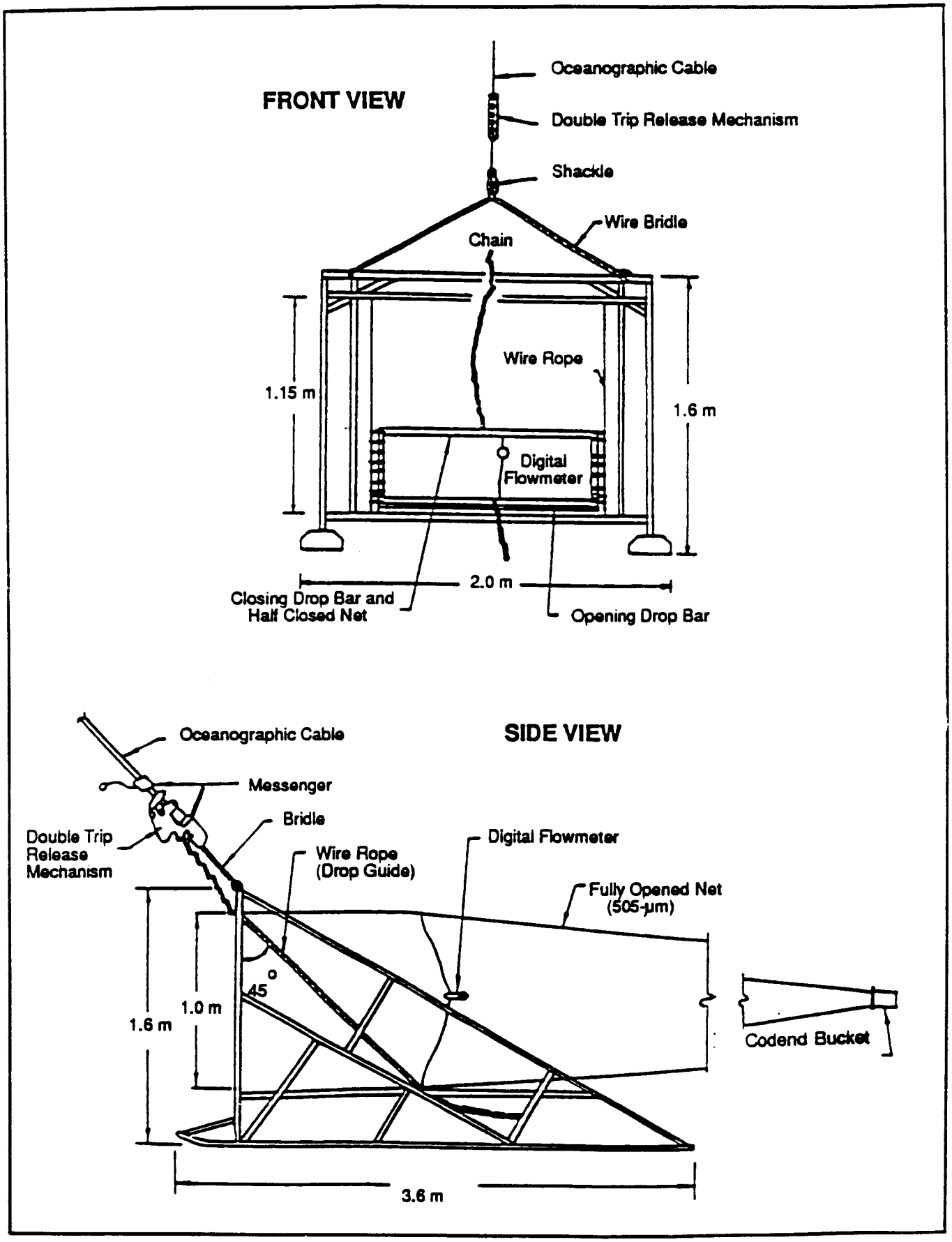


Figure 2-5. Design and dimensions of 1.0-m^2 Tucker trawl mounted on an epibenthic sled.

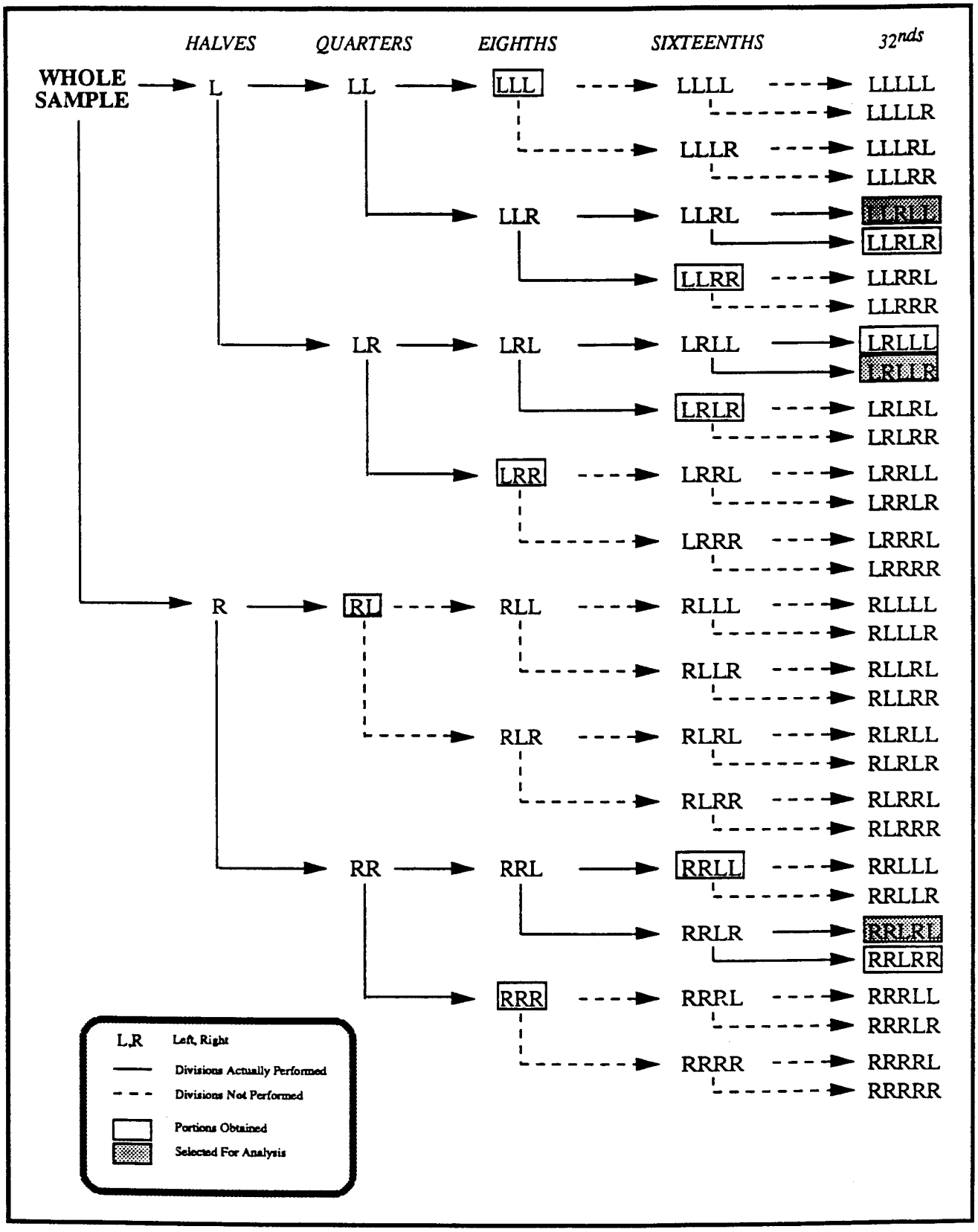


Figure 2-6. Conceptual diagram of the splitting process.

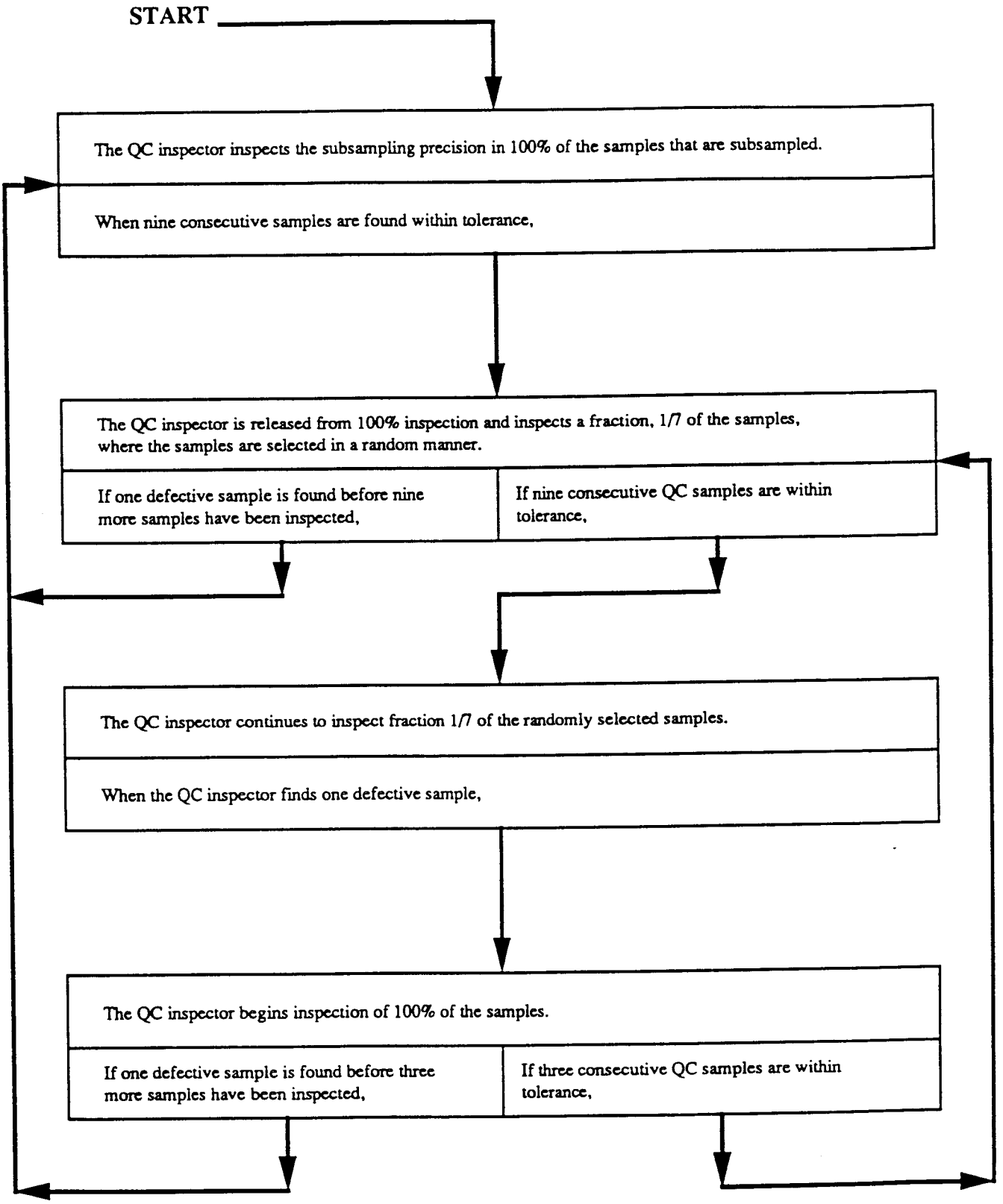


Figure 2-7. Inspection plan for evaluation of splitting precision.

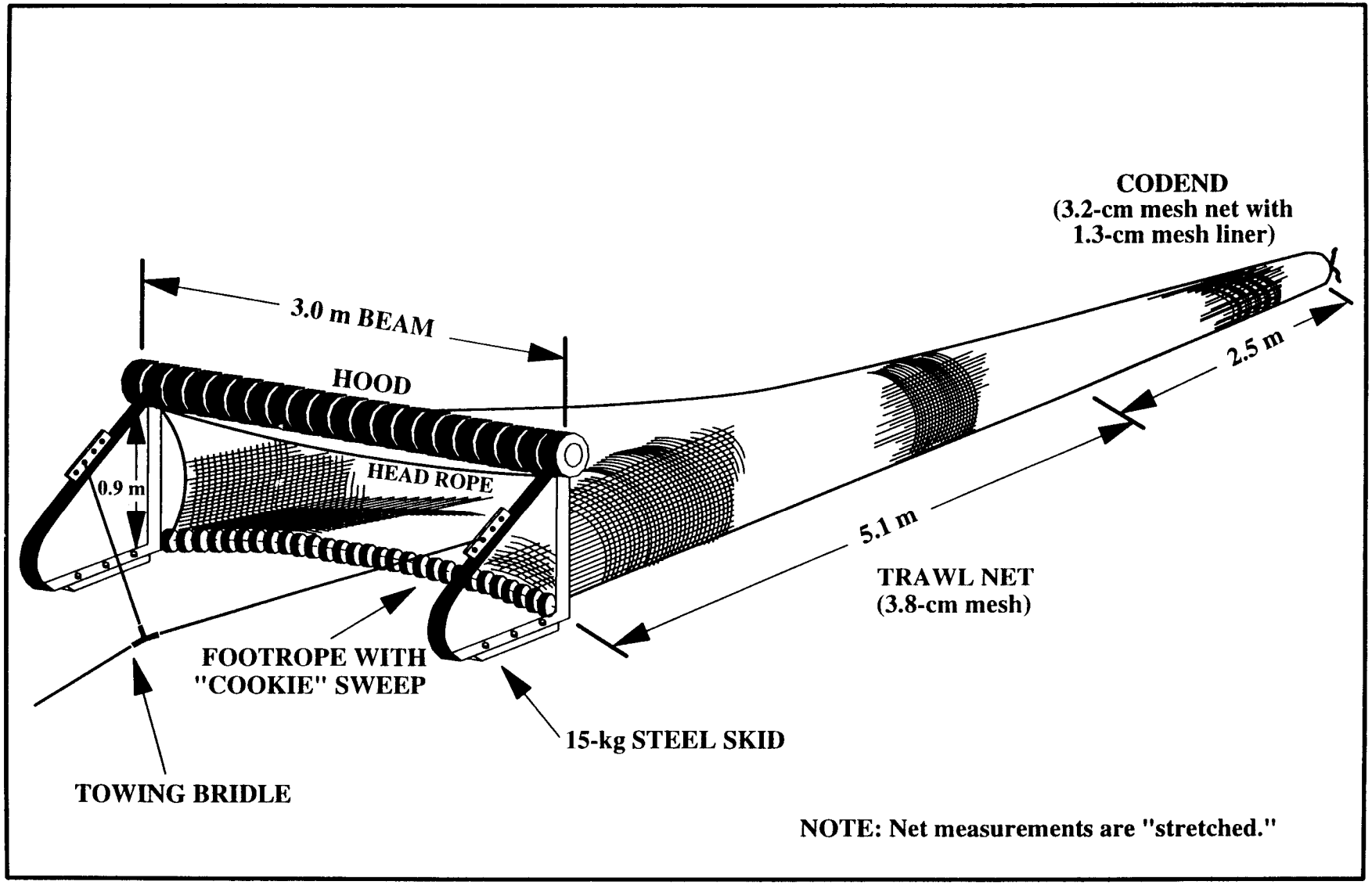


Figure 2-8. Design and dimensions of the 3.0-m beam trawl.

Table 2-1 Strata Sampled within the 13 Geographic Regions of the Hudson River Estuary During 2009

Region	Abbreviation	River Miles	River Kilometers	2009 Surveys Shore	Shoal	Channel	Bottom
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 2009 Hudson River Surveys

Program Phase	Sampling Schedule: Start Week	Sampling Schedule: End Week	Number of River Runs	Sampling Frequency	Strata Sampled	Sample Number: Collection: Projected	Sample Number: Collection: Actual	Sample Number: Lab Analysis	Sampling Gear
Longitudinal River Ichthyoplankton Survey	16 MAR	11 OCT	23	Weekly/ Biweekly	Shoal	588	588	556	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	1,389	929	1.0-m^2 net on epibenthic sled
Fall Juvenile Survey	6 JUL	6 DEC	11	Biweekly	Shoal	427	427		3.0-m beam trawl, or 1.0-m^2 Tucker trawl
					Channel	648	648		1.0-m^2 Tucker trawl
					Bottom	1,055	1,055		3.0-m beam trawl
Beach Seine Survey	15 JUN	25 OCT	10	Biweekly	Shore	1,000	1,000		30.5-m beach seine

Table 2-3 Summary of 2009 Sample Collection Information by River Region and Stratum for the Longitudinal River Ichthyoplankton Survey

	3-Week Period from 16 MAR to 5 APR					3-Week Period from 6 APR to 26 APR					3-Week Period from 27 APR to 17 MAY				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
Region	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total
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	12	12	12	54
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	--	--	15	15	30
Total	36	30	114	114	294	51	39	279	210	579	51	39	231	276	597

	3-Week Period from 18 MAY to 7 JUN					4-Week Period from 8 JUN to 5 JUL					13-Week Period from 13 JUL to 11 OCT				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
Region	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total	Sled	Trawl	Sled	Trawl	Total
Battery	--	--	24	12	36	--	--	24	16	40	--	--	42	42	84
Yonkers	6	3	18	12	39	8	8	24	28	68	14	14	42	28	98
Tappan Zee	12	6	12	12	42	8	8	20	20	56	21	21	28	28	98
Croton-Haverstraw	12	6	12	12	42	12	8	24	24	68	21	21	28	28	98
Indian Point	6	6	18	36	66	12	8	20	64	104	21	21	28	28	98
West Point	--	--	21	45	66	--	--	32	96	128	--	--	28	28	56
Cornwall	9	6	24	15	54	8	8	48	48	112	14	14	21	21	70
Poughkeepsie	--	--	36	54	90	--	--	28	60	88	--	--	21	21	42
Hyde Park	--	--	21	30	51	--	--	20	36	56	--	--	--	--	--
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	231	273	576	48	40	296	448	832	91	91	238	224	644

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

Table 2-4 Specifications of Sampling Gear Used During the 2009 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 μm
Net material	Nytex (monofilament nylon)
Collection cup	
Length	30 cm
Length with net-retaining ring	37 cm
Mesh size	500 μm
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 μm
Net material	Nytex (monofilament nylon)
Collection cup	
Length	30 cm
Length with net-retaining ring	37 cm
Mesh size	500 μm
Net material	Nytex (monofilament nylon)

Table 2-5 Water Quality Sampling Locations During the 2009 Longitudinal River Ichthyoplankton and Fall Juvenile Surveys

	Scheduled Sampling Locations (RM)		Number of Water Quality Samples Scheduled Per Region Per River Run			
River Region	Shoals[1]	Channel	LRS River Runs 1-3	LRS River Runs 4-16	LRS River Runs 17-23	FJS River Runs 1-11
Battery	--	1, 3, 6, 9	12	12	12	12
Yonkers	19	12, 14, 17, 19, 22	19	19	19	19
Tappan Zee	29	25, 27, 29, 32	16	16	16	16
Croton-Haverstraw	36	35, 36, 37, 38	16	16	16	16
Indian Point	43	40, 42, 43, 46	16	16	16	16
West Point	--	49, 51, 53, 55	12	12	12	12
Cornwall	59	56, 57, 59, 61	16	16	16	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	182

NOTE: Dashes (--) indicate no sampling scheduled.
[1] Sample collected from east and west shoals at designated river mile.

Table 2-6 Summary of 2009 Sample Analysis Information by River Region and Stratum for the Longitudinal River Ichthyoplankton Survey

	3-Week Period from 16 MAR to 5 APR					3-Week Period from 6 APR to 26 APR					3-Week Period from 27 APR to 17 MAY				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
Region	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	6	12	12	36	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	--	--	15	15	30
Total	36	30	78	78	222	42	39	147	150	378	42	39	147	177	405

	3-Week Period from 18 MAY to 7 JUN					4-Week Period from 8 JUN to 5 JUL					13-Week Period from 13 JUL to 11 OCT				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel		Shoal		Bottom	Channel	
Region	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.

Table 2-7 Summary of 2009 Sample Collection by River Region and Stratum for the Fall Juvenile Survey

	15-Week Period from 6 JUL to 18 OCT					6-Week Period from 26 OCT to 6 DEC				
	Shoal		Bottom	Channel		Shoal		Bottom	Channel	
Region	Beam	Tucker	Beam	Tucker	Total	Beam	Tucker	Beam	Tucker	Total
Battery	--	--	64	48	112	--	--	36	--	36
Yonkers	16	16	64	49	145	15	--	34	--	49
Tappan Zee	48	48	49	49	194	15	--	25	--	40
Croton-Haverstraw	40	40	48	47	175	15	--	19	--	34
Indian Point	32	32	55	56	175	15	--	30	--	45
West Point	--	--	80	96	176	--	--	36	--	36
Cornwall	40	40	48	48	176	15	--	30	--	45
Poughkeepsie	--	--	88	87	175	--	--	30	--	30
Hyde Park	--	--	64	48	112	--	--	29	--	29
Kingston	--	--	32	48	80	--	--	24	--	24
Saugerties	--	--	32	16	48	--	--	30	--	30
Catskill	--	--	24	24	48	--	--	28	--	28
Albany	--	--	32	32	64	--	--	24	--	24
Total	176	176	680	648	1680	75	--	375	--	450

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

Table 2-8 Specifications of Sampling Gear Used During the 2009 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 2009 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 2009 Sample Collection by River Region for the Beach Seine Survey

Region	5-Week Period from 15 JUN to 19 JUL	13-Week Period from 27 JUL to 25 OCT	Total
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 (m^3) and Surface Areas (m^2) Used in Analysis of 2009 Hudson River Estuary Data

Geographic Region	Channel Volume	Bottom Volume	Shoal Volume	Region Volume	Shorezone Surface Area
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 2009 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 (USGS) for the Green Island Dam near Troy, New York, and daily water temperature data from Poughkeepsie's Water Treatment Facility and the near-by USGS gaging site are discussed. Physical and chemical parameters are presented in Appendix B.

3.1 GREEN ISLAND DAM FLOWS

During 2009, daily freshwater flow for Green Island, New York was estimated from discharge data provided by the USGS 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 2009 were provisional. The daily flow in 2009 ranged from 133 to 1,970 m^3/sec/day (Figure 3-1, Appendix Table B-1). The primary peak in daily flow occurred in early March with flows between 1,500 – 2,000 m^3/sec/day and secondary peaks occurred in early April and in late October with flows about 1,300 m^3/sec/day. Periods of daily flow less than 200 m^3/sec/day occurred in September with an unusually high flow occurring in early August (Figure 3-1, Appendix Table B-1).

The 2009 monthly freshwater flow rates were similar to the long-term (1947-2008) monthly average flow rates, in that the highest flows were observed in early spring and lowest flows in the summer months (Figure 3-1, Appendix Table B-2). The monthly average flows in the winter and spring of 2009 were similar to the long-term average. For the rest of 2009, monthly average flows were slightly above the average, even approaching the long-term maximum in August 2009. When compared to monthly average flow rates since the Hudson River surveys began in 1974 (Appendix Table B-3), the 2009 monthly flows were similar to the long-term average flows during the winter and early spring and greater than the long-term average from May through December.

Average annual freshwater flow for the Hudson River as estimated at Green Island during 1947 to 2009 has varied from a minimum of 219 m^3/sec/day in 1965 to a maximum of 604 m^3/sec/day in 1976 (Figure 3-2, Appendix Table B-4). For 2009, the provisional average annual flow of 541 m^3/sec/day was the 15th highest flow in the 63 years of data.

3.2 HUDSON RIVER WATER TEMPERATURES NEAR POUGHKEEPSIE

Long-term (since 1951) daily temperature records are available from Poughkeepsie's Water Treatment Facility, located just north of the City of Poughkeepsie, New York, at RM 77. In addition, water temperature records dating back to 1993 are available from the USGS gaging site (#01372058) on the Hudson River 2.3 miles below Poughkeepsie, New York, at RM 72. Because of the consistency and verification of the USGS records, they were substituted for the Water Treatment Facility records beginning with 1993 and continuing to 2009. Temperature records from the Water Treatment Facility were retained for 1951 through 1992.

In 2009, the lowest recorded temperature was -0.1°C occurring in January (Appendix Table B-5). Water temperatures in 2009 remained relatively low (<5°C) through late March, increased steadily during the spring and early summer, and reached a high of 26.3°C in late August. Temperatures declined steadily from late August through December (Figure 3-3).

The 2009 mean water temperature profile was similar to the long-term (1951-2008) average temperatures for most of the year (Figure 3-3). Exceptions to this similarity, when 2009 temperatures were cooler than long-term averages, occurred in the winter months, during mid-summer, and again in October and early November. The 2009 temperatures were warmer than long-term averages during all of May, in late August, and in late November/early December. Average annual water temperature for the Hudson River as measured near Poughkeepsie during 1951 to 2009 has varied from a minimum of 11.29°C in 1960 to a maximum of 13.67°C in 1991 (Figure 3-4, Appendix Table B-6). For 2009, the average annual temperature of 12.30°C was the 36th highest temperature in the 59 years of data.

3.3 HUDSON RIVER SURVEYS

3.3.1 Spatiotemporal Pattern in Temperature

Average weekly water temperature measured during the 2009 LRS/FJS increased from the beginning of sampling in March to late August 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 for the Hudson River near Poughkeepsie. Average weekly temperatures measured during the LRS/FJS were similar to concurrent temperatures recorded near Poughkeepsie. Peak river temperatures occurred during late August when the river-wide mean temperature, as measured from Battery to Poughkeepsie, was 26.6°C and regional mean values were between 25.9 and 27.3°C (Appendix Table B-7) (Hudson River temperatures near Poughkeepsie averaged 26.0°C for this period). Lowest values occurred during mid-March when the mean temperature in the lower river was 3.0°C and regional mean temperatures from Battery to Cornwall ranged from 2.5 to 3.3°C (Hudson River temperatures near Poughkeepsie averaged 3.1°C for this period).

Average weekly water temperatures in 2009 were consistent with the long-term (1974-2008) average temperatures observed in previous Hudson River surveys (Figure 3-5). Average temperatures in 2009 were very similar to the long-term averages, except in May 2009 when temperatures were warmer than average and in the early summer of 2009 when temperatures were cooler than average. Average annual water temperatures measured during the LRS/FJS from 1974 through 2009 have varied from 19.14°C in 1983 to 23.59°C in 1991 (Figure 3-5, Appendix Table B-8). For 2009, the average annual temperature of 21.01°C was the 24th highest temperature in the 36 years of data.

Temporal patterns in the 2009 BSS temperature data resembled the pattern observed in LRS/FJS measurements with summer peak temperatures of 26.9°C achieved in late August (Figure 3-6). Mean weekly regional temperatures at the peak were 25.7 to 27.6°C (Appendix Table B-9). Minimum mean temperatures of 10-16°C were recorded during the last week of sampling that began on 19 October.

Average weekly temperatures during the 2009 BSS were comparable to the average temperatures observed in the long-term (1974-2008) record for most of the sampling season except that late spring temperatures in 2009 were slightly cooler than the long-term average

and the peak temperature in late August was greater than the long-term peak for that week (Figure 3-6). Average annual water temperatures measured during the BSS from 1974 through 2009 have varied from 21.34°C in 1974 to 25.69°C in 2005 (Figure 3-6, Appendix Table B-10). For 2009, the average annual temperature of 23.88°C was the 10th highest temperature in the 36 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 2009 LRS/FJS, showed fluctuating levels in spring and early summer during periods of varying freshwater inputs with increasing and more stable values occurring in late summer and fall (Figure 3-7). Salinity was lowest in late June (following a period of high freshwater inputs for that time of year) when the river-wide mean value was 1.1 parts per thousand (ppt) and regional values were as low as 7.5 ppt in the Battery region (Appendix Table B-11). Maximum salinity was observed several times in 2009: April, September, and November when regional values were 17-22 ppt in the Battery region and extended to 1-2 ppt in the West Point 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 2009 BSS, the salinity pattern was nearly typical with low salinity in the late spring and increasing values during the summer, but salinity remained high in the fall instead of declining as is typical (Appendix Table B-12). Maximum salinity of 10.7 ppt in the Yonkers region occurred in late October; low values were observed in late June when salinity averaged 1.1 ppt in the Yonkers region following several days of above-average freshwater inputs (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 2009, dissolved oxygen, as recorded in the LRS/FJS, declined from peak mean weekly regional values of 12-13 mg/L in mid-March to minimum mean levels of 4-6 mg/L in late August (Figure 3-8, Appendix Table B-13).

Average weekly dissolved oxygen concentrations in 2009 were lower than the long-term (1974-2008) average values for most of the sampling season except during the fall when high values equaled a long-term maximum value in late October (Figure 3-8). Average annual dissolved oxygen measured during the LRS/FJS from 1974 through 2009 has varied from a low of 6.81 mg/L in 2008 to 8.64 mg/L in 1984 (Figure 3-8, Appendix Table B-14). For 2009, the average annual dissolved oxygen concentration of 7.29°C was the 8th lowest concentration in the 36 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 2009 LRS/FJS were usually above 70 percent for most of the sampling season with values in the 60th percentile common in the summer and fall in the downriver regions (Appendix Table B-17). Individual mean weekly regional values were never lower than 49 percent, the minimum recorded during August from the Battery region.

Data collected in the 2009 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 (1974-2008) average weekly dissolved oxygen, 2009 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 59 percent and were usually in the 70 to 85 percent range.

Average annual dissolved oxygen measured during the BSS from 1974 through 2009 has varied from a new low of 6.34 mg/L in 2009 to 8.82 mg/L in 1991 (Figure 3-9, Appendix Table B-16). For 2009, the average annual dissolved oxygen concentration of 6.34°C was the lowest concentration in the 36 years of data.

Link to Chapter 4

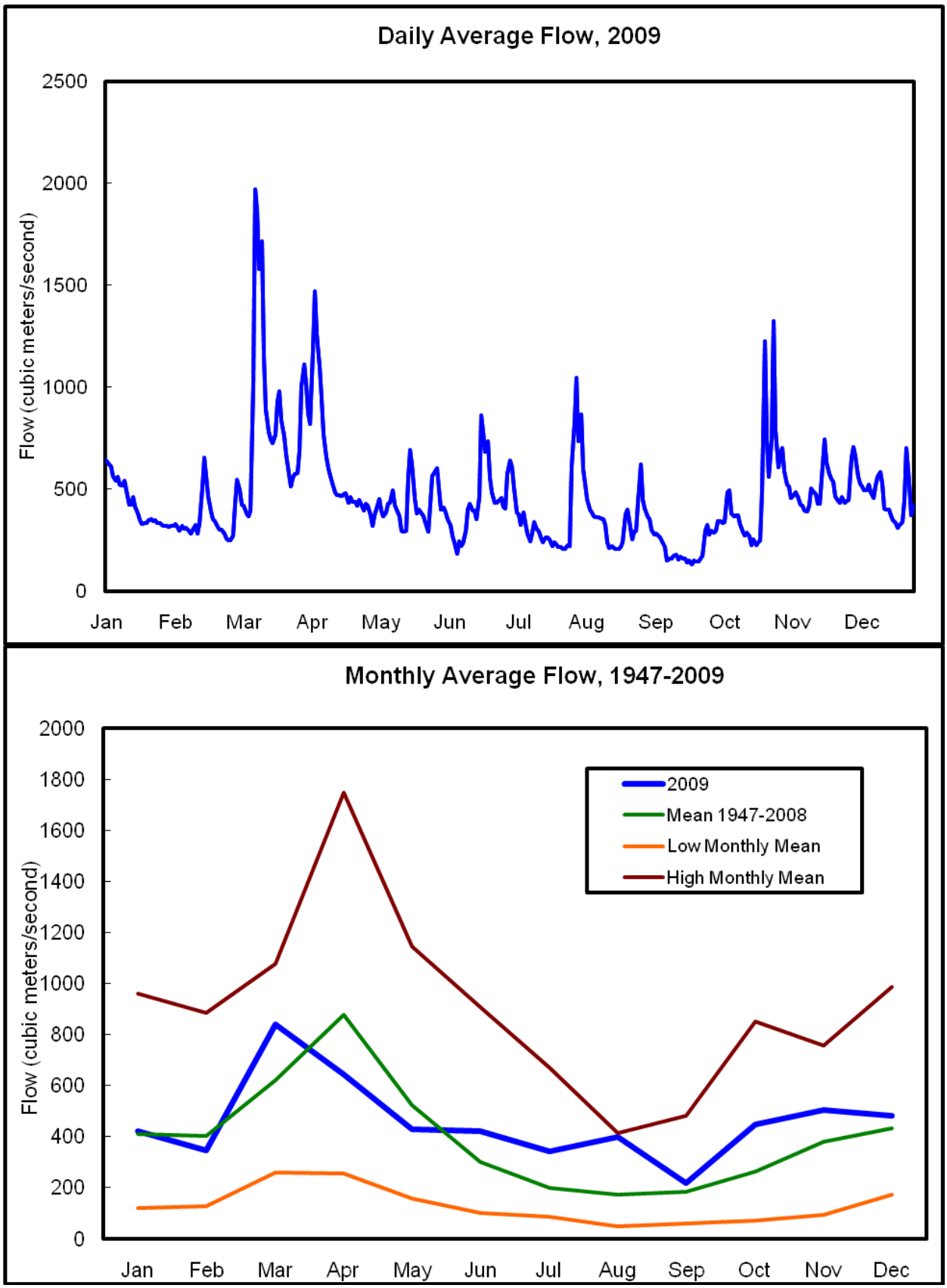


Figure 3-1. Hudson River daily average flow rate in 2009 and monthly average flow rates from 1947 to 2009, Green Island, New York. (Note: Data for October through December 2009 are provisional.)

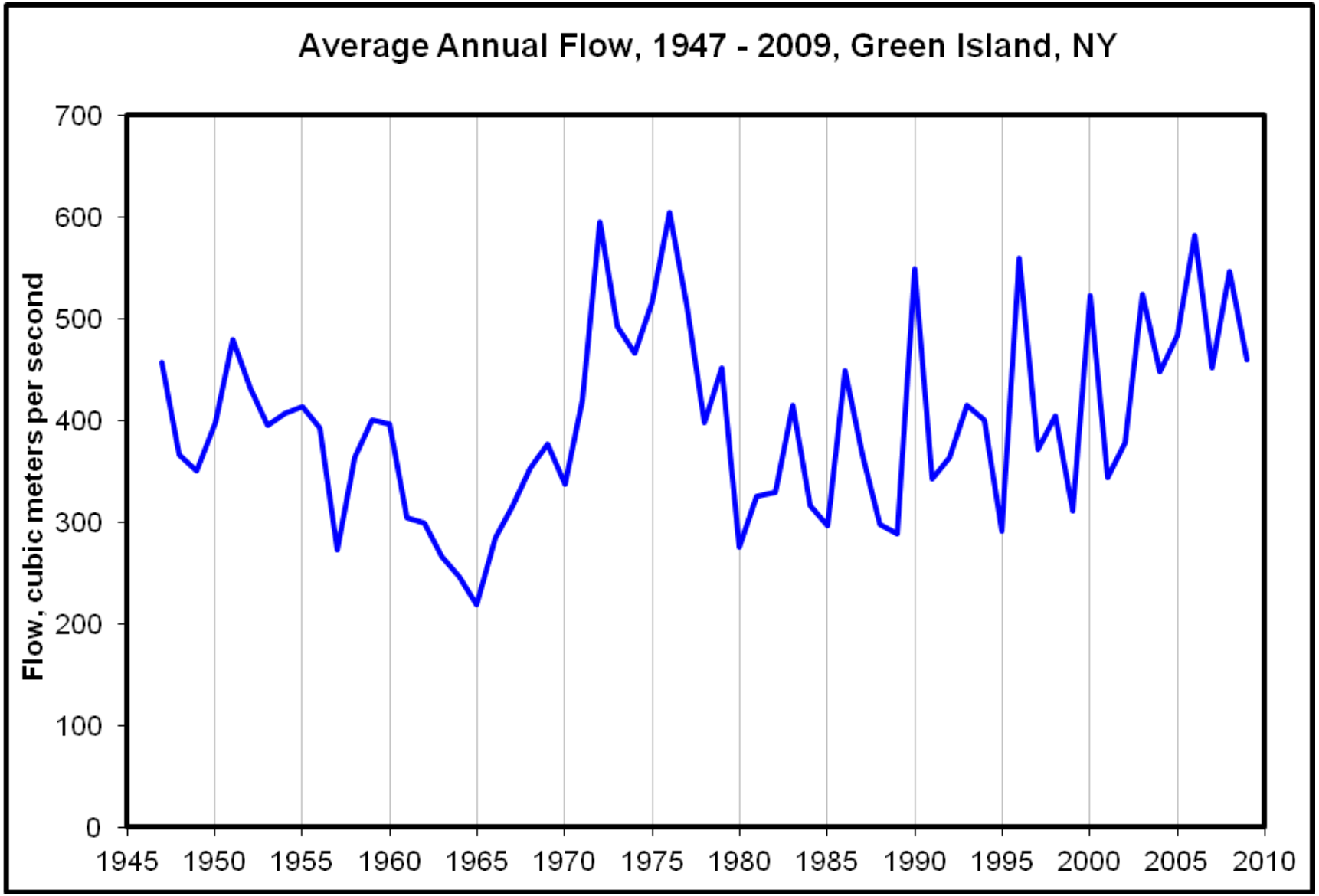


Figure 3-2. Average annual Hudson River flow from 1947 to 2009, Green Island, New York. (Note: Data for 2009 are provisional.)

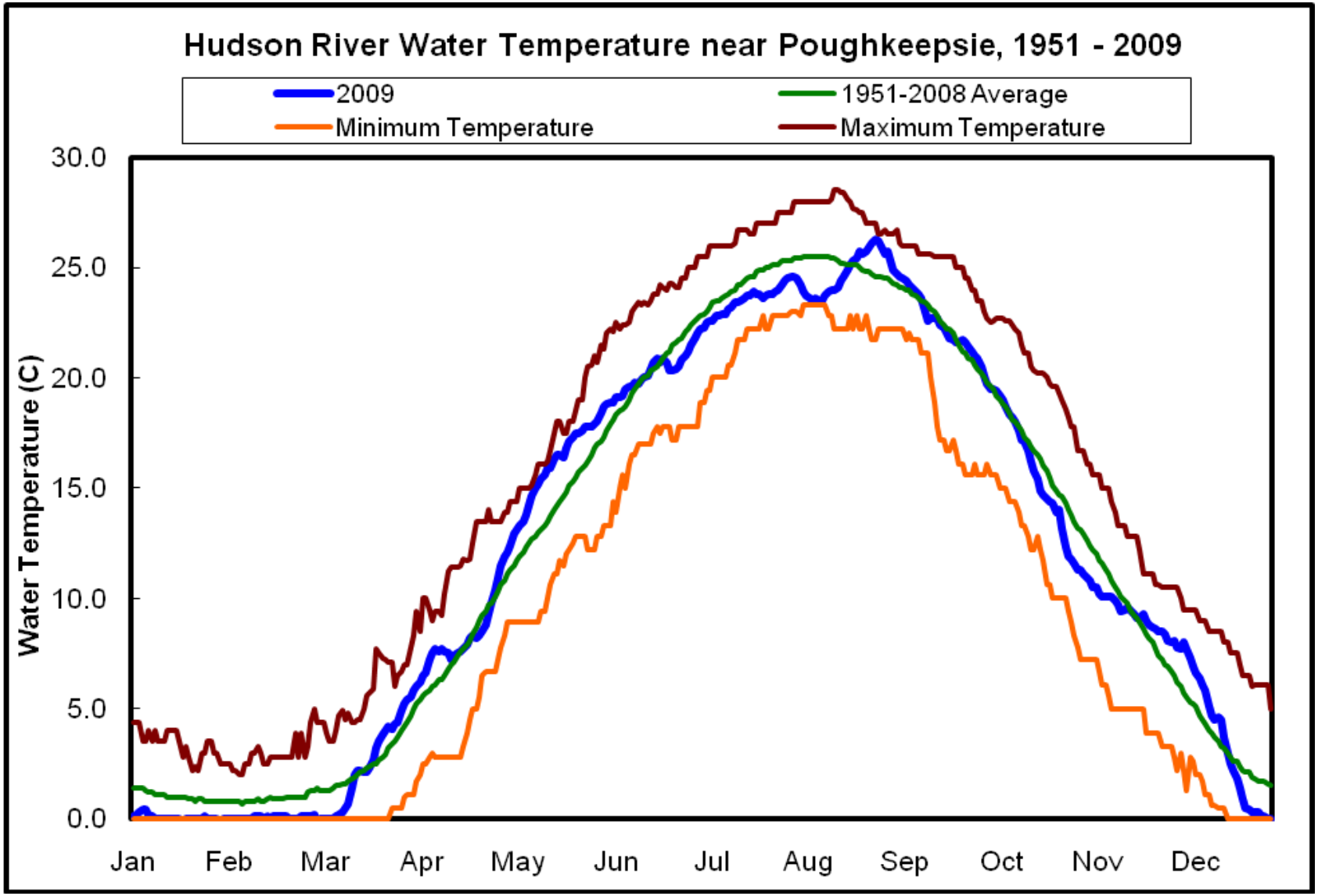


Figure 3-3. Seasonal variations in water temperature from 1951 to 2009 from Hudson River near Poughkeepsie. (Data from 1951 through 1992 from Poughkeepsie's Water Treatment Facility. Data from 1993 through 2009 from USGS gaging site 01372058 Hudson River below Poughkeepsie, NY.)

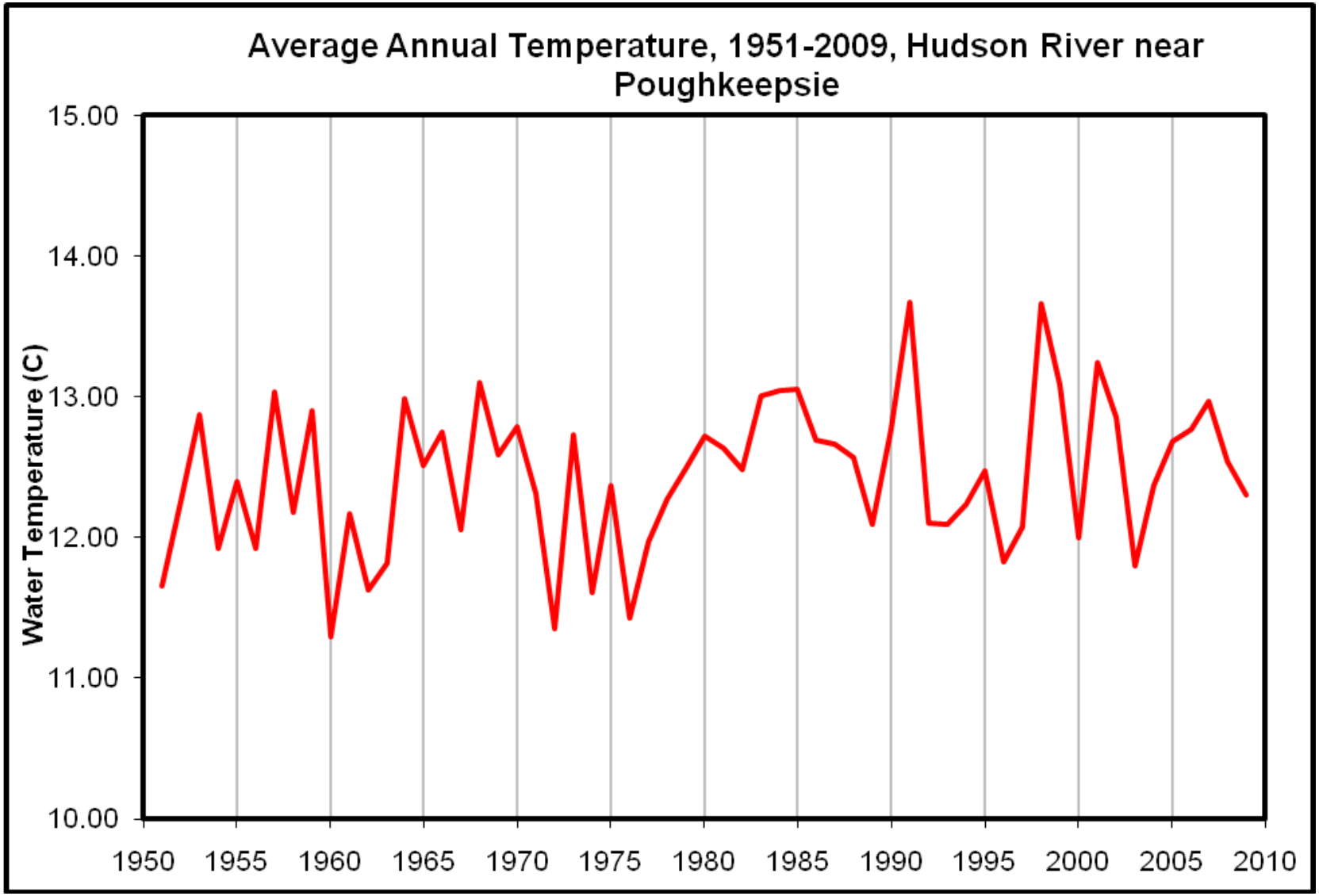
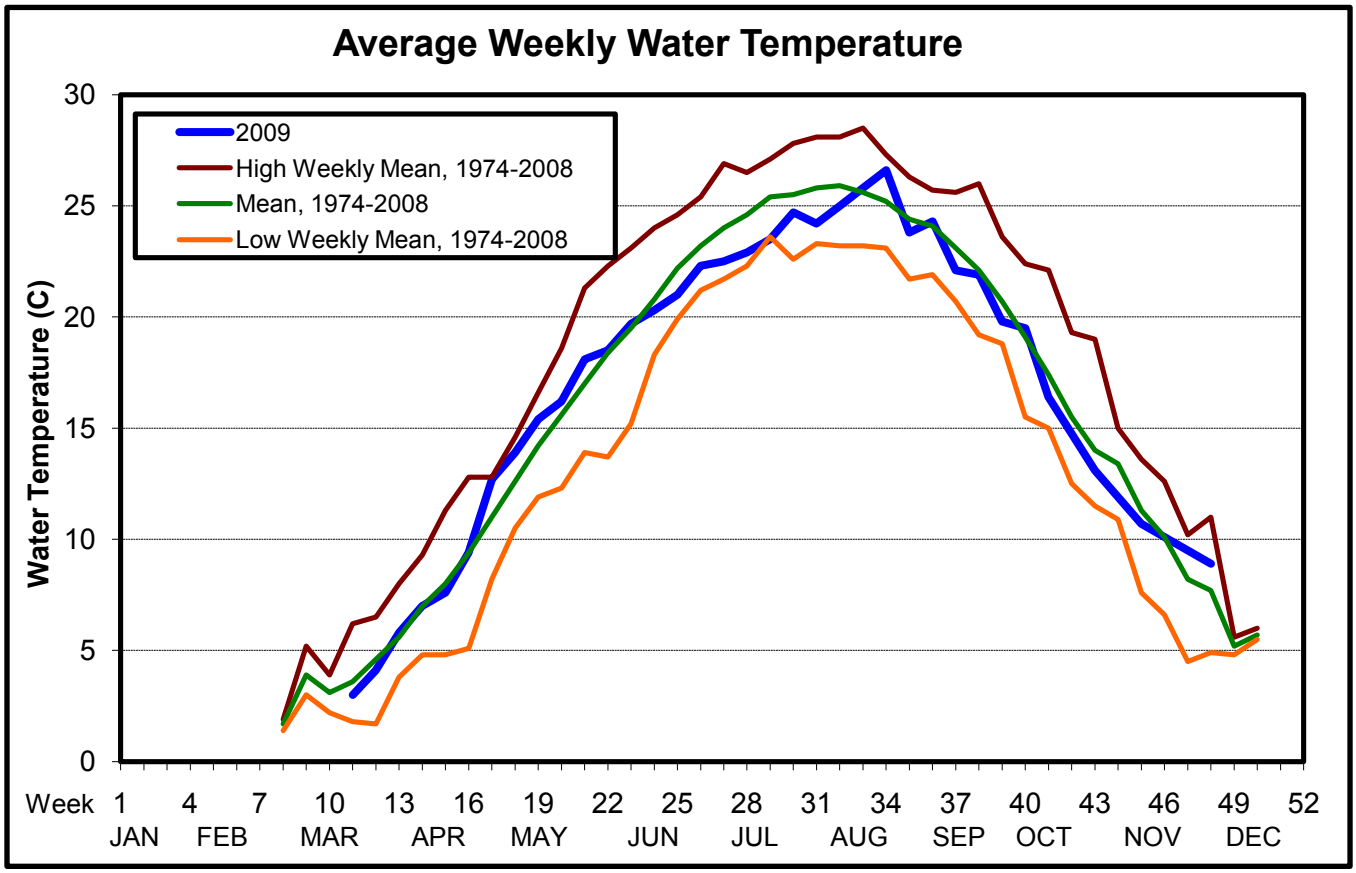


Figure 3-4. Average annual water temperature from 1951 to 2009 from Hudson River near Poughkeepsie. (Data from 1951 through 1992 from Poughkeepsie's Water Treatment Facility. Data from 1993 through 2009 from USGS gaging site 01372058 Hudson River below Poughkeepsie, NY.)

Long River/Fall Juvenile Survey



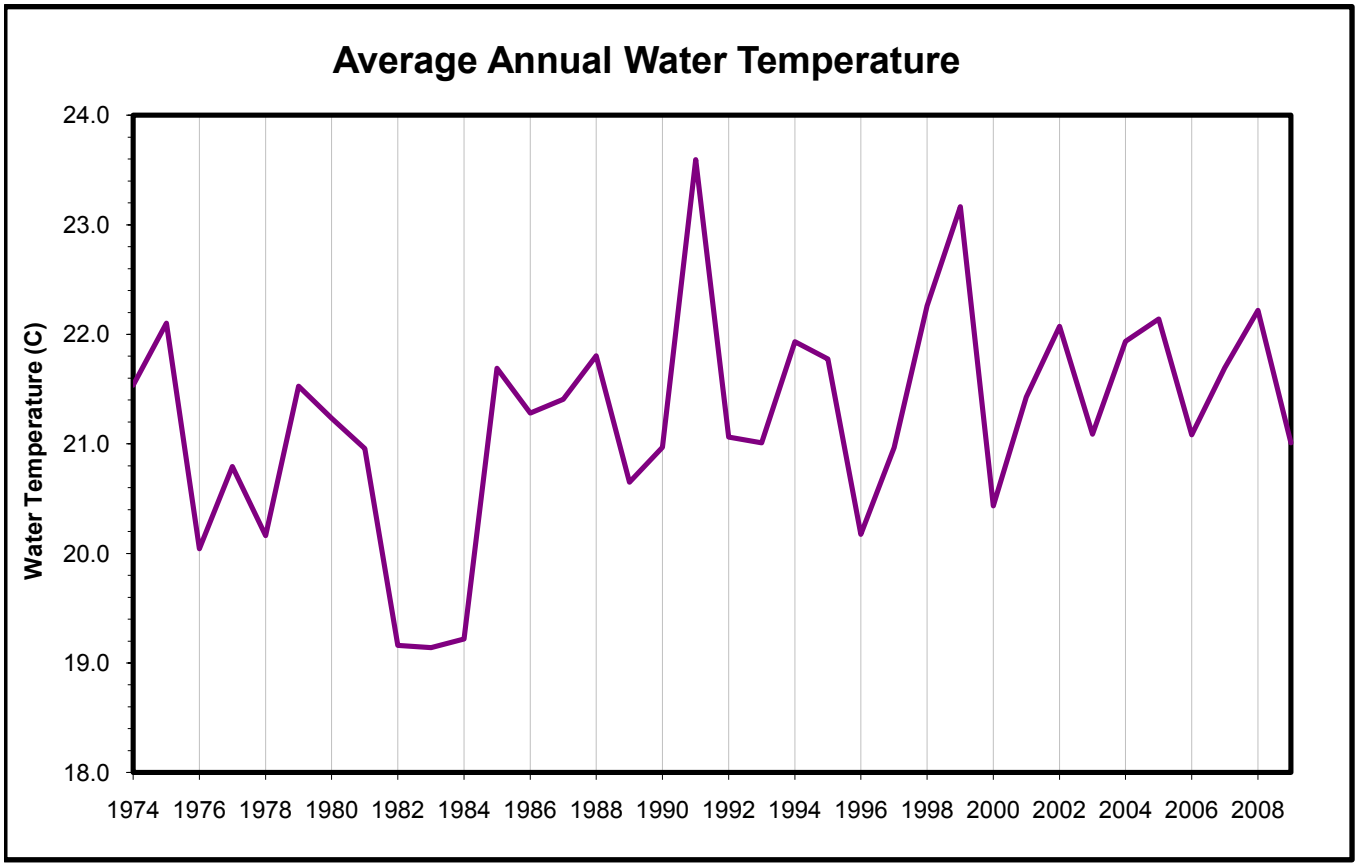
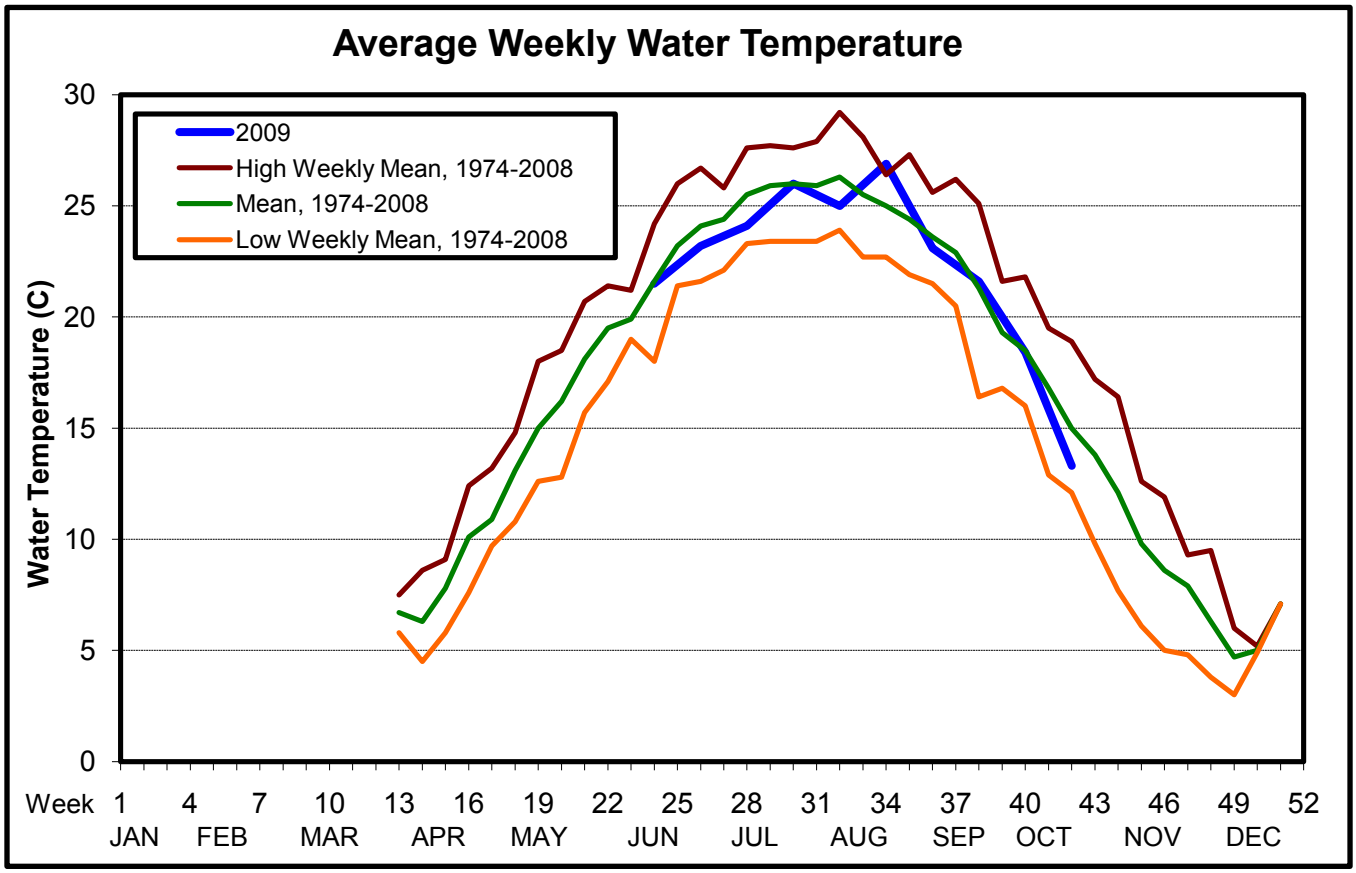


Figure 3-5. Seasonal and annual variations in water temperature from the Long River/Fall Juvenile surveys, 1974 - 2009.

Beach Seine Survey



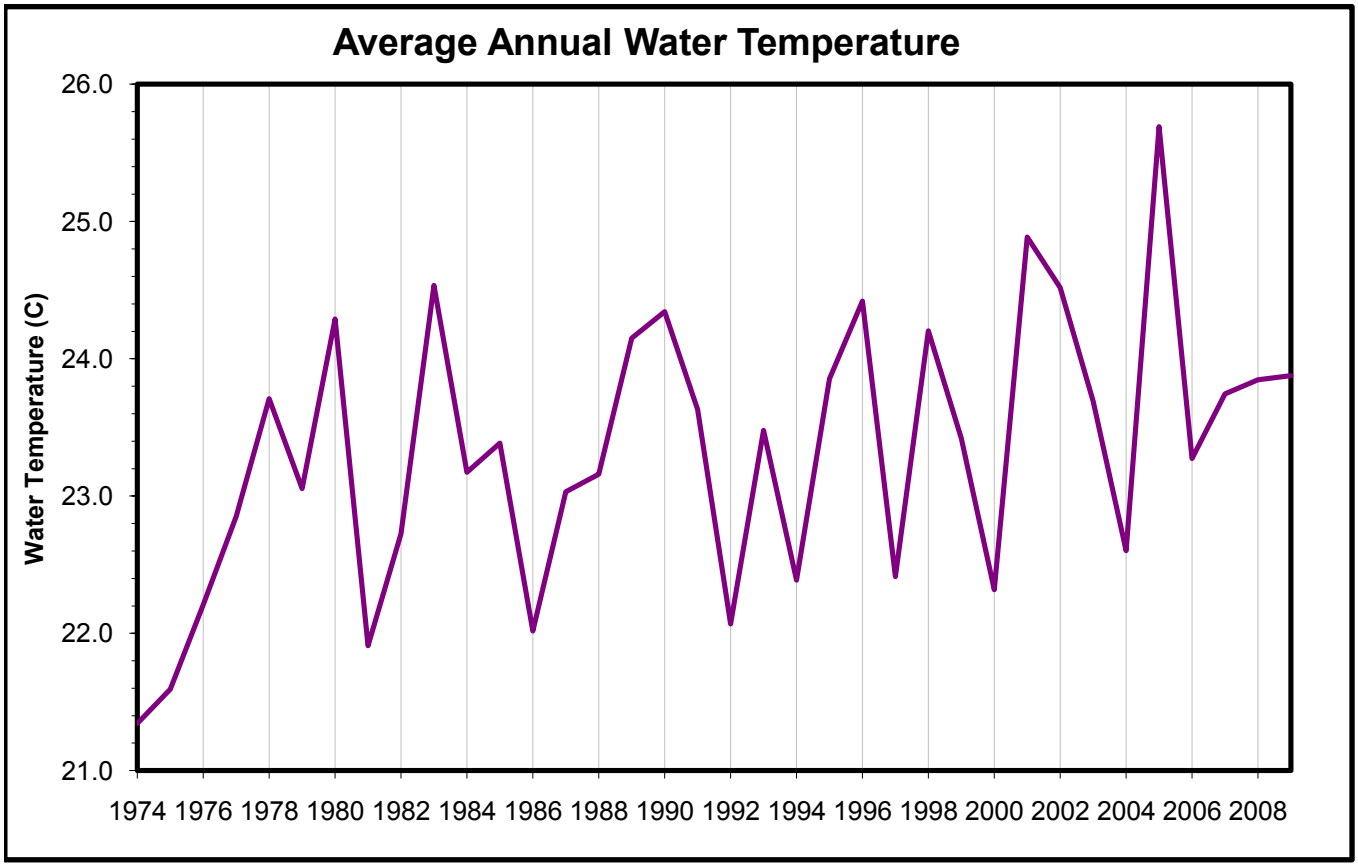


Figure 3-6. Seasonal and annual variations in water temperature from the Beach Seine surveys, 1974 - 2009.

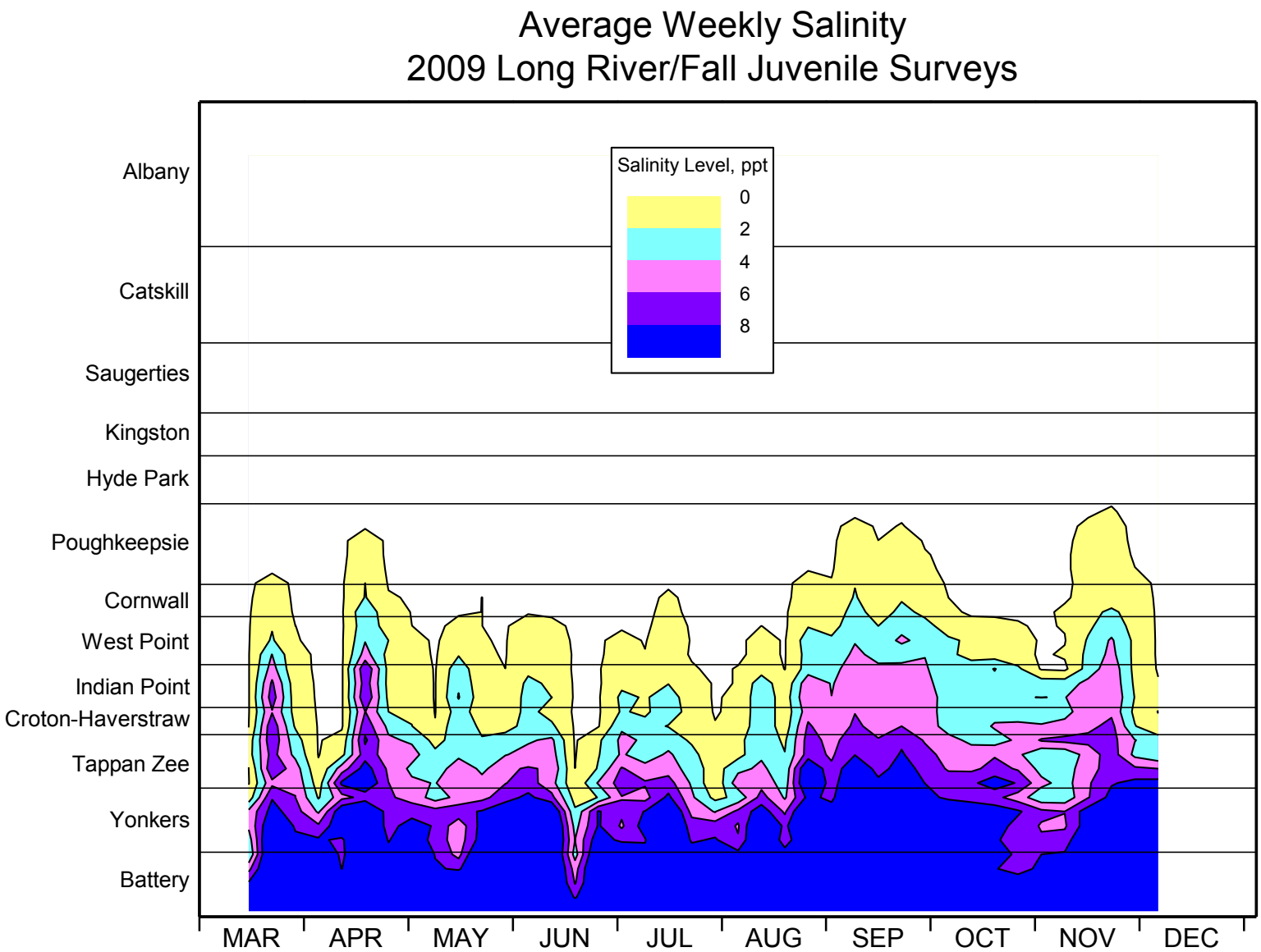
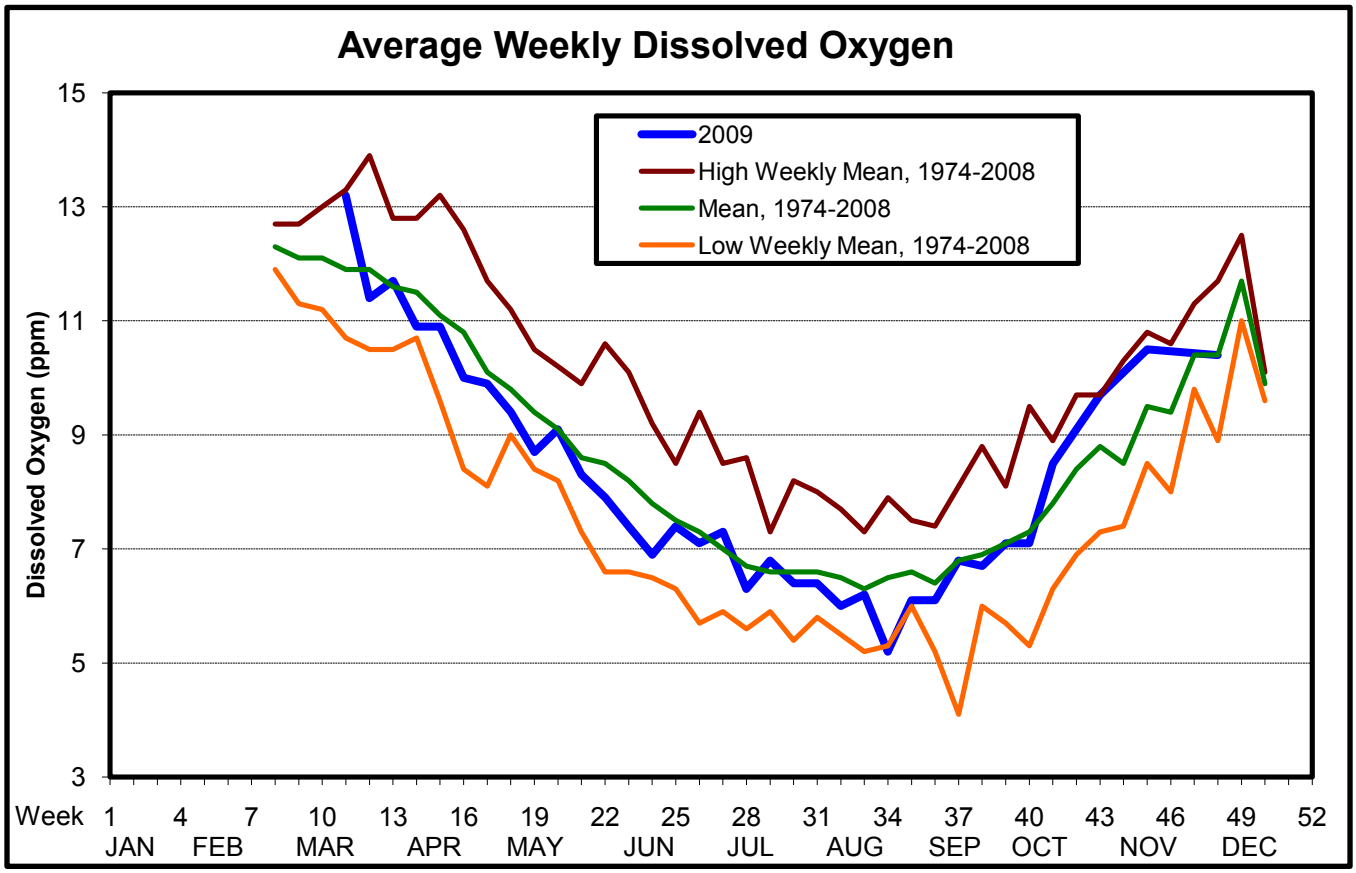


Figure 3-7. Seasonal variations in average weekly salinity from the 2009 Long River/Fall Juvenile surveys.

Long River/Fall Juvenile Survey



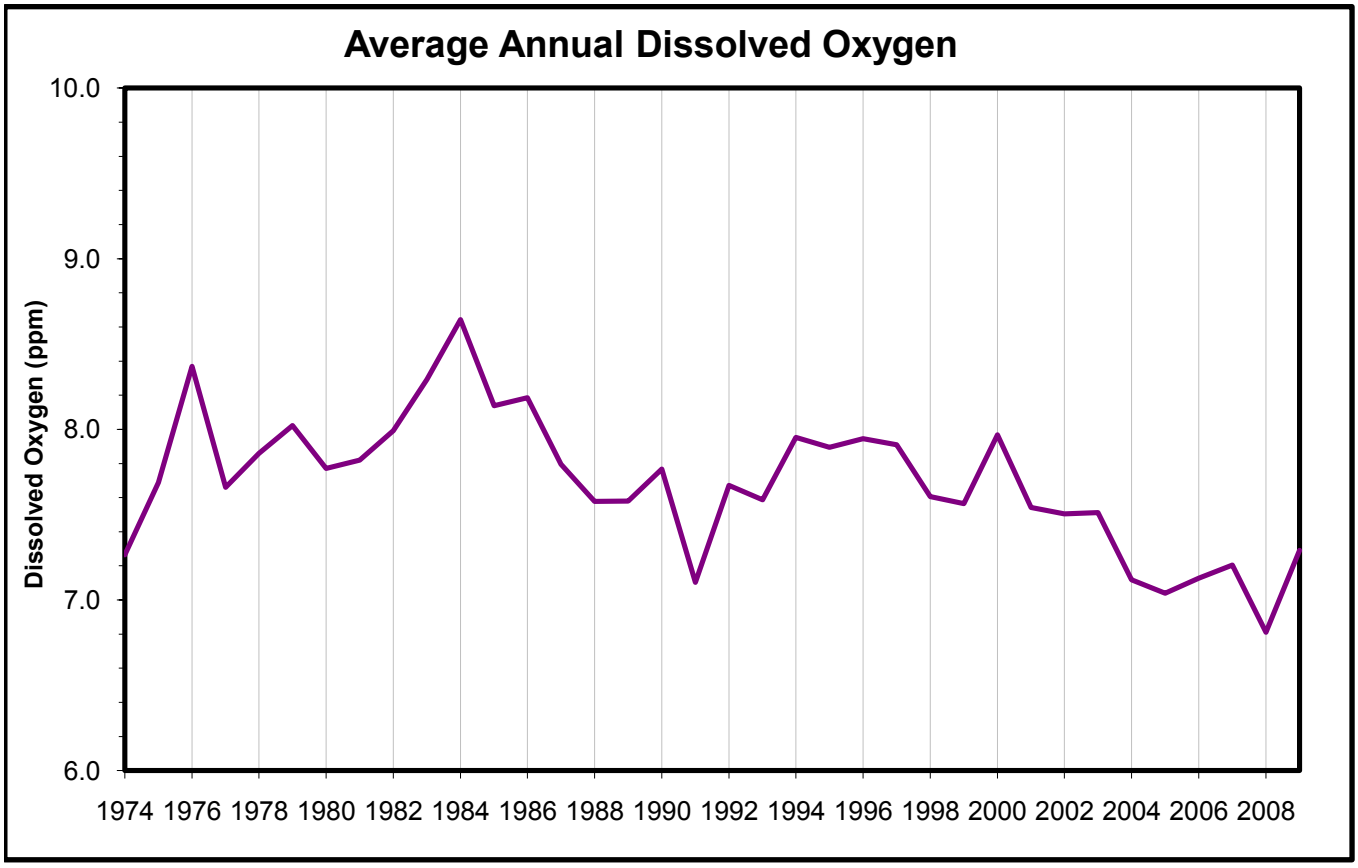
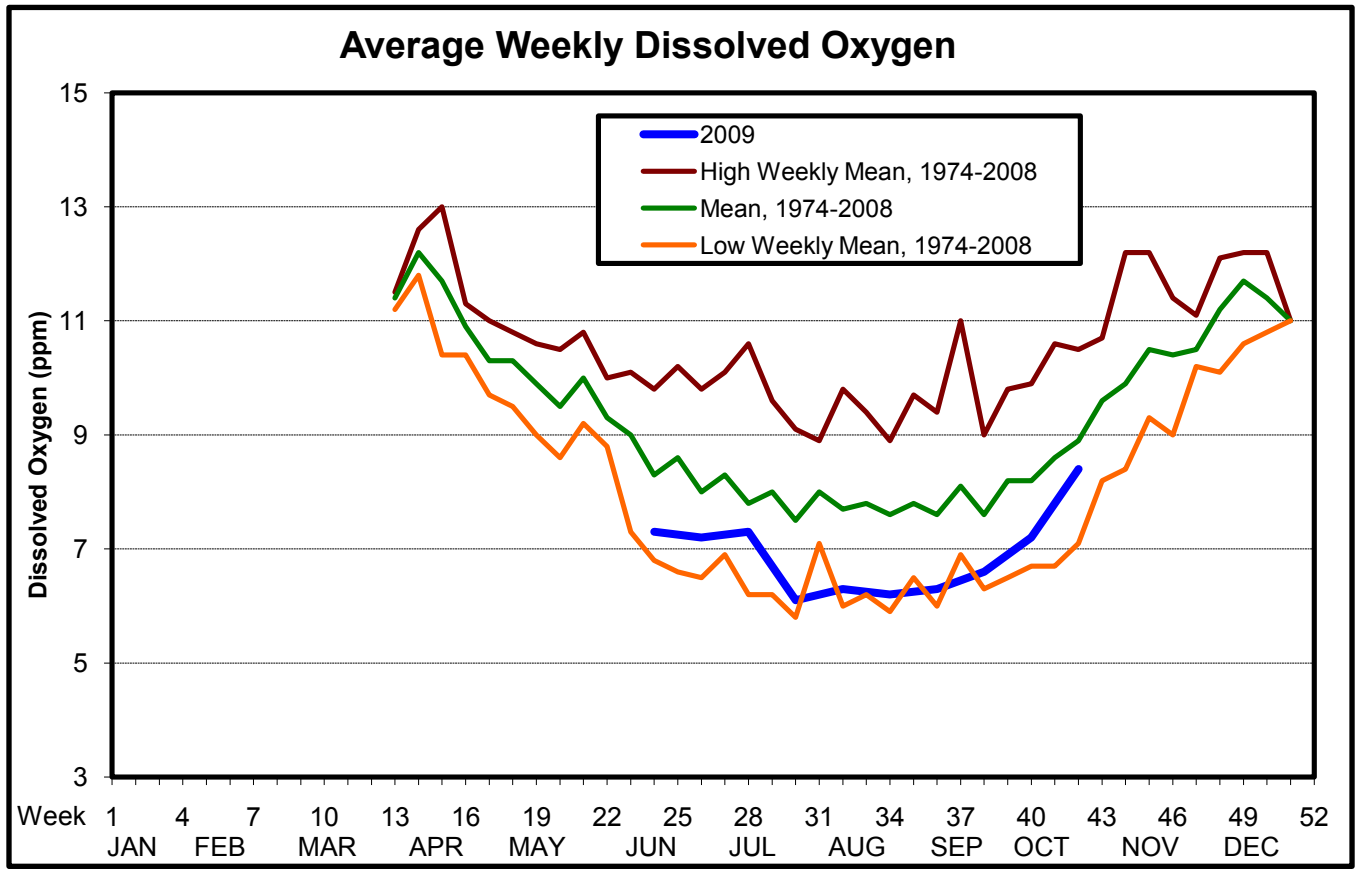


Figure 3-8. Seasonal and annual variations in dissolved oxygen from the Long River/Fall Juvenile surveys, 1974 - 2009.

Beach Seine Survey



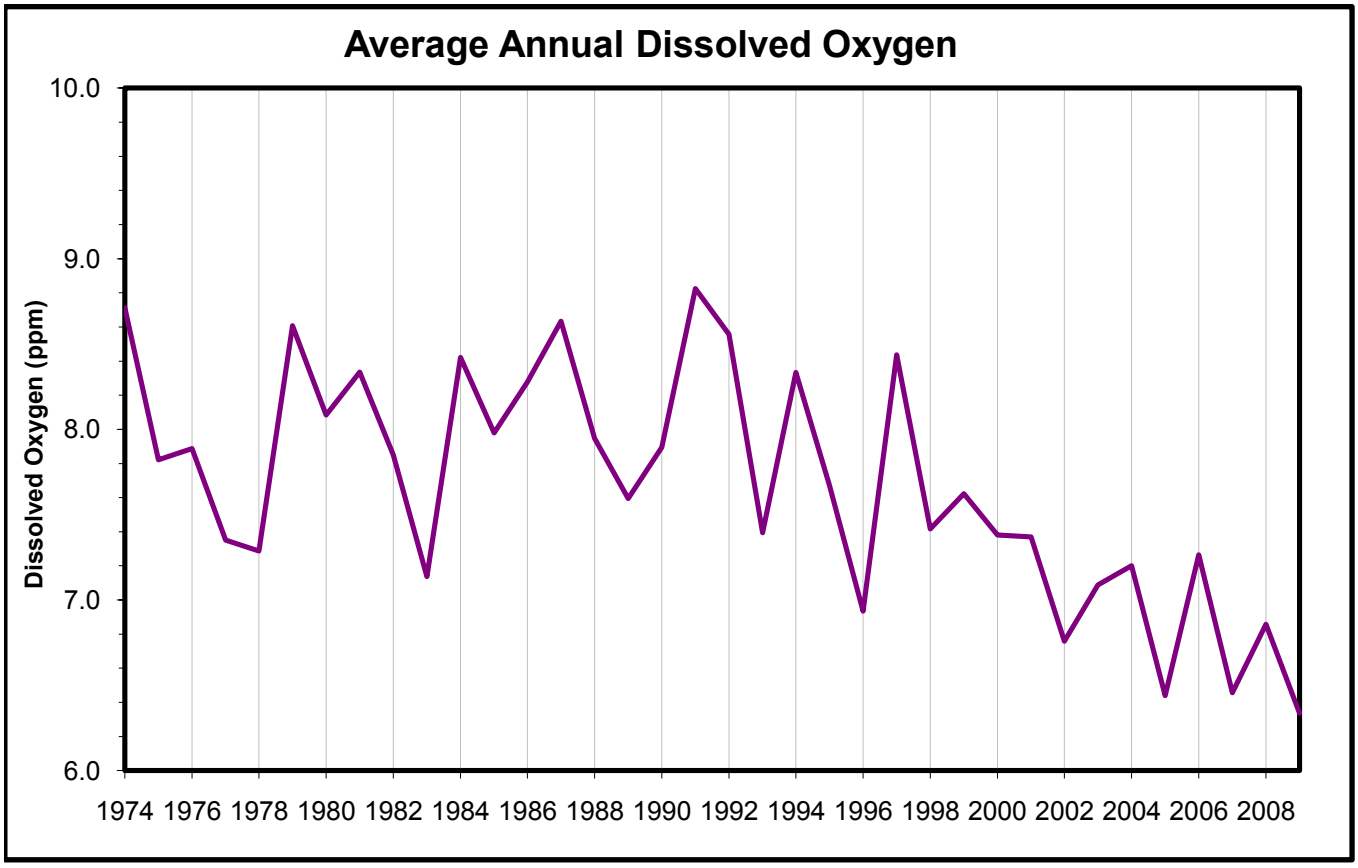


Figure 3-9. Seasonal and annual variations in dissolved oxygen from the Beach Seine surveys, 1974 - 2009.

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 Assemblages

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 2009 (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.

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, redfin 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. 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).

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 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.

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 freshwaters 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.

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.

4.1.3 Species Collected in 2009

Of the 98 species of fish collected in 2009, 34 were freshwater species, which is consistent with the number of freshwater species collected since the late 1980s (Table 4-1). The marine species in 2009 numbered 45, continuing the trend begun in the early 1990s of greater numbers of marine species than freshwater species. The diadromous and estuarine assemblages in 2009 were nearly identical to similar assemblages collected since 1974, with 8 to 11 species, respectively. No new species were collected in 2009.

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 98 species recorded during 2009, 30 were collected in all three sampling surveys, while 46 of the remaining 68 species were collected in only one of the surveys. Of the 30 freshwater species, 19 (nearly two-thirds) of them were collected only in the BSS. Likewise, 17 (37 percent) of the 46 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 2009 LRS, as they have in previous years (Appendix Table C-1). Grubby, tautog, and tesselated darter were more abundant in the 2009 LRS than in most previous years whereas blueback herring and alewife were less abundant. The 2009 FJS was dominated by bay anchovy, hogchoker, and white perch (Appendix Table C-2). Compared to previous years, tesselated darter and walleye were more abundant in the 2009 FJS, but blueback herring, spottail shiner, and weakfish were less abundant than in the past. Catches of several species, namely rainbow smelt, tesselated darter, 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, brown bullhead, and channel catfish have increased in the last decade. In the 2009 BSS, bay anchovy was the dominant taxon, followed by *Alosa* spp. and spottail shiner (Appendix Table C-3). Compared to most previous years, bay anchovy and largemouth bass were more abundant in the 2009 BSS than in the past, but 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 2009, striped bass (PYSL) abundance index ranked 7th highest since 1974. Species for which the abundance indices ranked near the 50th percentile were: striped bass (eggs/YSL), white perch (eggs), alewife (juveniles), spottail shiner (juveniles), and bluefish (juveniles). For all other species/life stages, the 2009 abundance indices were among the lowest observed since 1974 or 1979. Indeed, for American shad (eggs) and weakfish (juveniles), the 2009 indices were the lowest observed.

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 2009, striped bass eggs were most abundant in the lower river, whereas YSL abundance occurred in the mid-river region of Cornwall (Figure 4-1; supporting density and standing crop tables for striped bass are presented in Appendix Tables E-1 through E-24). As in other 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 2009, striped bass PYSL were present throughout the middle and lower estuary and were most abundant in the west Point 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 2009 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 increasing 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 2009 (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 and yearling from the BSS collected in the mid-estuary during late spring.

Comparing the temporal distribution of early life stages of striped bass in 2009 with previous years (1974-2008), peak egg density in 2009 occurred in early June which was later than the historical peak but YSL occurrence was similar to the historical pattern of peak occurrence in late May (Figure 4-5). Peak PYSL abundance in 2009 occurred also in late May, which fit the historical pattern from late May to mid-June. YOY were collected in late June in 2009, but also in the weeks beyond the temporal limits (Weeks 18-26 which is May through June) of this comparison.

Striped bass eggs in the 2009 LRS were most abundant in the Yonkers region and also occurred in the West Point to Poughkeepsie regions, downriver of the historical peak in Kingston (Figure 4-6). The YSL distribution in 2009 was similar to the long-term distribution pattern with greatest abundance in the middle estuary, especially in the West Point and Poughkeepsie regions. PYSL were also most abundant in the middle estuary in 2009 although slightly downriver of the historical pattern.

The 2009 geographical distribution of YOY striped bass in the BSS was consistent with the long-term trend (based on data from 1974 to 2008) 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 2009 BSS were collected in the lower estuary with lesser numbers collected throughout the estuary (Figure 4-7). Older-than-yearling striped bass were predominately in the upper estuary region of Saugerties but were also found in downriver regions.

Weekly length statistics for young-of-year striped bass collected in 2009 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 2009, white perch eggs were most abundant in the upper estuary from Kingston 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 2009, in the same areas that eggs were most abundant but also extending downriver to the West Point 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 2009, white perch PYSL were most abundant in the upper and middle estuary in late May and 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 2009, YOY fish were found in the middle estuary by late June and throughout the entire estuary by 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 2009 monitoring program with the greatest concentration in the middle estuary in early spring (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 2009 with previous years (1974-2008), the 2009 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 mid-May to mid-June, with peak abundance in early May, earlier than the long-term trend. PYSL occurrence extended from mid-May into July with peak abundance in early June as in the long-term pattern. Most YOY white perch were collected in late June in the 2009 LRS with others collected during weeks beyond the temporal limits of this comparison.

White perch eggs in the 2009 LRS were primarily in the Kingston through Albany regions which agrees with the historical trend (Figure 4-14). YSL were distributed mainly in the upper and middle regions of the estuary in 2009 as seen in the long term pattern with peak distribution in the Catskill region. Also similar to the long-term trend, PYSL were well distributed throughout the estuary in 2009 with abundance peaking in the Poughkeepsie region.

Historically, as well as in 2009, 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). In 2009, however, the upper estuary was the larger distribution center for yearling white perch. 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 2009 showed 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 2009 LRS collected YSL mainly in the middle estuary regions from West Point to Tappan Zee (Figure 4-17, Appendix Tables E-49 through E-66). PYSL were collected in March and April predominantly from the lower estuary to the West Point region (Figure 4-17). Juvenile Atlantic tomcod collected in the 2009 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 2009 FJS collected juvenile Atlantic tomcod primarily in middle and lower estuary during July and August. The few juvenile Atlantic tomcod collected in the 2009 BSS were found in the lower estuary in June (Figure 4-18). The few yearling and older Atlantic tomcod collected in the 2009 monitoring program were found in the lower estuary in summer and fall (Figure 4-19).

Comparing the temporal distribution of early life stages of Atlantic tomcod in 2009 with the long-term database (beginning in early May) available from previous years (1974-2008), the 2009 distribution for PYSL was consistent with the long-term record showing that most were collected in early May (Figure 4-20). However, in 2009 YOY distribution was slightly later than the historic pattern with more YOY collected in late May rather than early May.

The geographical distribution of early life stages of Atlantic tomcod in the 2009 LRS was upriver from the primary distribution in the long-term pattern (Figure 4-21). Although peak abundance for PYSL was in the Yonkers region in 2009, more PYSL were found upriver in the West Point region than in the past. YOY abundance in 2009 also peaked in the West Point region rather than the Yonkers and Tappan Zee regions, as in the historic pattern. YOY Atlantic tomcod distribution has historically extended into the middle estuary and did so in 2009. 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 2009, the majority of YOY and yearling-and-older Atlantic tomcod occurred in the upriver distribution center of Indian Point and West Point with very few collected in the lower estuary.

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 2009, 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 (Vouglitois 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 2009, most of the YOY population was located downstream of the Cornwall region although peak distribution in the 2009 FJS occurred in the upper estuary region of Catskill (Figure 4-25). Most YOY bay anchovy were collected from August into October. 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 2009 with the years when LRS sampling included the Battery region (1988-2008), the 2009 egg distribution, which began in early June, peaked earlier than the long-term trend (Figure 4-27). A few YSL bay anchovy were collected in early June 2009. PYSL distribution in 2009 was similar to the long-term pattern, peaking in mid-July. YOY distribution in 2009 was similar to the historic trend extending from late July into October, with most collected from late August to late September (Figure 4-27).

The geographical distribution of bay anchovy early life stages in 2009 was very consistent with the distribution pattern seen over the 1988-2008 period with greatest egg abundance in the lower estuary and PYSL abundance distributed from the Battery to Indian Point regions (Figure 4-28). The 2009 YOY geographical distribution from the LRS was very similar to the historic pattern with peak abundance in the Tappan Zee region. Conversely, the 2009 geographical distribution of YOY and yearling and older bay anchovy in the BSS differed from the 1974-2008 long-term pattern of peak abundance in the Yonkers and Tappan Zee regions (Figure 4-29). In 2009, peak abundance occurred much further upriver in the Cornwall region with a large portion of YOY bay anchovy also collected even further upriver in the Catskill region.

Weekly length statistics for bay anchovy juvenile life stage collected in 2009 showed an increase in growth during early summer, lesser growth during August and September as later spawned fish were recruited to the sampling gear, and declining growth in the late fall (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 2009, 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. Although some downriver dispersal was apparent during 2009, both YSL and PYSL American shad were found primarily in the upper estuary between Kingston and Albany (Figure 4-31).

During 2009, YOY shad appeared to have been fully recruited to the beach seine gear by June with high abundance in the upper and middle estuary, but primarily in the upper estuary for the LRS and FJS gears (Figure 4-32). YOY American shad moved downriver during the late summer and fall as evidenced in the BSS. Few yearling and older American shad were collected in 2009 (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 2009 with previous years (1974-2008), the 2009 distribution for eggs was later than the historic pattern with peak abundance in late May rather than mid-May (Figure 4-34). YSL abundance in 2009 was similar to the historic occurrence trend from mid-May to early June. PYSL abundance peaked in late May 2009, slightly earlier than the long-term pattern. YOY were collected beginning in late June. The geographical distribution of American shad early life stages in 2009 was generally consistent with the long-term record with greatest distribution in the upper estuary, although peak distributions for eggs and YSL were further downriver than in the past (Figure 4-35). PYSL and YOY American shad collected in the 2009 LRS were predominately found in the Catskill region rather than distributed throughout the upper and middle 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 2009 geographical distribution of YOY American shad was concentrated in the lower estuary regions of Tappan Zee and Croton-Haverstraw, with fewer YOY found in either the middle or upper estuary than in the past.

Weekly length statistics for YOY American shad collected in 2009 showed steady growth during the spring and early summer and slower growth in the late summer and 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 2009, peak abundance of *Alosa* spp. eggs occurred in the upper estuary at Albany in early May (Figure 4-38, Appendix Tables E-103 through E-114). YSL and PYSL were also most abundant in the upper estuary in May with PYSL found throughout the upper and middle estuary by late May and early June. YOY *Alosa* spp. were found mainly in the upper and middle estuary in late June and July (Figure 4-39).

Comparing the temporal distribution of early life stages of *Alosa* spp. in 2009 with previous years (1974-2008), the 2009 peak abundance for eggs occurred in mid- to late May, which was similar to the historical pattern. YSL and PYSL occurrence were within the historical range, peaking in mid-May for YSL and early June for PYSL (Figure 4-40). No YOY *Alosa* spp. were collected in the 2009 LRS.

The geographical distribution of *Alosa* spp. early life stages in previous years (1974-2008) 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 2009 distribution is consistent with this long-term record. 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 2009, however, many YOY in the BSS were collected much further downriver in the Tappan Zee region with a secondary distribution found in the Albany region.

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 2009 LRS in late June mainly in the upper and middle estuary (Figure 4-43, Appendix Tables E-115 through E-126). YOY alewife were most abundant in the upper and middle estuary in the 2009 FJS throughout the summer and in the middle and lower estuary in the 2009 BSS during the summer and early fall. The few yearling

and older alewife collected in the 2009 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 2009.

Comparing the geographical distribution of YOY alewife based on the 2009 BSS with previous years (1974-2008), the 2009 distribution of juveniles differed from the historic tri-modal pattern, showing more juveniles concentrated in the Croton-Haverstraw region than in the past (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 2009 showed slow, 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 2009, 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 2009 FJS and BSS in late July. They were present in the upper and middle estuary only until October when collections ceased, possibly reflecting the downriver migration out of the estuary. A few yearling and older blueback herring were collected in 2009 during the spring spawning run, mainly in the upper estuary (Figure 4-48).

Comparing the geographical distribution of juvenile blueback herring based on the 2009 BSS with previous years (1974-2008), the 2009 distribution of YOY was similar to the long-term record with most of the population in the upper estuary regions and extending down to the middle estuary (Figure 4-49). In 2009, however, more juveniles were found in the middle estuary regions of Poughkeepsie and Cornwall than in the past.

Weekly length statistics for juvenile blueback herring collected in 2009 showed a slow, steady increase in growth throughout the summer and 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 2009 BSS predominantly in the lower estuary in the summer (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 2009 were collected in beach seines in the upper and lower estuary primarily in the summer and early fall (Figure 4-52).

Comparing the geographic distribution of gizzard shad during the 2009 BSS with the long-term record (1974-2008), peak 2009 distribution for YOY differed from the historic trend in that most were found in the lower and middle estuary and none in the upper estuary (Figure 4-53). Abundance of yearling and older gizzard shad in 2009 differed from the long-term concentration in the middle estuary, with 2009 peak abundance occurring in the upriver region of Albany.

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 2009.

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 2009. 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 PYSL was collected in the Albany region in 2009 (Figure 4-54, Appendix Tables E-147 through E-154). 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 2009. 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 2009 (Figure 4-55). Historically they were found mainly in the Indian Point through Hyde Park regions.

The long-term temporal distribution record (1974-2008) of the early life stages of rainbow smelt in the Hudson River showed a short occurrence of eggs and YSL in early May and a protracted occurrence of PYSL throughout May and June (Figure 4-56). The one PYSL in 2009 was collected in late June. The historical geographic distribution (1974-2008) 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 although the one PYSL in 2009 was found in the Albany region (Figure 4-57). The long-term distribution record (1979-2008) from the FJS indicated that most YOY and yearling and older smelt were found in the middle estuary (Figure 4-58).

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 2009 hogchoker eggs were collected primarily in the Battery region in June (Figure 4-59, 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 2009, YSL were collected further upstream in Tappan Zee in July, but PYSL were collected further downriver in Yonkers in July (Figure 4-59). YOY hogchoker in 2009 were found primarily in the middle estuary during late summer and fall (Figure 4-60). Yearling and older hogchoker were collected throughout the Hudson River in 2009 but were most abundant in the middle estuary (Figure 4-61).

The 2009 geographical distribution of YOY hogchoker in the FJS was similar to the long-term trend (1979-2008) which showed a presence in most regions of the estuary, but in 2009 more YOY were collected in the middle estuary region of Poughkeepsie than in the past (Figure 4-62). Yearling and older hogchoker were also found throughout the estuary with peak abundance in the Tappan Zee region in 2009, 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 2009 BSS during June and were most abundant in September in the shorezone above the Cornwall region (Figure 4-63, 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 the Indian Point region in 2009 (Figure 4-64).

Comparing the geographical distribution of YOY and yearling and older spottail shiner based on the BSS in 2009 with previous years (1974-2008), the 2009 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 YOY spottail shiner were found in the Albany region in 2009 than in the long-term record and more yearling and older spottail shiner were collected from the Catskill region in 2009 (Figure 4-65).

Weekly length statistics for juvenile spottail shiner collected in 2009 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 4-66, 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 oxyrhynchus*, has two recognized subspecies, *A. o. oxyrhynchus* 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 2008 collected 35 Atlantic sturgeon. One YOY and four yearling and older Atlantic sturgeon were collected in the LRS mainly in the spring from the middle estuary (Table 4-3, Figure 4-67). All of the remaining 30 yearling and older Atlantic sturgeon were caught in the FJS between Croton-Haverstraw and Hyde Park (RM 35 to 77) from July to December (Figure 4-68, Appendix Tables E-185 through E-192).

4.15 SHORTNOSE 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 2009 resulted in a total of 12 yearling and older shortnose sturgeon collected in the FJS from Yonkers to Kingston (RM 20 to 92) from July to November (Figure 4-69, Table 4-4, and Appendix Tables E-193 through E-198).

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 2009 LRS and FJS captured low numbers of YOY white catfish primarily in the upper estuary during the summer, then after migration, in the middle estuary by fall (Figure 4-70, Appendix Tables E-199 through E-210). Yearling and older white catfish were captured in low numbers during the 2009 surveys throughout the estuary (Figure 4-71).

The 2009 geographical distribution of YOY white catfish in the FJS differed from the 1979-2008 long-term trend of juveniles mainly in the upper Hudson River in that the 2009 peak occurred further downriver in the Cornwall and Poughkeepsie regions (Figure 4-72). In the historical pattern, yearling and older white catfish were found throughout the estuary, as was the case in 2009 (Figure 4-72). 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 2009 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 4-73, 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 2009 LRS, YOY weakfish were present from July through October from the Battery to Croton-Haverstraw regions with greatest abundance in July (Figure 4-74, Appendix Tables E-211 through E-222). In the 2009 FJS, peak YOY abundance occurred in July with abundance declining through October when they gradually emigrated from the Hudson estuary. A few yearling and older weakfish were collected in the 2009 monitoring program in the lower estuary (Figure 4-75).

The 2009 geographical distribution of YOY weakfish in the FJS is similar to the 1979-2008 long-term trend in which the majority of weakfish were found in the lower estuary regions of Yonkers and Tappan Zee (Figure 4-76). Historically, yearling and older weakfish were collected primarily in the lower estuary, but none were collected in 2009 within the temporal limits of this index.

Weekly length statistics for juvenile weakfish collected in 2009 showed an overall increase in growth in the summer but declining growth through the fall (Figure 4-77, Appendix Tables F-24 and F-25). Decreasing lengths in the mid-summer and fall 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 2009, YOY bluefish were collected predominantly in the lower and middle estuary in June and July, but were found into October in the lower estuary (Figure 4-78, Appendix Tables E-223 through E-228). 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 2009 geographical distribution of YOY bluefish in the BSS is consistent with the 1974-2008 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 4-79).

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

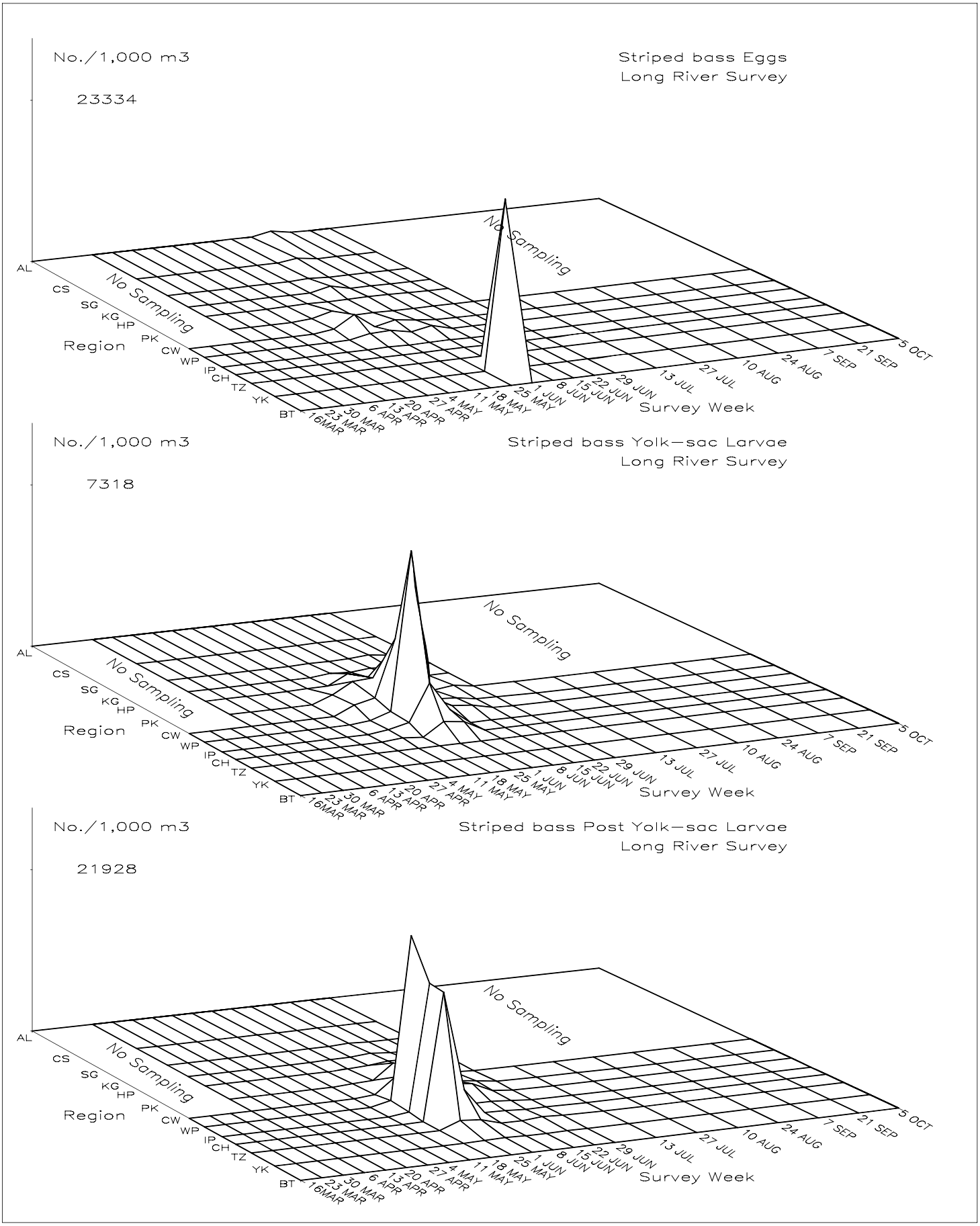


Figure 4–1. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval striped bass in the Hudson River estuary based on the 2009 Long River Survey.

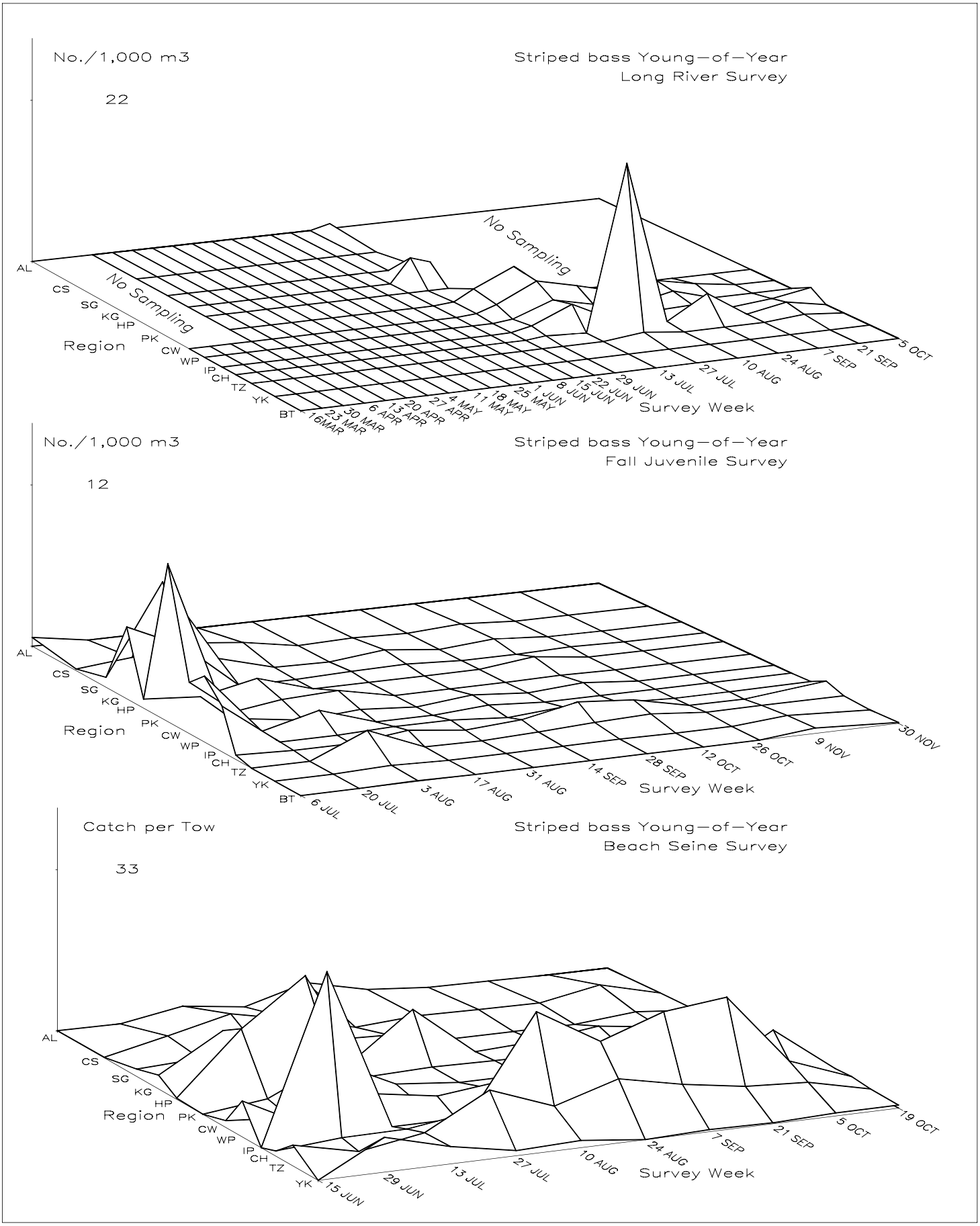


Figure 4–2. Spatiotemporal distribution of young–of–year striped bass in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

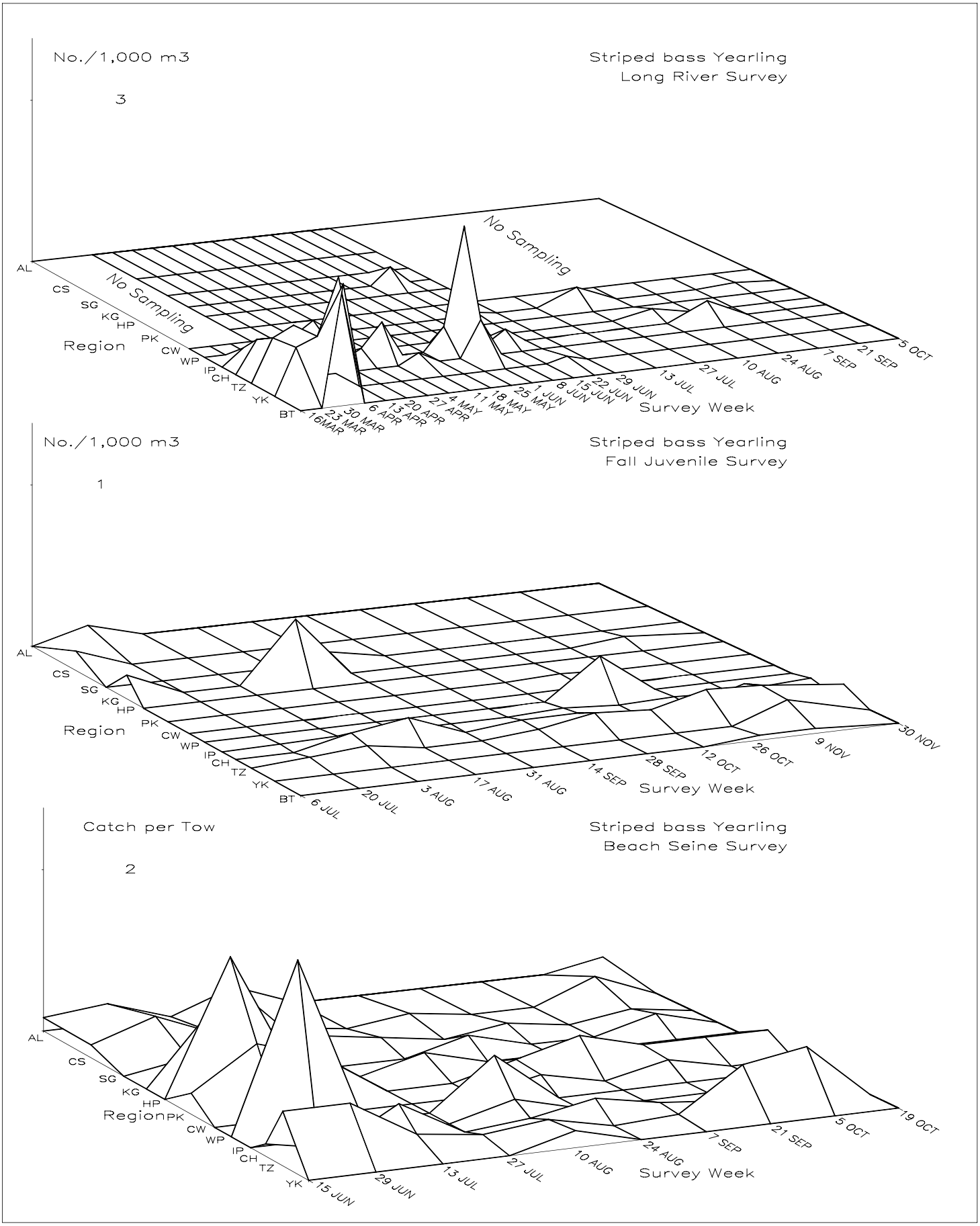


Figure 4–3. Spatiotemporal distribution of yearling striped bass in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

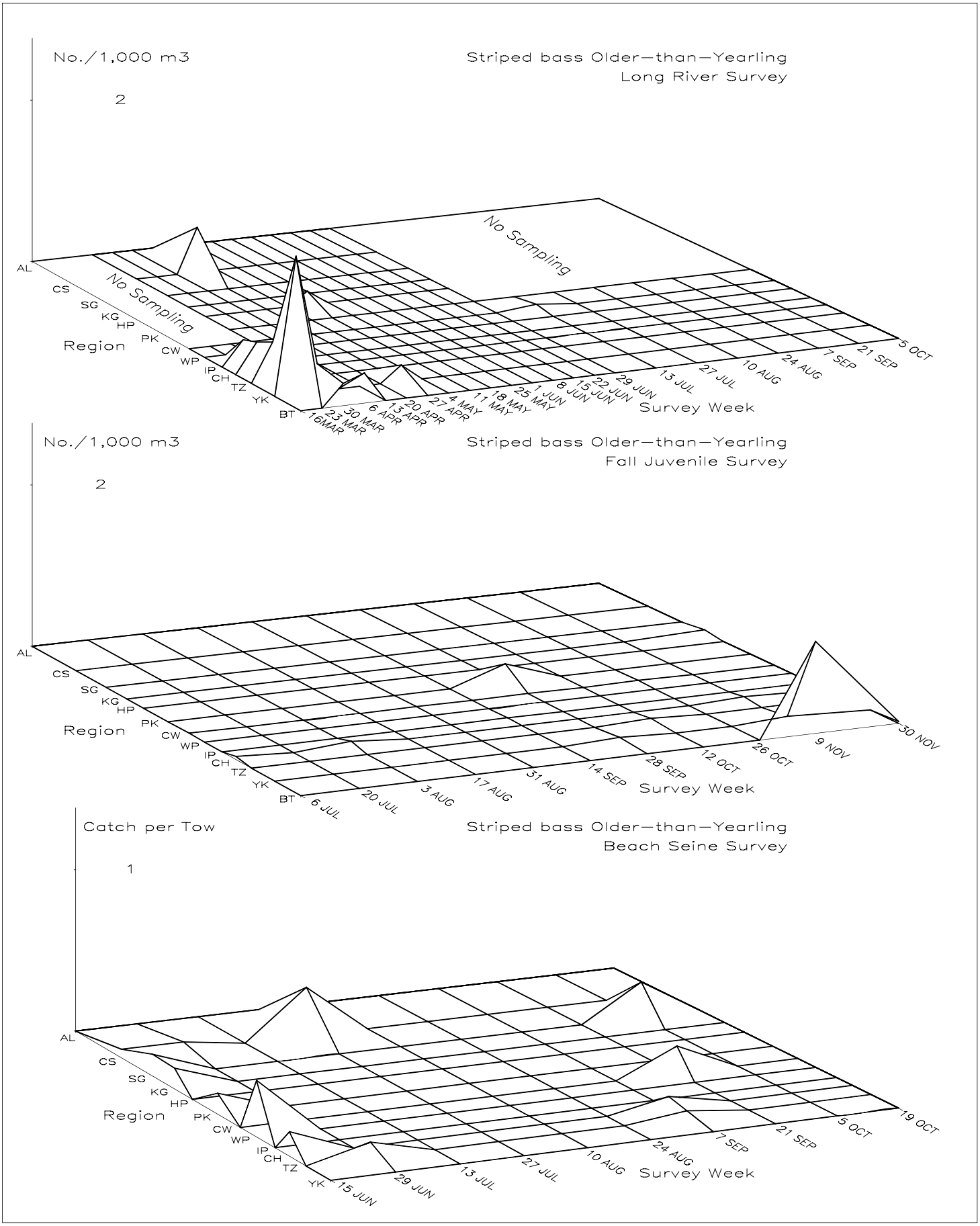


Figure 4–4. Spatiotemporal distribution of older–than–yearling striped bass in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

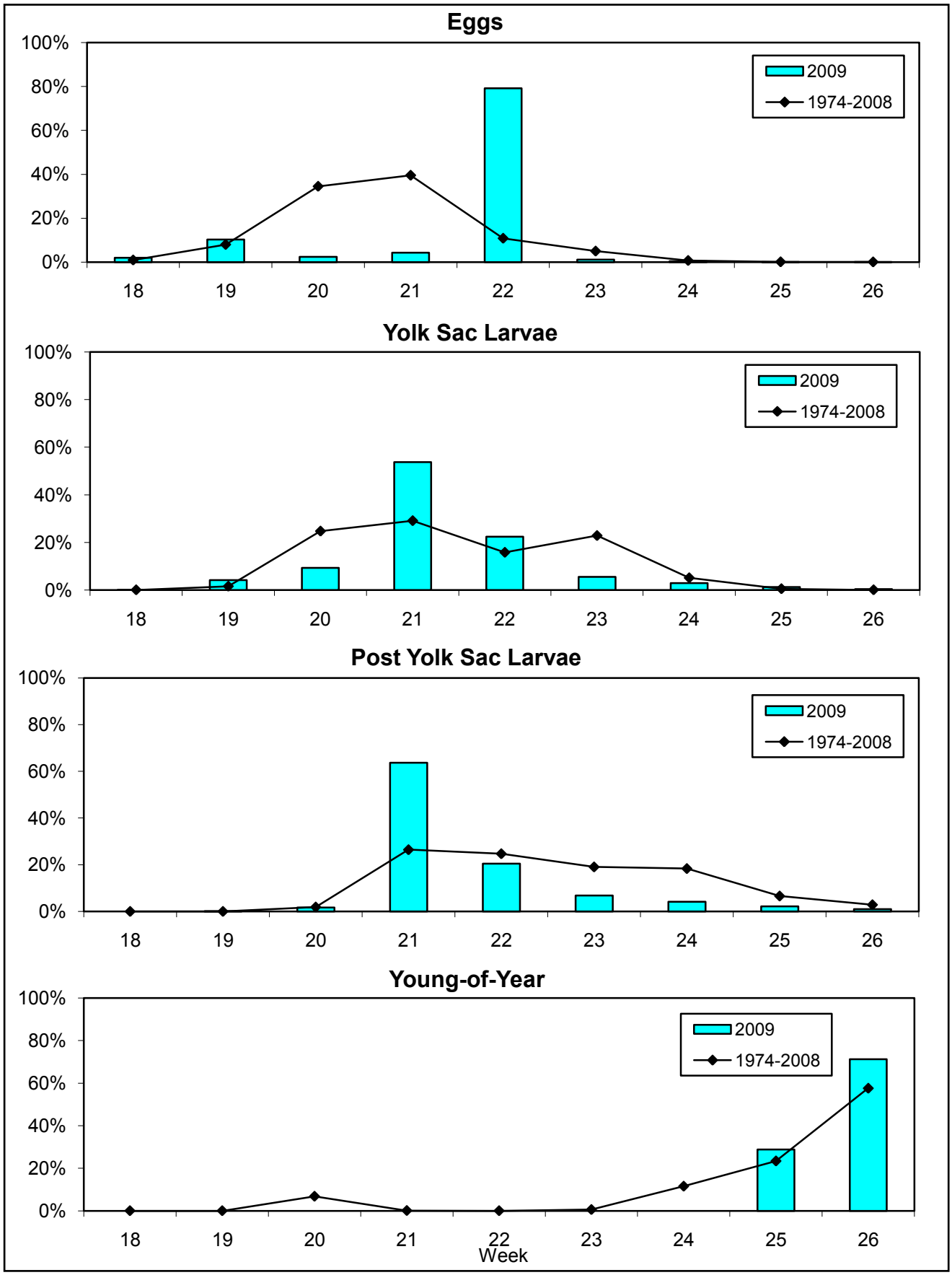


Figure 4-5. Temporal distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2009.

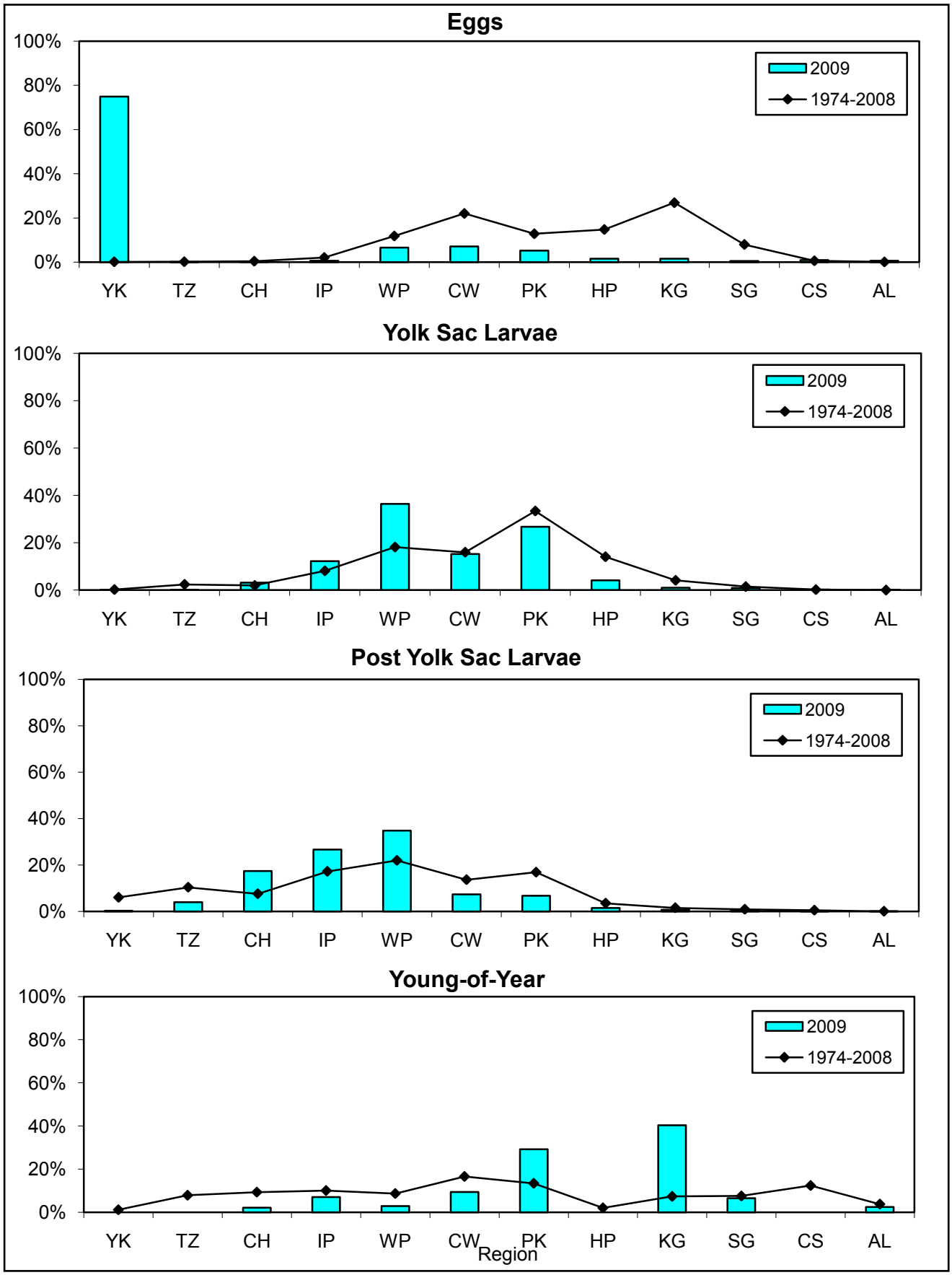


Figure 4-6. Geographic distribution indices for striped bass collected during Long River surveys of the Hudson River estuary, 1974-2009.

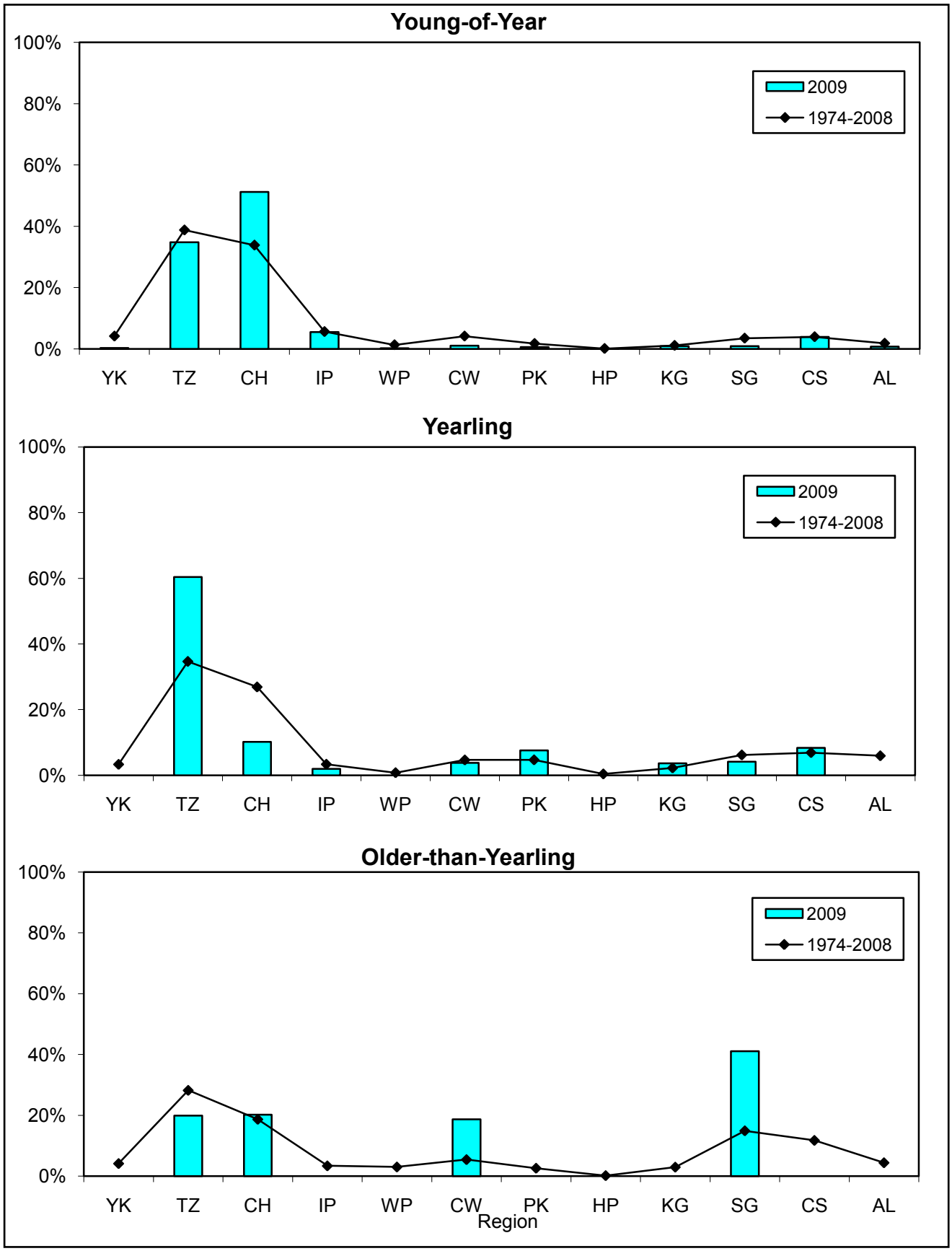


Figure 4-7. Geographic distribution indices for striped bass collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

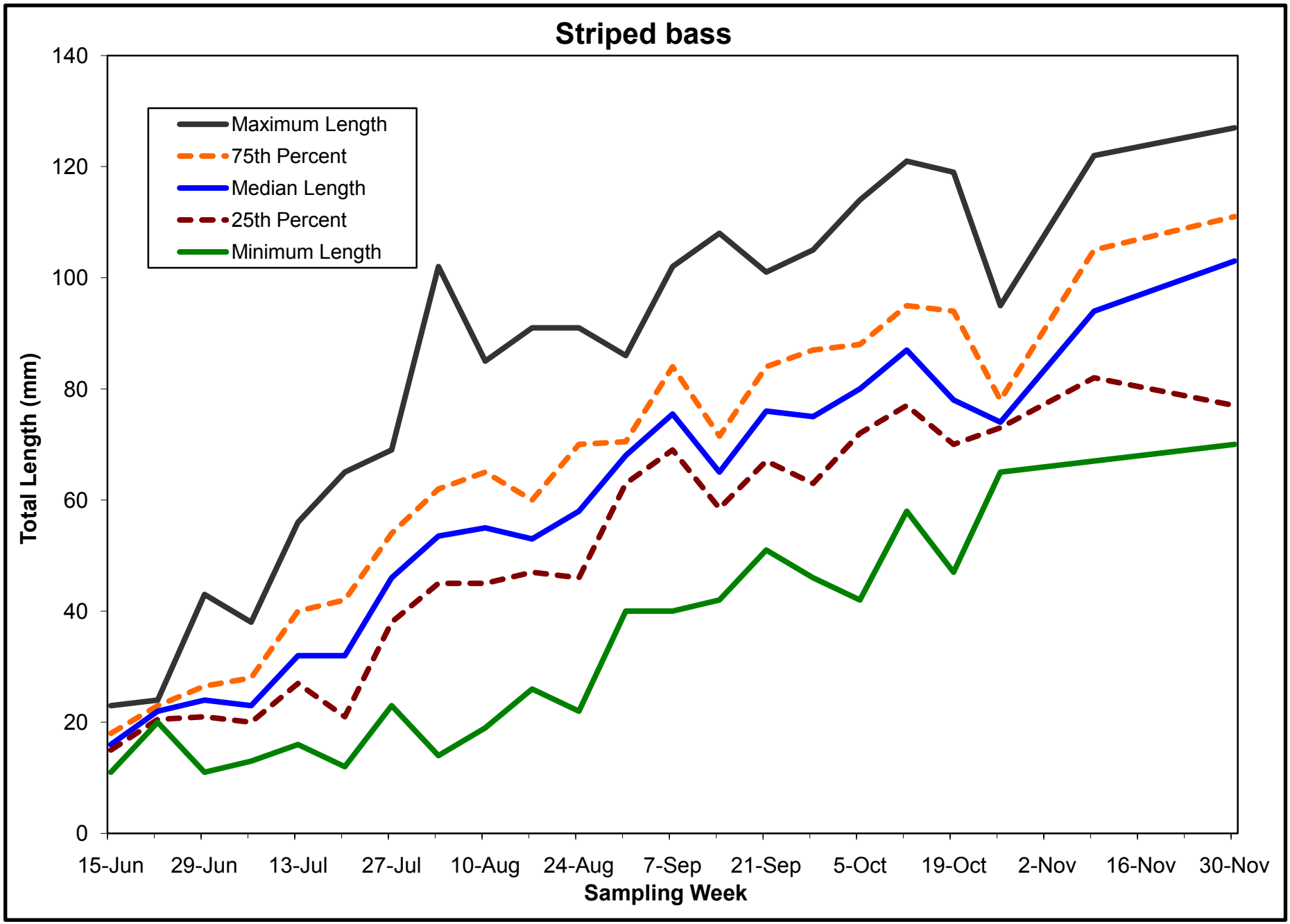


Figure 4-8. Weekly length statistics for young-of-year striped bass in the Hudson River estuary, 2009.

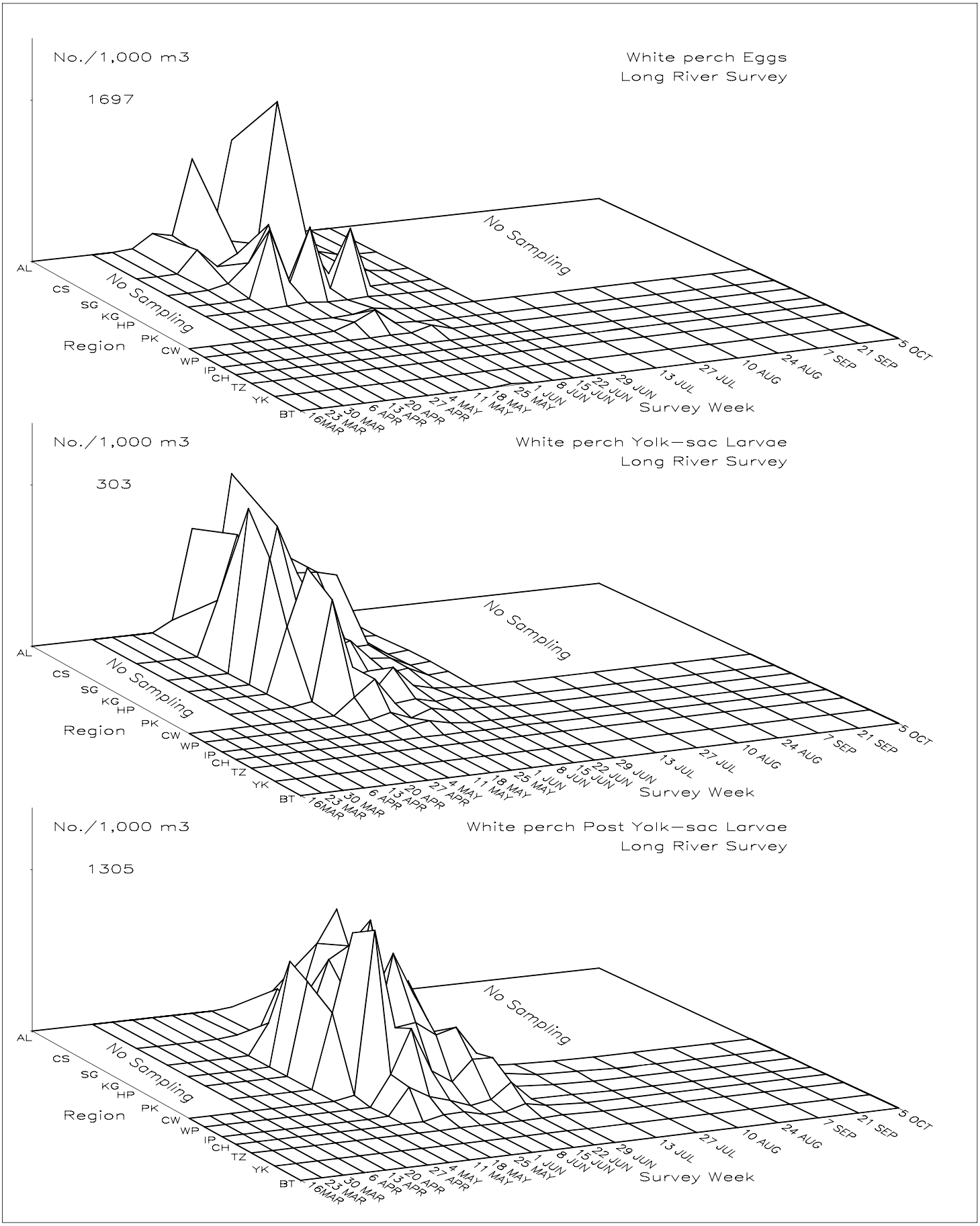


Figure 4–9. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval white perch in the Hudson River estuary based on the 2009 Long River Survey.

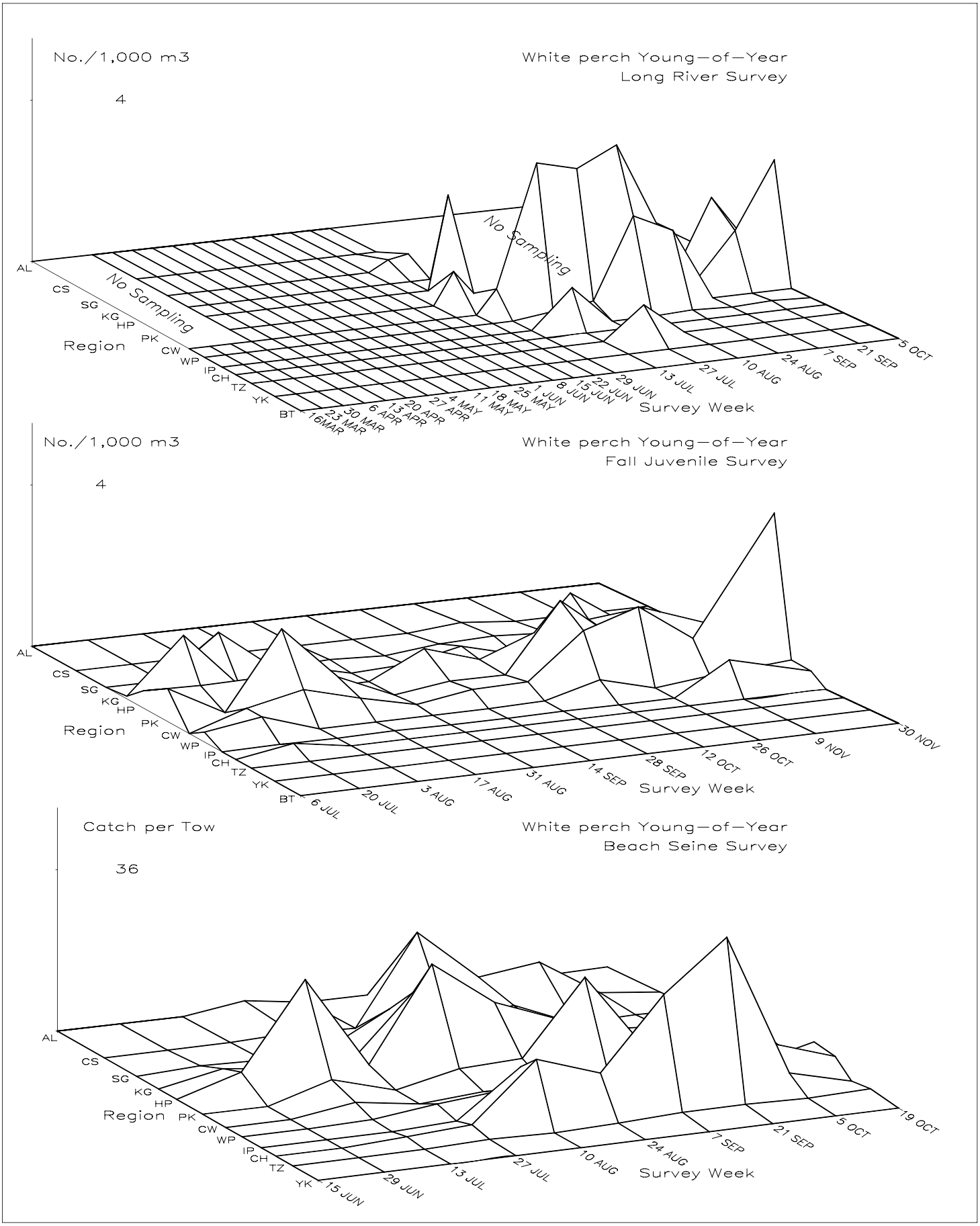


Figure 4–10. Spatiotemporal distribution of young–of–year white perch in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

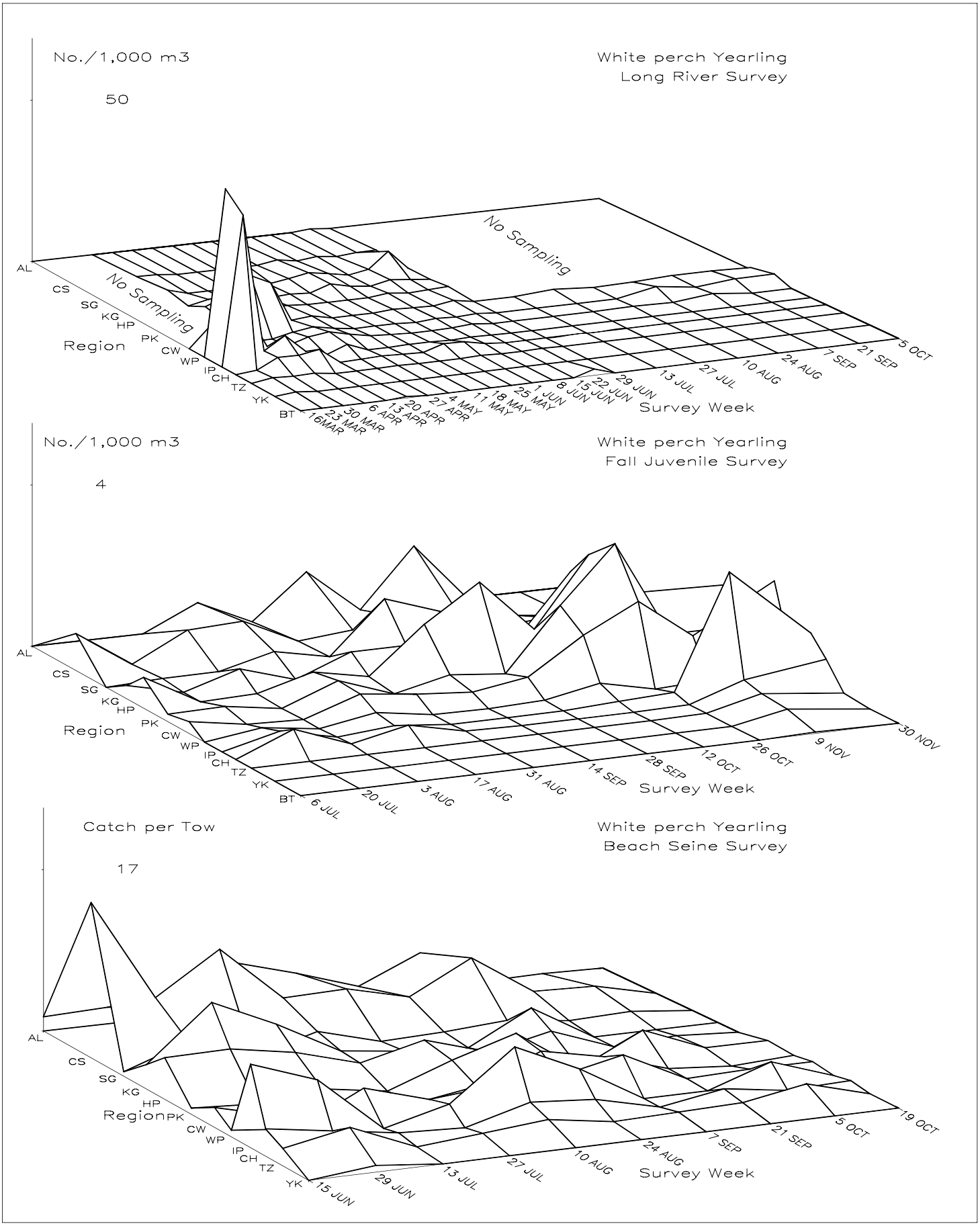


Figure 4–11. Spatiotemporal distribution of yearling white perch in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

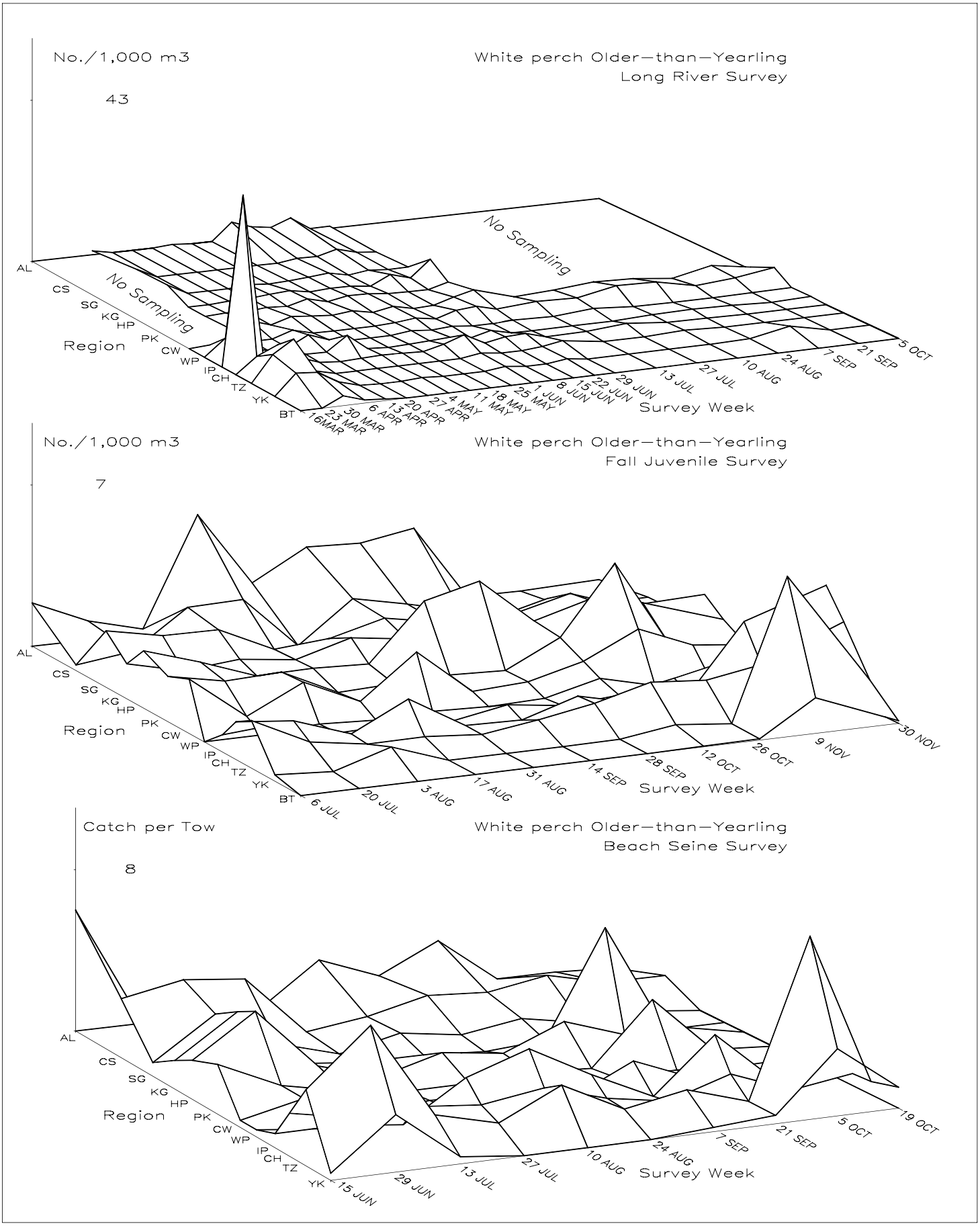


Figure 4–12. Spatiotemporal distribution of older–than–yearling white perch in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

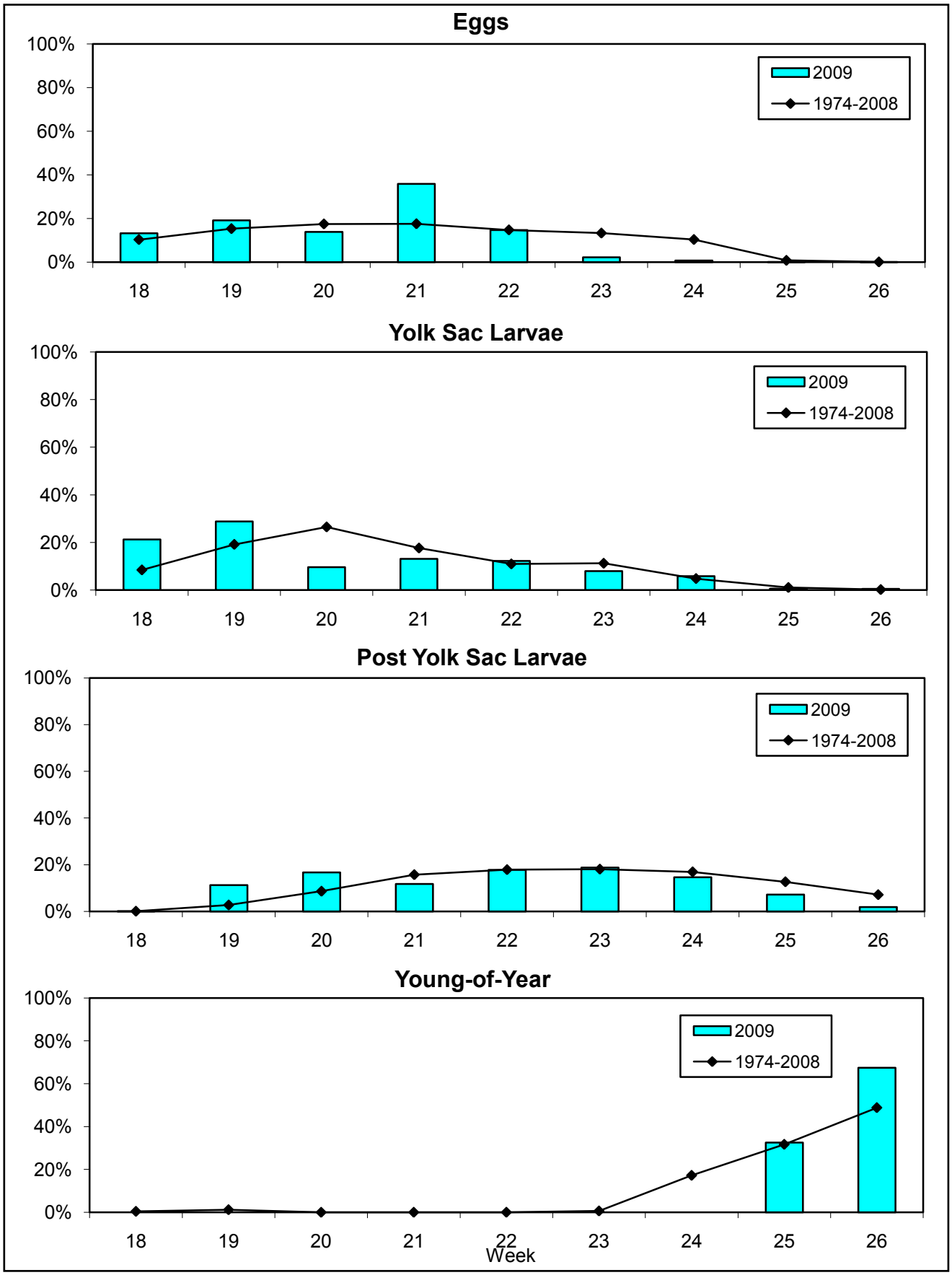


Figure 4-13. Temporal distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2009.

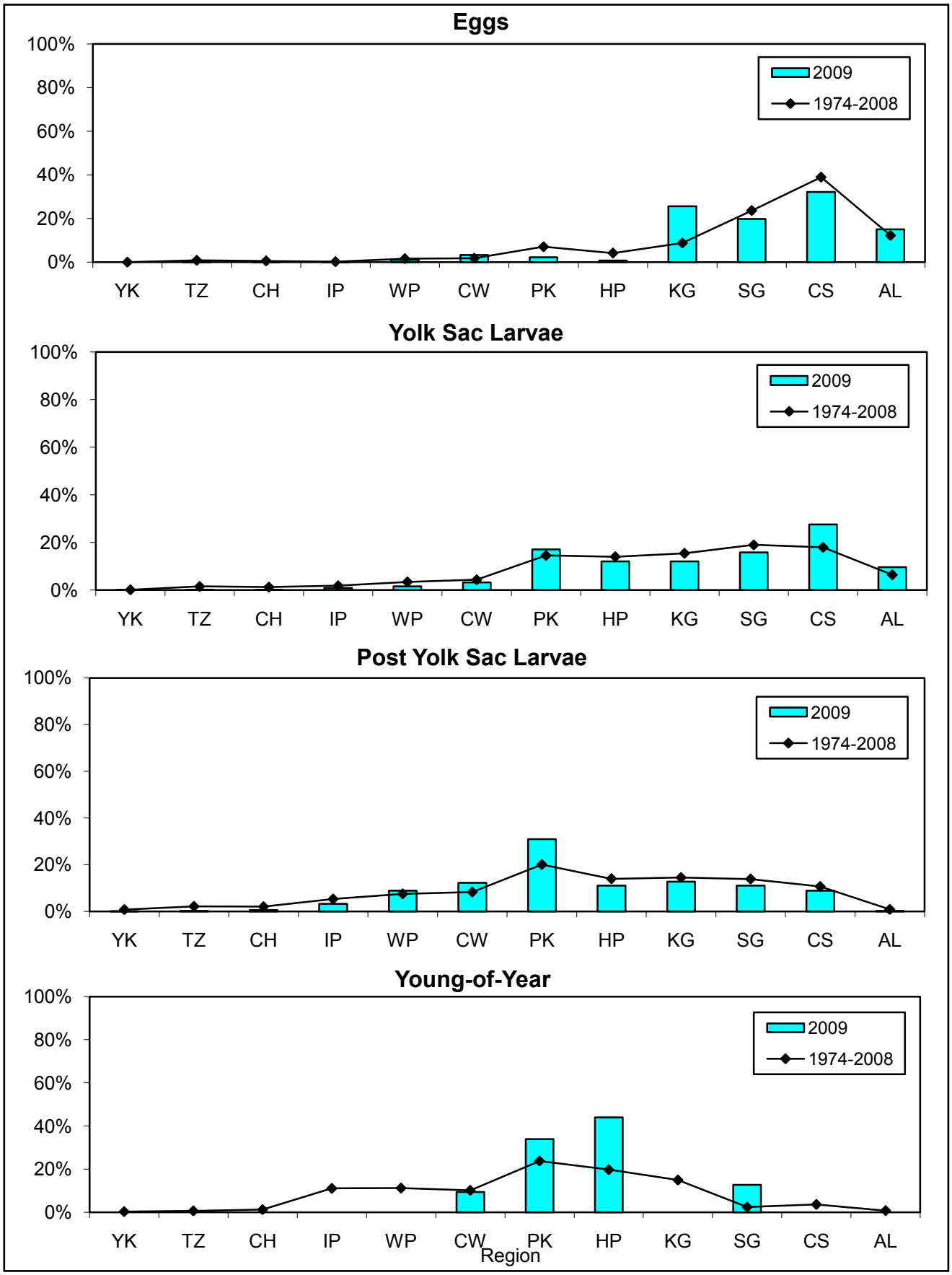


Figure 4-14. Geographic distribution indices for white perch collected during Long River surveys of the Hudson River estuary, 1974-2009.

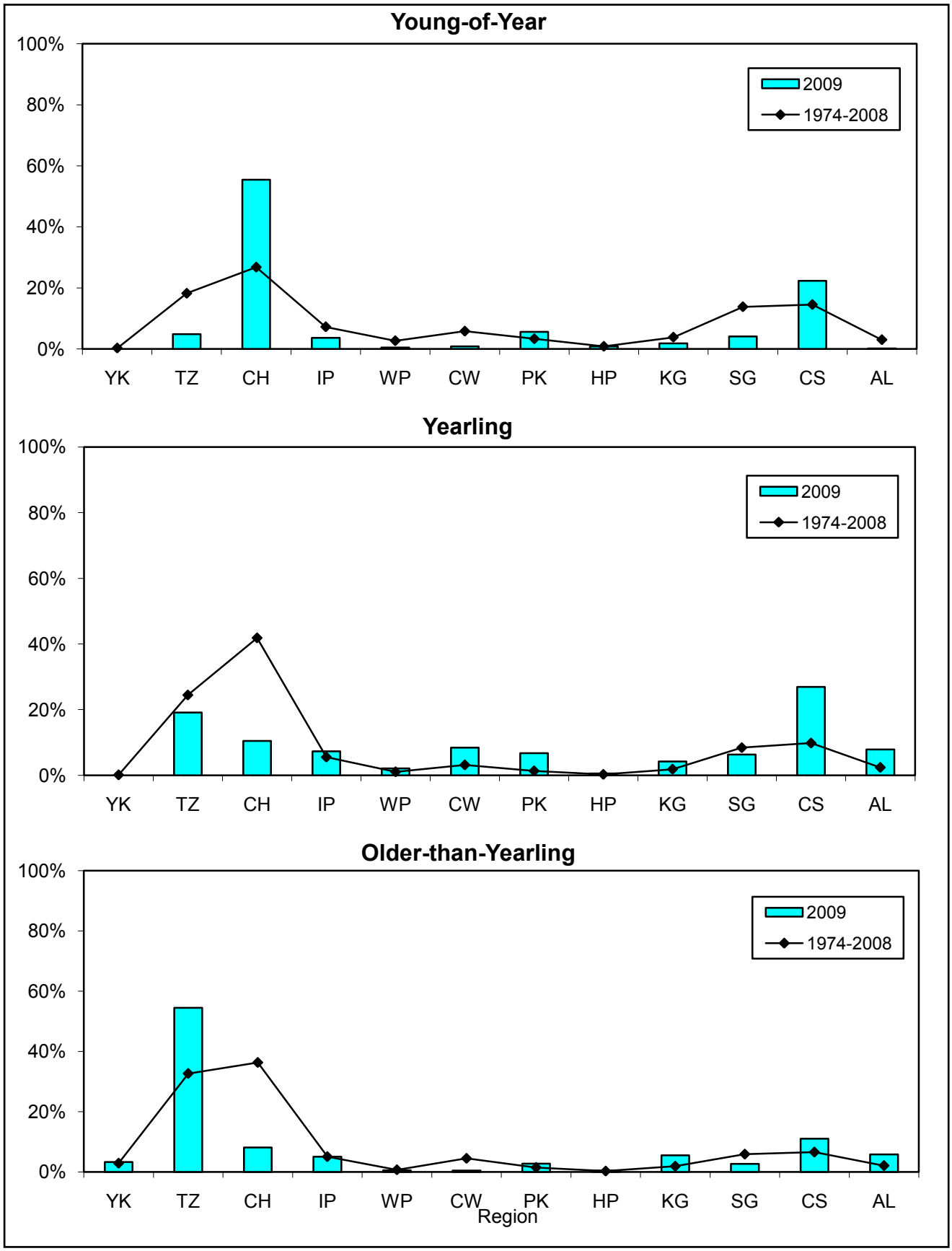


Figure 4-15. Geographic distribution indices for white perch collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

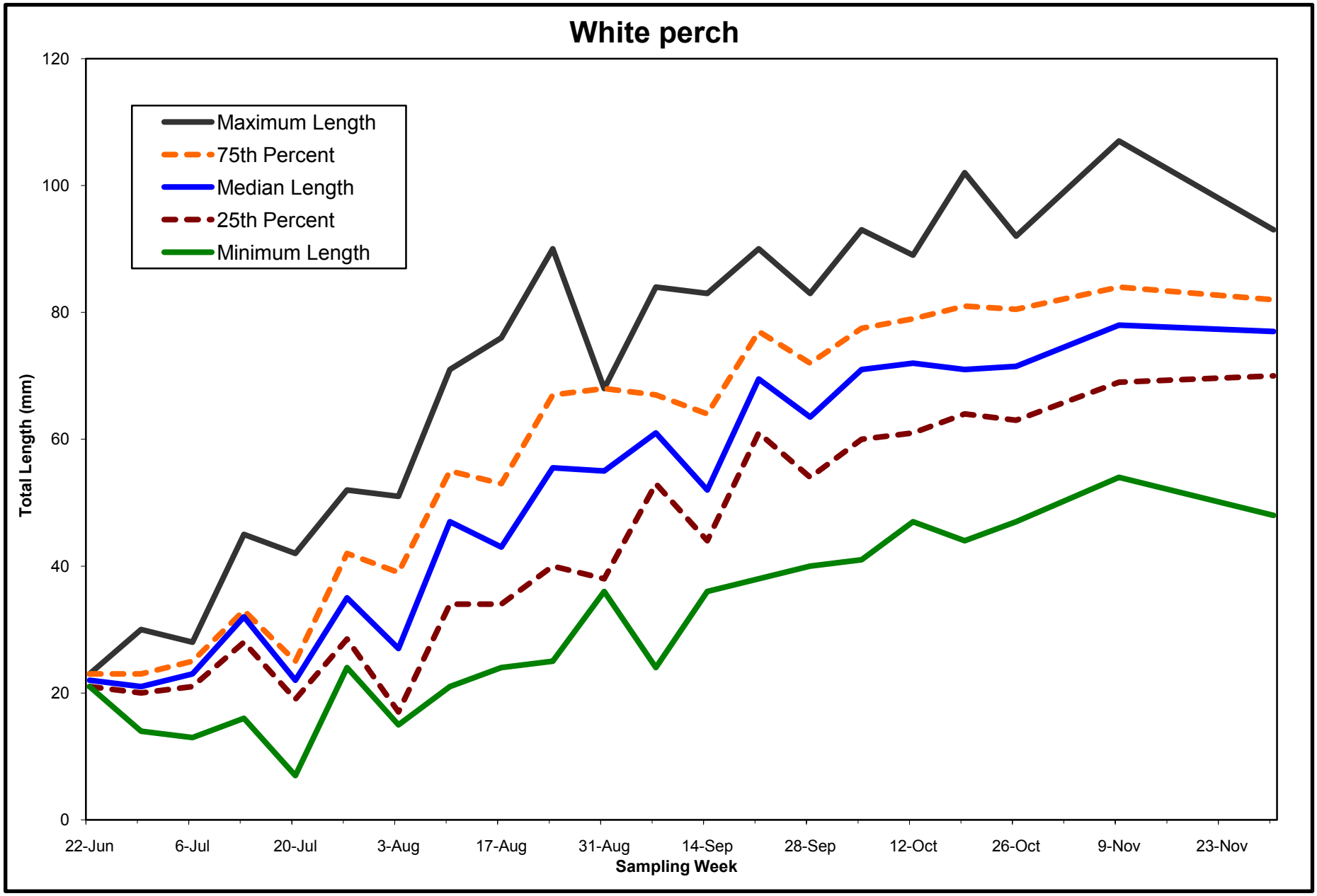


Figure 4-16. Weekly length statistics for young-of-year white perch in the Hudson River estuary, 2009.

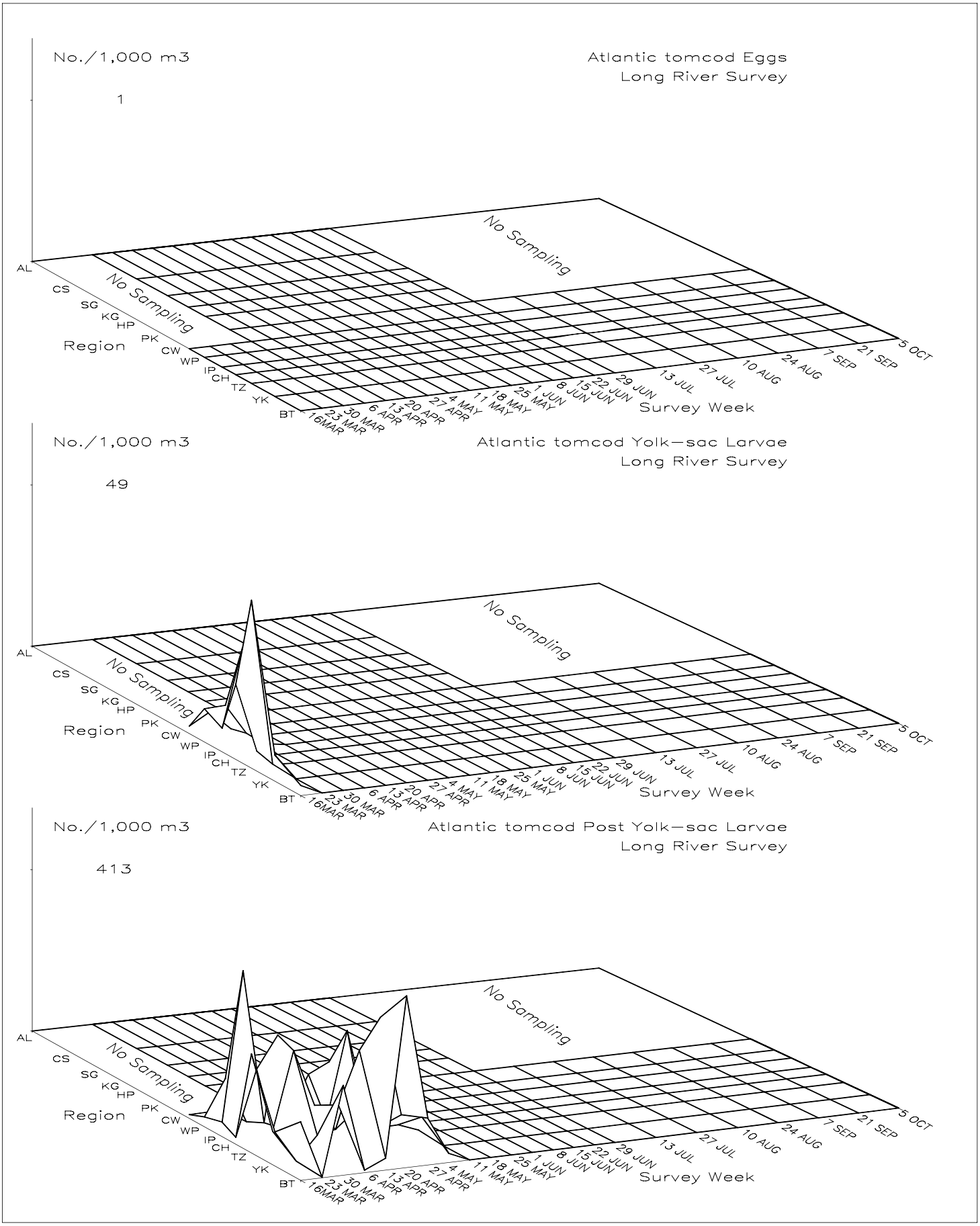


Figure 4–17. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval Atlantic tomcod in the Hudson River estuary based on the 2009 Long River Survey.

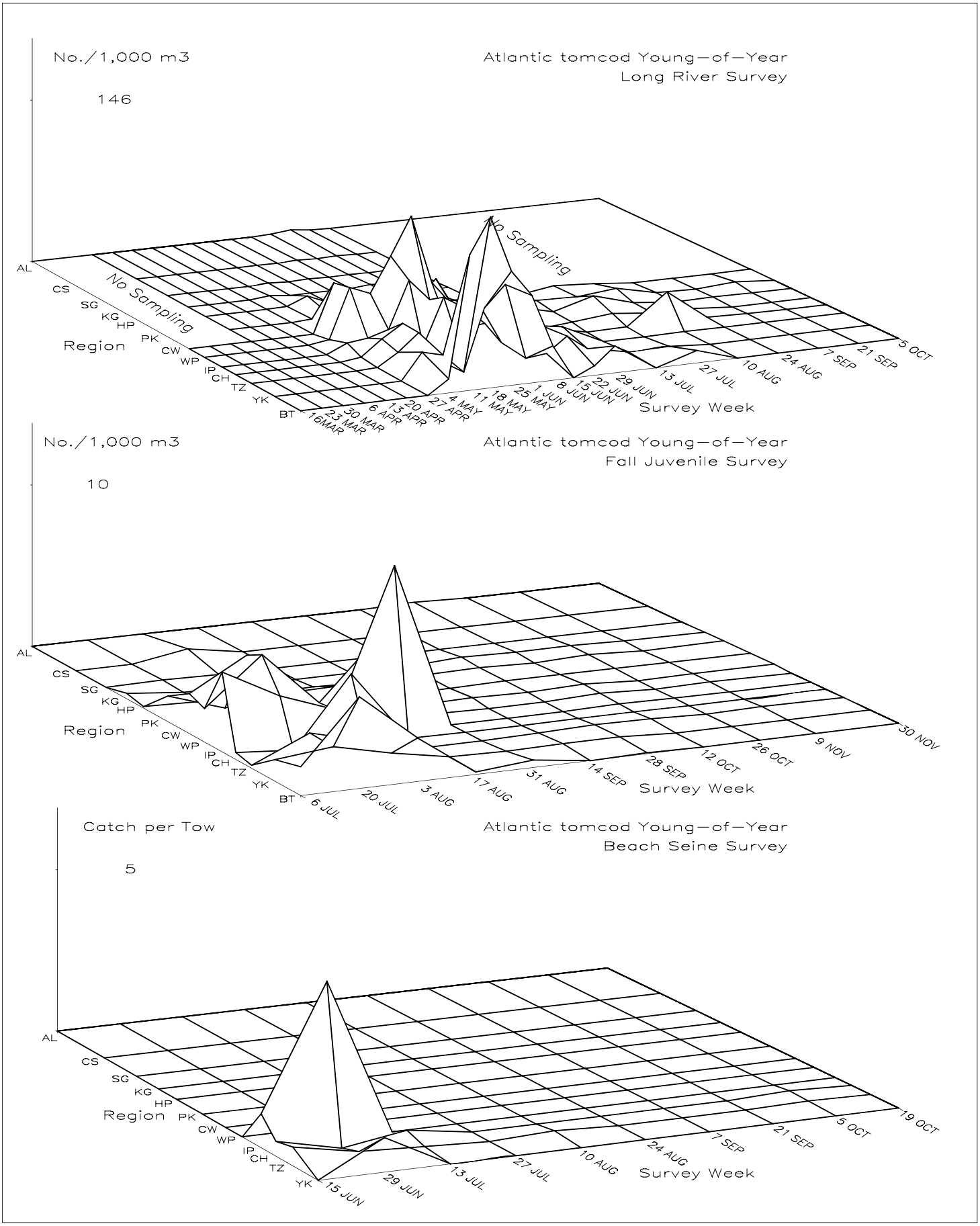


Figure 4–18. Spatiotemporal distribution of young–of–year Atlantic tomcod in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

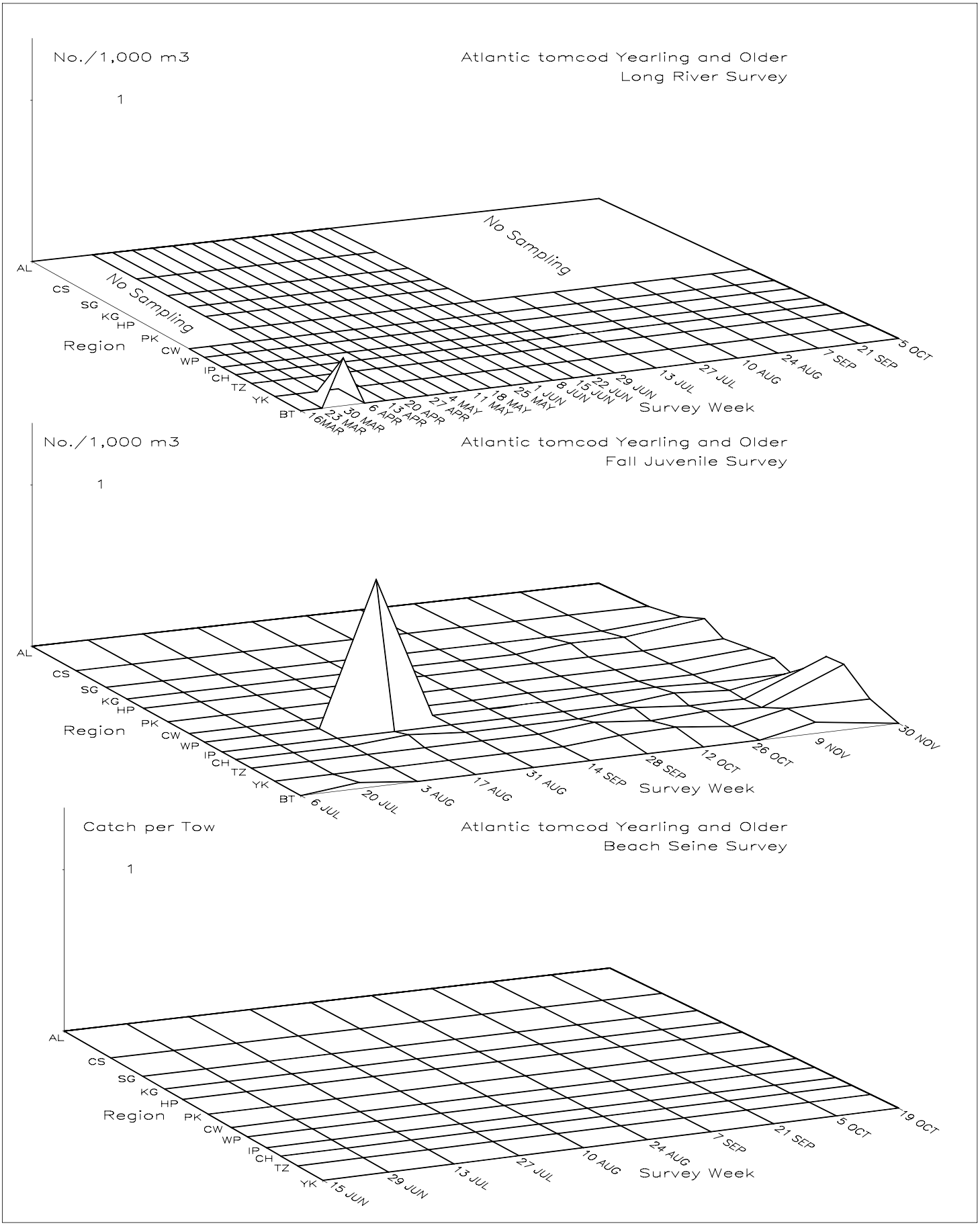


Figure 4–19. Spatiotemporal distribution of yearling and older Atlantic tomcod in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

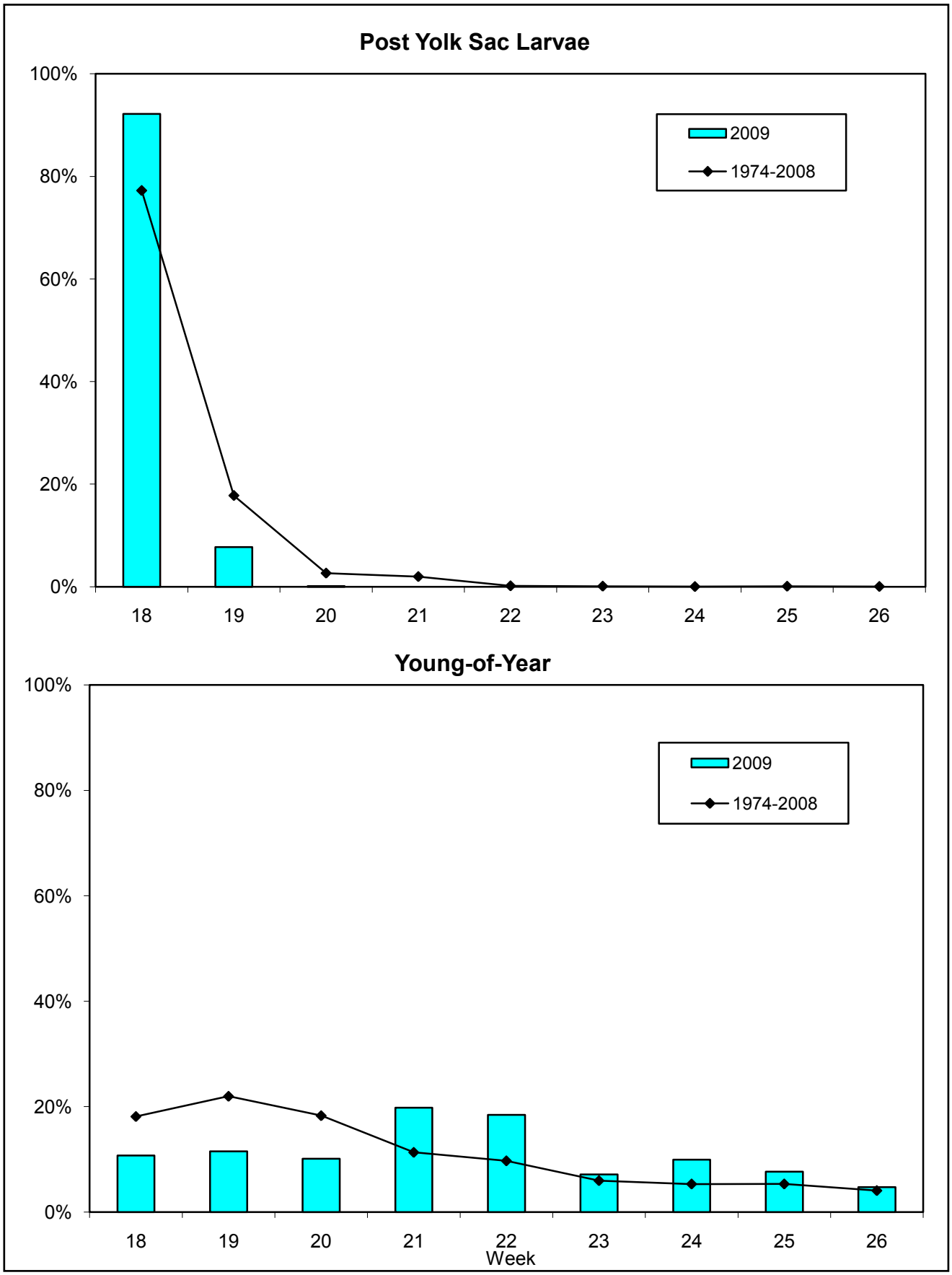


Figure 4-20. Temporal distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2009.

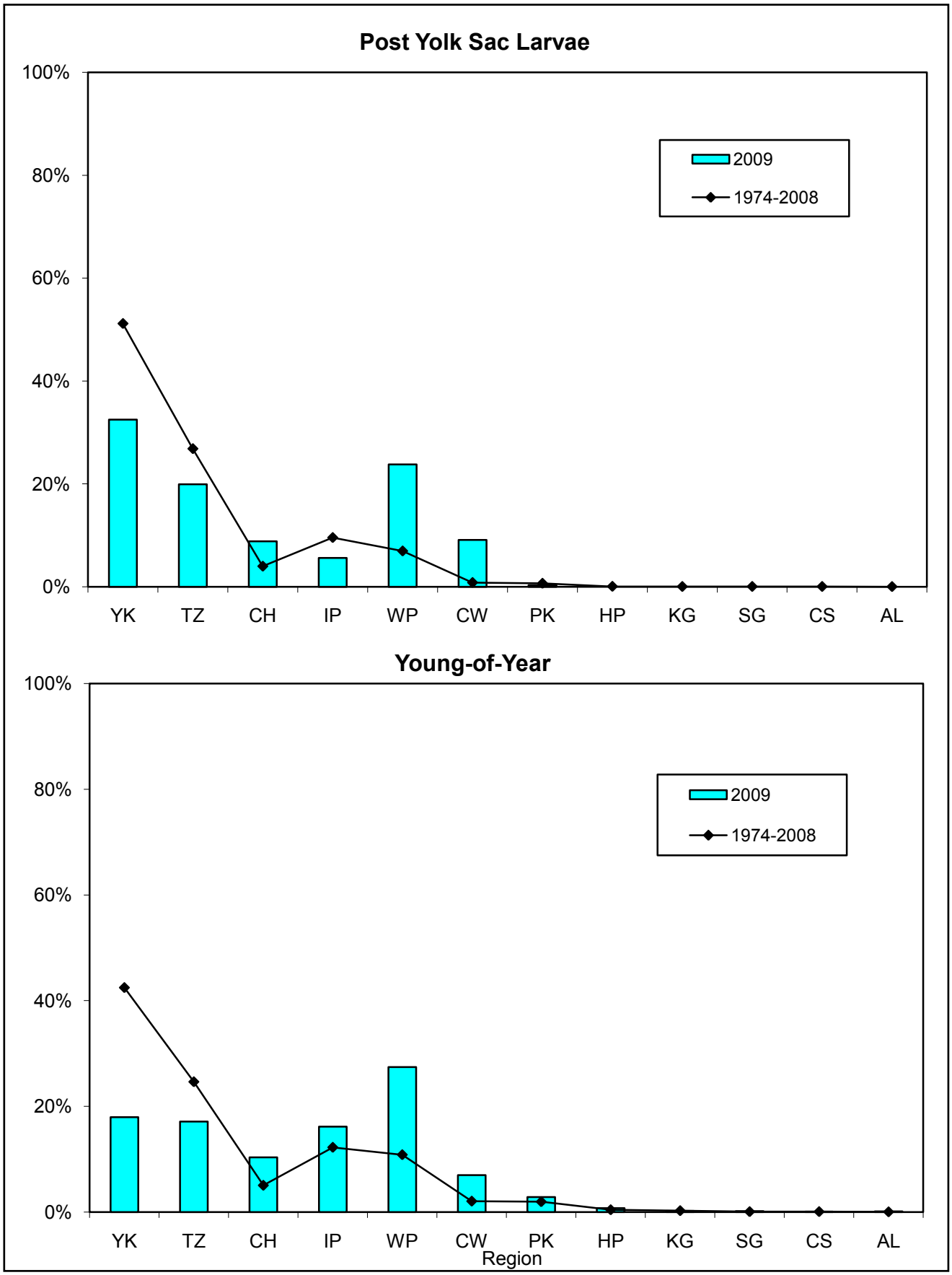


Figure 4-21. Geographic distribution indices for Atlantic tomcod collected during Long River surveys of the Hudson River estuary, 1974-2009.

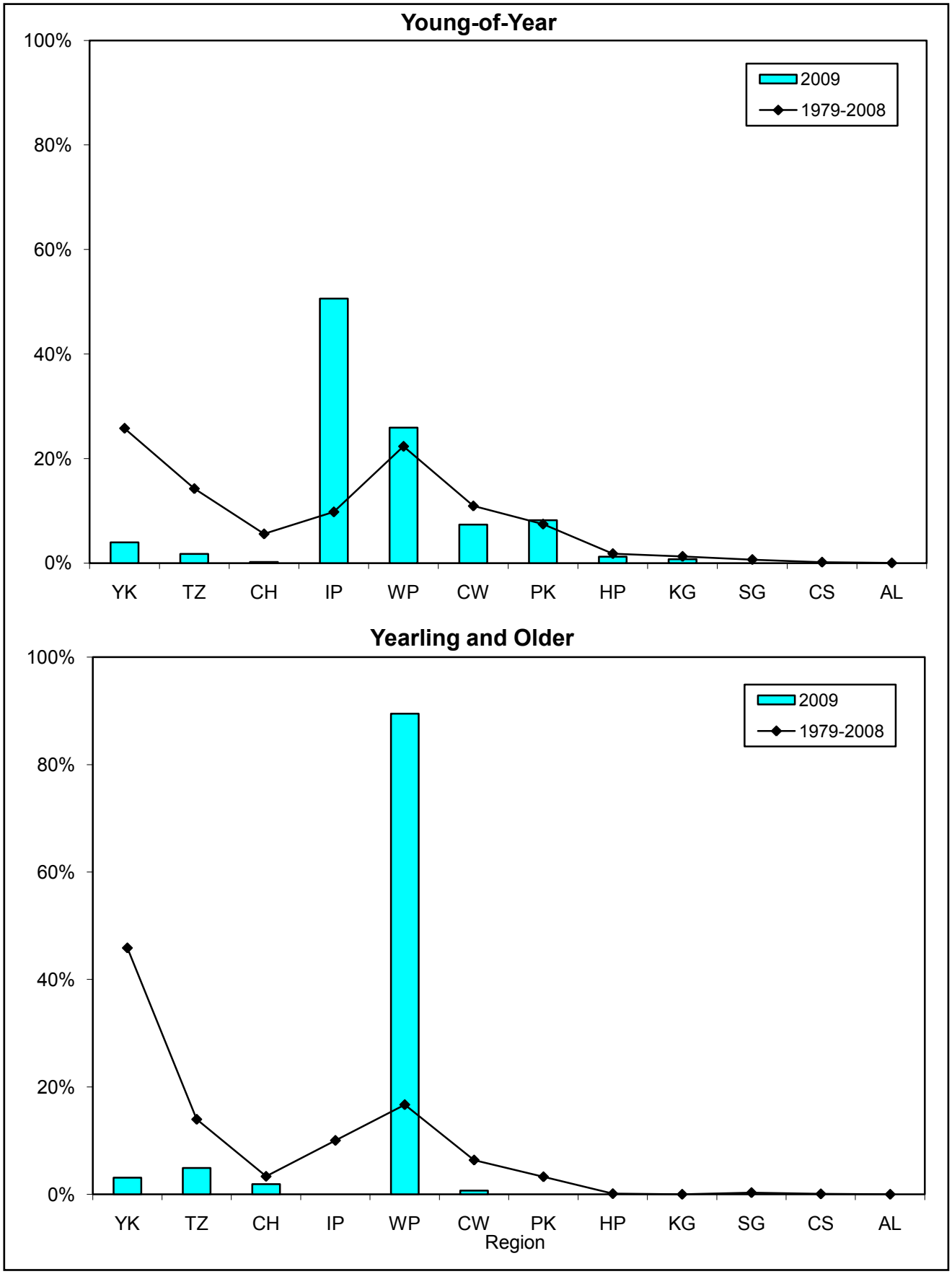


Figure 4-22. Geographic distribution indices for Atlantic tomcod collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2009.

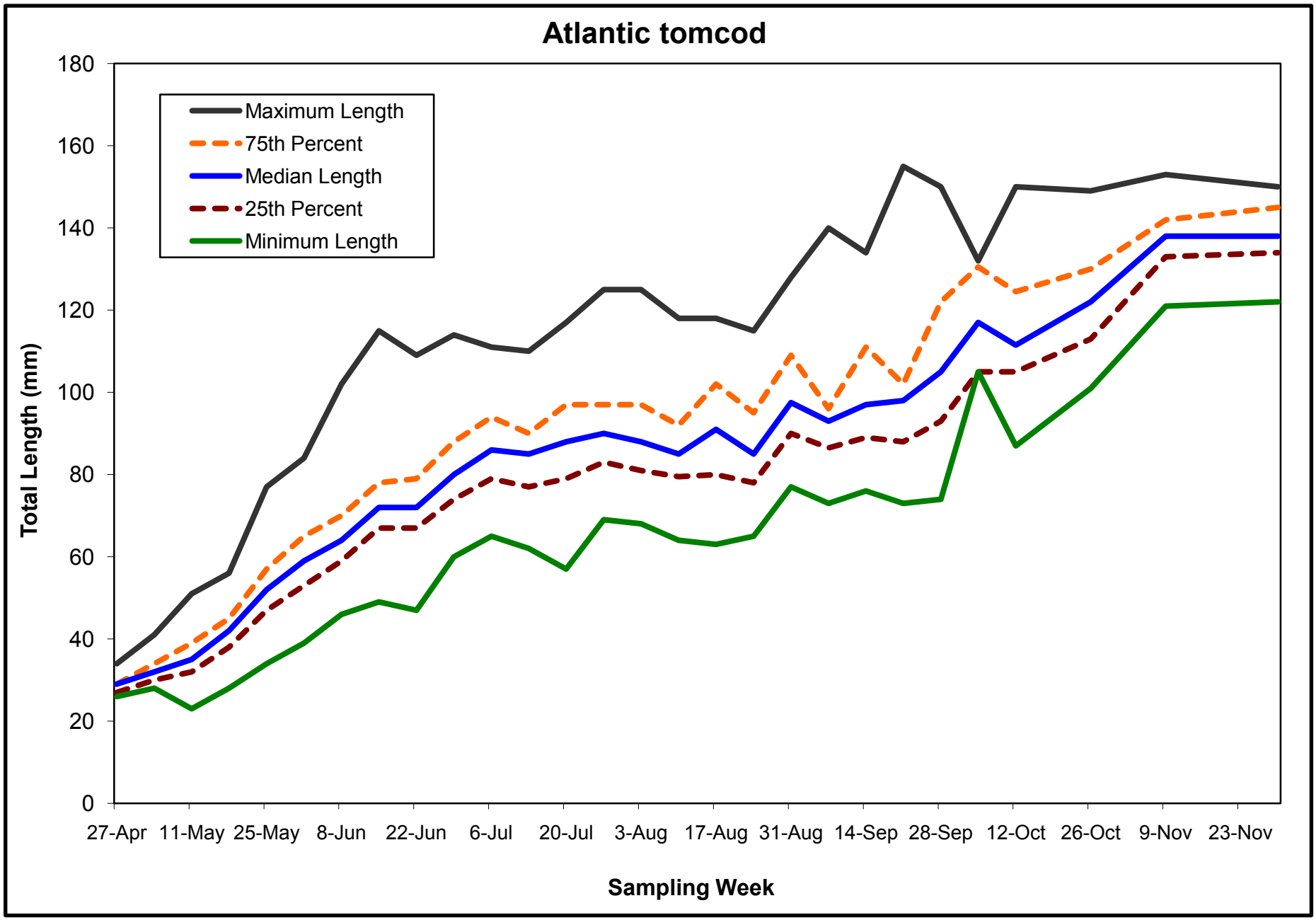


Figure 4-23. Weekly length statistics for young-of-year Atlantic tomcod in the Hudson River estuary, 2009.

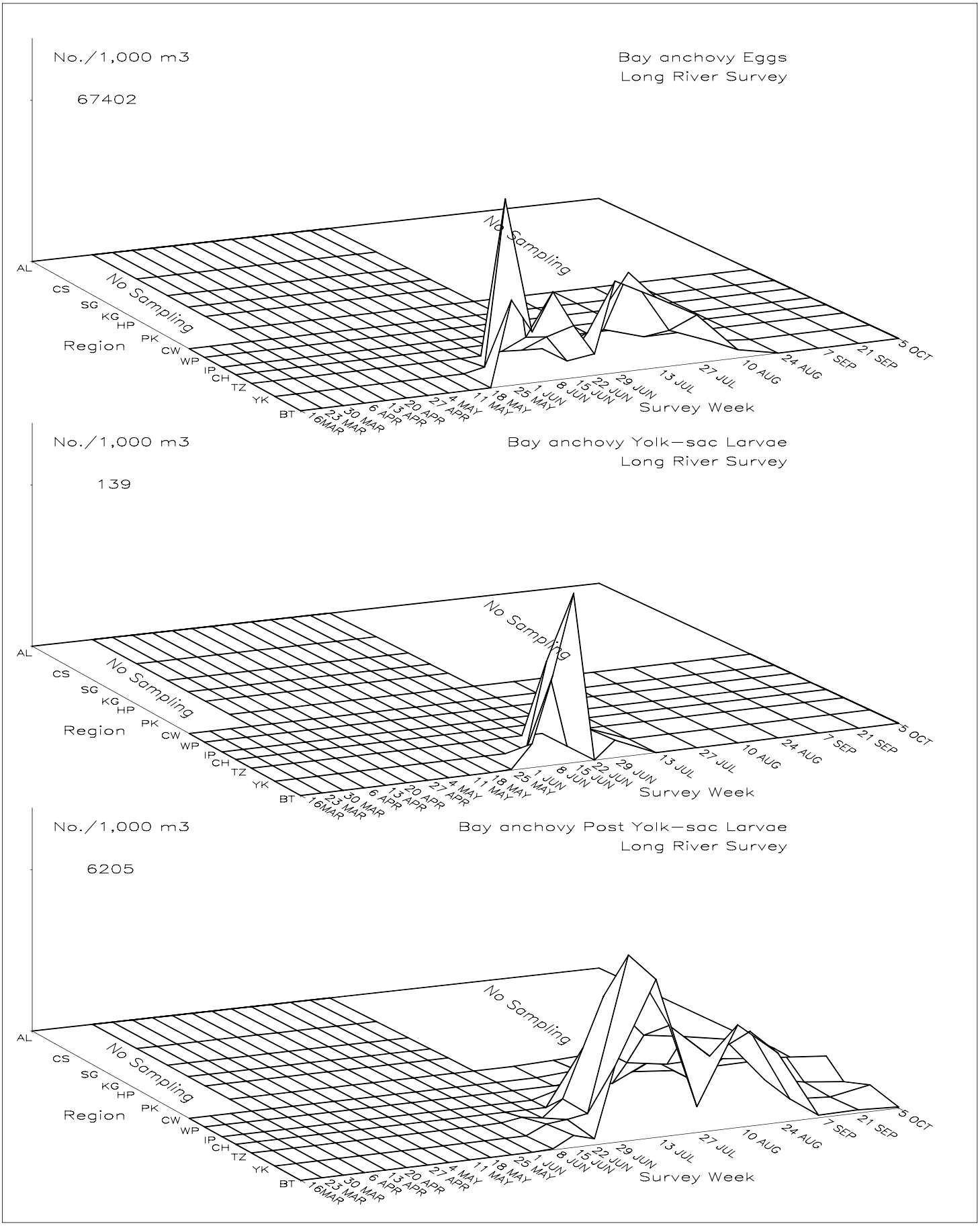


Figure 4–24. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval bay anchovy in the Hudson River estuary based on the 2009 Long River Survey.

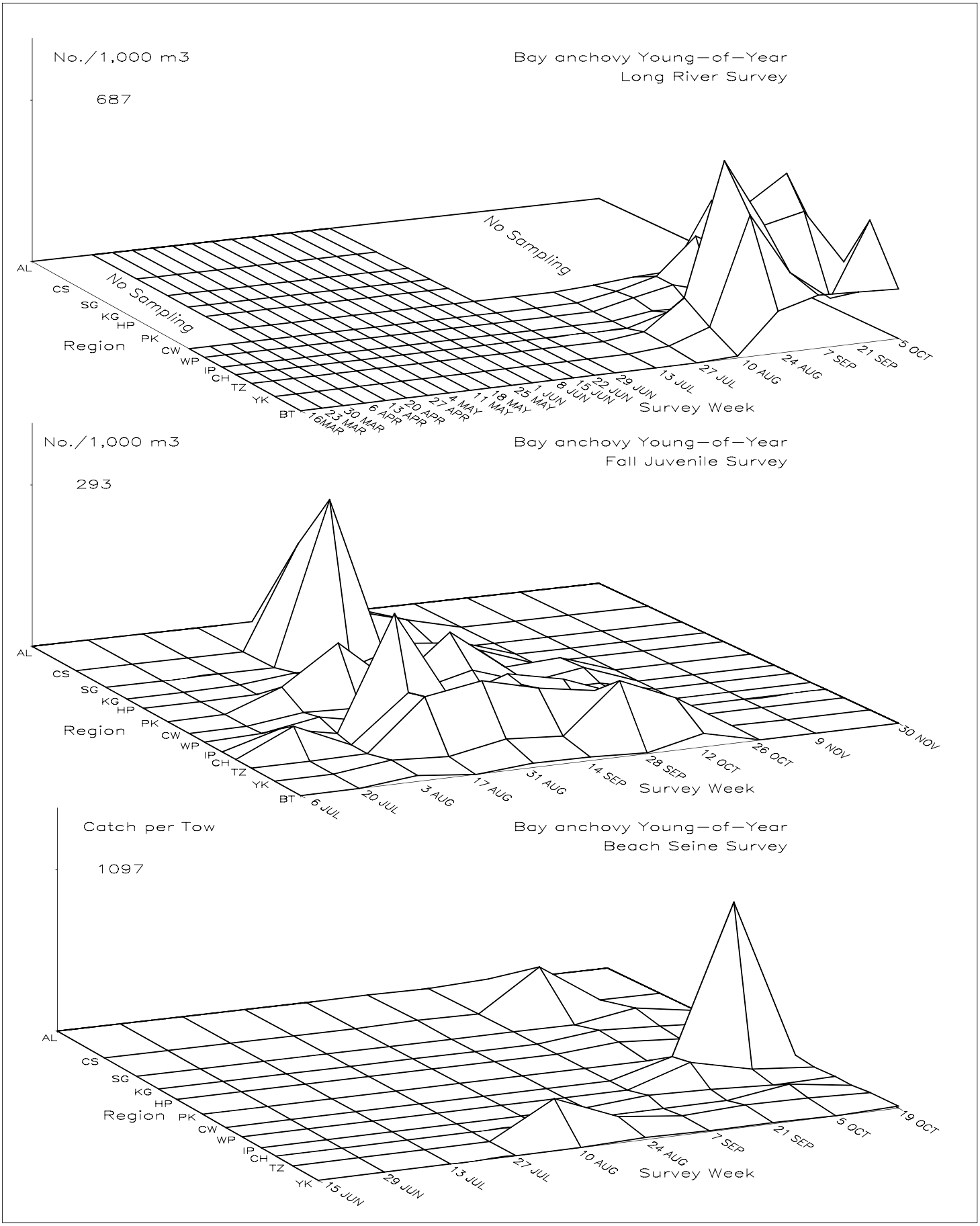


Figure 4–25. Spatiotemporal distribution of young–of–year bay anchovy in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

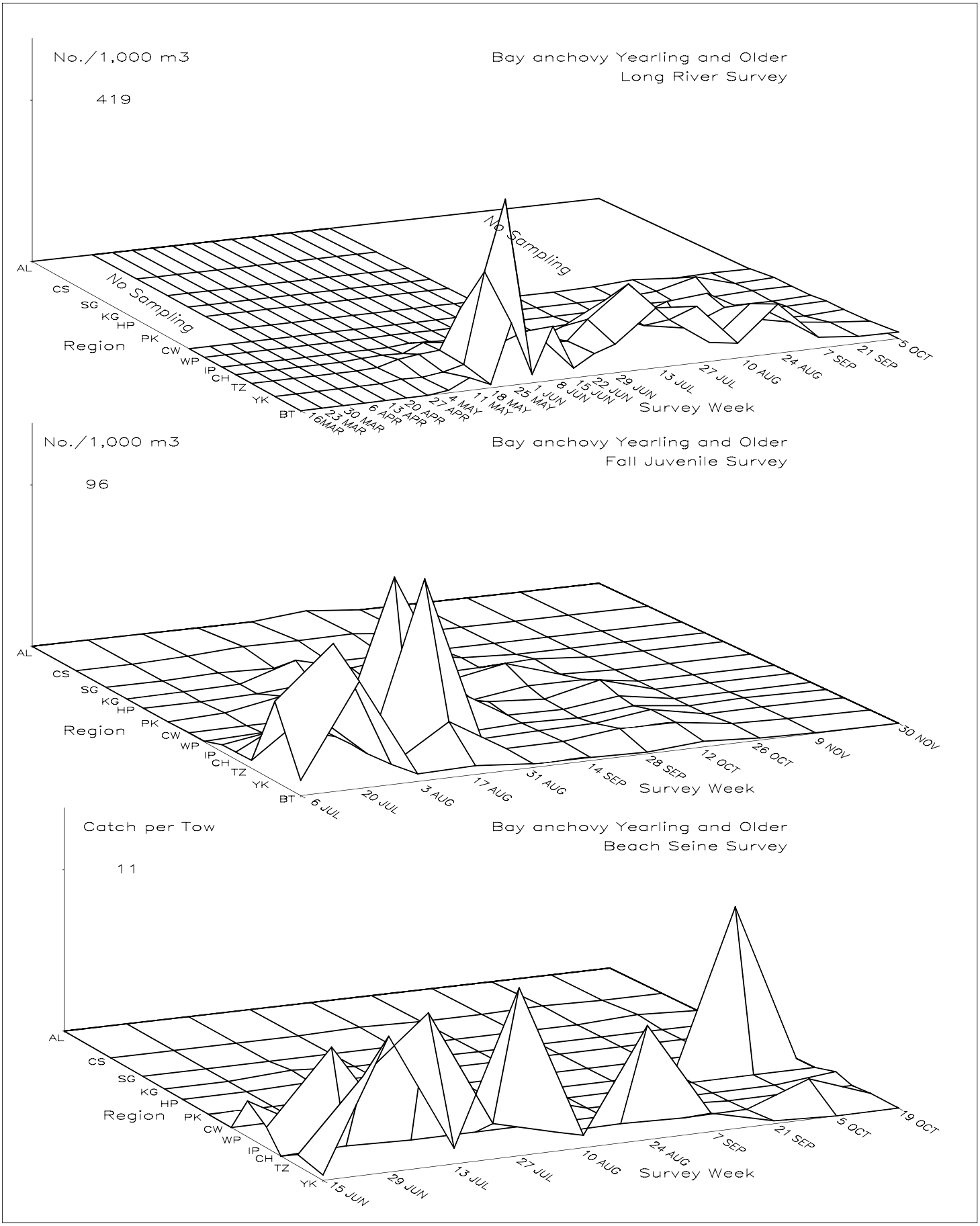


Figure 4–26. Spatiotemporal distribution of yearling and older bay anchovy in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

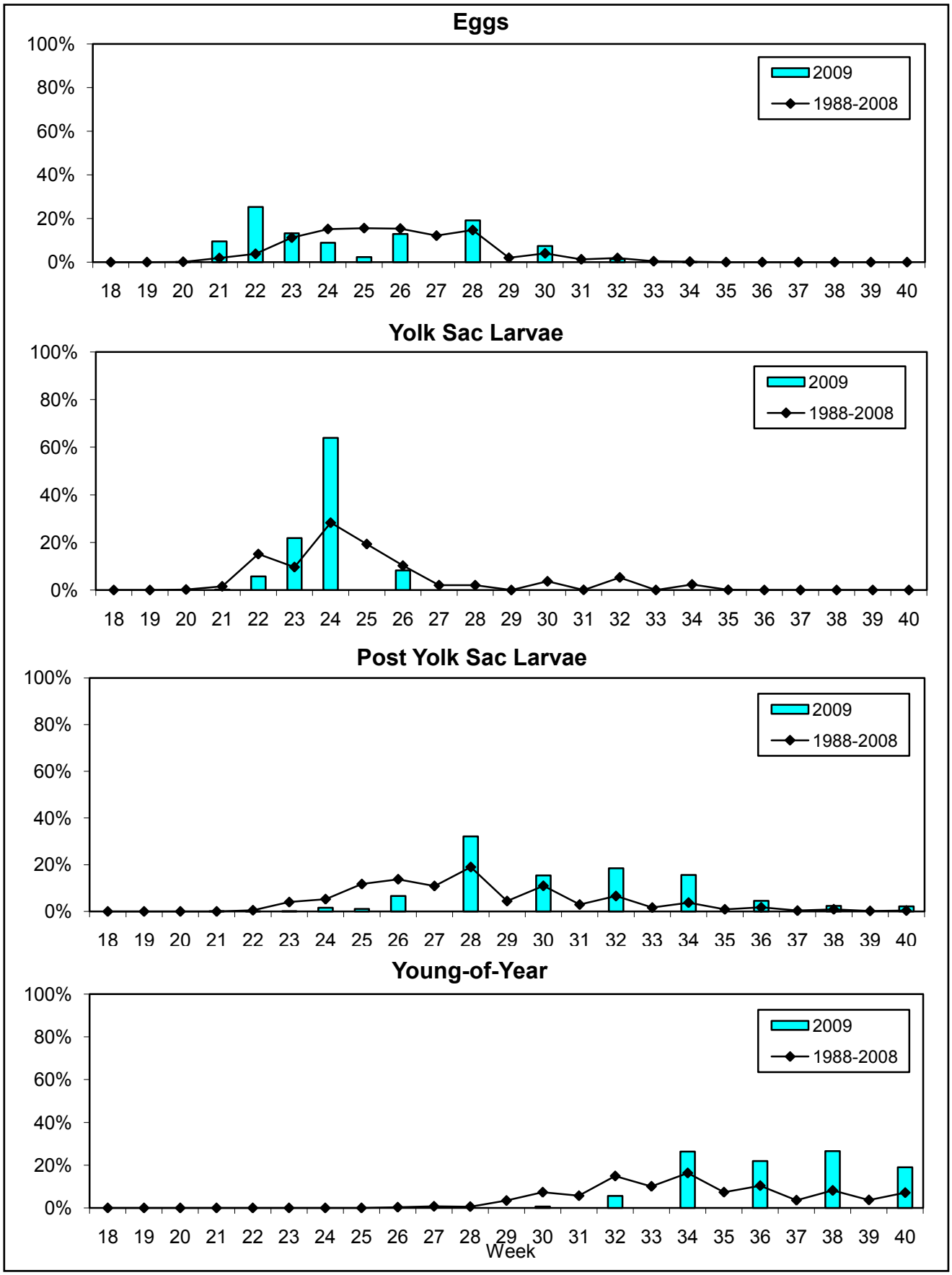


Figure 4-27. Temporal distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2009.

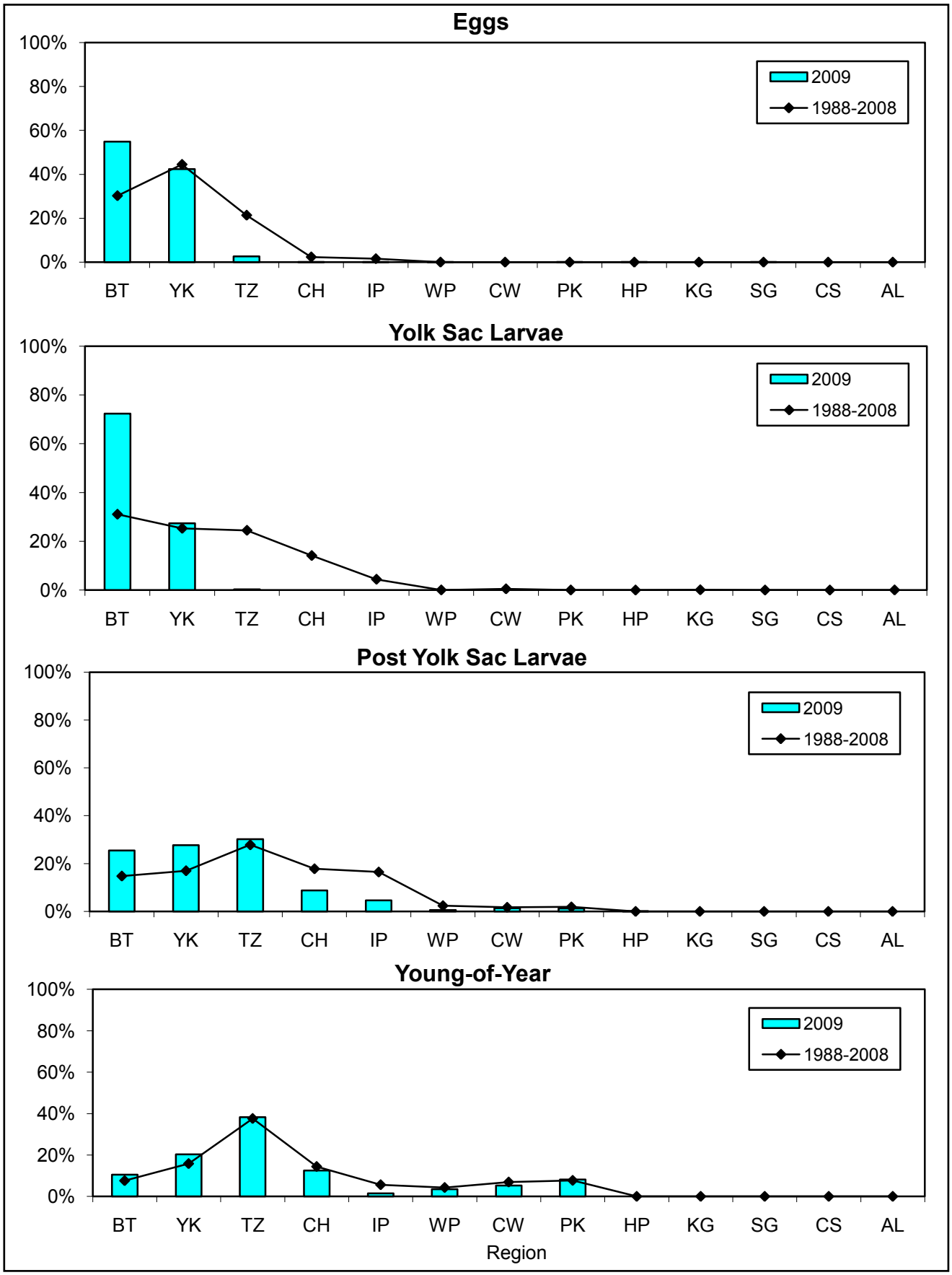


Figure 4-28. Geographic distribution indices for bay anchovy collected during Long River surveys of the Hudson River estuary, 1988-2009.

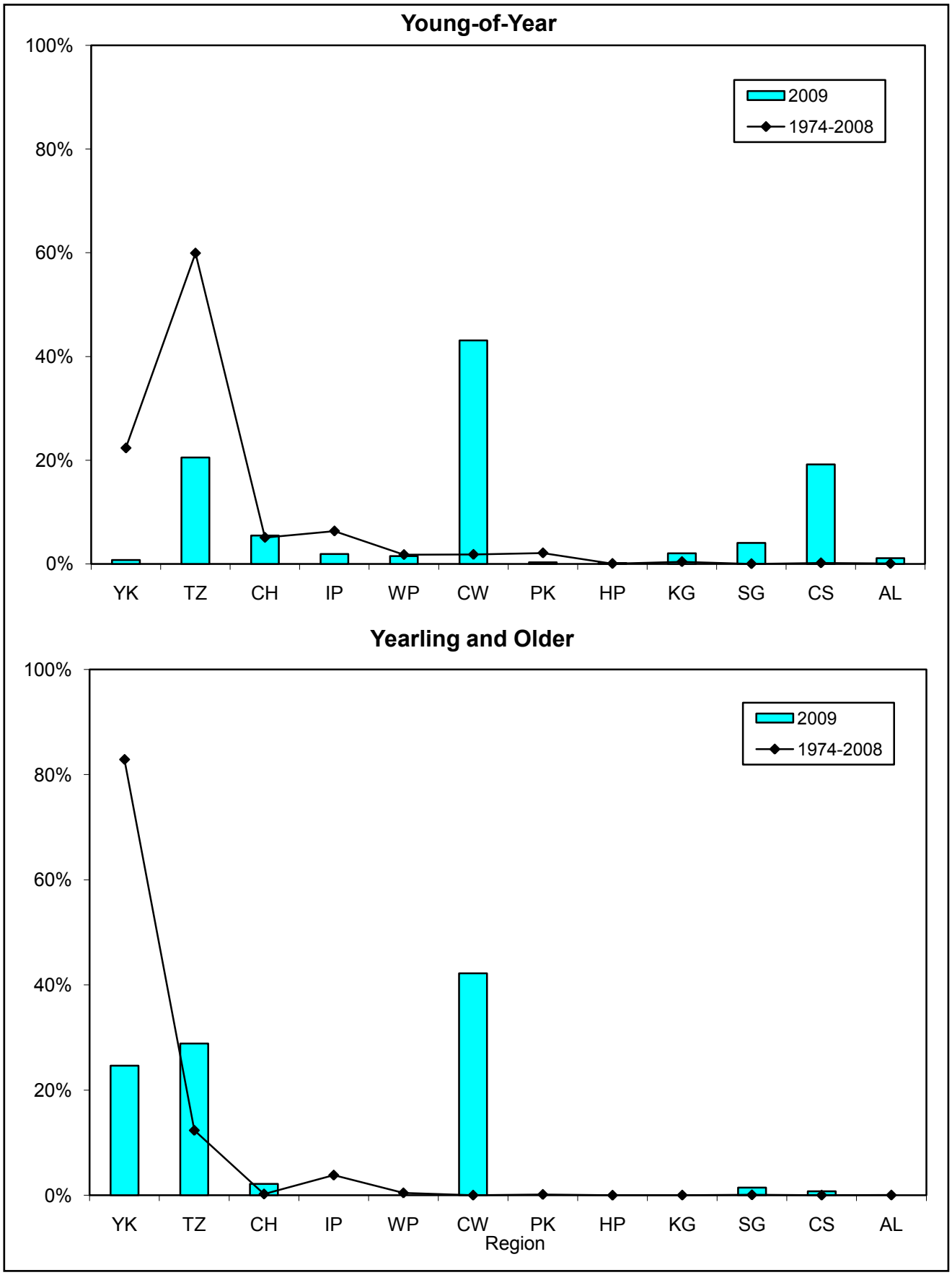


Figure 4-29. Geographic distribution indices for bay anchovy collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

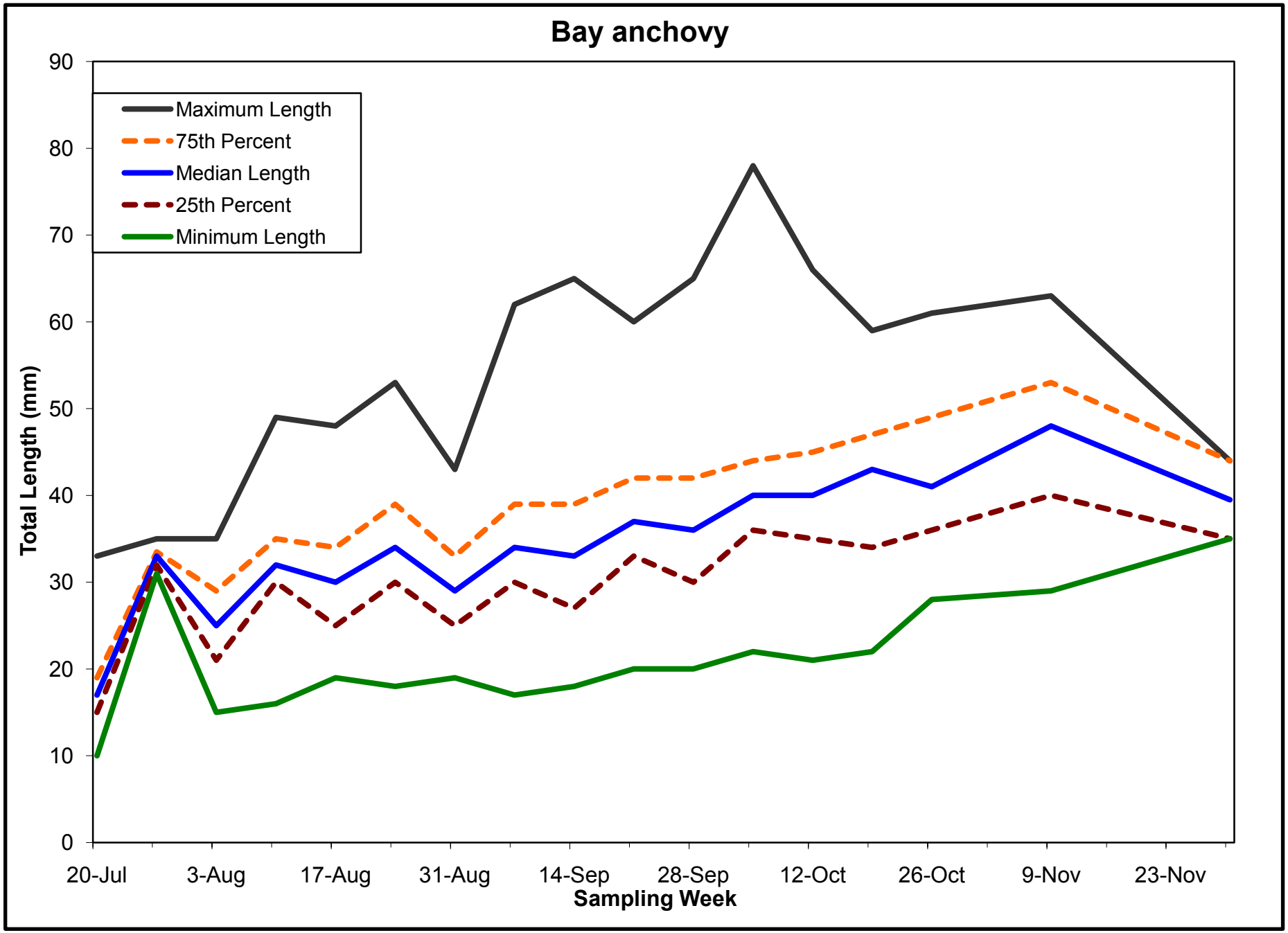


Figure 4-30. Weekly length statistics for young-of-year bay anchovy in the Hudson River estuary, 2009.

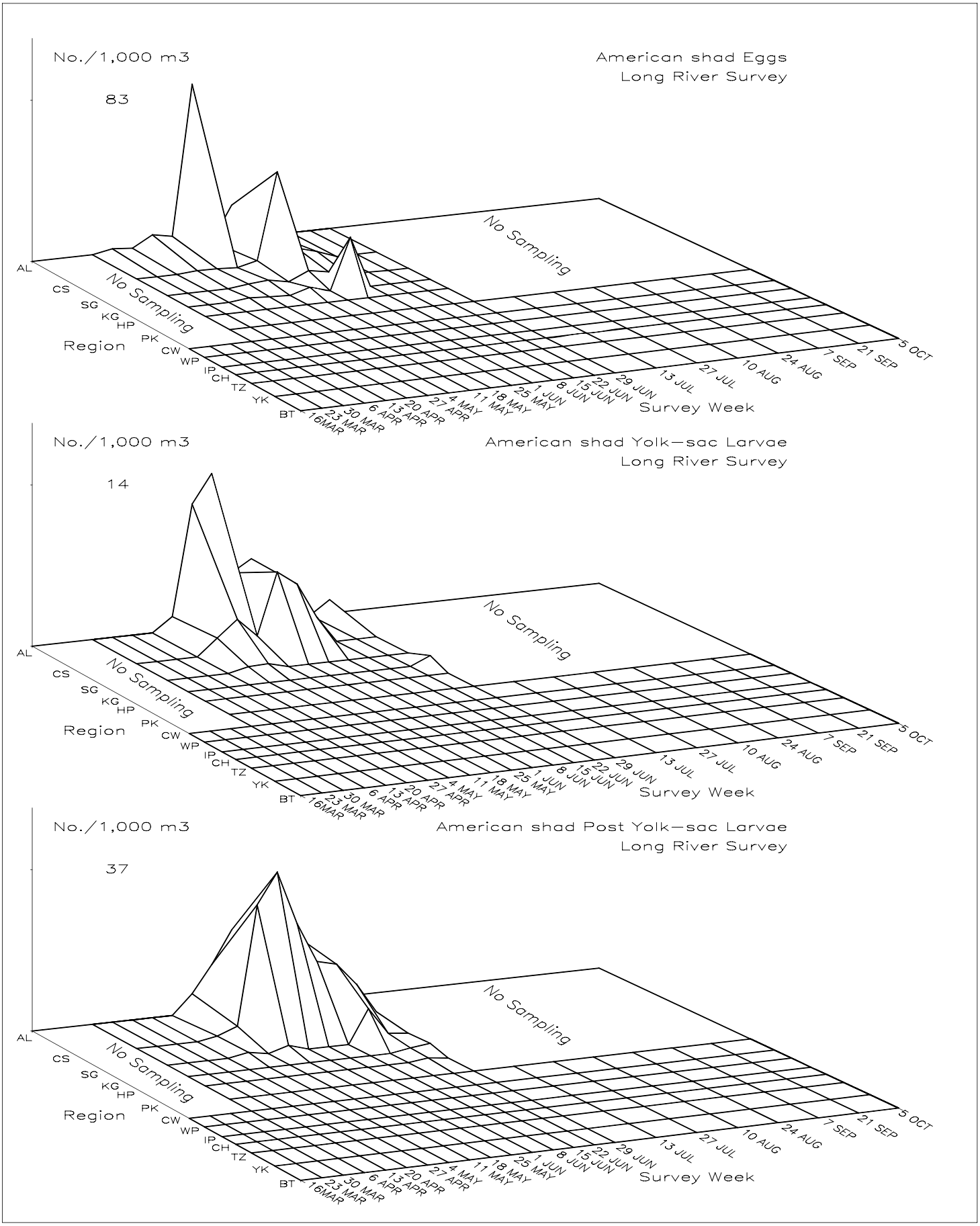


Figure 4–31. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval American shad in the Hudson River estuary based on the 2009 Long River Survey.

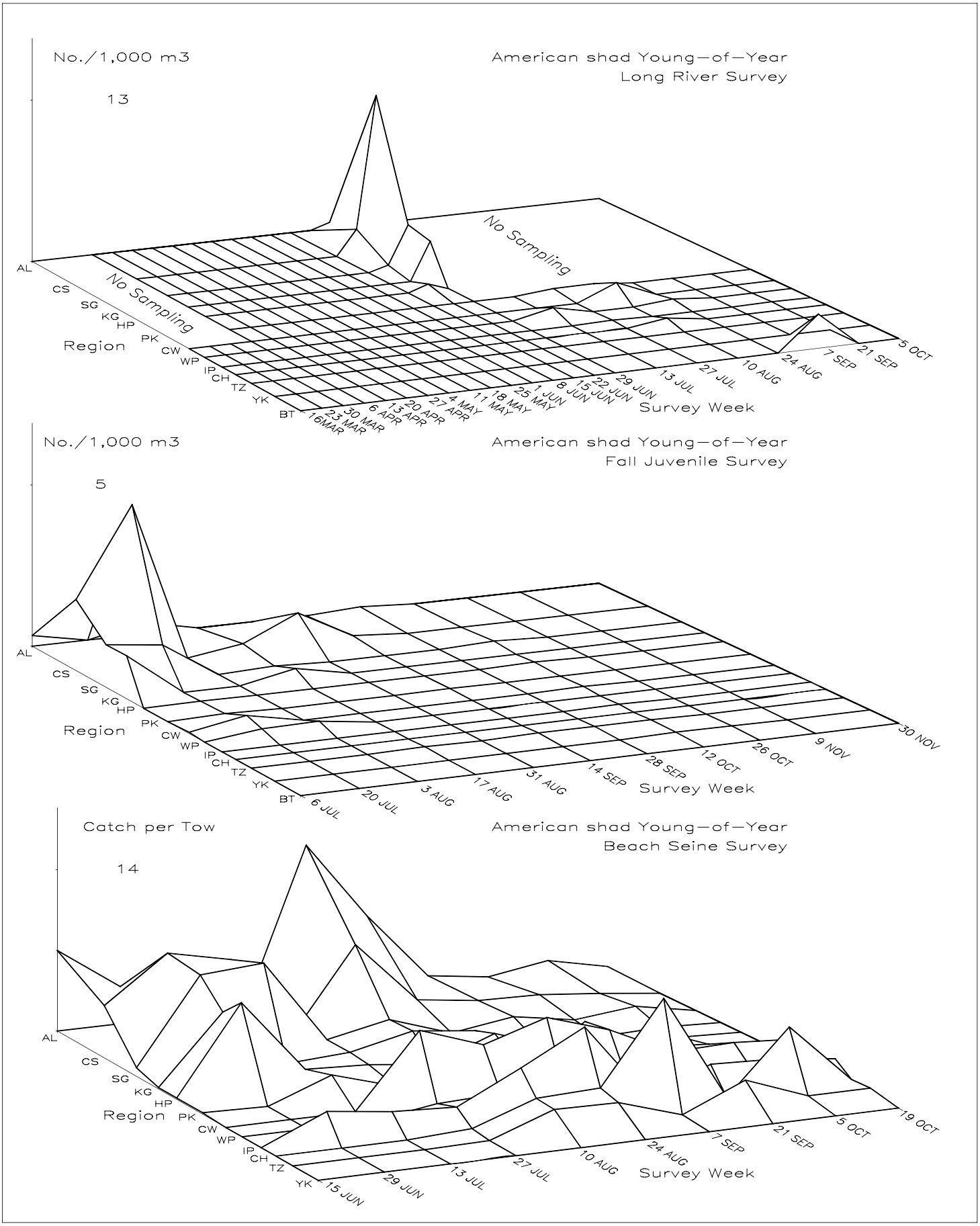


Figure 4–32. Spatiotemporal distribution of young–of–year American shad in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

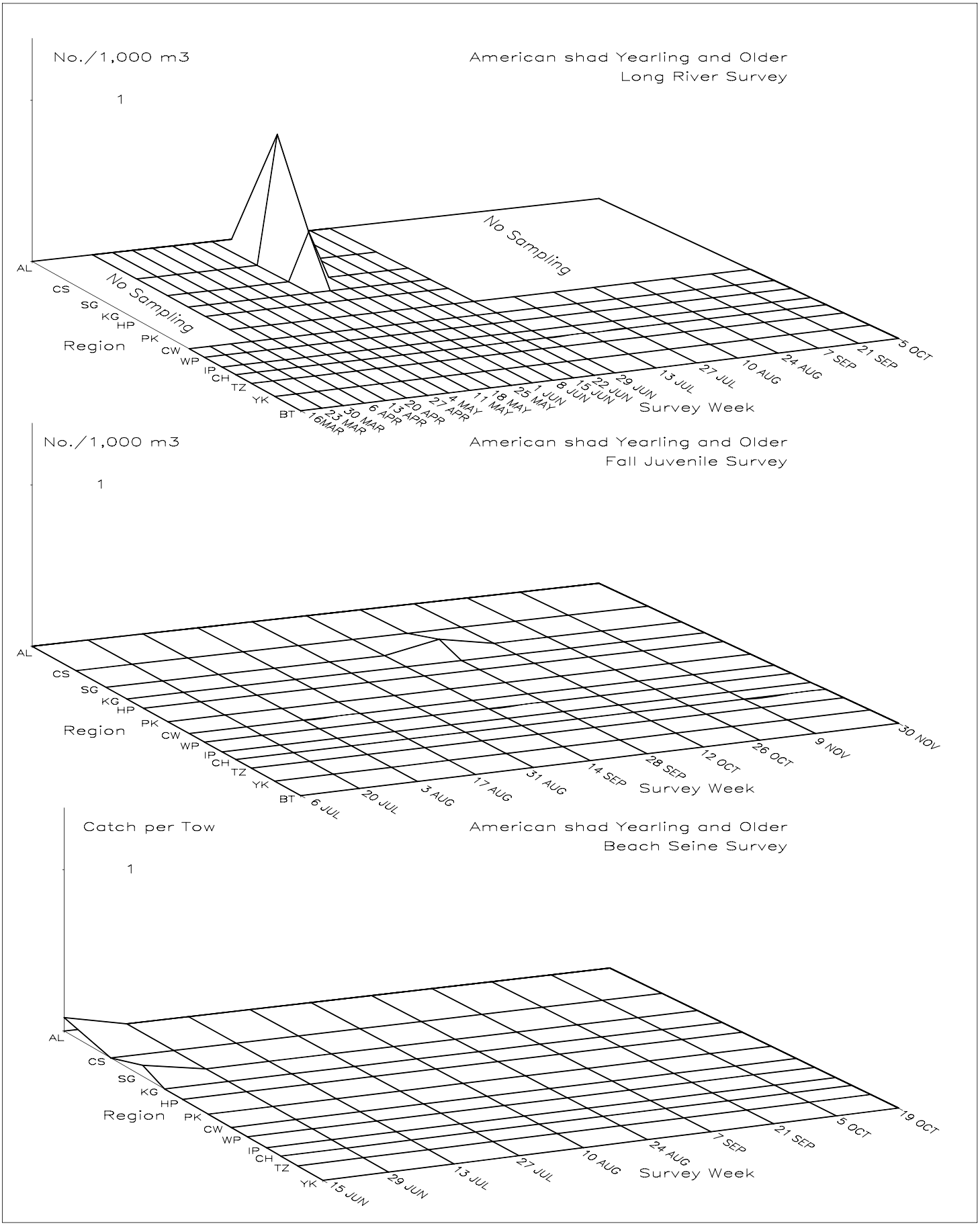


Figure 4–33. Spatiotemporal distribution of yearling and older American shad in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

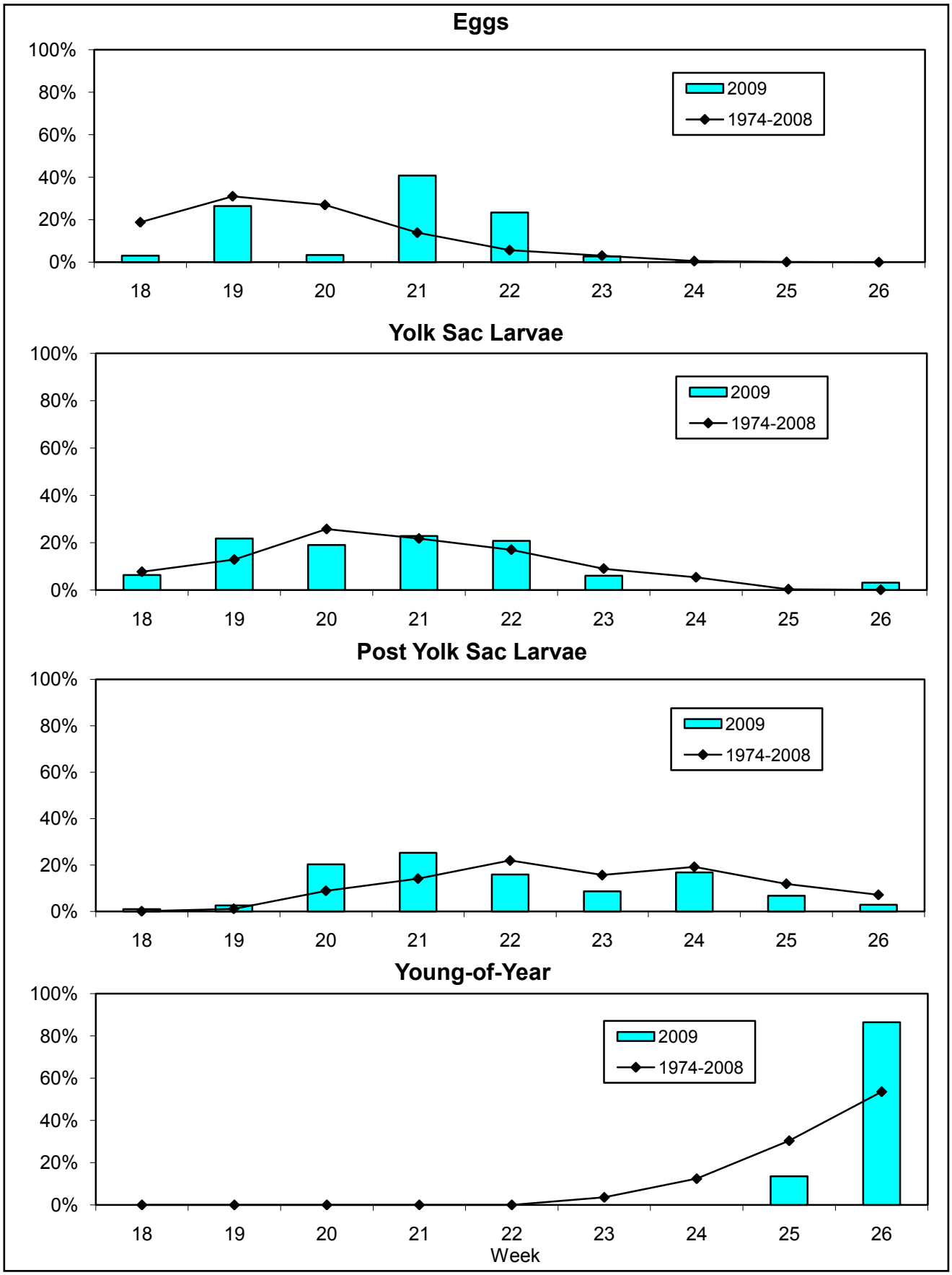


Figure 4-34. Temporal distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2009.

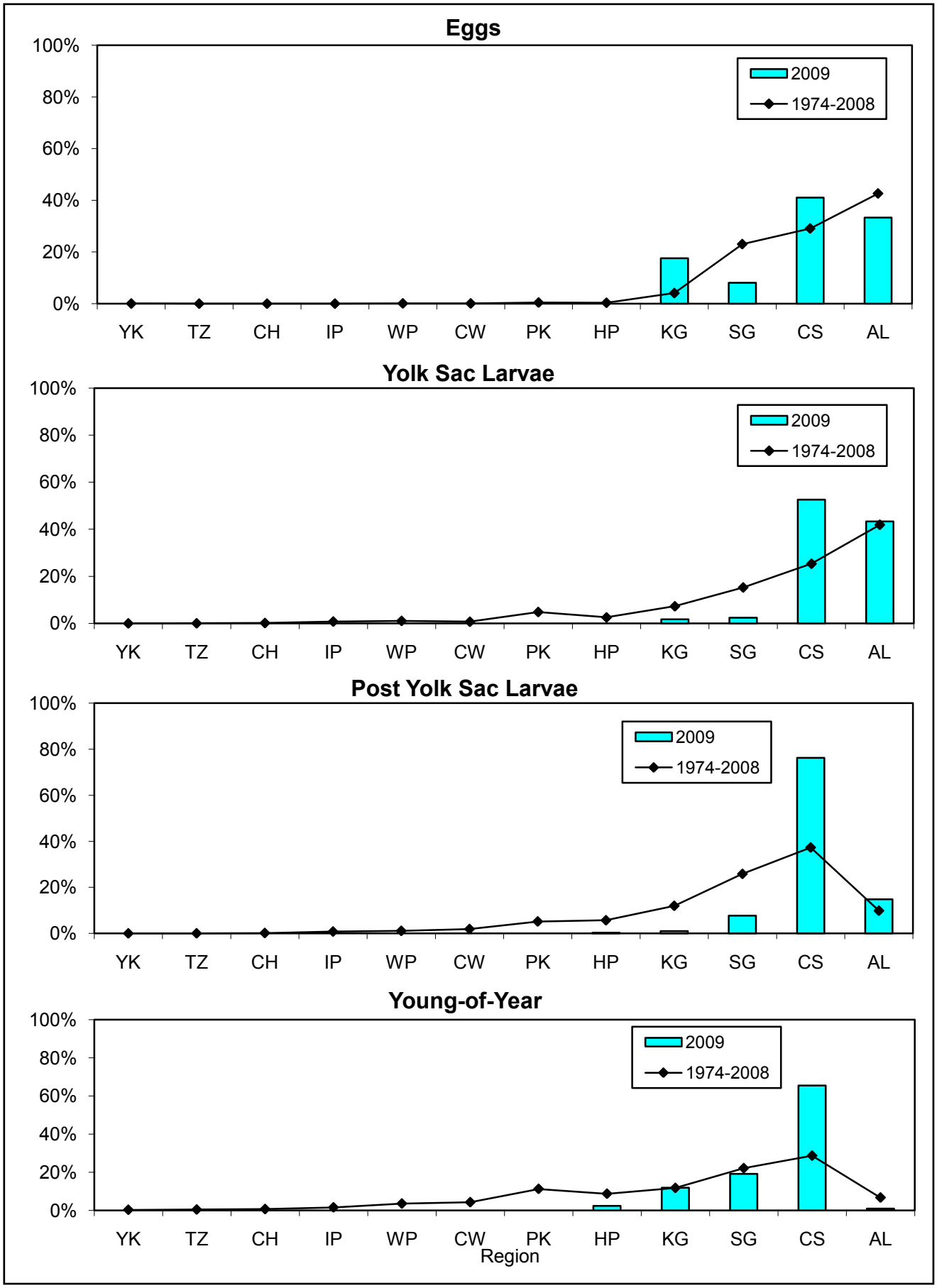


Figure 4-35. Geographic distribution indices for American shad collected during Long River surveys of the Hudson River estuary, 1974-2009.

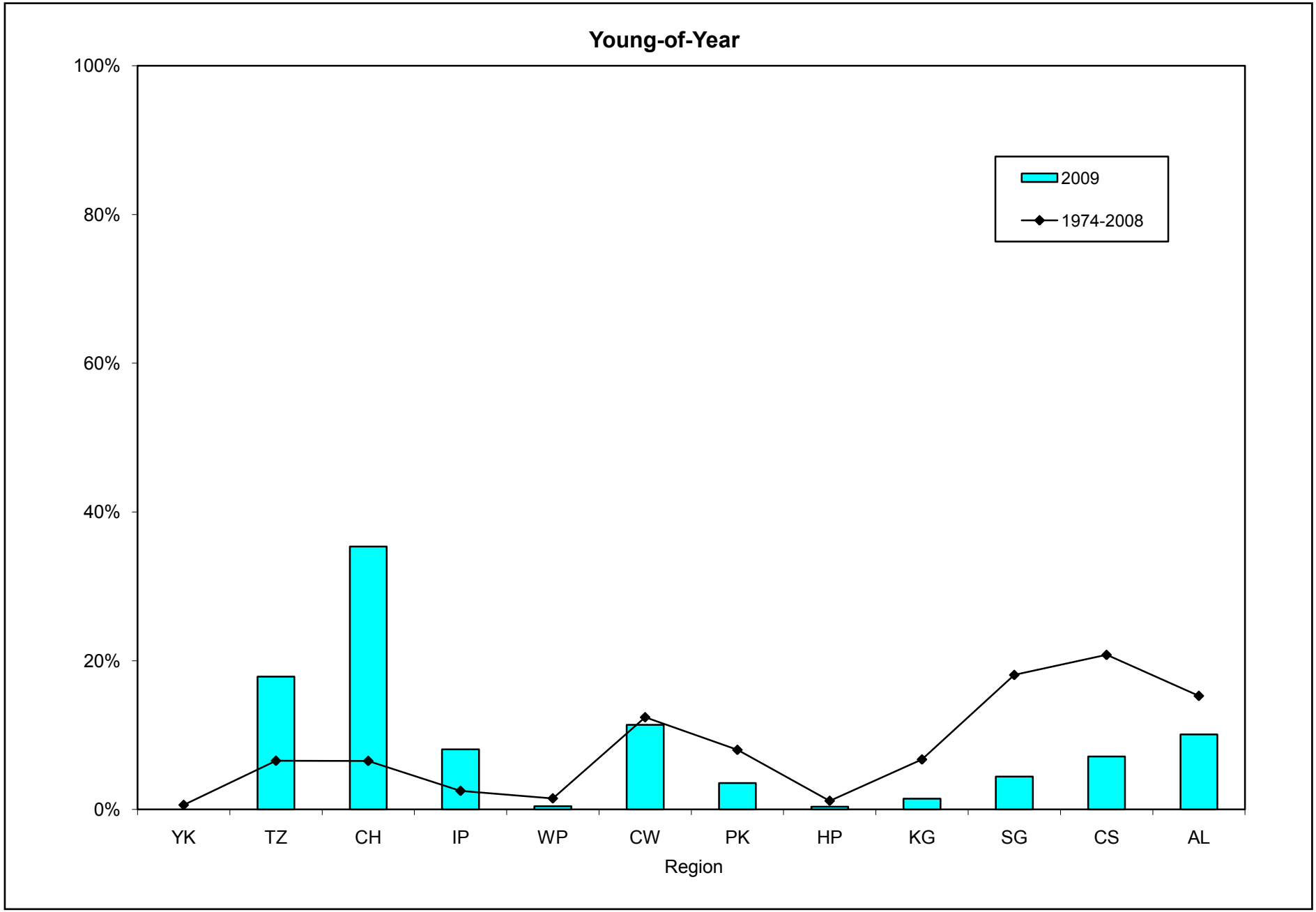


Figure 4-36. Geographic distribution indices for American shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

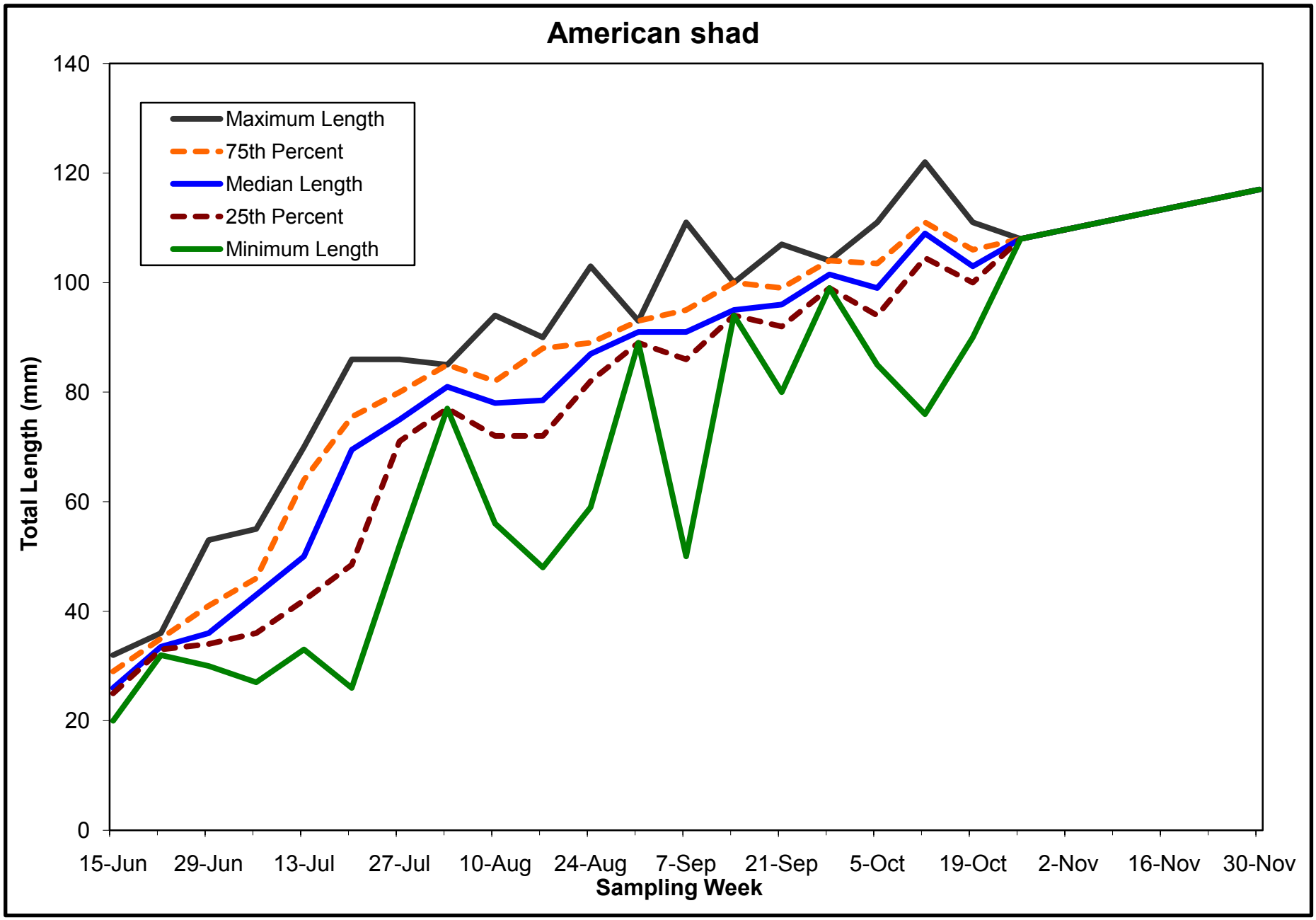


Figure 4-37. Weekly length statistics for young-of-year American shad in the Hudson River estuary, 2009.

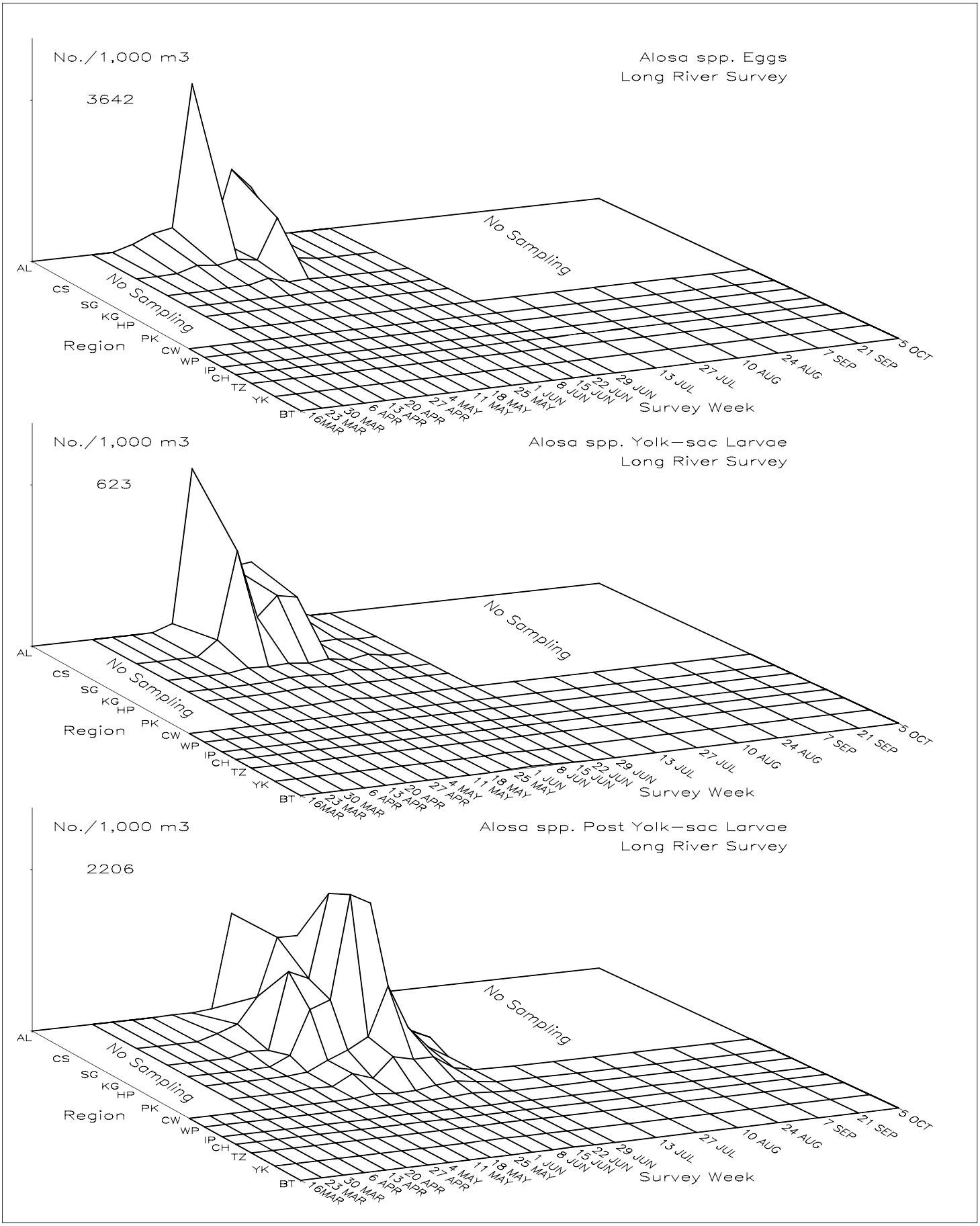


Figure 4–38. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval Alosa spp. in the Hudson River estuary based on the 2009 Long River Survey.

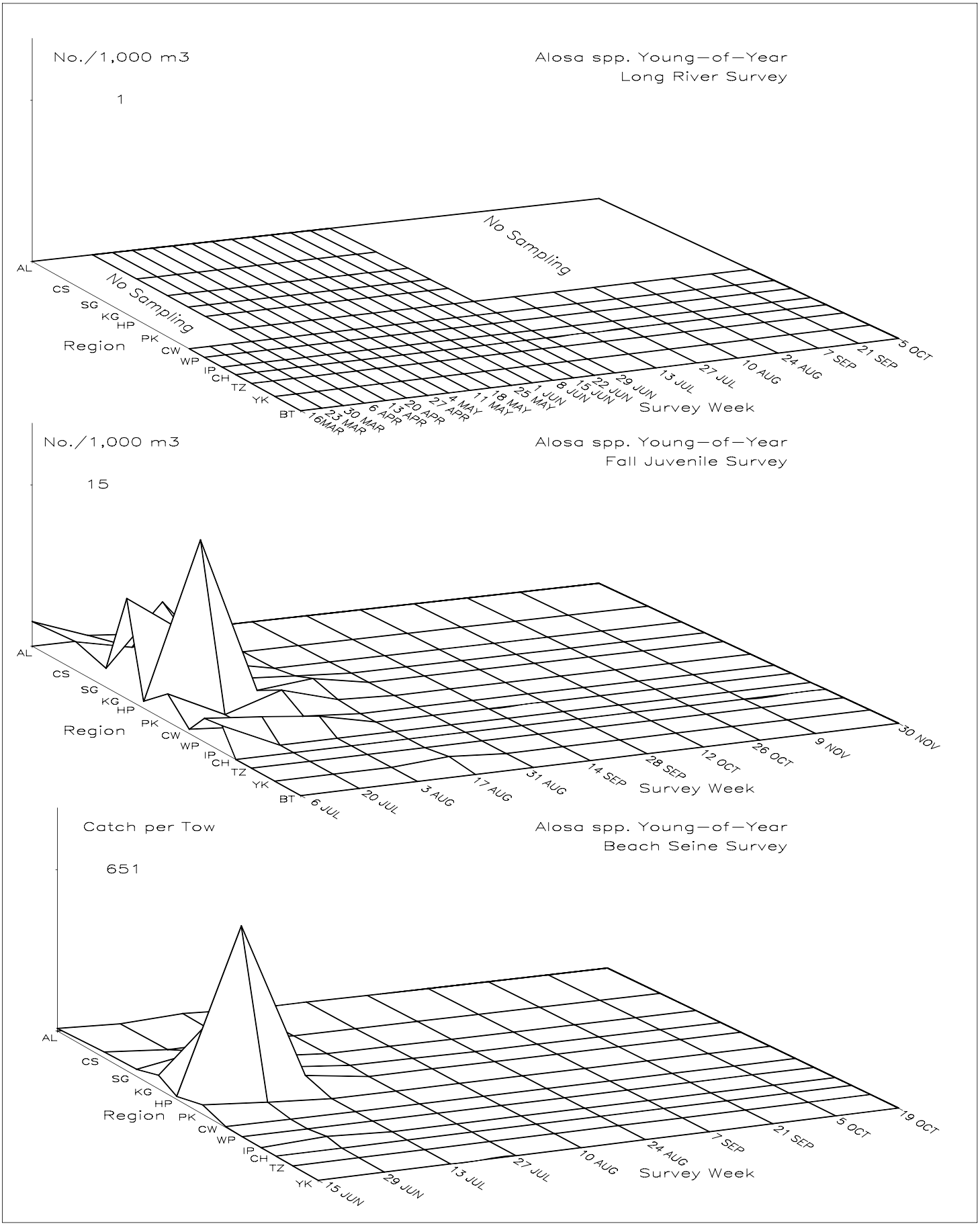


Figure 4–39. Spatiotemporal distribution of young–of–year Alosa spp. in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

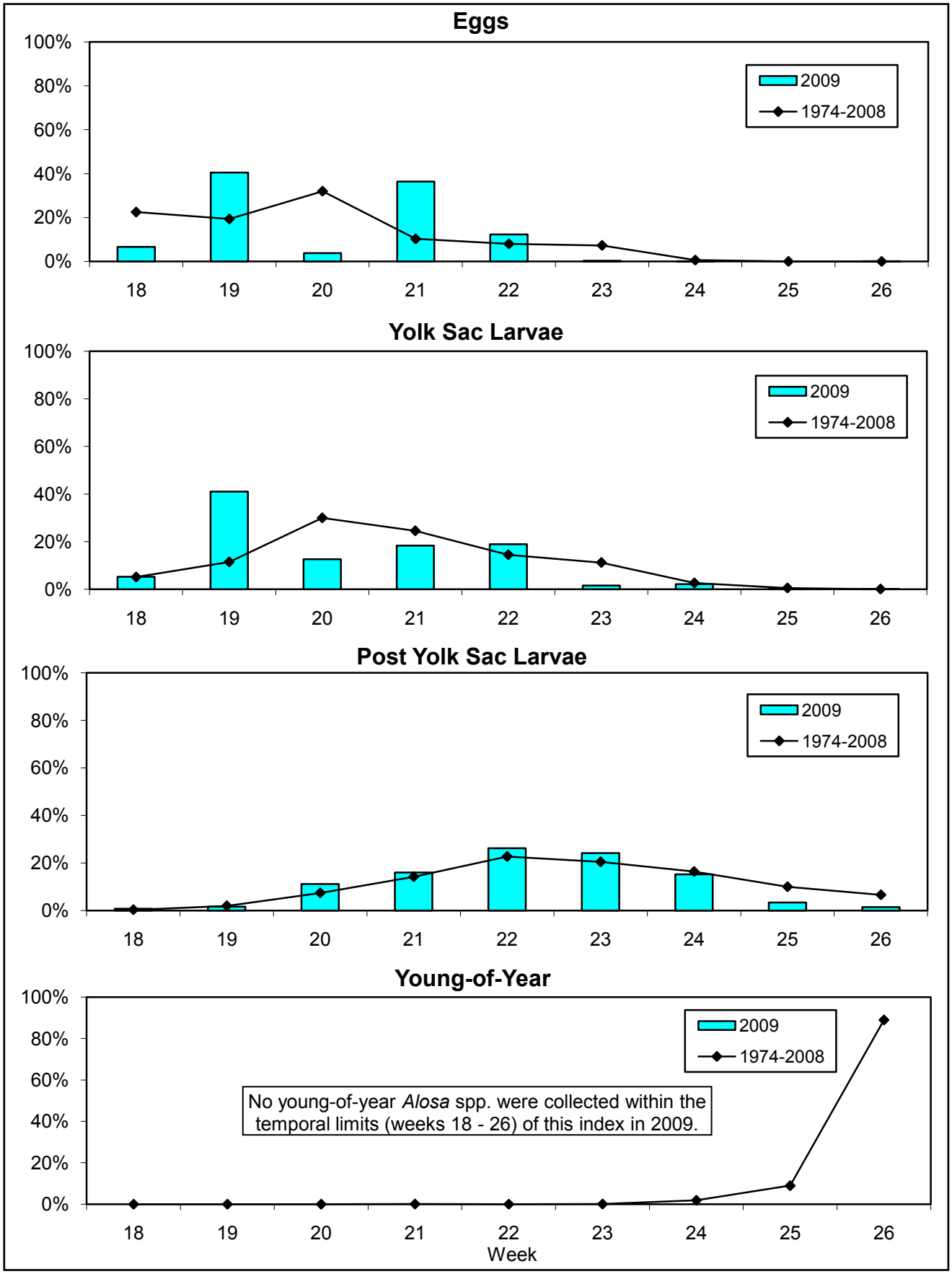


Figure 4-40. Temporal distribution indices for *Alosa* spp. collected during Long River surveys of the Hudson River estuary, 1974-2009.

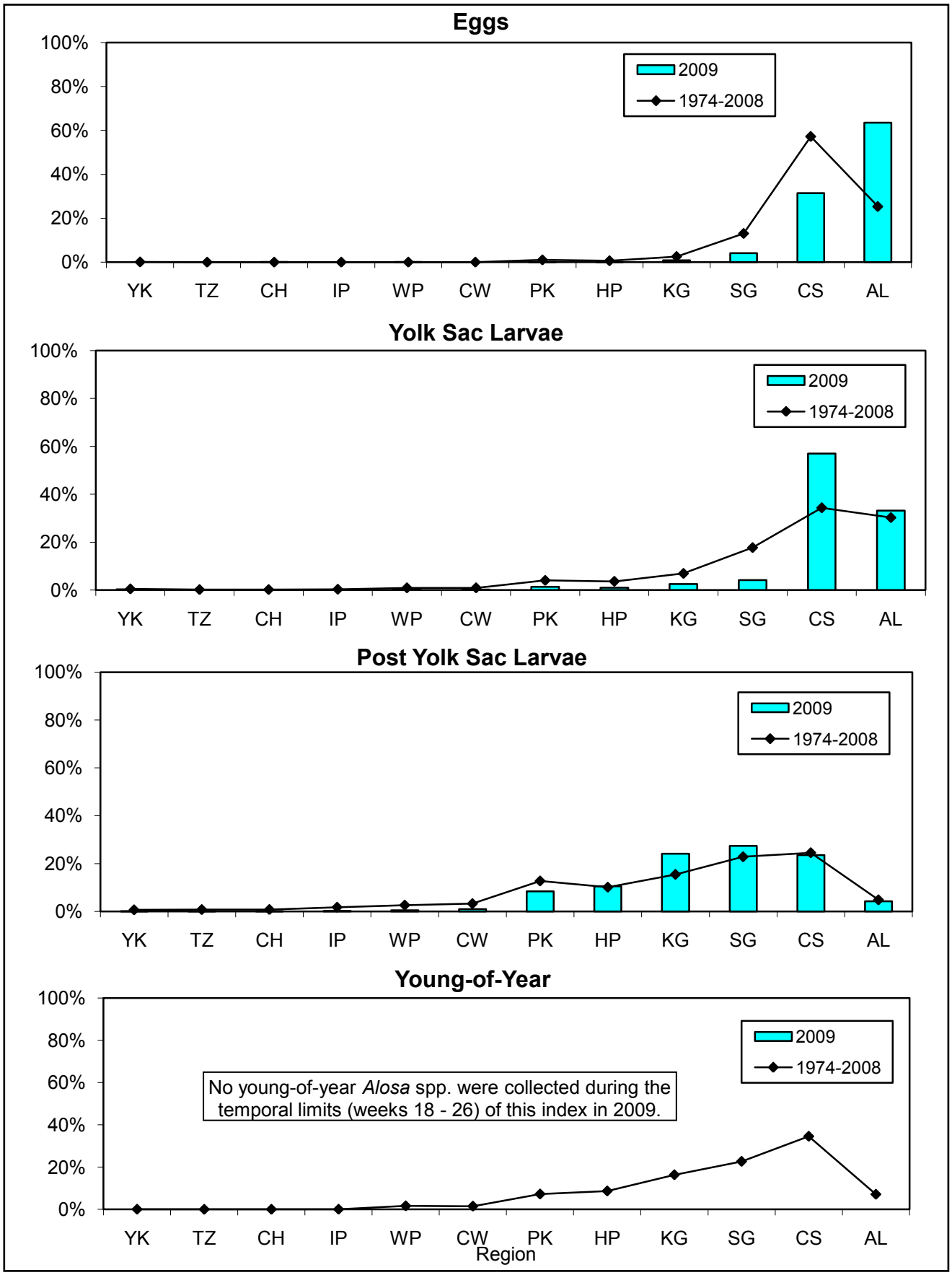


Figure 4-41. Geographic distribution indices for *Alosa* spp. collected during Long River surveys of the Hudson River estuary, 1974-2009.

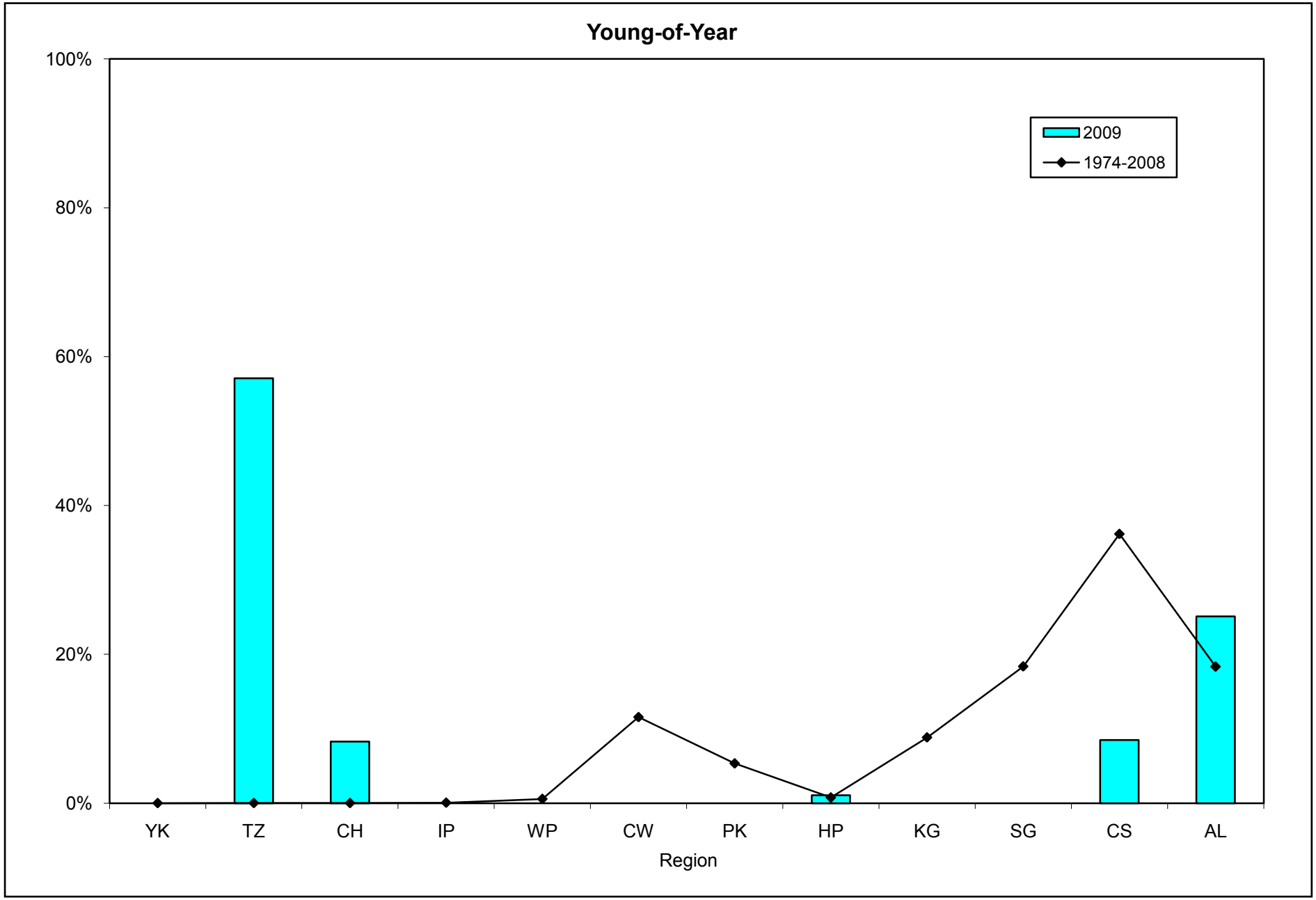


Figure 4-42. Geographic distribution indices for *Alosa* spp. collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

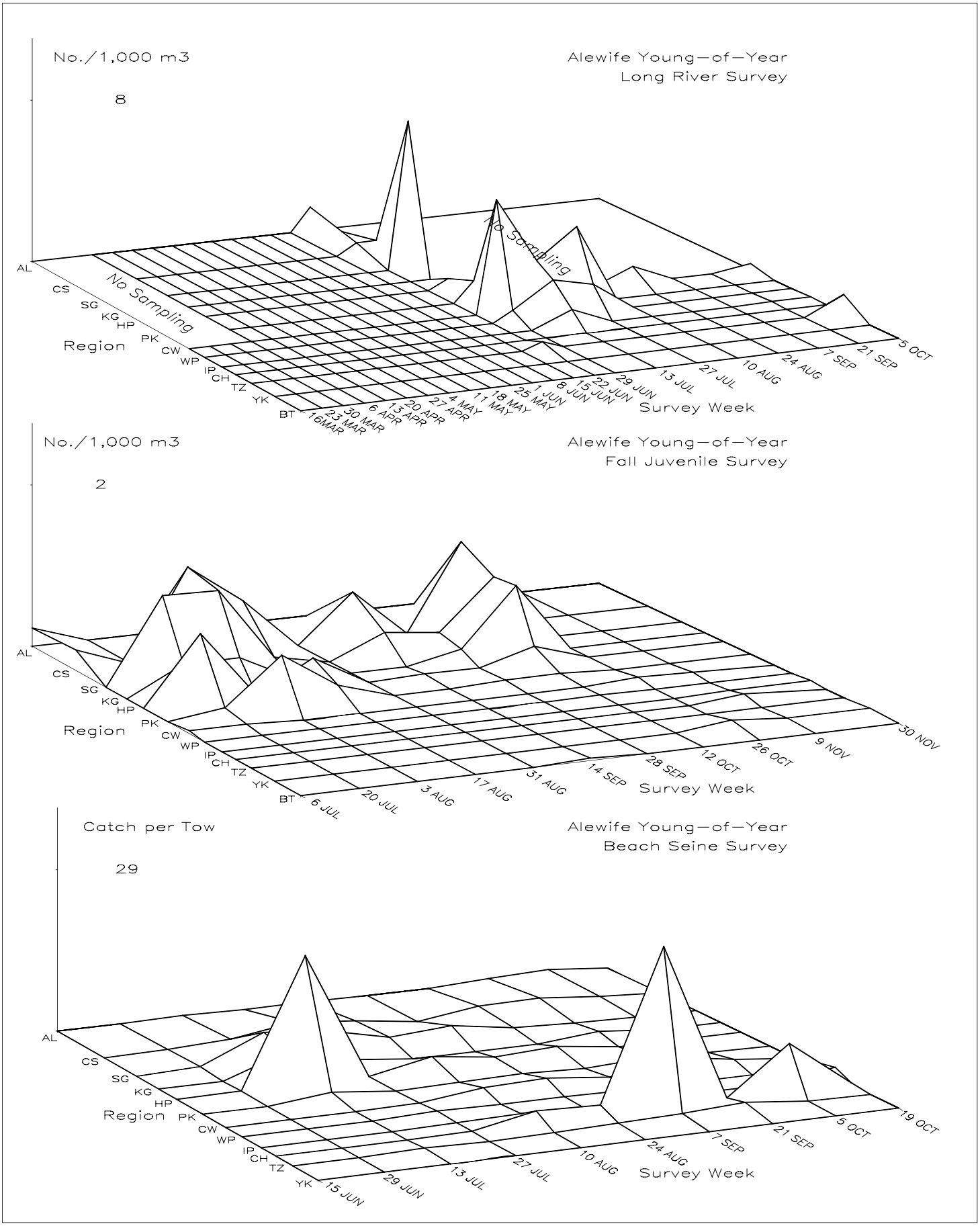


Figure 4–43. Spatiotemporal distribution of young–of–year alewife in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

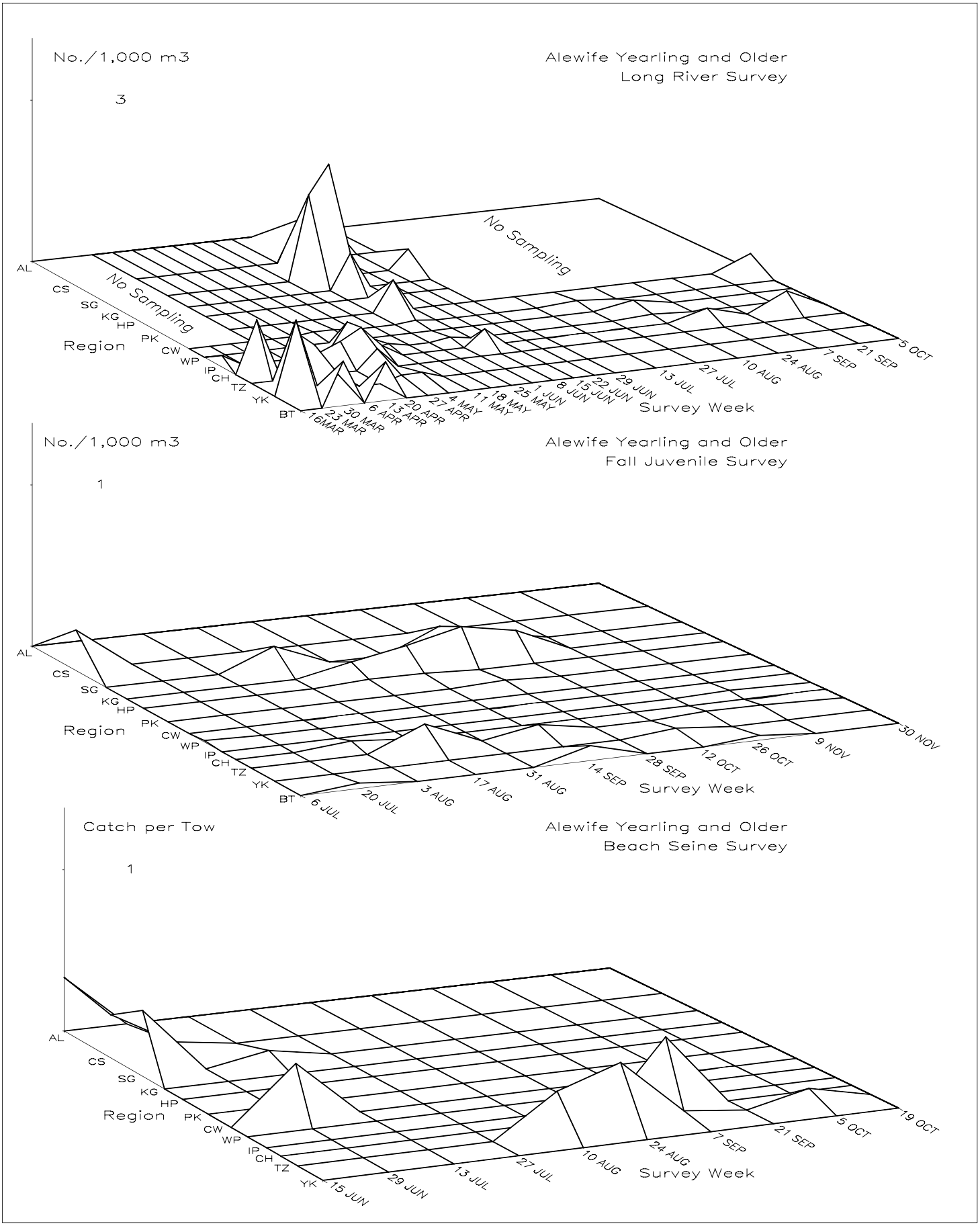


Figure 4–44. Spatiotemporal distribution of yearling and older alewife in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

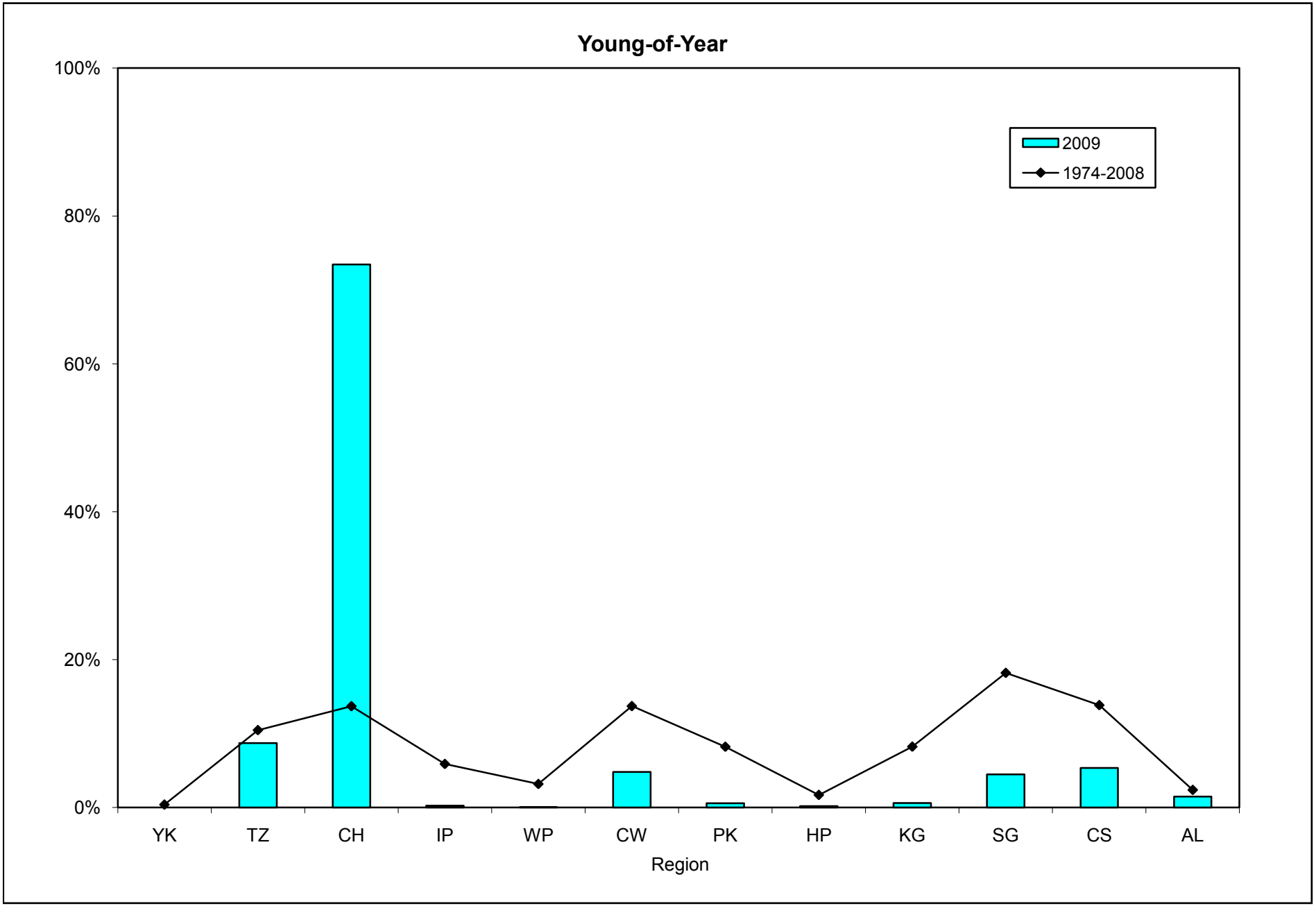


Figure 4-45. Geographic distribution indices for alewife collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

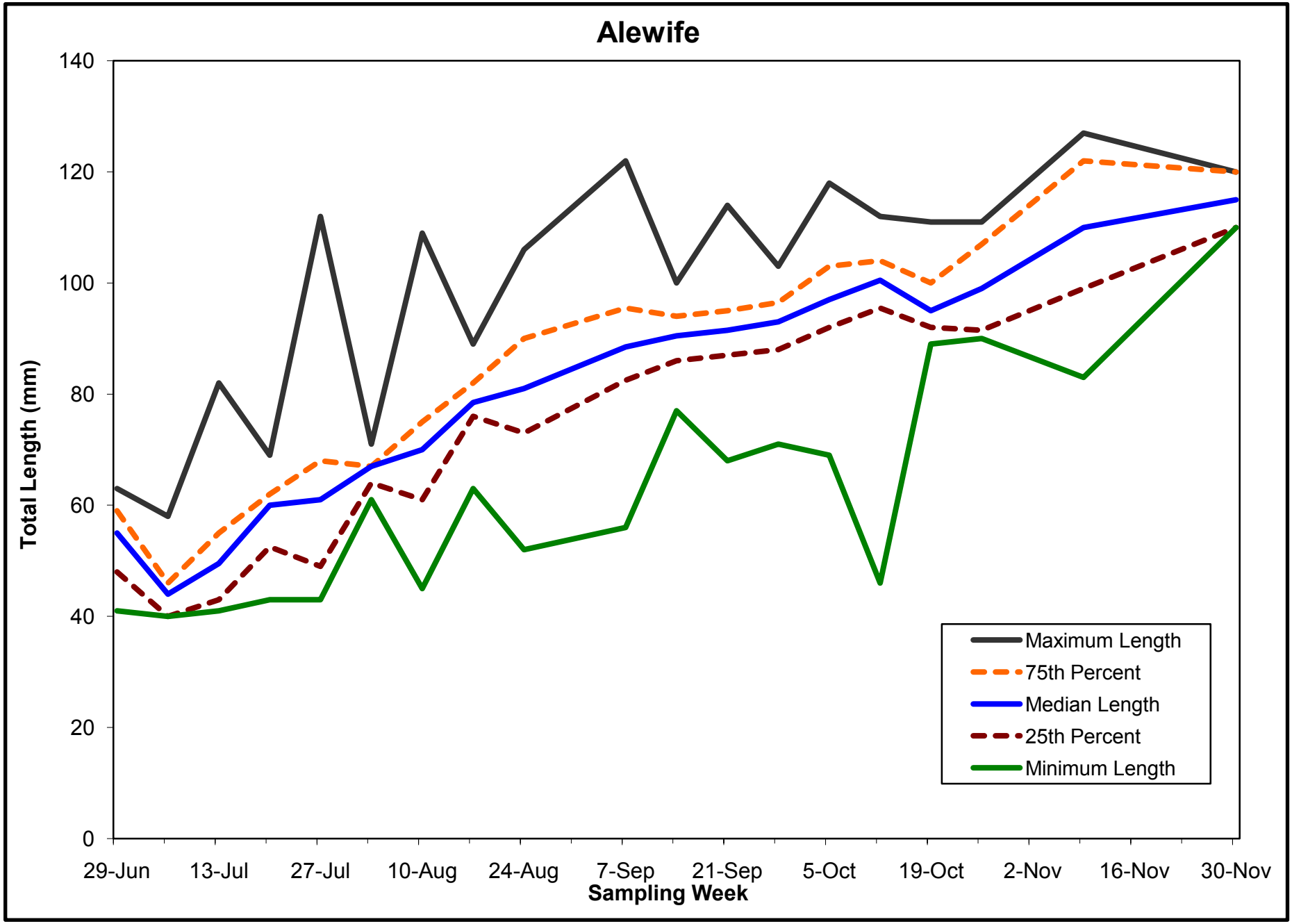


Figure 4-46. Weekly length statistics for young-of-year alewife in the Hudson River estuary, 2009.

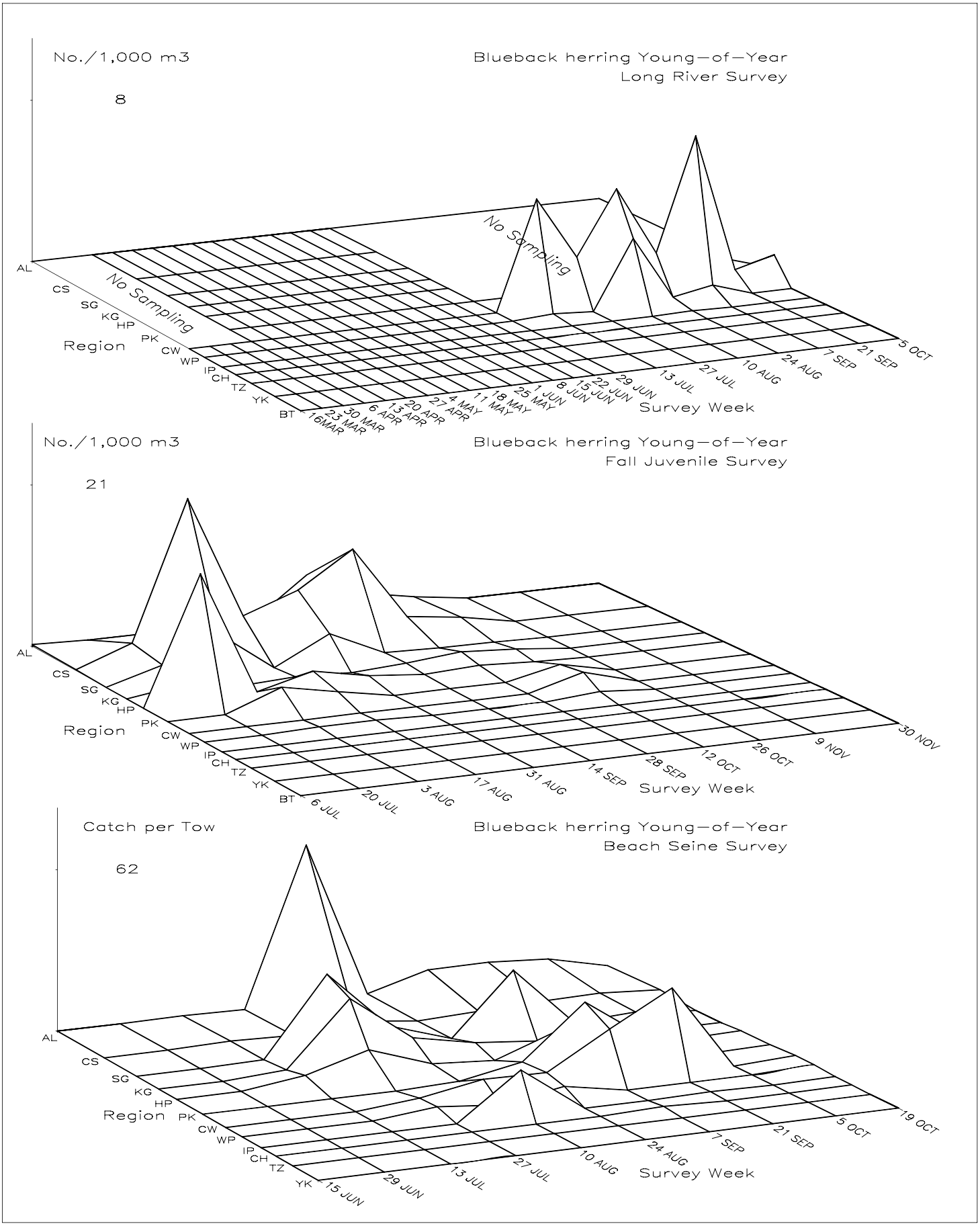


Figure 4–47. Spatiotemporal distribution of young–of–year blueback herring in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

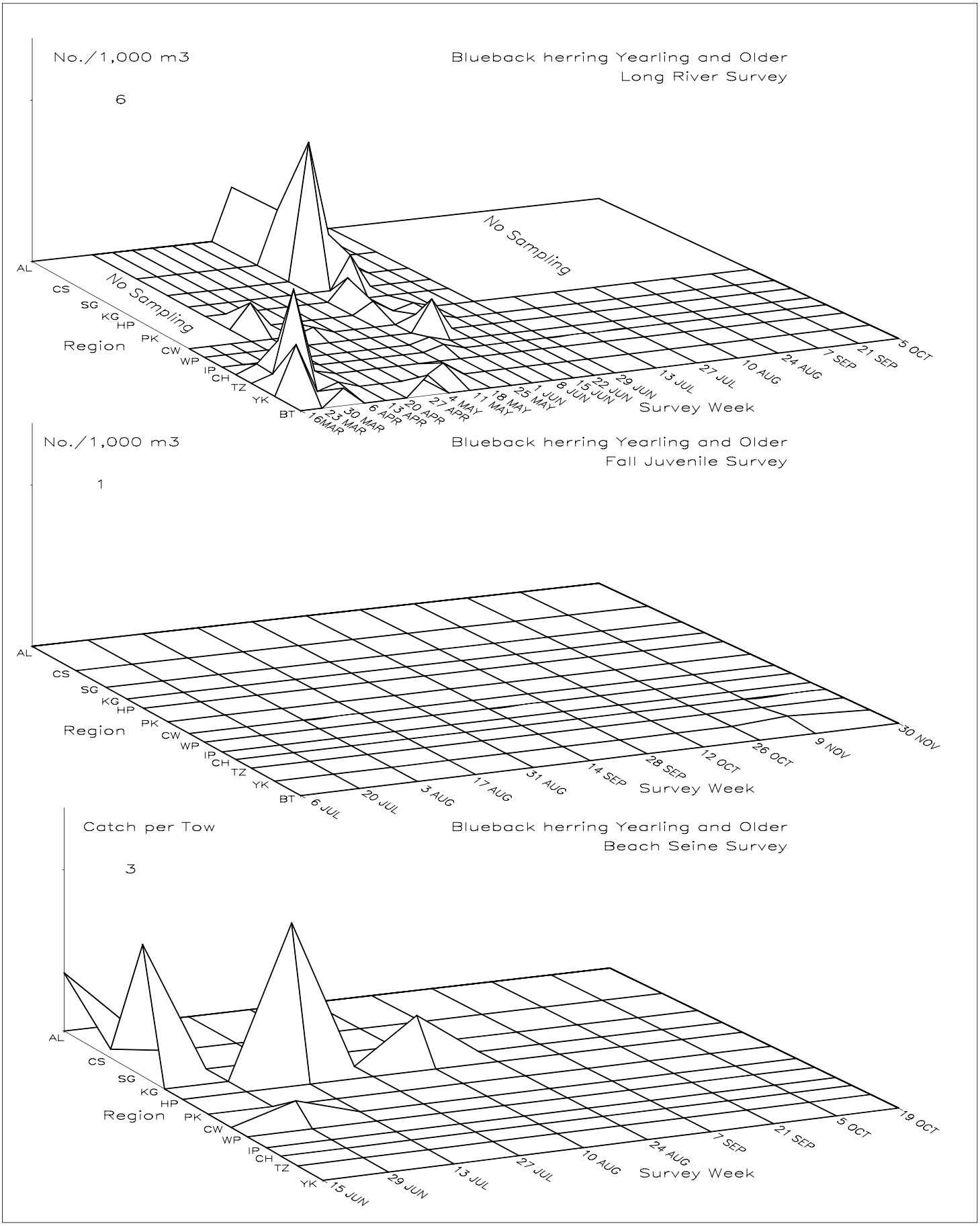


Figure 4–48. Spatiotemporal distribution of yearling and older blueback herring in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

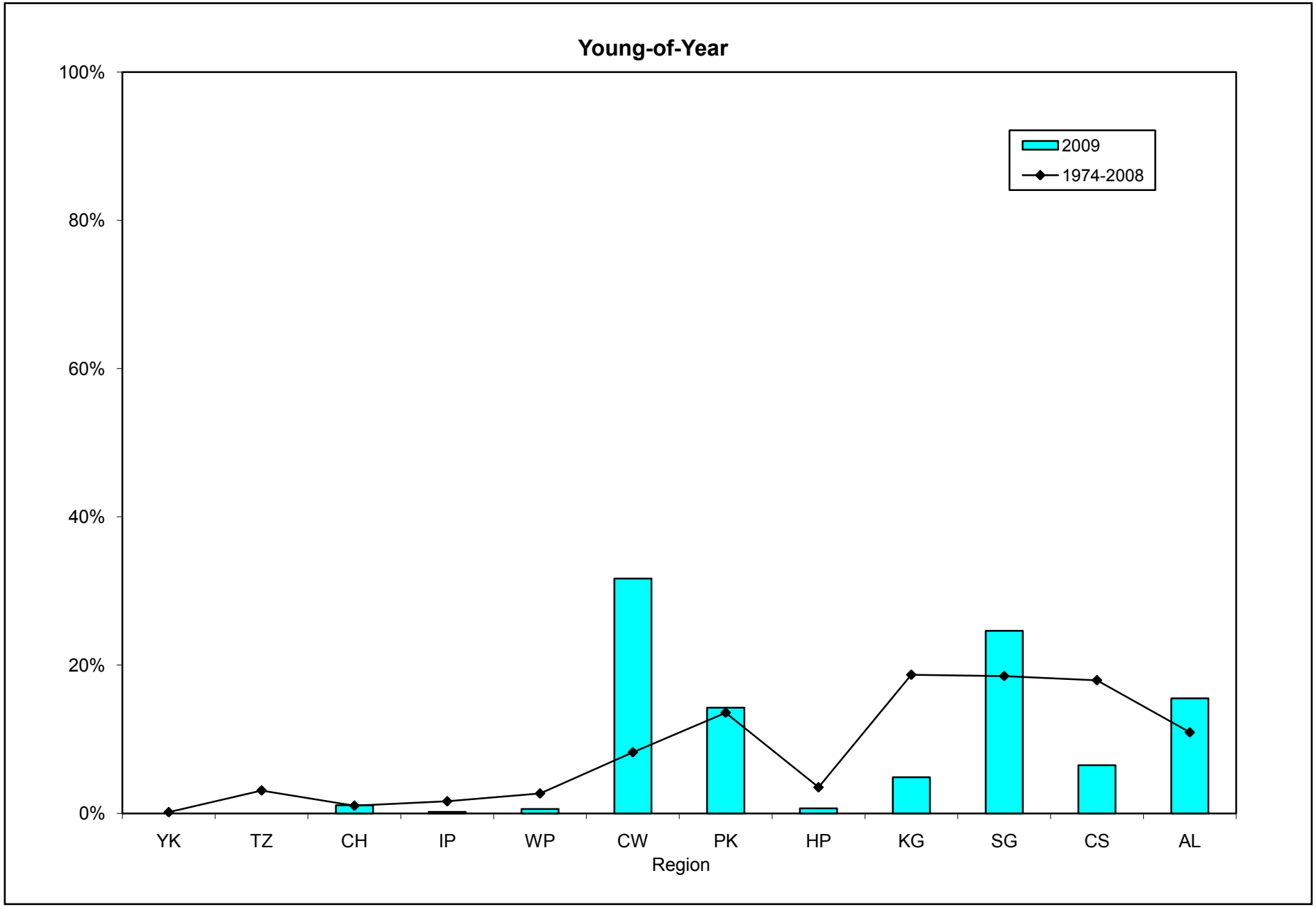


Figure 4-49. Geographic distribution indices for blueback herring collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

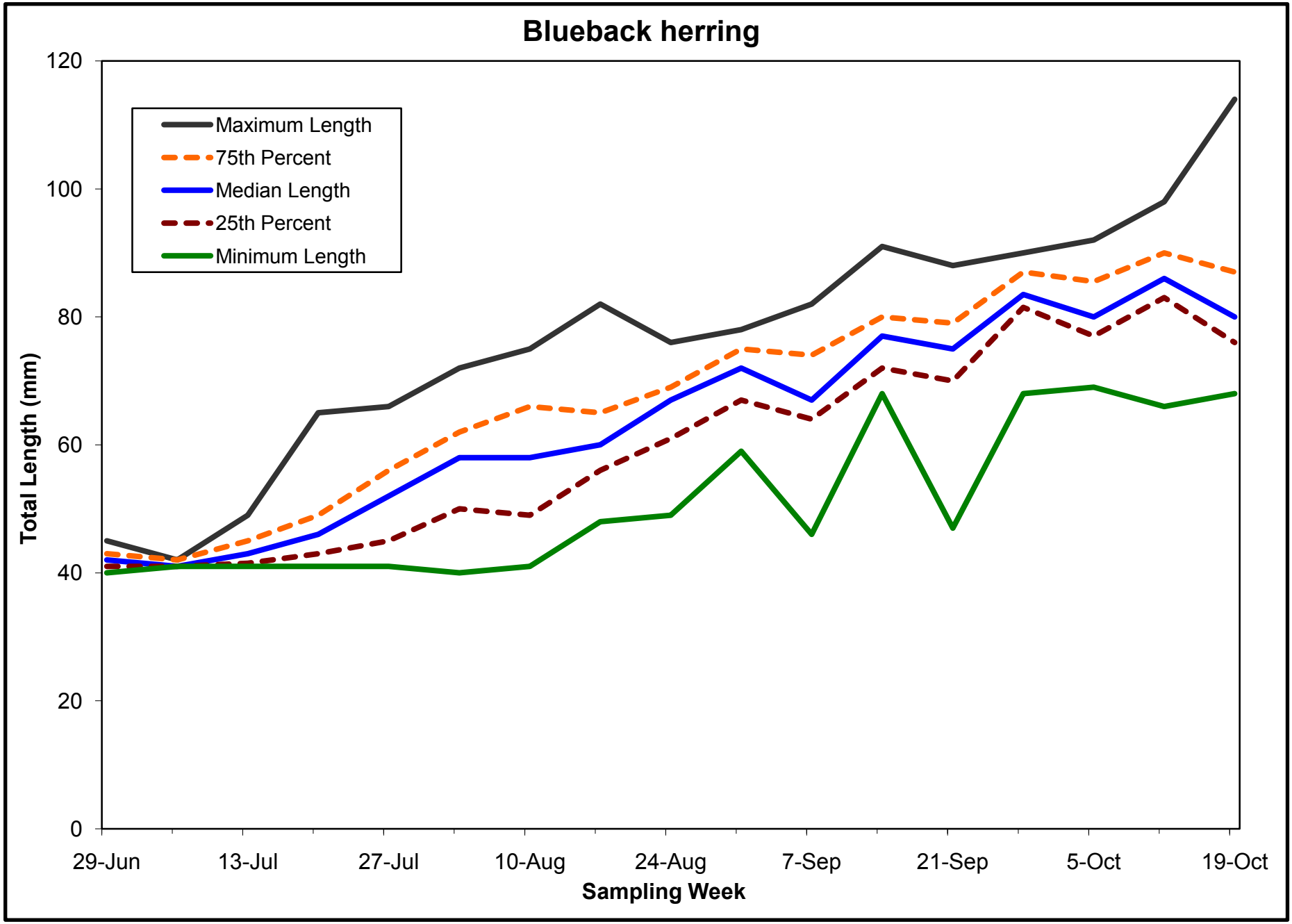


Figure 4-50. Weekly length statistics for young-of-year blueback herring in the Hudson River estuary, 2009.

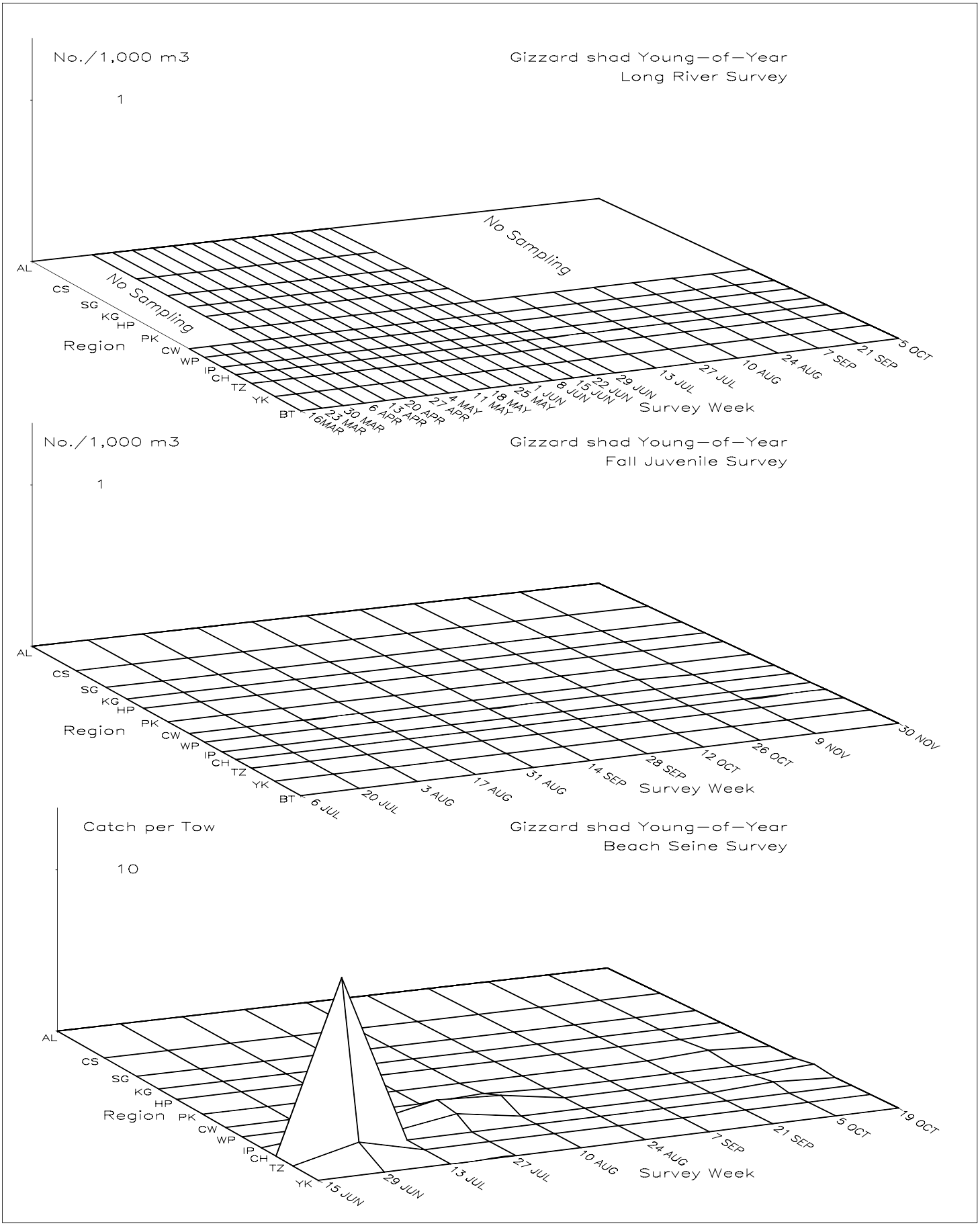


Figure 4–51. Spatiotemporal distribution of young–of–year gizzard shad in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

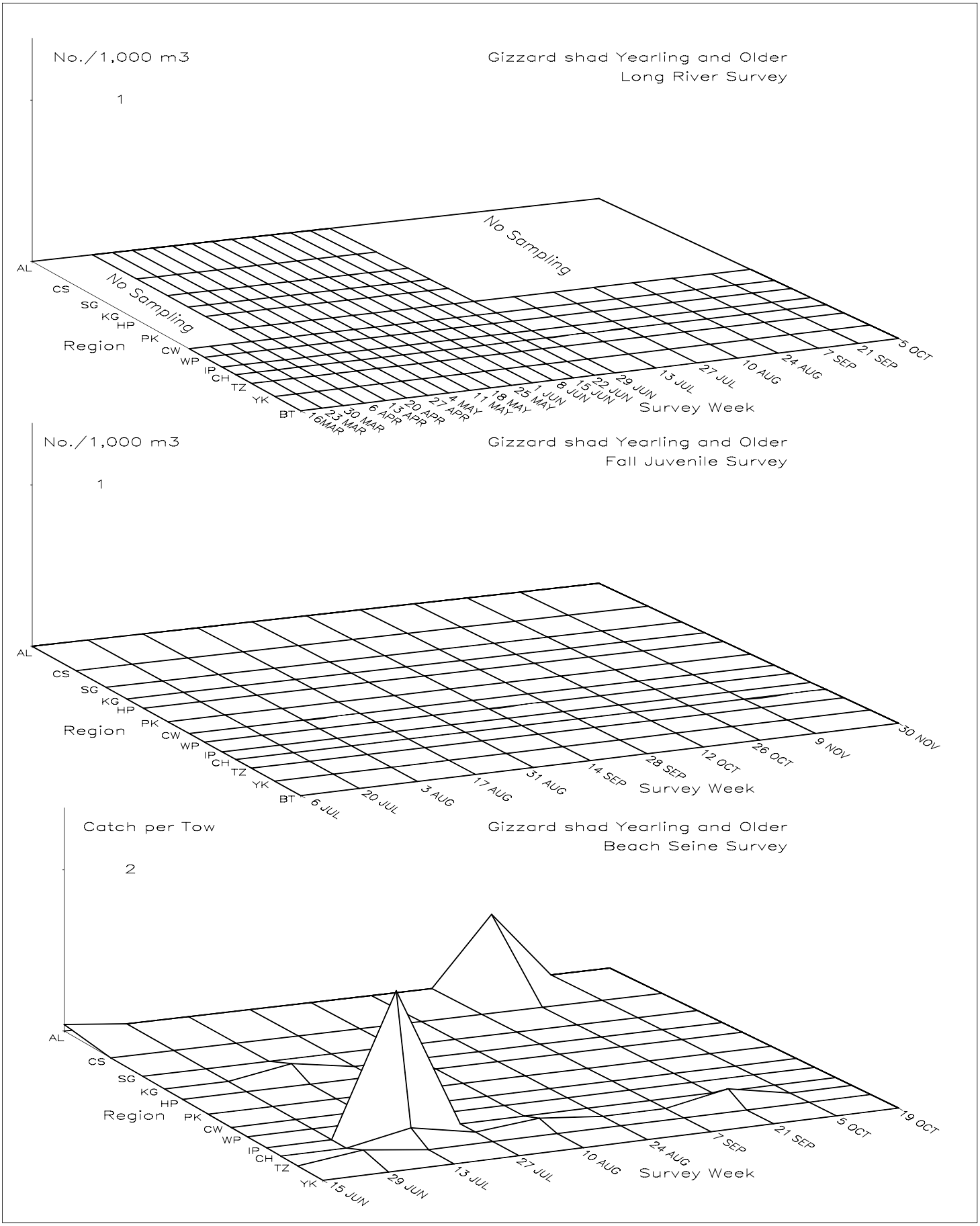


Figure 4–52. Spatiotemporal distribution of yearling and older gizzard shad in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

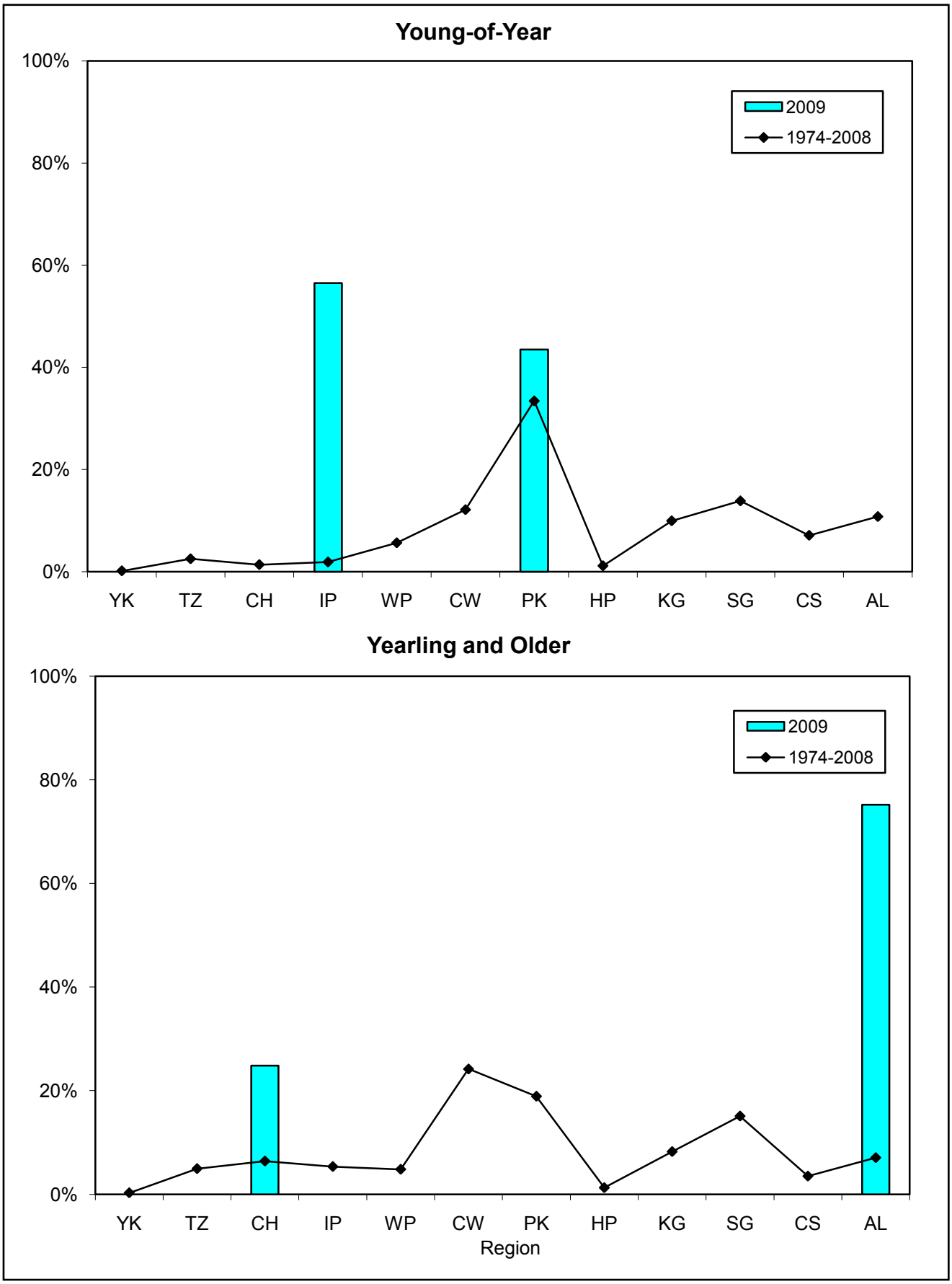


Figure 4-53. Geographic distribution indices for gizzard shad collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

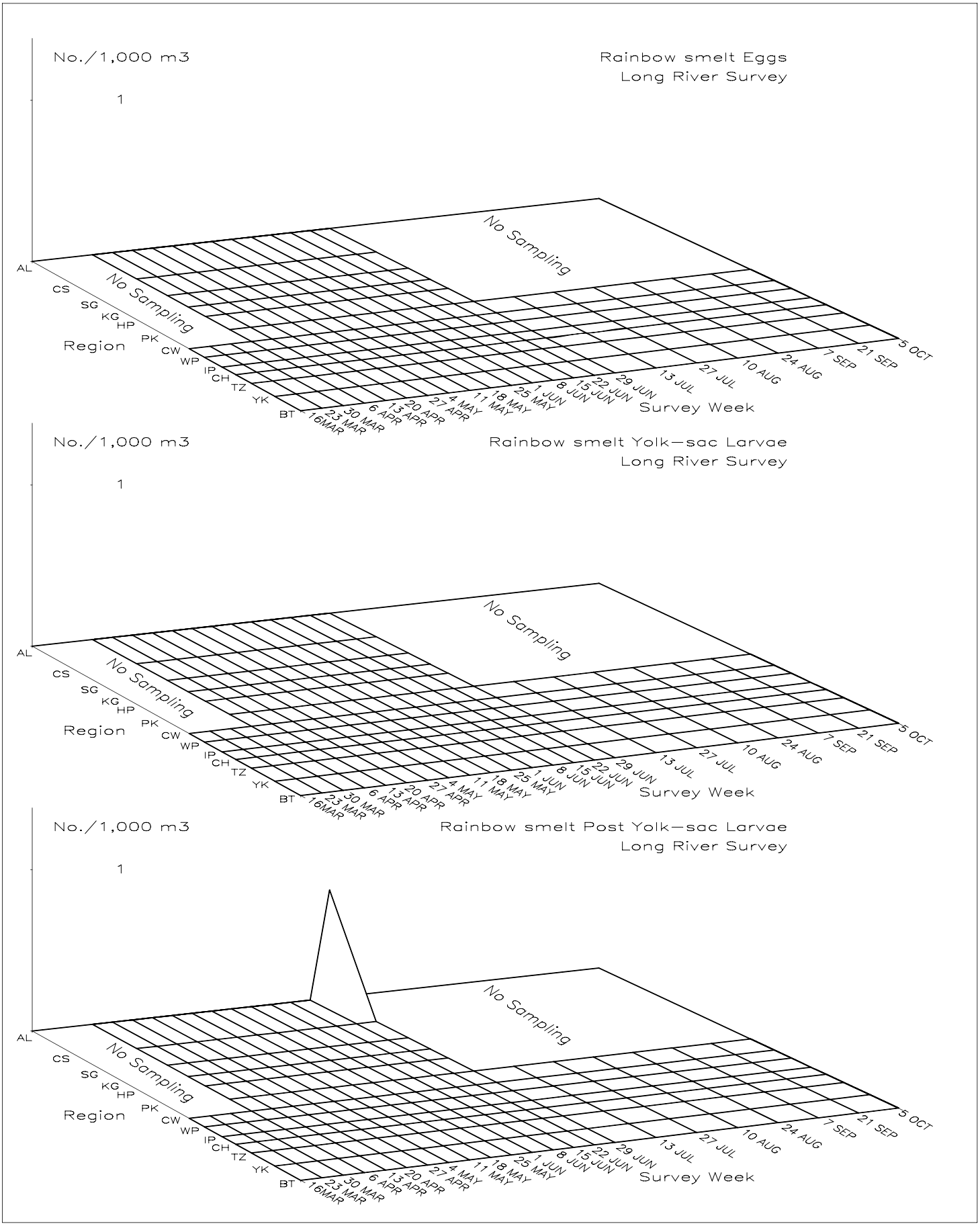


Figure 4–54. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval rainbow smelt in the Hudson River estuary based on the 2009 Long River Survey.

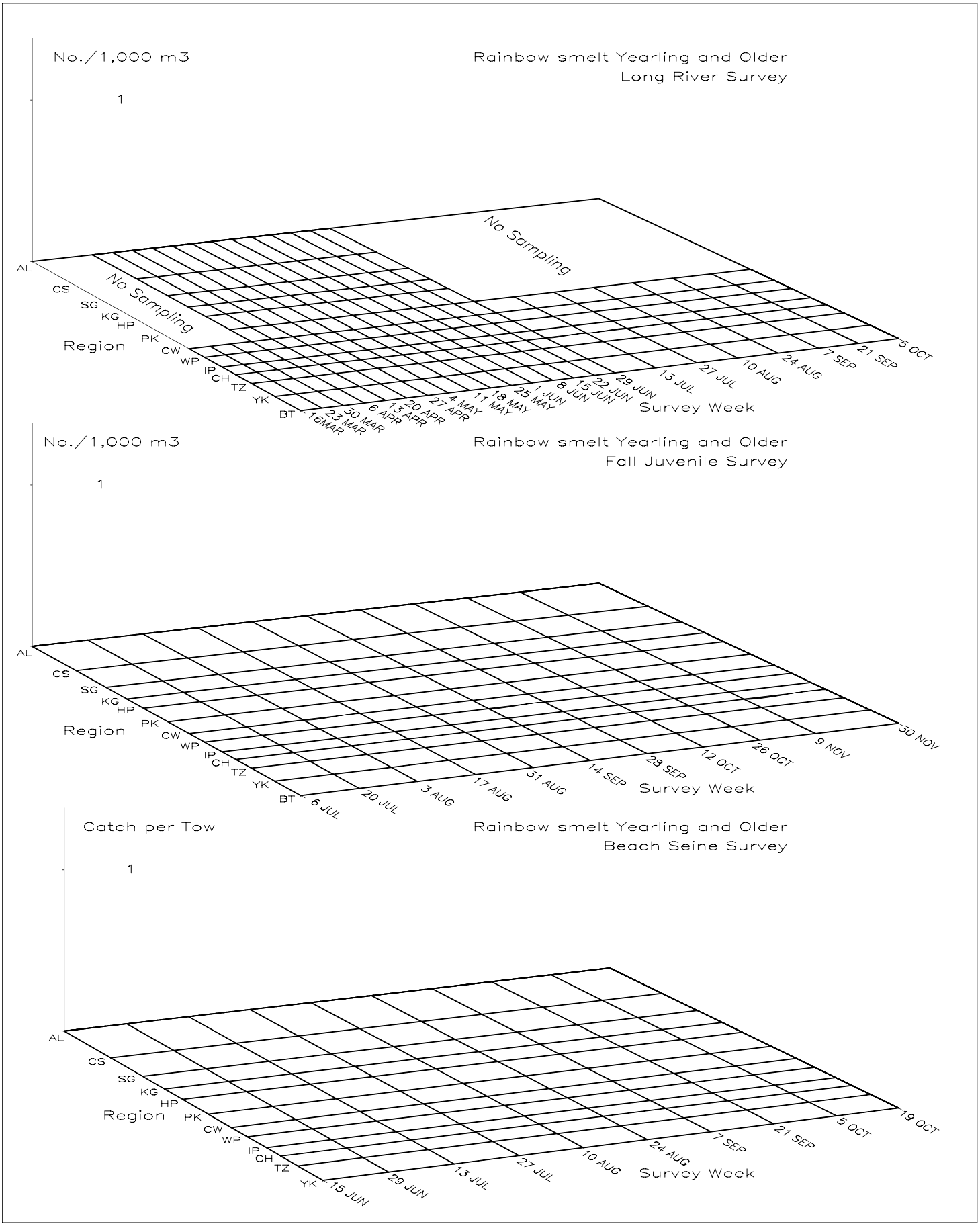


Figure 4–55. Spatiotemporal distribution of yearling and older rainbow smelt in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

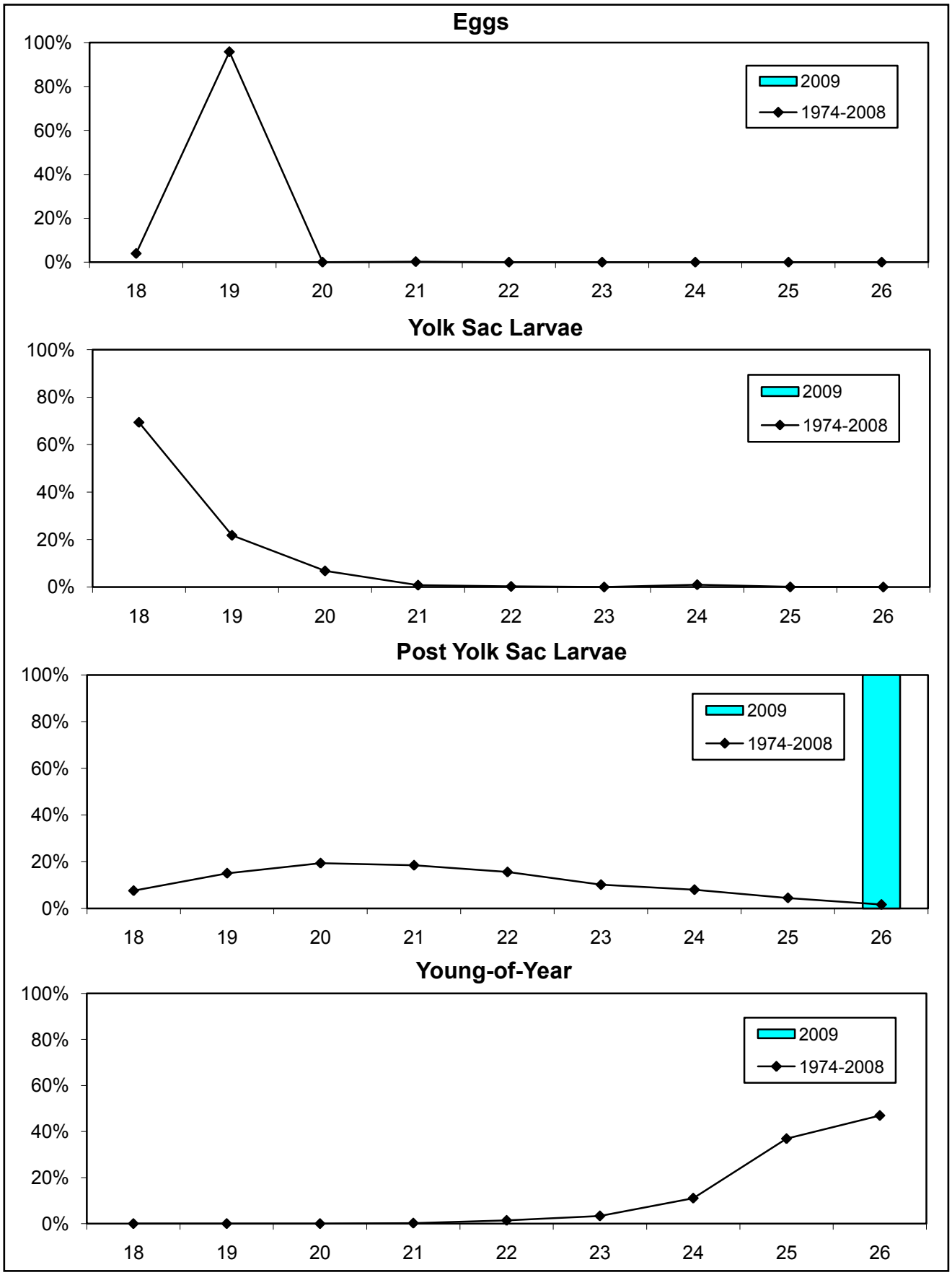


Figure 4-56. Temporal distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2009.

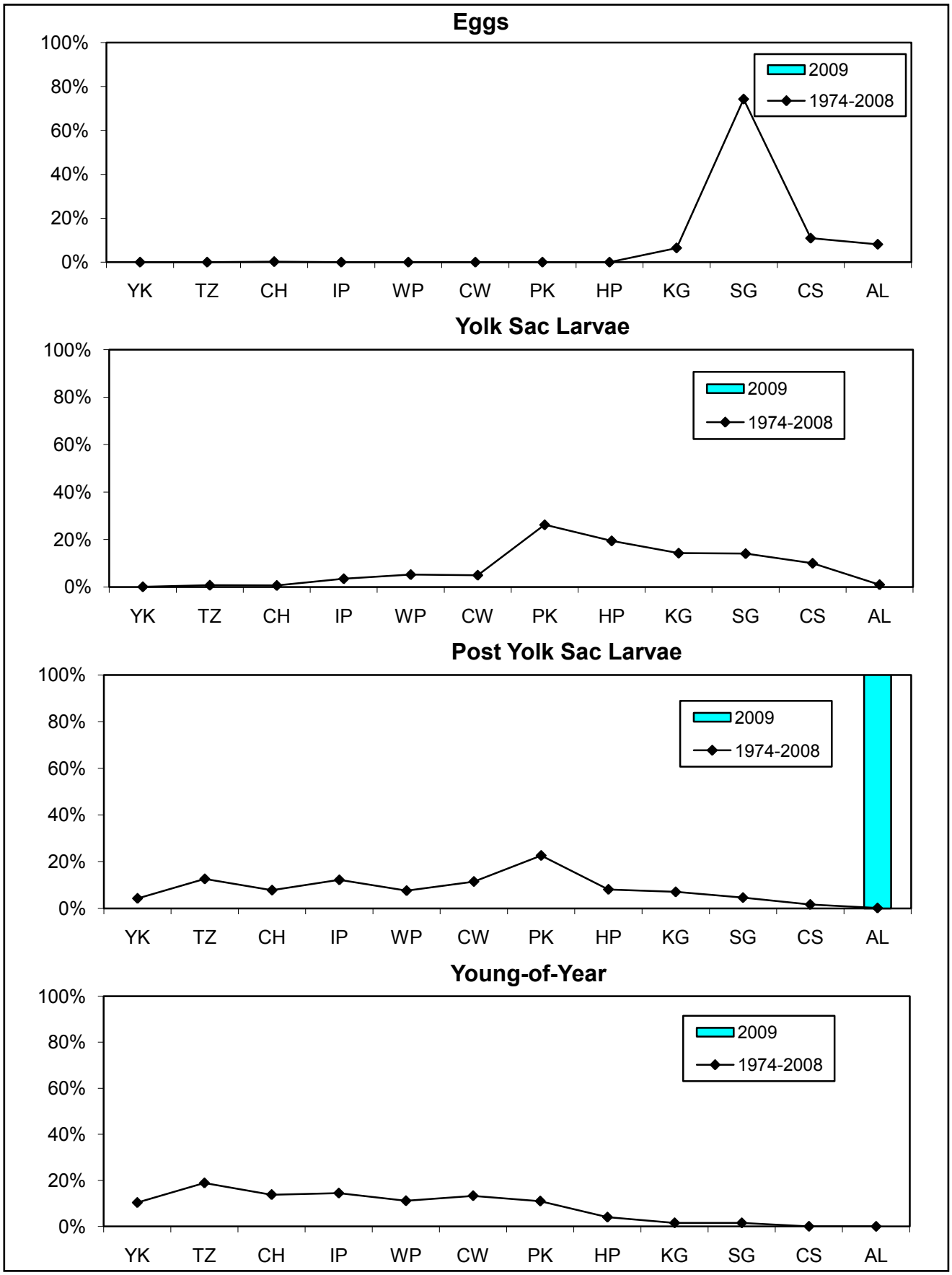


Figure 4-57. Geographic distribution indices for rainbow smelt collected during Long River surveys of the Hudson River estuary, 1974-2009.

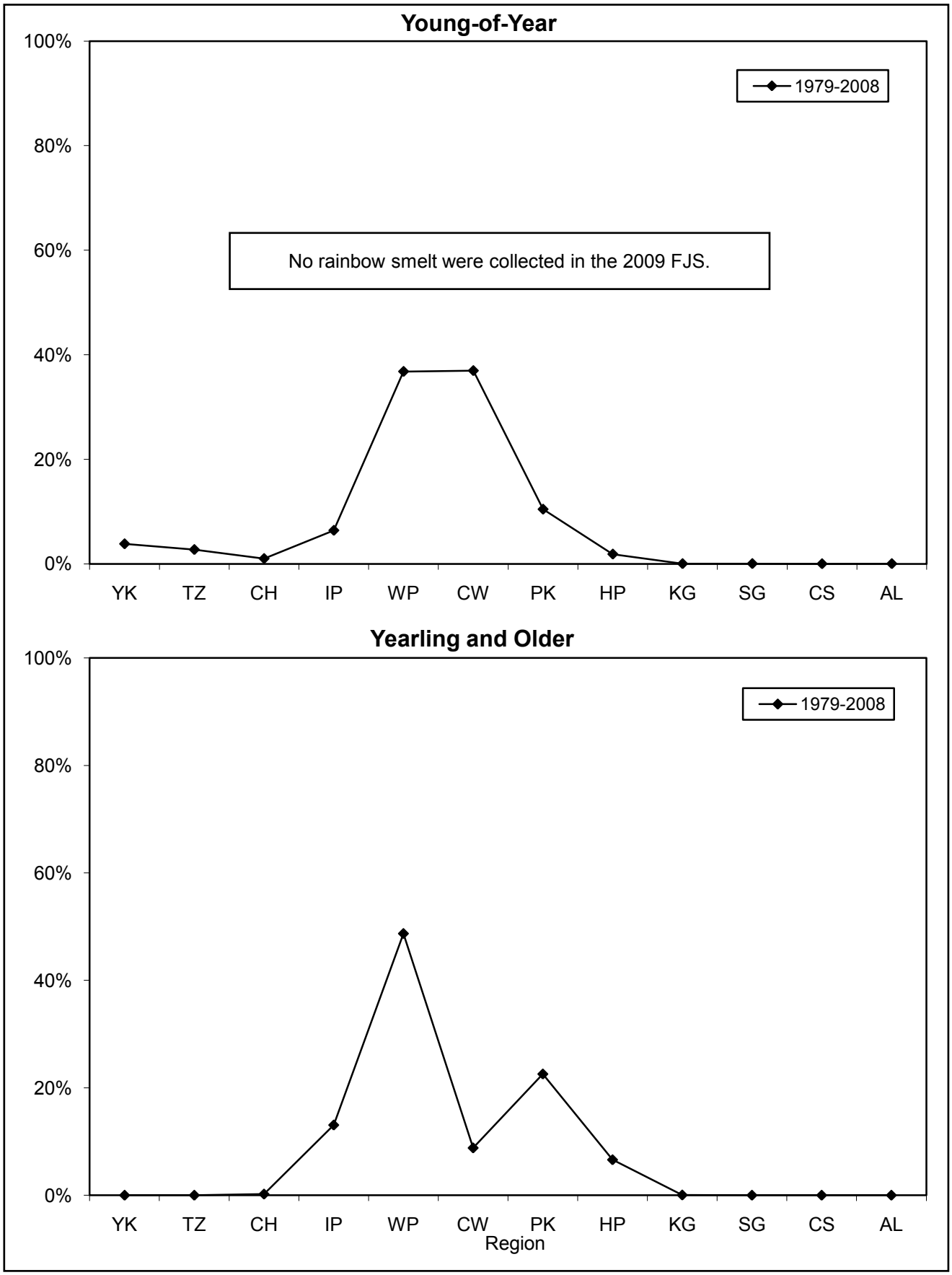


Figure 4-58. Geographic distribution indices for rainbow smelt collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2009.

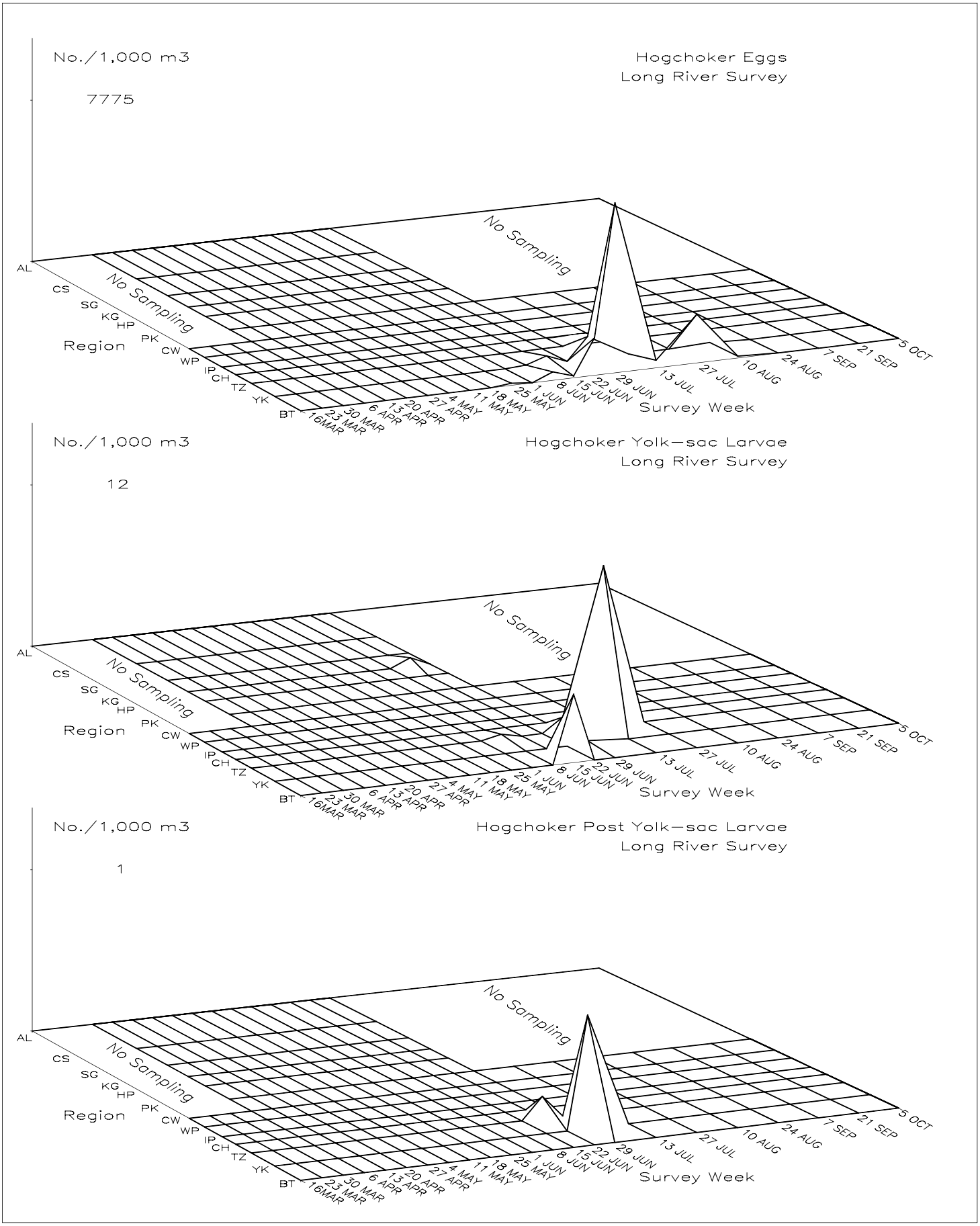


Figure 4–59. Spatiotemporal distribution of eggs, yolk–sac, and post yolk–sac larval hogchoker in the Hudson River estuary based on the 2009 Long River Survey.

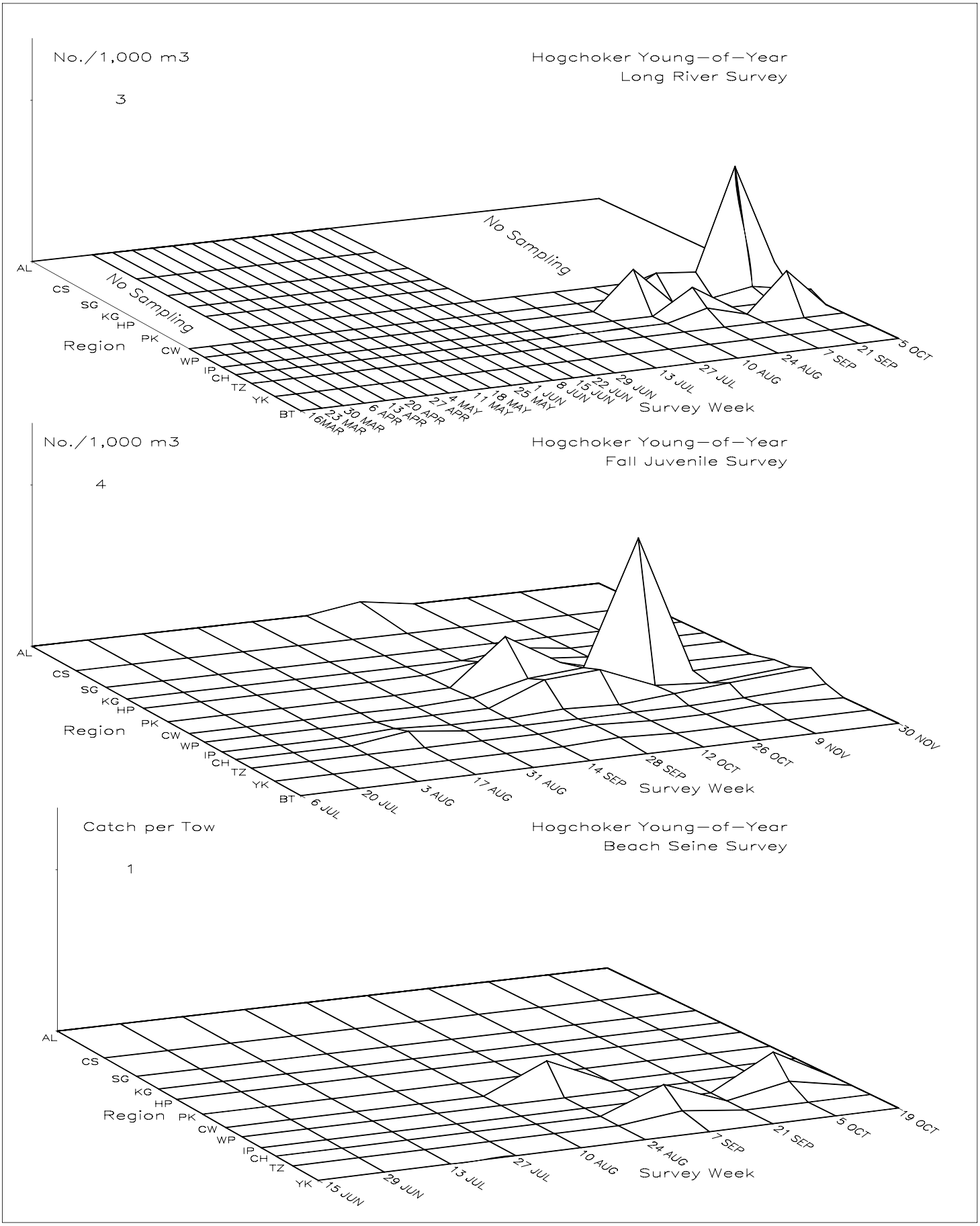


Figure 4–60. Spatiotemporal distribution of young–of–year hogchoker in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

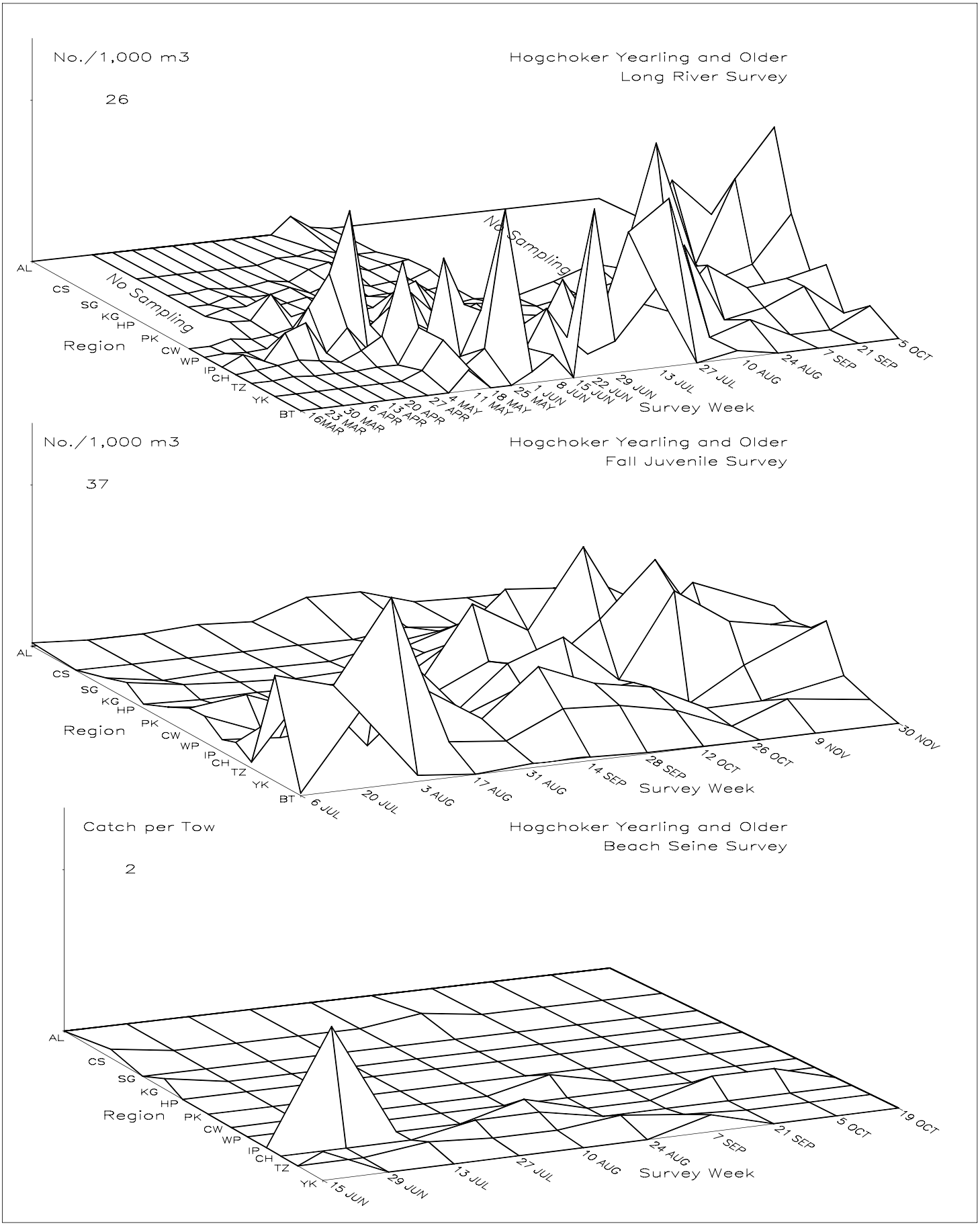


Figure 4–61. Spatiotemporal distribution of yearling and older hogchoker in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

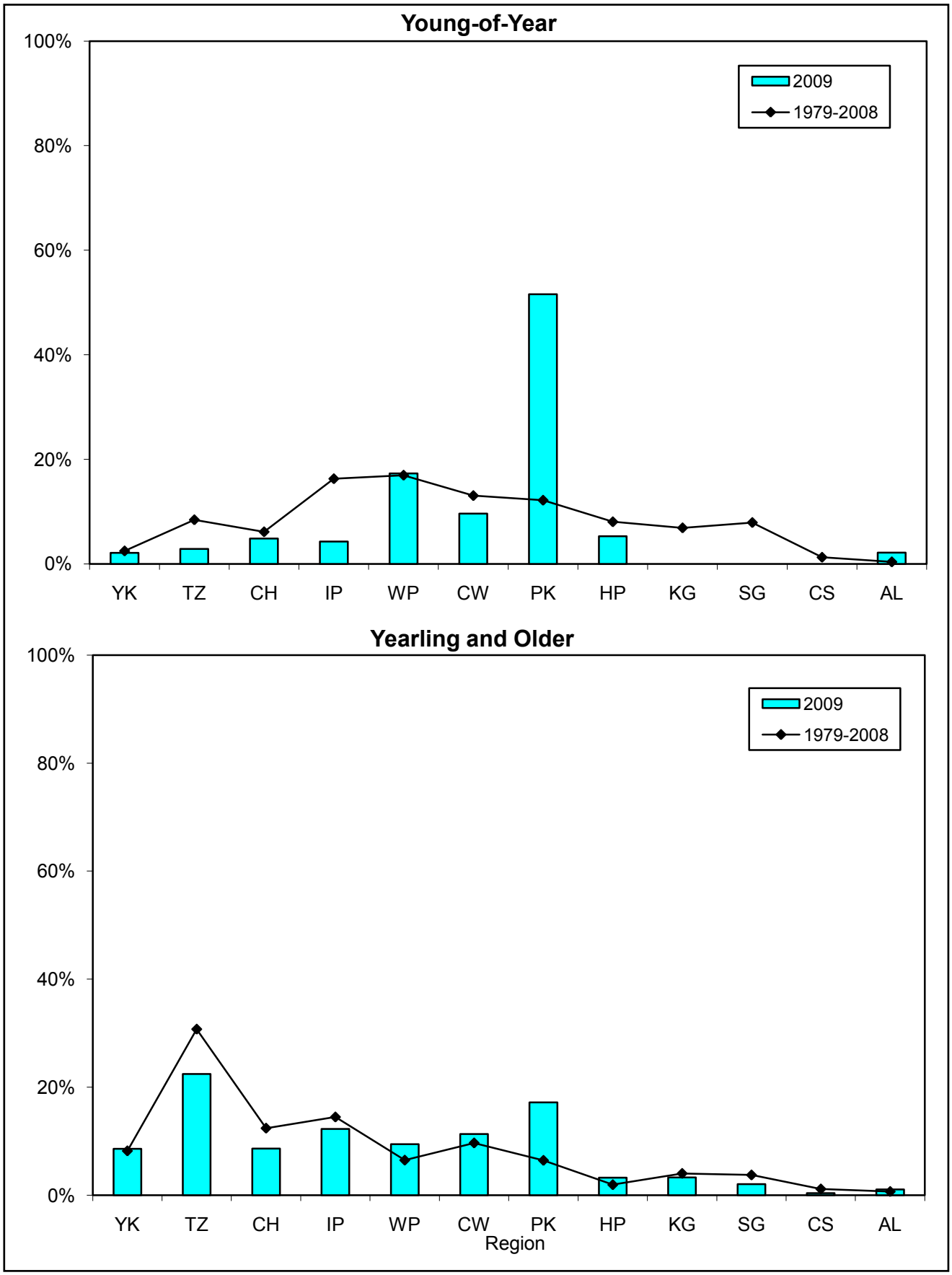


Figure 4-62. Geographic distribution indices for hogchoker collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2009.

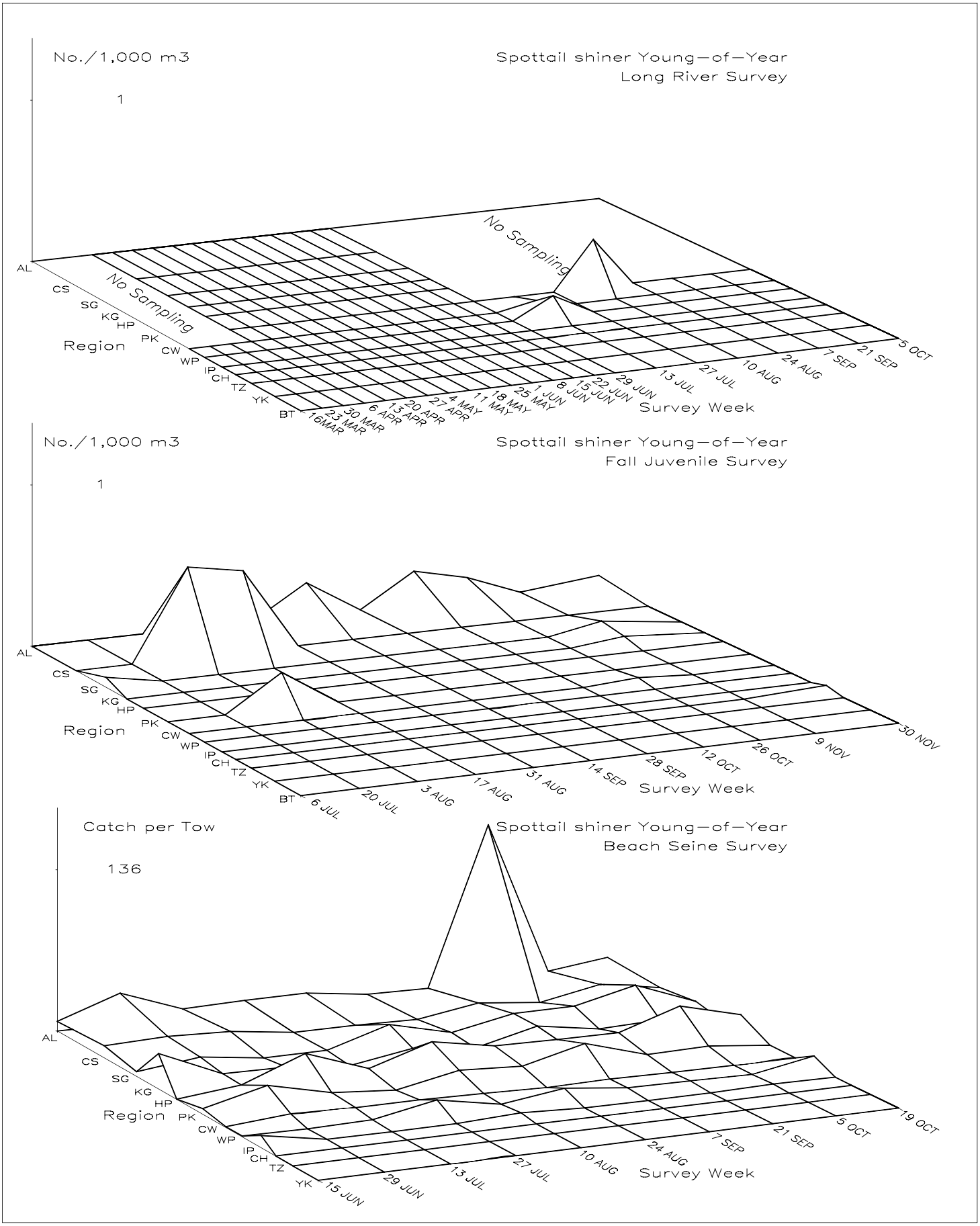


Figure 4–63. Spatiotemporal distribution of young–of–year spottail shiner in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

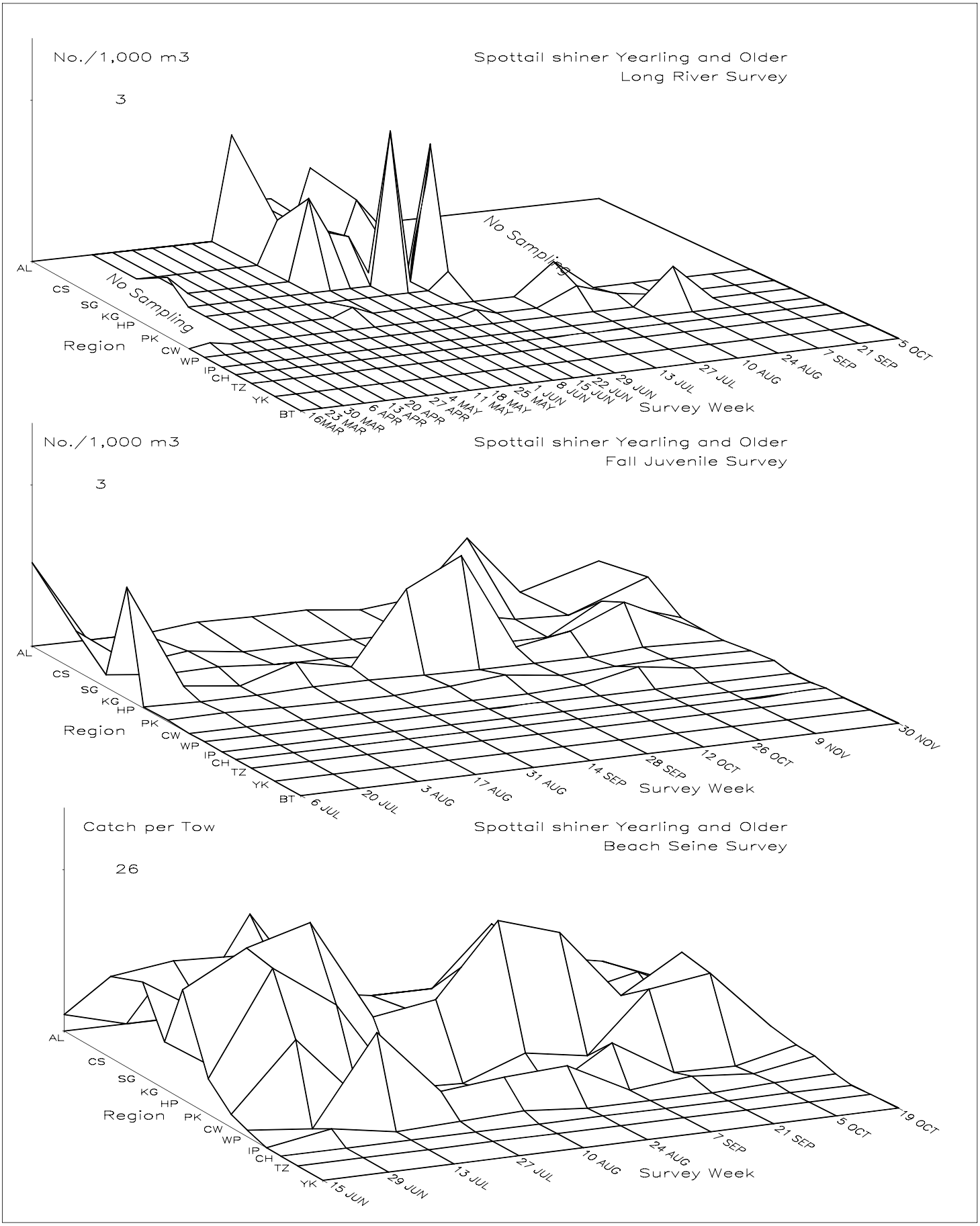


Figure 4–64. Spatiotemporal distribution of yearling and older spottail shiner in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

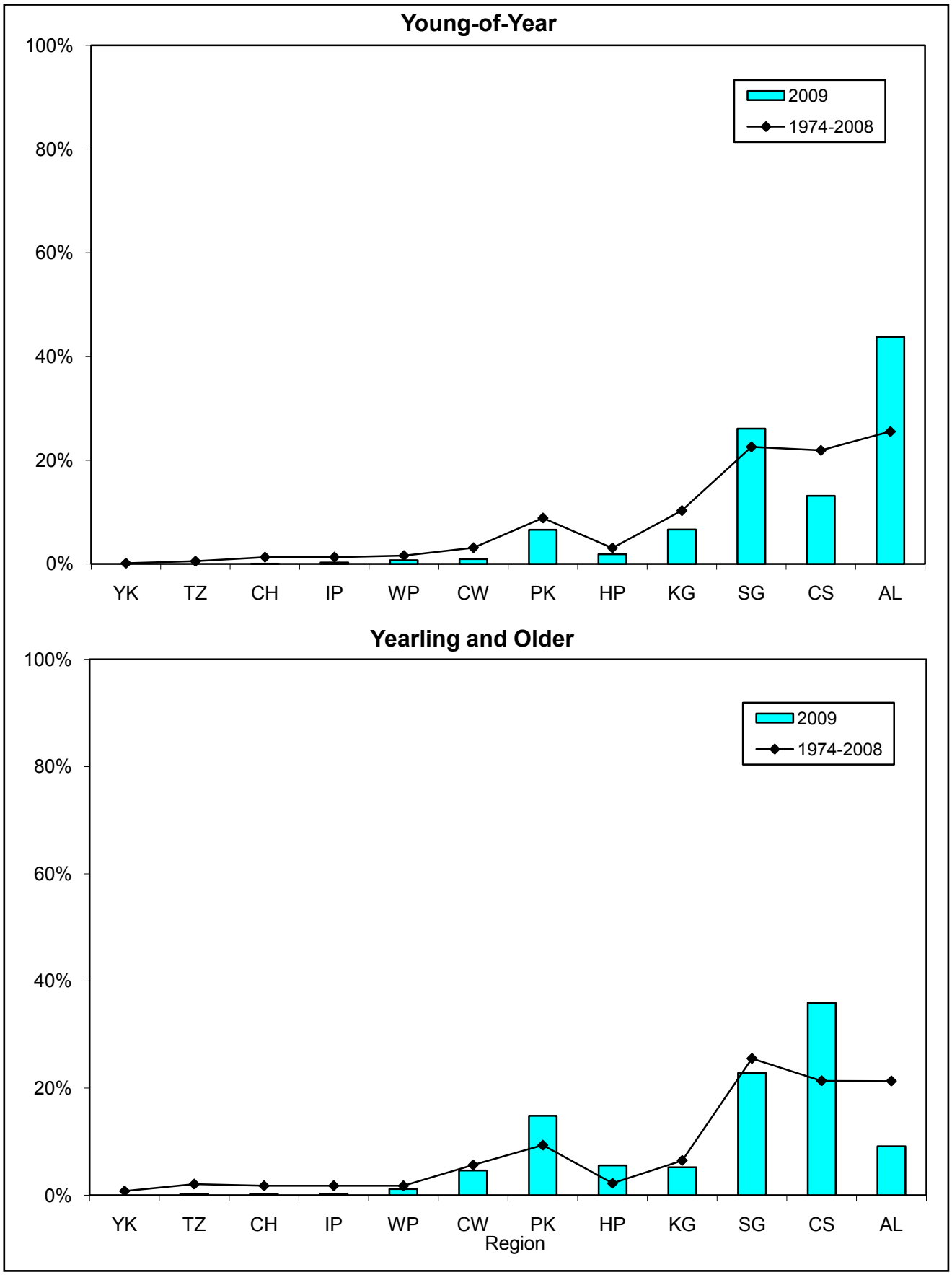


Figure 4-65. Geographic distribution indices for spottail shiner collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

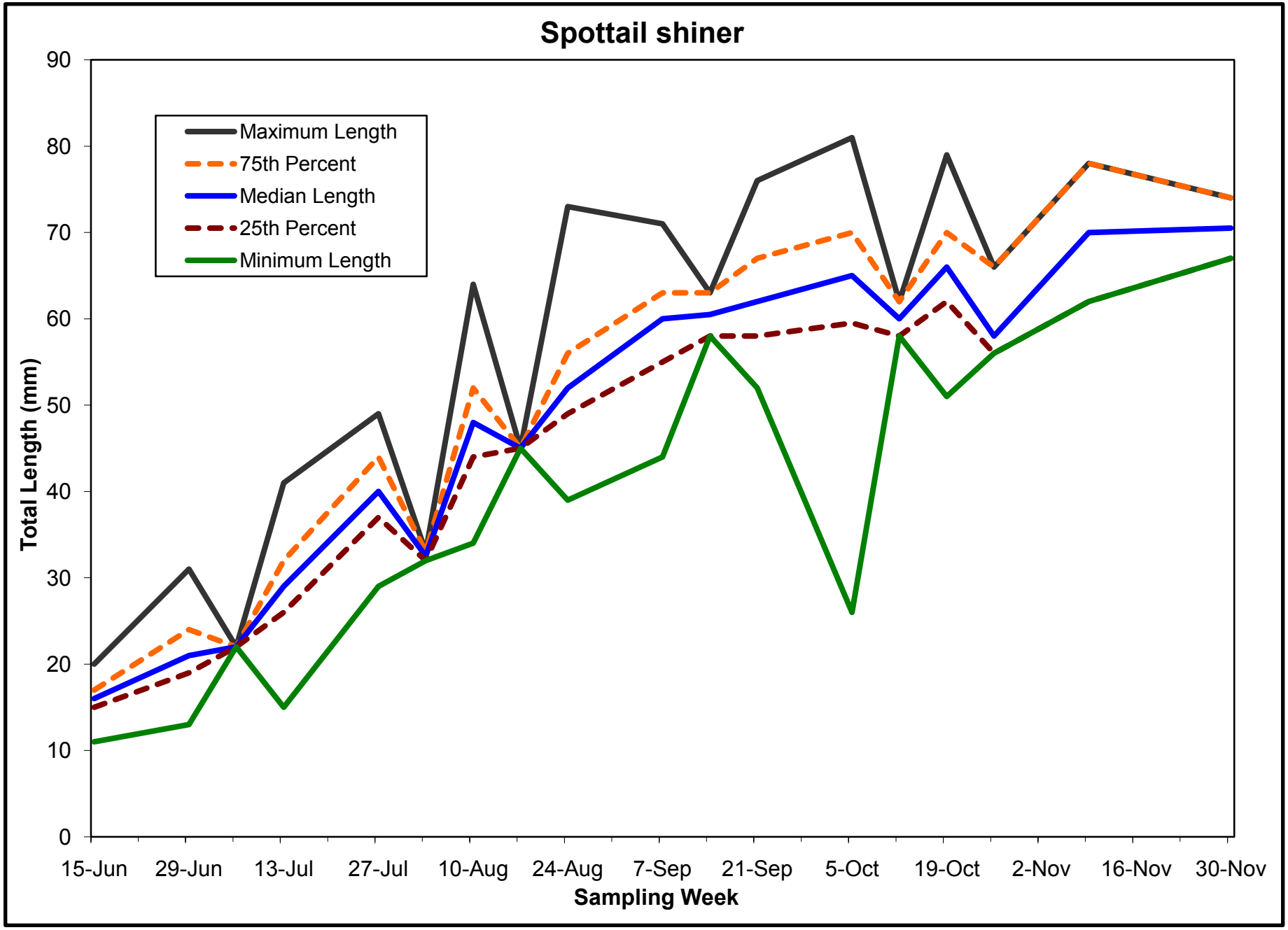


Figure 4-66. Weekly length statistics for young-of-year spottail shiner in the Hudson River estuary, 2009.

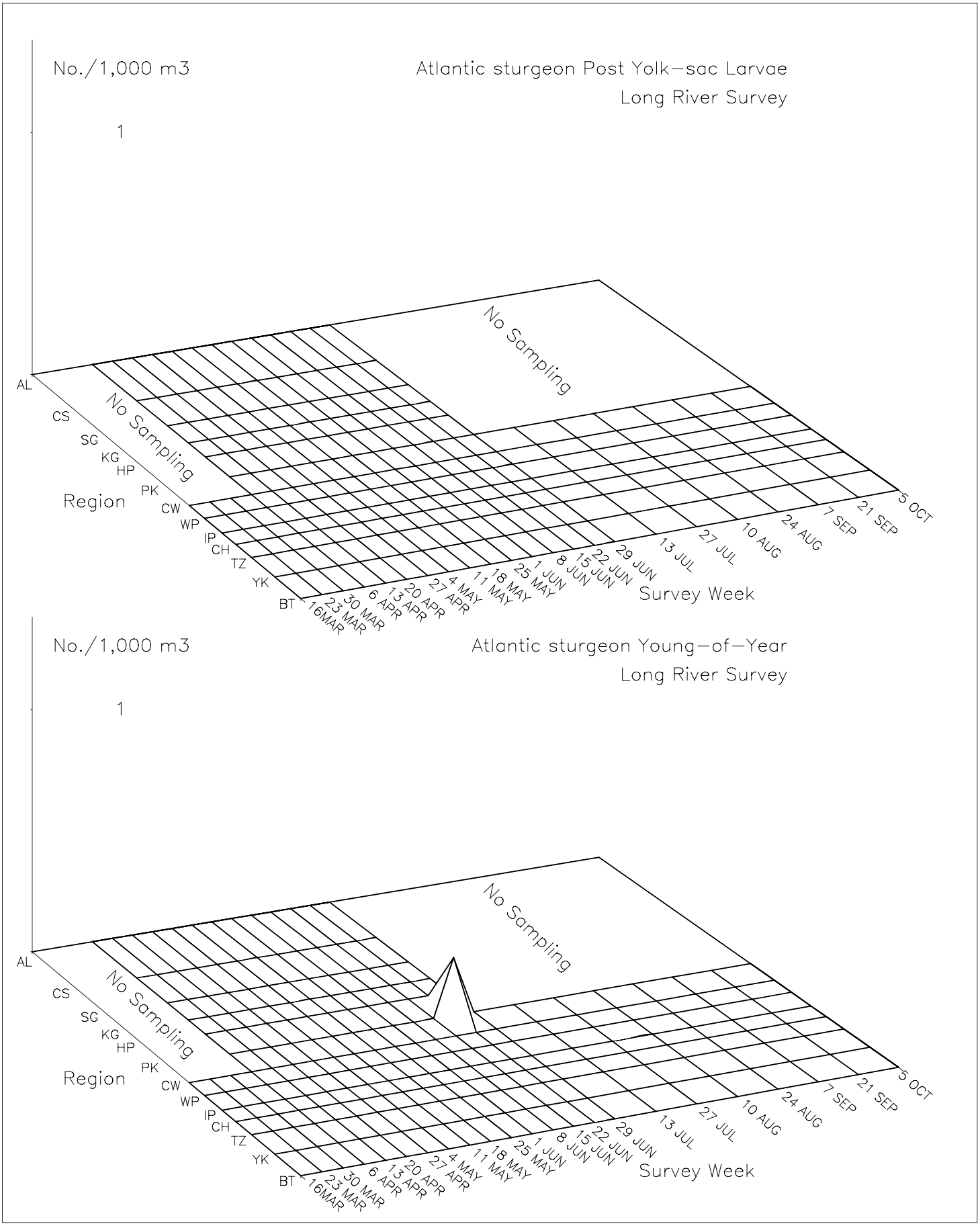


Figure 4–67. Spatiotemporal distribution of post yolk–sac larval and young–of–year Atlantic sturgeon in the Hudson River estuary based on the 2009 Long River Survey.

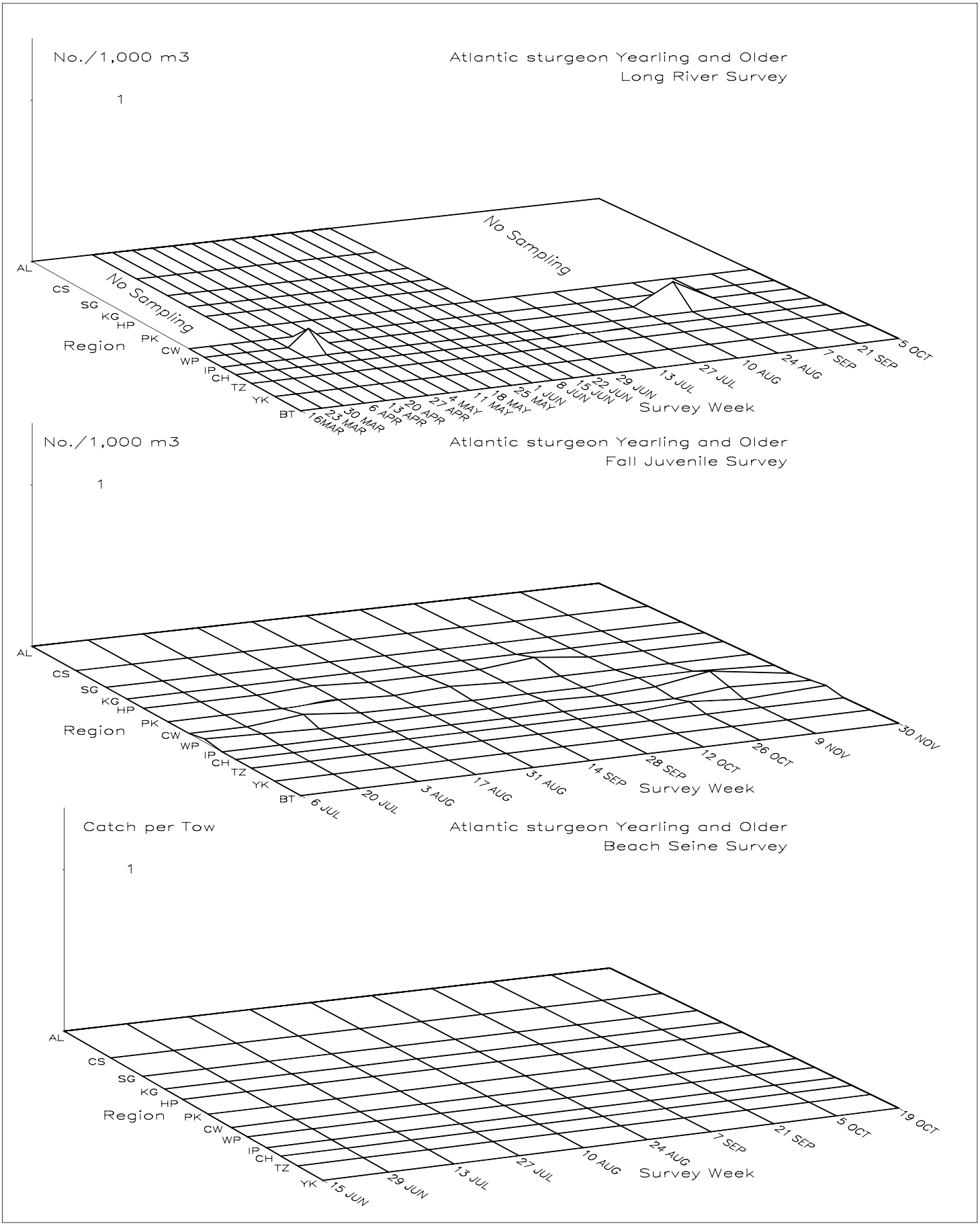


Figure 4–68. Spatiotemporal distribution of yearling and older Atlantic sturgeon in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

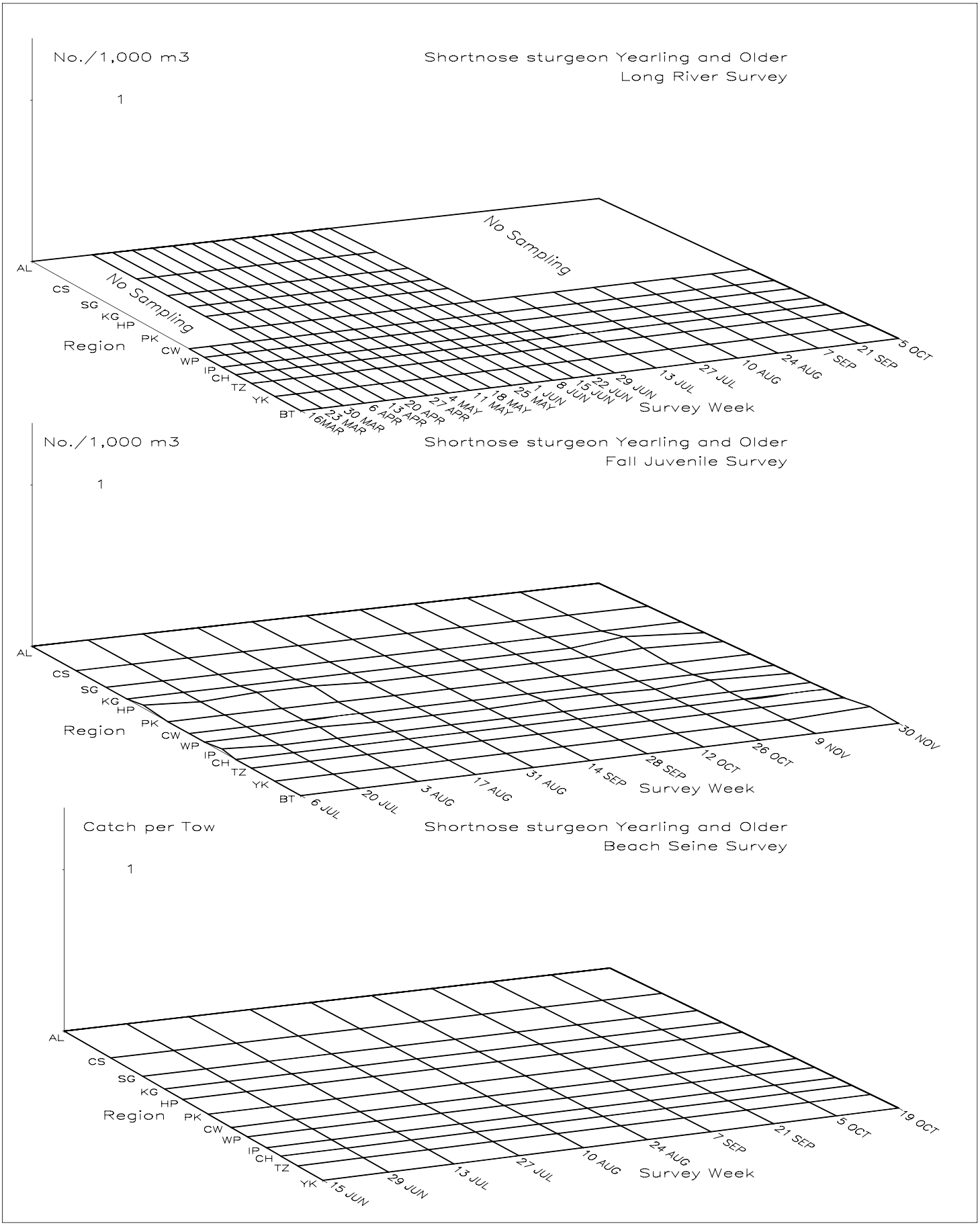


Figure 4–69. Spatiotemporal distribution of yearling and older shortnose sturgeon in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

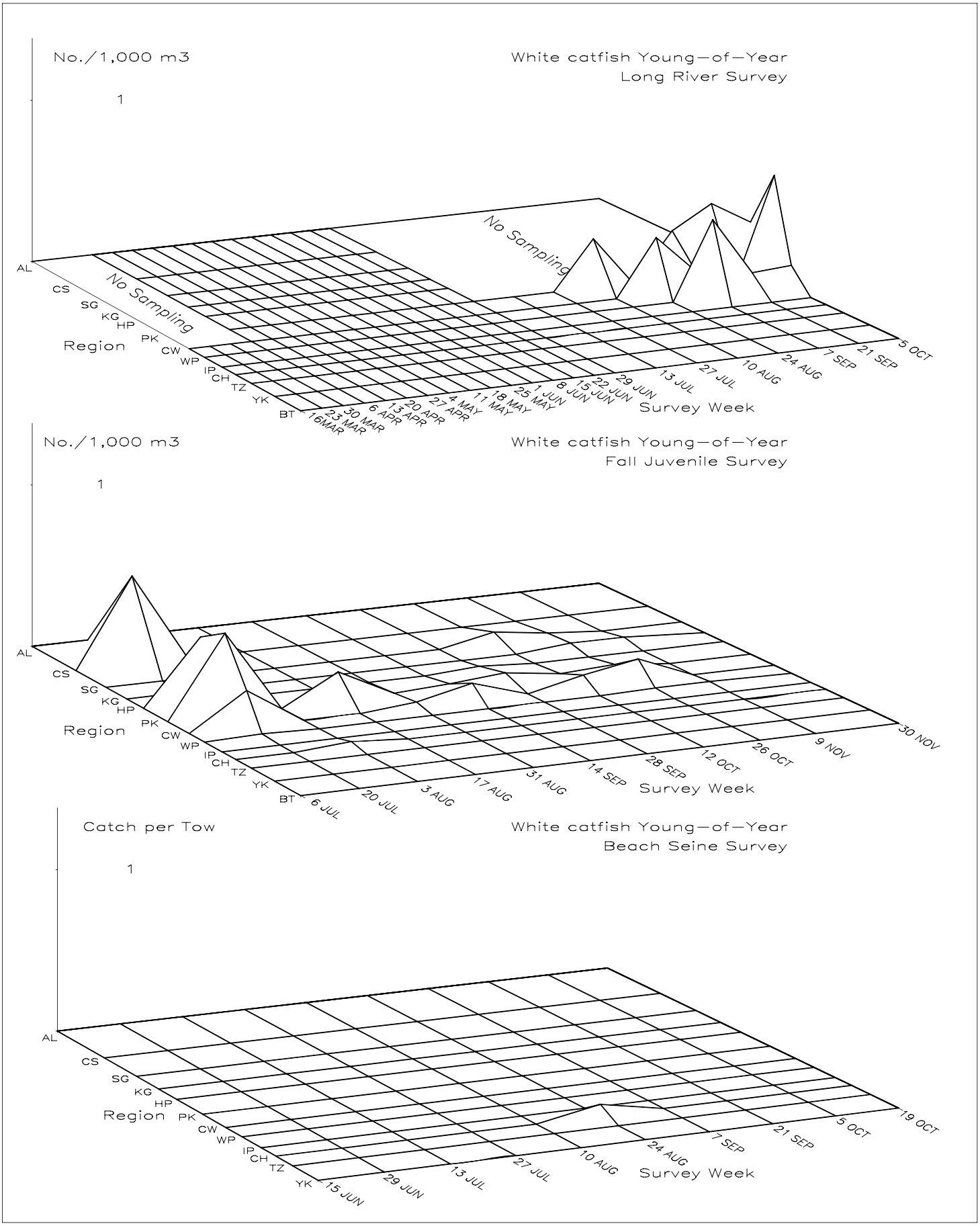


Figure 4–70. Spatiotemporal distribution of young–of–year white catfish in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

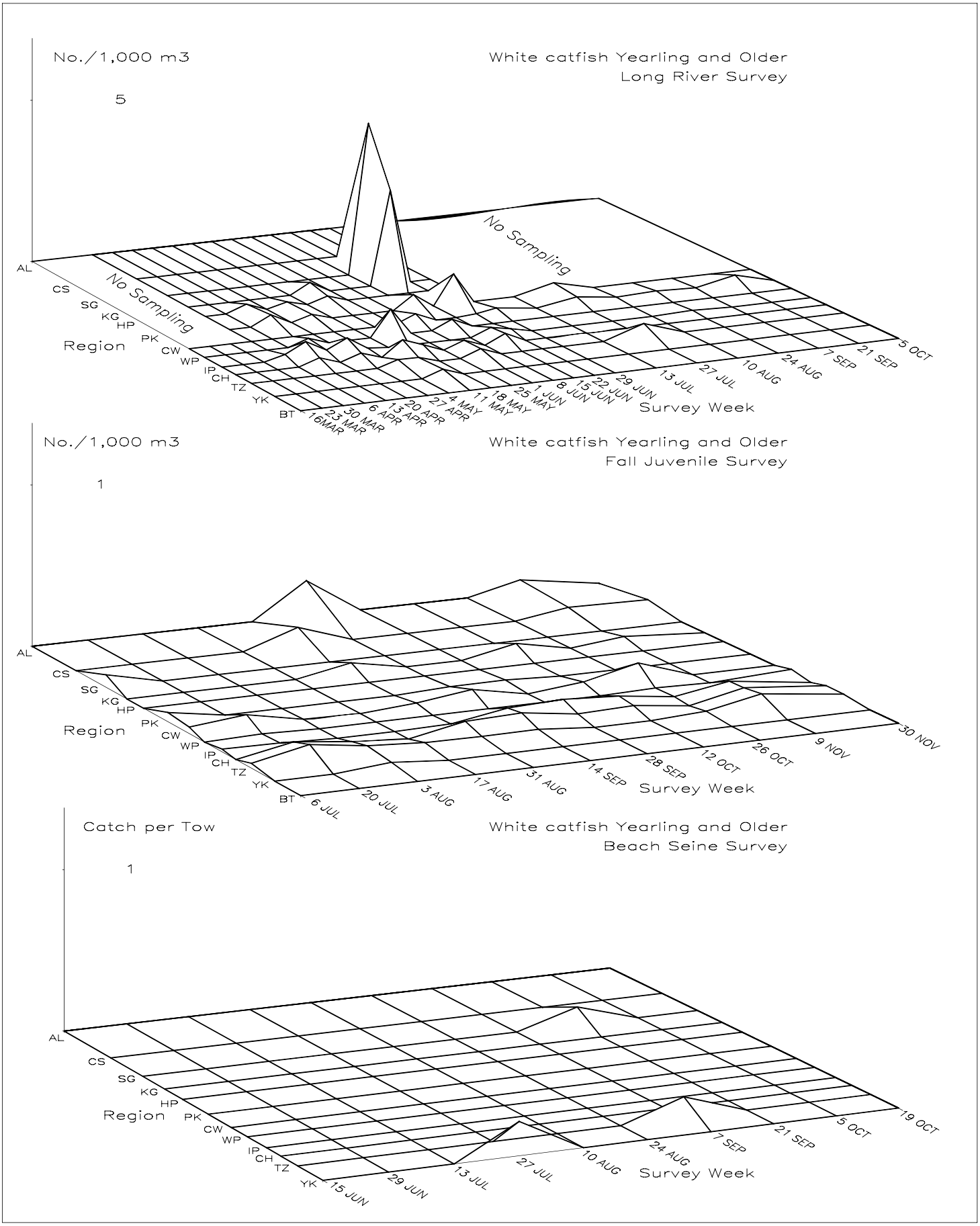


Figure 4–71. Spatiotemporal distribution of yearling and older white catfish in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

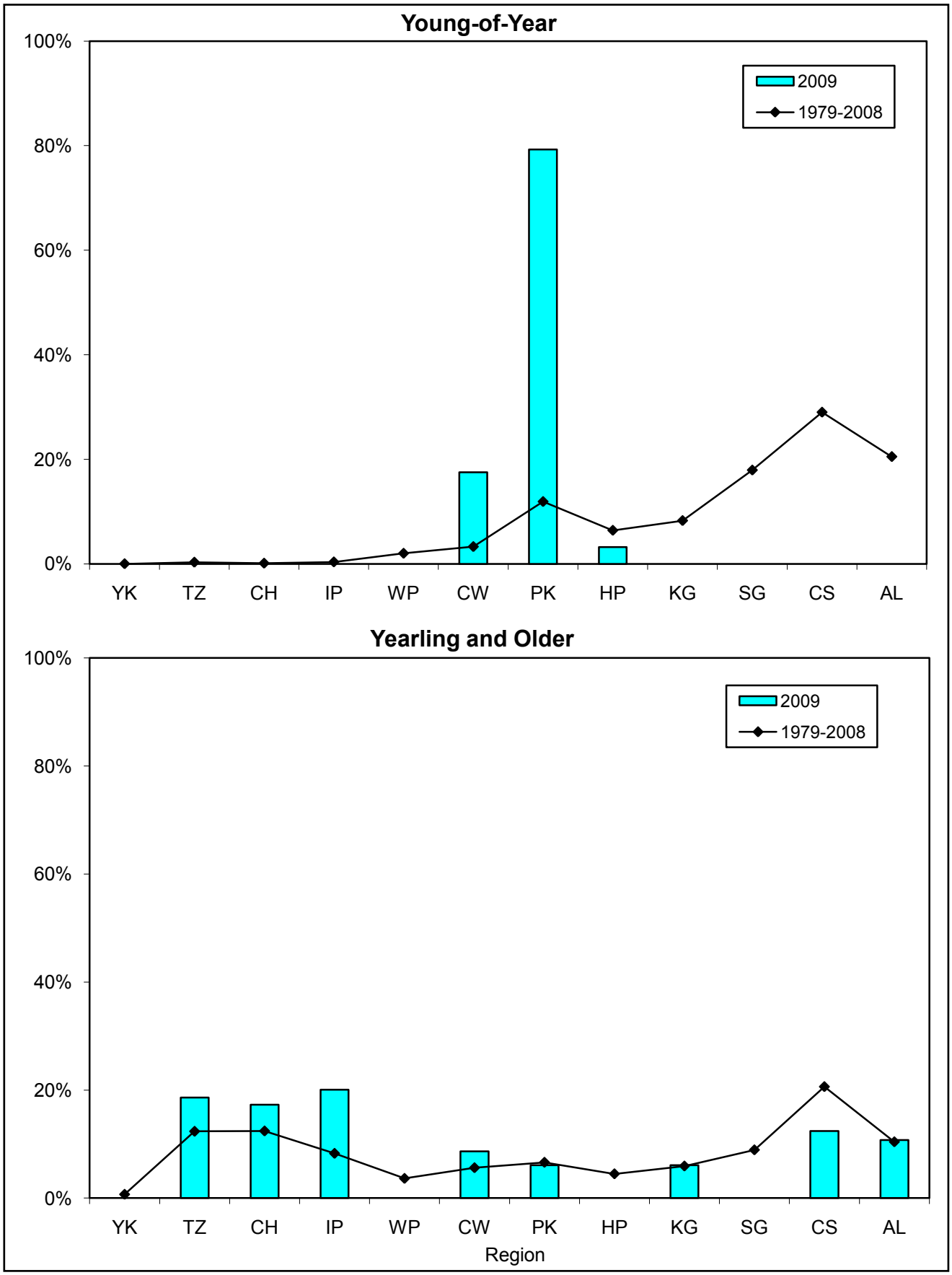


Figure 4-72. Geographic distribution indices for white catfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2009.

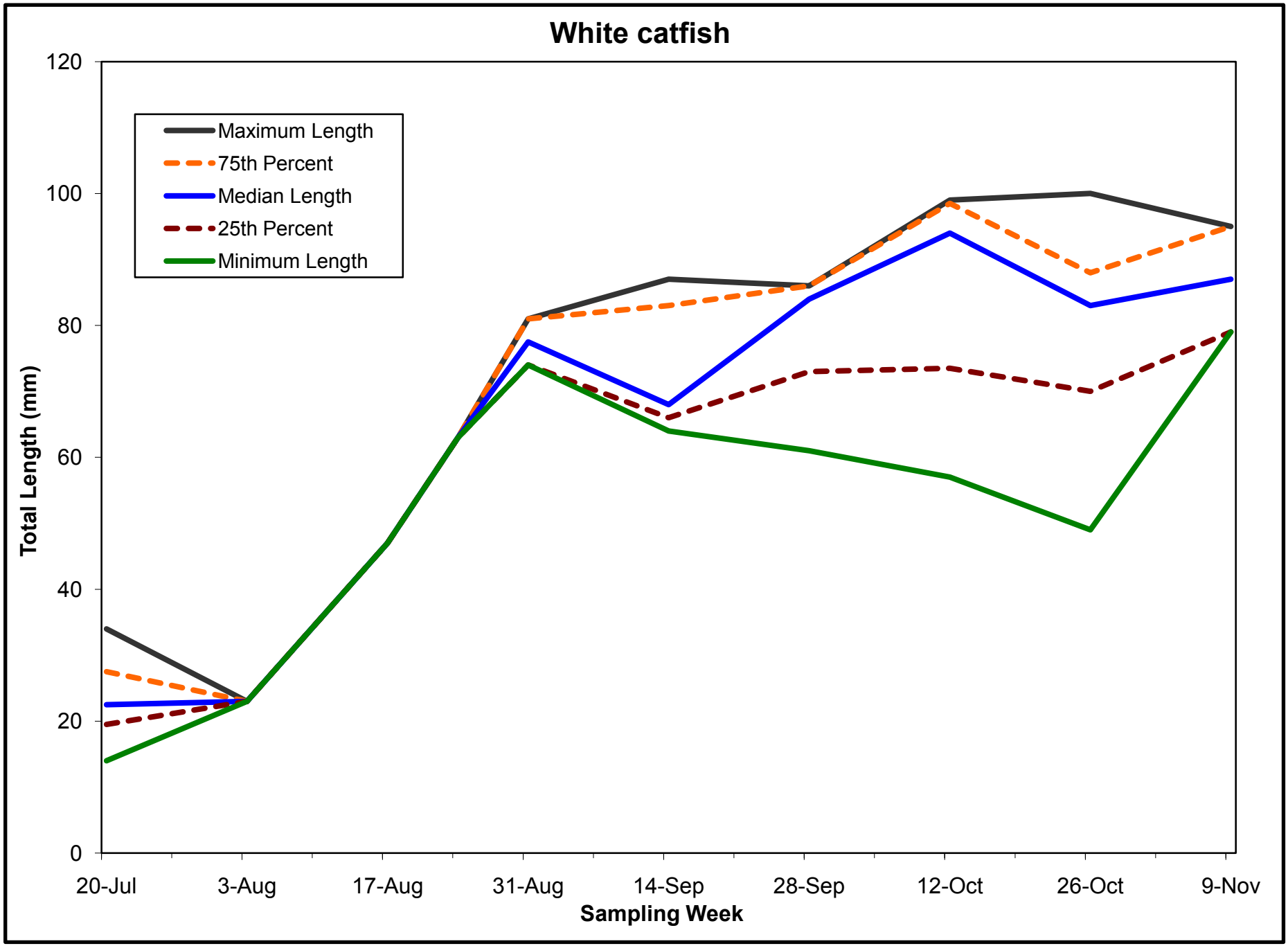


Figure 4-73. Weekly length statistics for young-of-year white catfish in the Hudson River estuary, 2009.

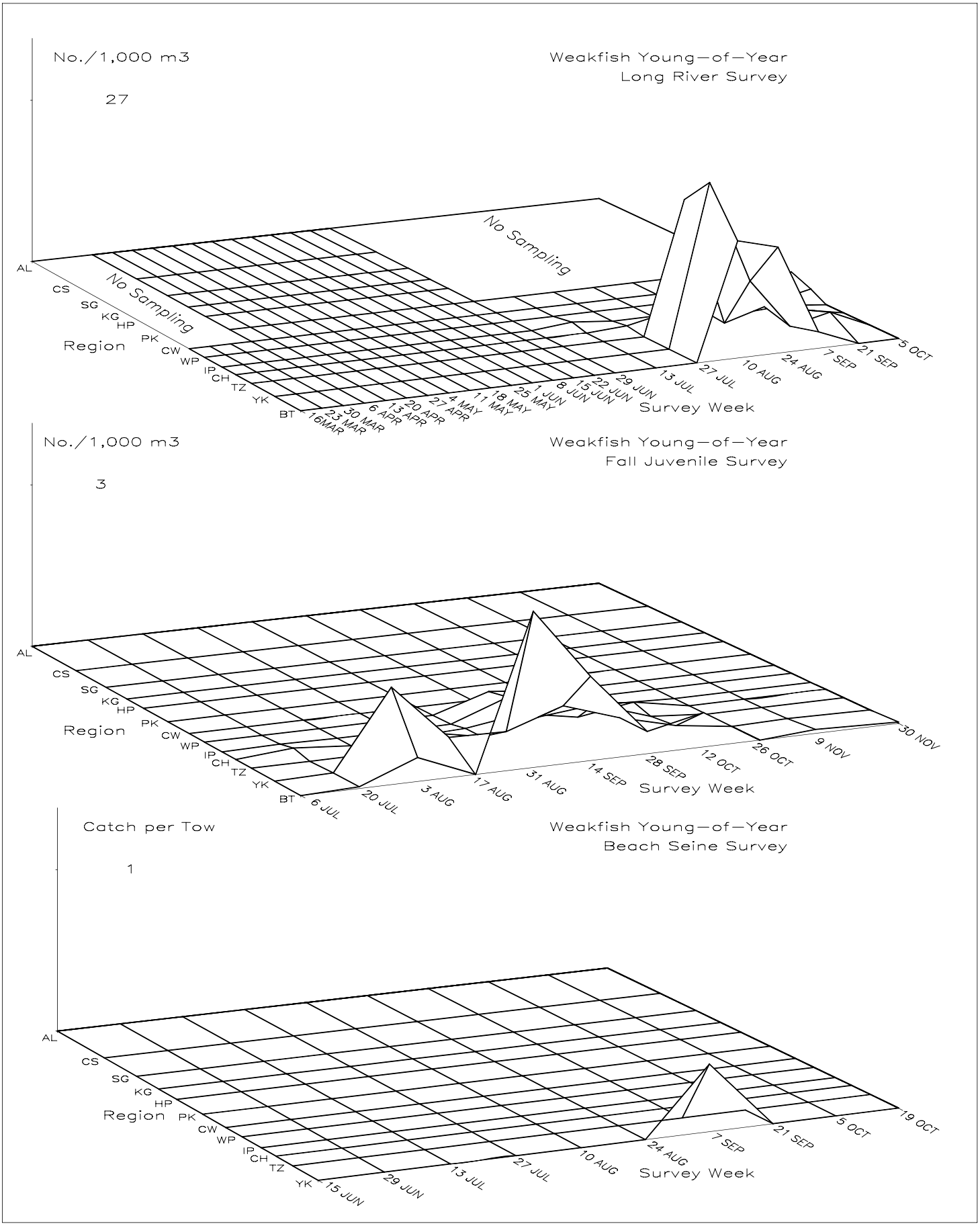


Figure 4–74. Spatiotemporal distribution of young–of–year weakfish in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

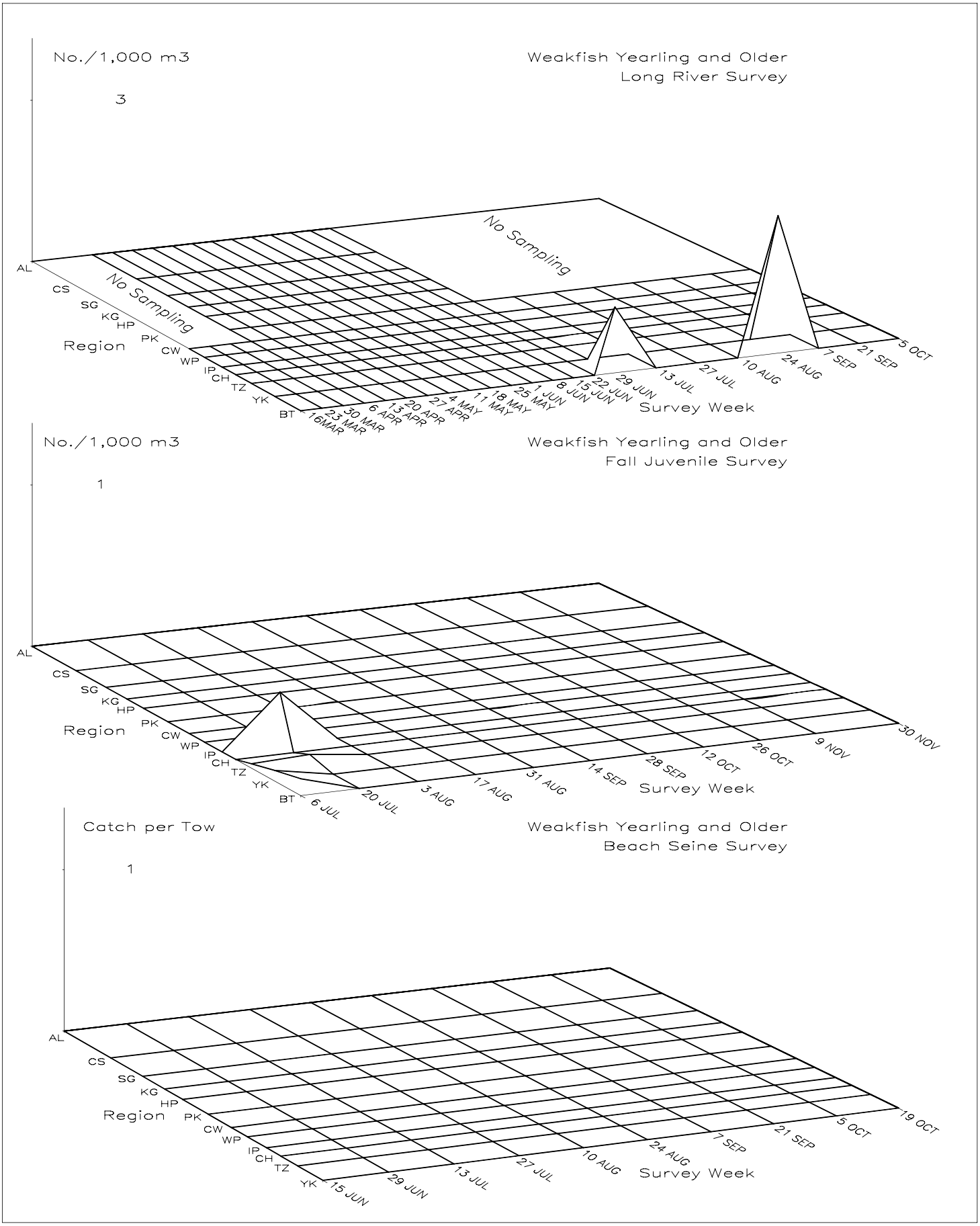


Figure 4–75. Spatiotemporal distribution of yearling and older weakfish in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

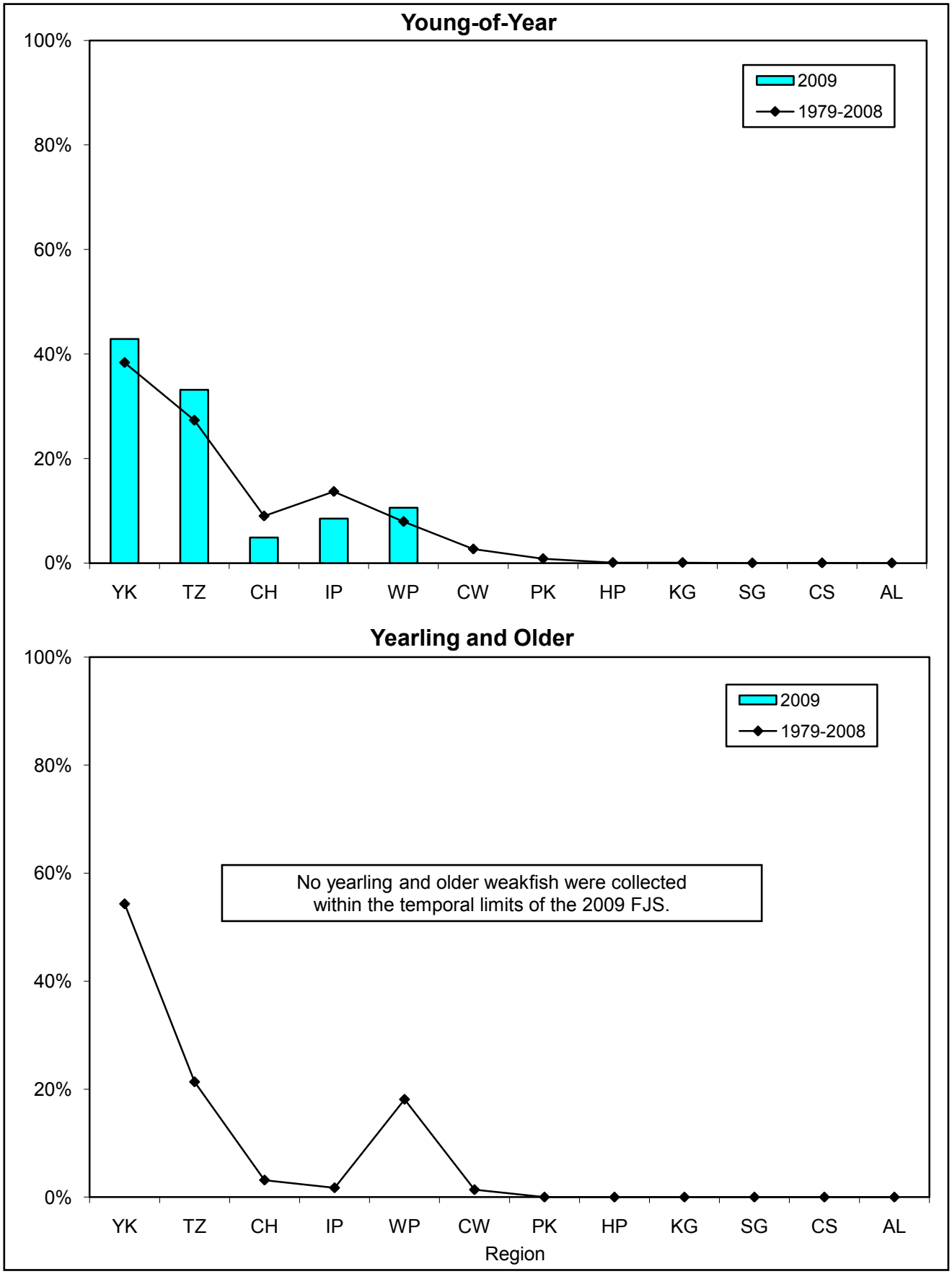


Figure 4-76. Geographic distribution indices for weakfish collected during Fall Juvenile surveys of the Hudson River estuary, 1979-2009.

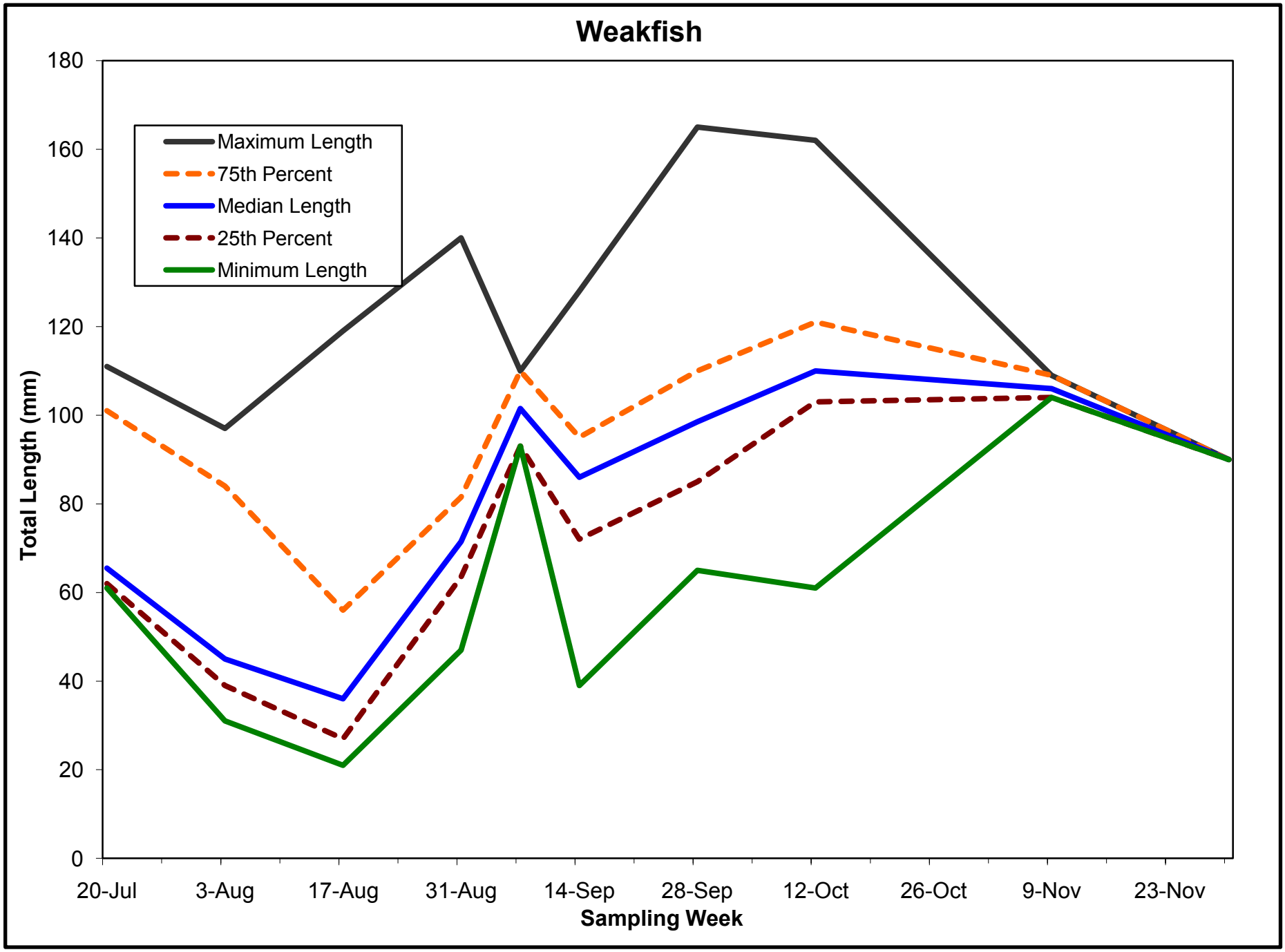


Figure 4-77. Weekly length statistics for young-of-year weakfish in the Hudson River estuary, 2009.

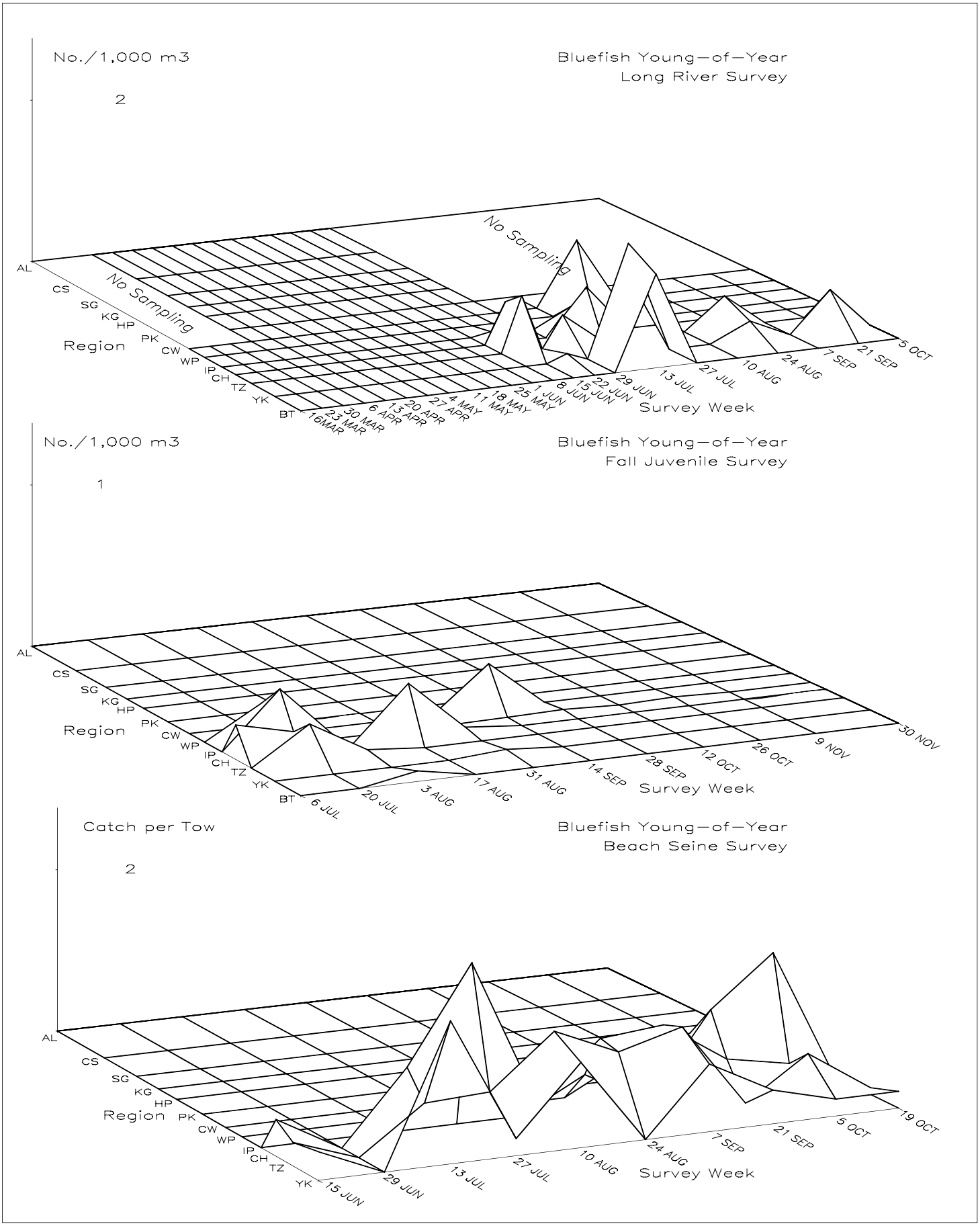


Figure 4–78. Spatiotemporal distribution of young–of–year bluefish in the Hudson River estuary based on the 2009 Long River, Fall Juvenile, and Beach Seine surveys.

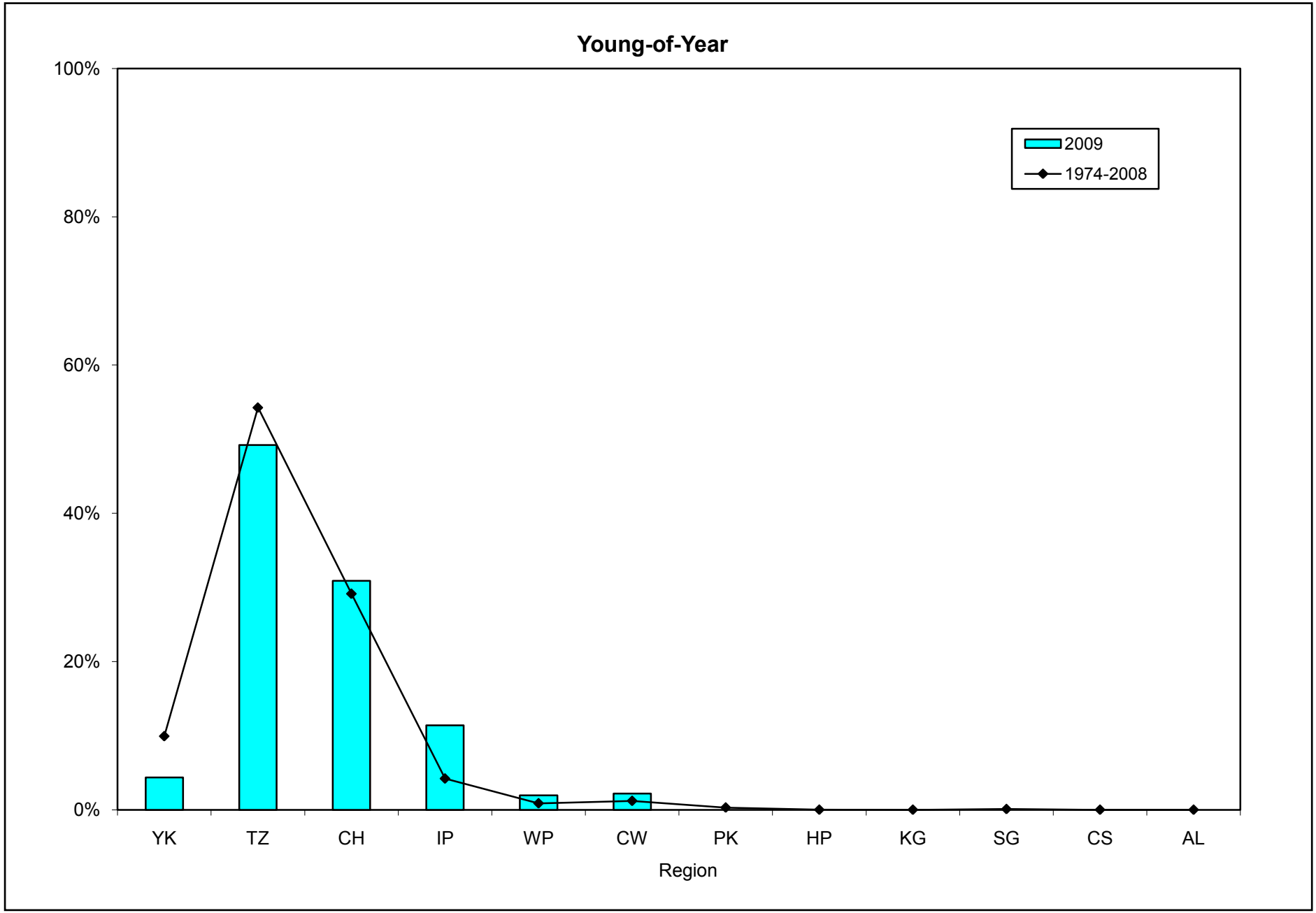


Figure 4-79. Geographic distribution indices for bluefish collected during Beach Seine surveys of the Hudson River estuary, 1974-2009.

Table 4-1 Species Composition of Fish Collected During Hudson River Studies from 1974 to 2009

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
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
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
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
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
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
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
Sea lamprey	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
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
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
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
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
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
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
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
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
Lined seahorse															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
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
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
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
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
White mullet	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
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
Freshwater																										
Black bullhead				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
Blacknose dace	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
Bluntnose minnow	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
Brook stickleback	X	X	X	X				X								X										
Brook trout				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
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
Brown trout			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
Central mudminnow			X				X							X												
Chain pickerel	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
Comely shiner	X						X													X						
Common shiner	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
Cutlips minnow	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
Fallfish		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
Freshwater drum																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
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
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
Grass carp																										
Grass pickerel	X				X												X									
Green sunfish		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
Logperch	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
Northern pike	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
Rainbow trout						X																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
Redfin pickerel	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
Rosyface shiner	X																									
Rudd																										
Satinfin shiner	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
Slimy sculpin																										
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
Spotfin shiner	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
Swallowtail shiner																			X						X	X
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
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	
White bass				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
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
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
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
Marine																										
American sandlance													X	X	X	X	X	X	X		X	X	X		X	X
Ammodytes sp.		X	X	X	X	X	X	X				X														
Atlantic cod							X							X	X											
Atlantic croaker			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
Atlantic mackerel															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
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
Atlantic seasnail																										
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
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
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
Cobia																										
Conger eel						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
Cunner									X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
Cusk																										
Feather blenny																									X	X
Fourbeard rockling						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
Goosefish																		X	X							
Gray snapper							X					X	X	X				X								
Grubby													X		X	X	X	X	X	X	X	X	X	X	X	X
Gulf Stream flounder																								X	X	X
Harvestfish																										X
Hightail goby																	X									X
Inshore lizardfish	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
Moonfish			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
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
Northern puffer		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
Northern stargazer	X						X		X	X	X	X			X		X	X	X	X	X	X	X	X	X	X
Orangespotted filefish													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
Oyster toadfish																			X			X	X		X	X
Permit																			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
Rock gunnel			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
Scup	X																					X				
Seaboard goby		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
Silver perch	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
Spanish mackerel																	X	X		X	X					
Speckled worm eel					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
Spotfin butterflyfish									X			X										X				
Spotfin mojarra									X												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
Striped anchovy		X				X			X			X							X	X	X	X	X	X	X	X
Striped burrfish													X													
Striped cuskeel							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				
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
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
Tautog		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
Windowpane	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
Witch flounder																							X			
Yellowtail flounder	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
All Categories																										
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

Table 4-1 (Continued)

Common Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Anadromous										
Alewife	X	X	X	X	X	X	X	X	X	X
American shad	X	X	X	X	X	X	X	X	X	X
Atlantic sturgeon	X	X	X	X	X	X	X	X	X	X
Atlantic tomcod	X	X	X	X	X	X	X	X	X	X
Blueback herring	X	X	X	X	X	X	X	X	X	X
Hickory shad						X			X	
Rainbow smelt	X	X	X				X	X		X
Sea lamprey							X	X	X	
Striped bass	X	X	X	X	X	X	X	X	X	X
Total	7	7	7	6	6	7	8	8	8	7
Catadromous										
American eel	X	X	X	X	X	X	X	X	X	X
Total	1	1	1	1	1	1	1	1	1	1
Estuarine										
Atlantic silverside	X	X	X	X	X	X	X	X	X	X
Banded killifish	X	X	X	X	X	X	X	X	X	X
Fat sleeper										
Fourspine stickleback	X	X	X	X	X	X	X	X	X	X
Hogchoker	X	X	X	X	X	X	X	X	X	X
Inland silverside	X	X	X	X	X	X	X	X	X	X
Lined seahorse	X	X	X	X			X		X	
Mummichog	X	X	X	X	X	X	X	X	X	X
Northern pipefish	X	X	X	X	X	X	X	X	X	X
Shortnose sturgeon	X	X	X	X	X	X	X	X	X	X
Threespine stickleback		X	X			X		X		X
White catfish	X	X	X	X	X	X	X	X	X	X
White mullet			X	X			X	X	X	
White perch	X	X	X	X	X	X	X	X	X	X
Total	11	12	13	12	10	11	12	12	12	11
Freshwater										
Black bullhead				X						
Black crappie	X	X	X	X	X	X	X	X	X	X
Blacknose dace					X					X
Bluegill	X	X	X	X	X	X	X	X	X	X
Bluntnose minnow	X			X	X			X		X
Bridle shiner										
Brook silverside	X		X	X	X	X	X	X	X	
Brook stickleback										
Brook trout										
Brown bullhead	X	X	X	X	X	X	X	X	X	X
Brown trout										
Carp	X	X	X	X	X	X	X	X	X	X

Table 4-1 (Continued)

Common Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Central mudminnow										
Chain pickerel	X		X		X	X			X	X
Channel catfish	X	X	X	X	X	X	X	X	X	X
Comely shiner										
Common shiner		X								X
Creek chub				X	X					
Cutlips minnow									X	
Eastern mudminnow										
Emerald shiner	X	X	X	X	X	X	X	X	X	X
Fallfish				X	X	X	X		X	X
Fathead minnow	X				X		X			X
Freshwater drum	X	X	X	X	X	X	X	X	X	X
Gizzard shad	X	X	X	X	X	X	X	X	X	X
Golden shiner	X	X	X	X	X	X	X	X	X	X
Goldfish	X	X	X	X	X	X	X	X	X	X
Grass carp						X				X
Grass pickerel										
Green sunfish				X						
Largemouth bass	X	X	X	X	X	X	X	X	X	X
Logperch		X	X	X	X	X	X	X	X	X
Longear sunfish								X		
Longnose dace										
Margined madtom										
Mimic shiner										
Northern hog sucker	X		X	X	X	X		X	X	
Northern pike	X	X		X	X		X	X	X	
Pugnose shiner										
Pumpkinseed	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
Redfin pickerel	X			X	X				X	X
Rock bass	X	X	X	X	X	X	X		X	X
Rosyface shiner										
Rudd					X				X	X
Satinfin shiner		X	X	X	X	X	X	X	X	X
Shield darter									X	
Silvery minnow	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
Spotfin shiner	X	X	X	X	X	X	X	X	X	X
Spottail shiner	X	X	X	X	X	X	X	X	X	X
Swallowtail shiner		X		X						
Tessellated darter	X	X	X	X	X	X	X	X	X	X
Tiger muskellunge										
Trout perch				X					X	
Walleye	X	X	X	X	X	X	X	X	X	X
White bass										
White crappie										
White sucker	X	X	X	X	X	X	X	X	X	X
Yellow bullhead										

Table 4-1 (Continued)

Common Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Yellow perch	X	X	X	X	X	X	X	X	X	X
Total	29	27	28	35	35	29	28	28	34	34
Marine										
American sandlance	X	X	X	X	X	X	X	X	X	X
Ammodytes sp.										
Atlantic cod				X		X			X	X
Atlantic croaker	X	X	X	X	X	X	X	X	X	X
Atlantic cutlassfish		X					X			
Atlantic herring	X	X	X	X	X	X	X	X	X	X
Atlantic mackerel	X	X	X	X	X			X		X
Atlantic menhaden	X	X	X	X	X	X	X	X	X	X
Atlantic needlefish	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
Black seabass								X		
Blackcheek tonguefish										
Bluefish	X	X	X	X	X	X	X	X	X	X
Butterfish	X	X	X	X	X	X	X	X	X	X
Cobia						X				
Conger eel	X	X	X	X	X	X	X	X	X	X
Crevalle jack	X	X	X	X	X	X	X	X	X	X
Cunner	X	X	X	X	X	X	X	X	X	X
Cusk	X							X		
Feather blenny	X		X						X	
Fourbeard rockling	X	X	X	X	X	X	X	X	X	X
Fourspot flounder		X							X	
Goosefish										
Gray snapper		X		X		X		X		
Grubby	X	X	X	X	X	X	X	X	X	X
Gulf Stream flounder			X		X					
Harvestfish			X							X
Hightail goby										
Inshore lizardfish	X	X	X				X		X	
Longhorn sculpin										
Lookdown	X			X		X	X		X	X
Moonfish	X	X	X	X	X	X	X	X	X	X
Naked goby	X	X	X	X	X	X	X	X	X	X
Northern kingfish	X	X	X		X	X	X	X	X	X
Northern puffer	X	X	X		X	X		X	X	X
Northern searobin		X	X	X	X	X	X	X	X	X
Northern stargazer	X	X	X	X	X	X	X	X	X	X
Orangespotted filefish										
Oyster toadfish	X	X	X	X	X	X	X		X	X
Permit	X	X						X		
Pinfish					X					
Pollack										
Radiated shanny										

Table 4-1 (Continued)

Common Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Red hake	X	X		X		X	X		X	X
Rock gunnel	X	X	X	X	X	X	X	X	X	X
Rough silverside	X	X	X	X	X	X	X	X	X	X
Scup	X	X	X	X	X	X		X		
Seaboard goby	X	X	X	X	X	X	X	X	X	X
Sea raven										
Sheepshead minnow										
Silver hake	X	X	X		X	X	X	X	X	X
Silver perch	X		X		X	X		X		X
Smallmouth flounder	X	X	X	X	X	X	X	X	X	X
Spanish mackerel					X					
Speckled worm eel	X		X							
Spot	X	X	X	X		X	X		X	X
Spotfin butterflyfish										X
Spotfin mojarra										
Spotted goatfish										
Spotted hake	X	X	X	X	X	X	X	X	X	X
Striped anchovy	X		X	X	X		X	X	X	
Striped burrfish							X			
Striped cuskeel	X	X		X	X	X	X	X	X	X
Striped killifish										
Striped mullet	X		X				X		X	X
Striped searobin	X	X	X	X	X	X	X	X	X	X
Summer flounder	X	X	X	X	X	X	X	X	X	X
Tautog	X	X	X	X	X	X	X	X	X	X
Weakfish	X	X	X	X	X	X	X	X	X	X
Windowpane	X	X	X	X	X	X	X	X	X	X
Winter flounder	X	X	X	X	X	X	X	X	X	X
Witch flounder										X
Yellowtail flounder	X	X	X			X			X	X
Total	46	43	44	39	40	42	40	40	43	45
All Categories										
Total	94	90	93	93	92	90	89	89	98	98

Table 4-2 Species Composition of Fish Collected in Each of the Hudson River Surveys During 2009

Common Name	BSS	FSS	LRS
Anadromous			
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
Striped bass	X	X	X
Total	5	6	7
Catadromous			
American eel	X	X	X
Total	1	1	1
Estuarine			
Atlantic silverside	X	X	X
Banded killifish	X		X
Fourspine stickleback	X	X	
Hogchoker	X	X	X
Inland silverside	X		X
Mummichog	X		X
Northern pipefish	X	X	X
Shortnose sturgeon		X	
White catfish	X	X	X
White perch	X	X	X
Total	10	7	8
Freshwater			
Black crappie	X		
Blacknose dace	X		
Bluegill	X		
Bluntnose minnow	X		
Brown bullhead	X	X	X
Carp	X	X	X
Chain pickerel	X		
Channel catfish	X	X	X
Emerald shiner	X		
Fall fish	X		
Freshwater drum	X	X	X
Gizzard shad	X	X	X
Golden shiner	X		
Goldfish	X	X	
Grass carp		X	
Largemouth bass	X		
Logperch	X		

(Continued)

Table 4-2 (Continued)

Common name	BSS	FSS	LRS
Freshwater (continued)			
Pumpkinseed	X	X	X
Rainbow trout	X		
Redbreast sunfish	X		
Redfin pickerel	X		
Rock bass	X	X	
Rudd	X		
Satinfin shiner	X		
Silvery minnow	X		
Smallmouth bass	X		X
Spotfin shiner	X		
Spottail shiner	X	X	X
Tesselated darter	X	X	X
Walleye			X
White sucker	X	X	X
Yellow perch	X	X	X
Total	32	13	12
Marine			
American sand lance			X
Atlantic cod			X
Atlantic croaker		X	X
Atlantic herring			X
Atlantic mackerel			X
Atlantic menhaden	X	X	X
Atlantic needlefish	X		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
Fourspot flounder		X	
Grubby			X
Harvestfish			X
Lookdown	X		
Moonfish		X	X
Naked goby	X	X	X
Northern kingfish	X	X	X
Northern puffer			X
Northern searobin			X
Northern stargazer		X	
Oyster toadfish		X	X
Red hake		X	X
Rock gunnel			X
Rough silverside		X	X
Seaboard goby	X		X

(Continued)

Table 4-2 (Continued)

Common name	BSS	FSS	LRS
Marine (continued)			
Silver hake		X	X
Silver perch	X	X	X
Smallmouth flounder			X
Spot	X		
Spotfin butterflyfish		X	
Spotted hake		X	X
Striped cuskeel			X
Striped mullet	X		X
Striped searobin		X	X
Summer flounder	X	X	X
Tautog			X
Weakfish	X	X	X
Windowpane		X	X
Winter flounder	X	X	X
Witch flounder			X
Yellowtail flounder			X
Total	15	23	39
Undetermined			
Alosa spp.	X	X	X
Blenniidae			X
Centrarchidae	X	X	X
Cyprinidae	X		X
Cyprinodontidae			X
Fundulus spp.			X
Gobiidae		X	X
Menidia spp.			X
Morone unidentified	X		X
Searobin			X
Unidentified hake			X
Unidentifiable			X
Total	4	3	12

Table 4-3 Collections Of Atlantic Sturgeon During The 2009 Hudson River Surveys

Date	Survey	Region	River Mile	Gear	Number Collected	Total Length (mm)
31-Mar	LRS	Croton-Haverstraw	36	1-m Epibenthic Sled	1	541
21-Apr	LRS	West Point	49	1-m Epibenthic Sled	1	295
24-Jun	LRS	Poughkeepsie	70	1-m Epibenthic Sled	1	YOY
25-Jun	LRS	West Point	48	1-m Epibenthic Sled	1	416
9-Jul	FJS	West Point	51	3-m Beam Trawl	2	615,675
22-Jul	FJS	West Point	55	3-m Beam Trawl	1	605
6-Aug	FJS	Cornwall	60	3-m Beam Trawl	1	537
18-Aug	FJS	Hyde Park	77	3-m Beam Trawl	1	740
19-Aug	FJS	Cornwall	56	3-m Beam Trawl	1	190
19-Aug	FJS	Poughkeepsie	65	3-m Beam Trawl	1	672
27-Aug	LRS	West Point	54	1-m Epibenthic Sled	1	562
15-Sep	FJS	Poughkeepsie	68	3-m Beam Trawl	1	545
30-Sep	FJS	West Point	48	3-m Beam Trawl	1	444
13-Oct	FJS	Hyde Park	77	3-m Beam Trawl	2	530,540
27-Oct	FJS	Croton-Haverstraw	35	3-m Beam Trawl	1	860
27-Oct	FJS	West Point	51	3-m Beam Trawl	1	593
28-Oct	FJS	West Point	55	3-m Beam Trawl	1	582
28-Oct	FJS	Cornwall	58	3-m Beam Trawl	1	560
12-Nov	FJS	Indian Point	39	3-m Beam Trawl	2	550,604
12-Nov	FJS	Indian Point	44	3-m Beam Trawl	1	757
12-Nov	FJS	West Point	48	3-m Beam Trawl	1	572
12-Nov	FJS	West Point	55	3-m Beam Trawl	8	234,247,253,262, 270,312,315,335
12-Nov	FJS	Cornwall	58	3-m Beam Trawl	1	285
1-Dec	FJS	Croton-Haverstraw	38	3-m Beam Trawl	1	535
1-Dec	FJS	Indian Point	39	3-m Beam Trawl	1	600

Table 4-4 Collections of Shortnose Sturgeon During the 2009 Hudson River Surveys

Date	Survey	Region	River Mile	Gear	Number Collected	Total Length (mm)
7-Jul	FJS	Hyde Park	83	3-m Beam Trawl	1	808
10-Jul	FJS	Indian Point	39	3-m Beam Trawl	1	753
5-Aug	FJS	Hyde Park	77	3-m Beam Trawl	1	674
6-Aug	FJS	West Point	55	3-m Beam Trawl	1	772
18-Aug	FJS	Hyde Park	77	3-m Beam Trawl	1	647
30-Sep	FJS	West Point	55	3-m Beam Trawl	1	710
14-Oct	FJS	West Point	53	3-m Beam Trawl	1	761
10-Nov	FJS	Hyde Park	84	3-m Beam Trawl	1	760
10-Nov	FJS	Kingston	92	3-m Beam Trawl	1	510
12-Nov	FJS	West Point	55	3-m Beam Trawl	2	695,790
30-Nov	FJS	Yonkers	20	3-m Beam Trawl	1	750

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.

ASA Analysis & Communication, Inc. 2008. 2006 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. 2009. 2007 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. 2010. 2008 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. Barnthouse, 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. Synoposis 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.

Icthyological 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 sapidissma*), 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 Widlife 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 oxyrhynchus*) 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.

Vouglitois, 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 Deleware 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 (*Acipsenser brevirostrum*). Fredericton, N.B., Canada.

Appendix B

Physical/Chemical Parameters

APPENDIX B

LIST OF TABLES

Table B-1 Daily Freshwater Flow (m^3/sec/day) Estimated for Green Island, New York, 2009

DAY OF MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	640	330	546	1008	322	399	573	1048	405	298	672	445
2	623	316	496	872	374	409	642	737	368	288	704	447
3	613	295	426	821	421	389	610	869	354	296	591	657
4	564	323	419	1180	453	353	508	599	302	345	525	708
5	541	305	381	1472	394	325	388	528	280	345	515	660
6	561	313	367	1259	370	276	377	454	282	335	458	559
7	525	299	397	1098	389	240	325	401	274	338	473	529
8	520	285	1027	942	428	182	388	388	262	485	486	512
9	540	304	1970	770	435	244	332	370	237	497	467	496
10	494	325	1857	654	495	220	285	363	217	381	426	493
11	426	284	1579	605	425	234	245	362	152	370	422	523
12	424	334	1718	566	400	295	290	360	160	373	397	484
13	463	509	1149	533	368	399	339	352	159	375	392	457
14	416	656	892	486	296	429	310	324	176	328	422	519
15	384	563	781	472	292	396	291	243	179	291	503	559
16	348	469	747	473	297	395	265	213	158	276	491	587
17	328	390	727	468	550	354	242	221	168	289	477	529
18	336	355	767	475	691	460	265	214	159	270	427	405
19	333	343	931	479	616	864	262	210	161	227	429	401
20	348	316	979	433	451	779	253	207	140	253	617	400
21	352	301	841	464	380	682	222	215	151	226	743	373
22	346	301	764	439	399	736	242	241	133	242	633	348
23	347	285	676	438	381	557	232	377	149	251	577	335
24	333	258	608	422	366	487	219	400	147	489	553	313
25	334	252	515	449	333	433	215	343	148	1225	538	324
26	324	249	558	427	294	433	207	257	159	738	467	342
27	323	273	577	396	428	443	206	291	175	563	443	449
28	321	427	582	431	568	456	228	299	299	745	435	704
29	315	NA	691	420	578	416	224	437	327	1324	460	528
30	321	NA	1002	374	602	408	611	623	278	785	432	374
31	320	NA	1112	NA	506	NA	827	446	NA	607	NA	420

[1] October through December data are provisional.

Table B-2 Long-Term (1947-2008) and 2009 Monthly Mean Freshwater Flow (m^3/sec/day) Estimated for Green Island, New York

MONTH	2009 AVERAGE	LONG-TERM AVERAGE	LONG-TERM MINIMUM	LONG-TERM MAXIMUM
JAN	421	409	118	961
FEB	345	403	128	885
MAR	841	623	258	1,077
APR	644	876	257	1,749
MAY	429	525	156	1,147
JUN	423	299	101	909
JUL	343	199	87	670
AUG	400	171	48	414
SEP	219	183	58	482
OCT	447	262	71	853
NOV	506	380	93	758
DEC	480	434	173	989
ANNUAL AVERAGE[2]	459	396		

[1] October through December data for 2009 are provisional.
[2] Weighted by number of days in each month. 2009 average is provisional.

Table B-3 Monthly Mean Freshwater Flow (m^3/sec/day) Estimated for Green Island, New York, 1974 to 2009

	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	2007	2008	2009
JAN	304	550	239	490	736	465	922	426	417	291	168	331	488	624	814	849	645	421
FEB	236	276	337	263	503	516	437	473	473	346	423	279	297	391	634	331	710	345
MAR	408	453	562	514	461	683	873	584	861	413	540	914	651	456	491	825	1,032	841
APR	648	1,749	1,375	257	939	873	652	593	1,069	1,375	693	833	676	1,059	566	1,240	1,203	644
MAY	501	375	534	158	1,081	643	349	214	898	341	652	621	526	385	553	496	385	429
JUN	342	203	233	130	353	180	550	115	573	451	483	413	298	301	909	195	204	423
JUL	254	136	248	94	384	153	243	142	314	195	152	188	259	214	670	151	333	343
AUG	203	140	265	97	191	126	153	84	393	105	112	332	399	126	257	114	331	400
SEP	217	158	190	102	185	127	133	257	228	116	138	257	452	161	187	110	173	219
OCT	286	192	177	361	288	133	169	266	264	115	248	533	222	683	569	211	313	447[1]
NOV	531	347	251	693	613	293	190	280	309	163	525	736	350	758	752	427	482	506[1]
DEC	438	403	396	328	989	268	187	298	469	220	406	846	759	639	584	472	750	480[1]
ANNUAL AVERAGE	364	415	401	291	560	372	405	311	522	344	378	524	448	483	582	452	547	459[1]

[1] October through December data for 2009 are provisional.

Table B-3 (Continued)

	Minimum	Maximum	Average
JAN	133	922	439
FEB	128	885	420
MAR	281	1,077	654
APR	257	1,749	852
MAY	156	1,081	512
JUN	115	909	311
JUL	92	670	212
AUG	48	414	191
SEP	58	482	201
OCT	71	853	324
NOV	163	758	441
DEC	180	989	462
ANNUAL AVERAGE	275	604	418

Table B-4 Average Annual Freshwater Flow (m^3/sec/day) Estimated for Green Island, New York, 1947 to 2009

YEAR	FLOW	YEAR	FLOW
1947	457	1978	398
1948	366	1979	452
1949	350	1980	275
1950	398	1981	325
1951	479	1982	329
1952	432	1983	415
1953	395	1984	316
1954	408	1985	296
1955	414	1986	449
1956	393	1987	366
1957	273	1988	298
1958	363	1989	288
1959	401	1990	549
1960	397	1991	342
1961	304	1992	364
1962	299	1993	415
1963	266	1994	401
1964	247	1995	291
1965	219	1996	560
1966	285	1997	372
1967	316	1998	405
1968	353	1999	311
1969	377	2000	522
1970	337	2001	344
1971	420	2002	378
1972	595	2003	524
1973	493	2004	448
1974	466	2005	483
1975	516	2006	582
1976	604	2007	452
1977	512	2008	547
		2009[1]	459

[1] Data for 2009 are provisional.

Table B-5 Mean, Minimum, And Maximum Temperature (°C) for Each Day of the Year, Hudson River near Poughkeepsie, 1951 to 2009[1]

MONTH	DAY	LONG-TERM TEMPERATURE (1951-2008) MEAN	MINIMUM	MAXIMUM	2009 ACTUAL TEMPERATURES
1	1	1.4	0.0	4.4	0.1
1	2	1.4	0.0	4.4	0.2
1	3	1.4	0.0	4.4	0.3
1	4	1.4	0.0	3.5	0.4
1	5	1.3	0.0	3.5	0.4
1	6	1.2	0.0	4.0	0.2
1	7	1.2	0.0	3.5	0.1
1	8	1.1	0.0	4.0	0.0
1	9	1.1	0.0	3.5	0.0
1	10	1.1	0.0	3.5	0.0
1	11	1.1	0.0	3.5	0.0
1	12	1.0	0.0	4.0	0.0
1	13	1.0	0.0	4.0	0.0
1	14	1.0	0.0	4.0	0.0
1	15	1.0	0.0	4.0	0.0
1	16	1.0	0.0	3.5	0.0
1	17	1.0	0.0	2.8	-0.1
1	18	1.0	0.0	3.3	0.0
1	19	0.9	0.0	2.8	0.0
1	20	0.9	0.0	2.2	0.0
1	21	0.8	0.0	2.4	0.0
1	22	0.9	0.0	2.2	0.0
1	23	0.9	0.0	3.0	0.0
1	24	0.8	0.0	3.0	0.1
1	25	0.8	0.0	3.5	0.0
1	26	0.8	0.0	3.5	0.0
1	27	0.8	0.0	3.0	0.0
1	28	0.8	0.0	3.0	0.0
1	29	0.8	0.0	2.5	-0.1
1	30	0.8	0.0	2.5	0.0
1	31	0.8	0.0	2.5	0.0
2	1	0.8	0.0	2.5	0.0
2	2	0.8	0.0	2.2	0.0
2	3	0.8	0.0	2.2	0.0
2	4	0.8	0.0	2.0	0.0
2	5	0.7	0.0	2.0	0.0
2	6	0.8	0.0	2.5	0.0
2	7	0.8	0.0	2.5	0.0
2	8	0.8	0.0	3.0	0.0
2	9	0.8	0.0	3.0	0.1
2	10	0.9	0.0	3.3	0.1
2	11	0.8	0.0	3.0	0.1
2	12	0.8	0.0	2.5	0.0
2	13	0.9	0.0	2.5	0.1
2	14	1.0	0.0	2.8	0.0
2	15	0.9	0.0	2.8	0.1
2	16	0.9	0.0	2.8	0.1
2	17	0.9	0.0	2.8	0.1
2	18	0.9	0.0	2.8	0.1
2	19	1.0	0.0	2.8	0.1
2	20	1.0	0.0	2.8	0.0
2	21	1.0	0.0	2.8	0.0
2	22	1.0	0.0	3.9	0.0
2	23	1.0	0.0	2.8	0.0
2	24	1.0	0.0	3.9	0.1
2	25	1.0	0.0	2.8	0.1
2	26	1.2	0.0	3.3	0.1
2	27	1.3	0.0	4.4	0.1
2	28	1.3	0.0	5.0	0.2
2	29	1.4	0.0	4.4	
3	1	1.3	0.0	4.4	0.0
3	2	1.3	0.0	4.4	0.0
3	3	1.3	0.0	3.9	0.0
3	4	1.3	0.0	3.5	0.0
3	5	1.4	0.0	3.5	0.0
3	6	1.5	0.0	4.0	0.1
3	7	1.5	0.0	4.7	0.2
3	8	1.6	0.0	4.9	0.3
3	9	1.6	0.0	4.5	0.5
3	10	1.7	0.0	4.8	0.7
3	11	1.8	0.0	4.4	1.4

[1] Data from 1951 through 1992 from Poughkeepsie's Water Treatment Facility. Data from 1993 through 2009 from USGS gaging site 01372058 Hudson River below Poughkeepsie, NY.

Table B-5 (Continued)

MONTH	DAY	LONG-TERM TEMPERATURE (1951-2008) MEAN	MINIMUM	MAXIMUM	2009 ACTUAL TEMPERATURES
3	12	1.9	0.0	4.4	2.0
3	13	2.0	0.0	4.5	2.2
3	14	2.1	0.0	4.5	2.2
3	15	2.2	0.0	5.0	2.1
3	16	2.3	0.0	5.6	2.1
3	17	2.4	0.0	5.7	2.3
3	18	2.5	0.0	5.9	2.7
3	19	2.5	0.0	7.7	3.2
3	20	2.7	0.0	7.5	3.5
3	21	2.8	0.0	7.3	3.8
3	22	2.9	0.0	7.2	4.0
3	23	3.2	0.0	7.1	4.2
3	24	3.4	0.5	7.1	4.1
3	25	3.5	0.5	6.0	4.3
3	26	3.7	0.5	6.5	4.4
3	27	4.0	0.5	6.7	4.9
3	28	4.2	1.0	7.0	5.2
3	29	4.4	1.1	7.0	5.4
3	30	4.7	1.1	7.8	5.5
3	31	5.0	1.1	8.3	5.8
4	1	5.2	1.7	9.4	6.0
4	2	5.4	2.0	8.5	6.2
4	3	5.6	2.5	10.0	6.5
4	4	5.7	2.5	10.0	6.6
4	5	5.8	2.8	9.5	7.2
4	6	6.0	3.0	9.0	7.5
4	7	6.1	2.8	9.4	7.7
4	8	6.3	2.8	9.4	7.6
4	9	6.3	2.8	9.2	7.7
4	10	6.5	2.8	10.2	7.6
4	11	6.8	2.8	11.2	7.5
4	12	7.0	2.8	11.4	7.2
4	13	7.1	2.8	11.4	7.4
4	14	7.4	2.8	11.4	7.5
4	15	7.6	2.8	11.5	7.6
4	16	7.7	3.3	11.8	7.7
4	17	7.9	3.9	11.7	7.9
4	18	8.1	4.5	11.8	8.2
4	19	8.4	5.0	12.5	8.3
4	20	8.7	5.0	13.5	8.2
4	21	9.0	5.5	13.5	8.3
4	22	9.2	6.5	13.5	8.5
4	23	9.4	6.7	13.5	8.8
4	24	9.7	6.7	14.0	9.3
4	25	9.8	6.7	13.5	9.8
4	26	10.1	6.7	13.5	10.4
4	27	10.3	7.2	13.5	10.9
4	28	10.6	7.8	13.5	11.5
4	29	10.8	8.3	13.9	11.9
4	30	11.1	8.9	13.9	12.1
5	1	11.3	8.9	14.4	12.4
5	2	11.5	8.9	14.4	12.9
5	3	11.7	8.9	14.4	13.1
5	4	11.9	8.9	15.0	13.3
5	5	12.1	8.9	15.0	13.5
5	6	12.3	8.9	15.0	13.8
5	7	12.5	8.9	15.0	14.2
5	8	12.7	8.9	15.1	14.6
5	9	12.8	8.9	15.6	15.0
5	10	13.0	8.9	16.1	15.2
5	11	13.1	9.4	16.1	15.4
5	12	13.3	9.4	16.1	15.6
5	13	13.5	10.0	16.2	15.9
5	14	13.7	10.6	16.7	15.9
5	15	14.0	11.1	17.5	16.3
5	16	14.2	11.1	18.0	16.5
5	17	14.4	11.7	18.0	16.5
5	18	14.6	11.5	17.5	16.4
5	19	14.8	12.0	17.5	16.8
5	20	15.1	12.2	18.0	17.1
5	21	15.3	12.5	18.0	17.3
5	22	15.5	12.8	18.5	17.5
5	23	15.7	12.8	19.0	17.5
5	24	15.9	12.8	19.0	17.6
5	25	16.0	12.8	20.0	17.8

Table B-5 (Continued)

MONTH	DAY	LONG-TERM TEMPERATURE (1951-2008) MEAN	MINIMUM	MAXIMUM	2009 ACTUAL TEMPERATURES
5	26	16.2	12.2	20.5	17.8
5	27	16.5	12.2	20.6	17.8
5	28	16.8	12.2	21.0	17.9
5	29	17.0	12.8	20.7	18.0
5	30	17.1	12.8	21.5	18.4
5	31	17.3	13.3	21.3	18.7
6	1	17.6	13.3	22.0	18.8
6	2	17.9	13.3	22.2	18.9
6	3	18.1	14.4	22.1	18.9
6	4	18.3	13.9	22.5	19.1
6	5	18.5	15.0	22.2	19.1
6	6	18.6	15.6	22.4	19.2
6	7	18.7	15.0	22.4	19.5
6	8	19.0	16.1	22.5	19.6
6	9	19.3	16.5	23.0	19.6
6	10	19.5	16.5	23.2	19.8
6	11	19.7	17.0	23.4	19.7
6	12	19.9	17.0	23.3	19.9
6	13	20.0	17.0	23.4	20.0
6	14	20.1	17.0	23.3	20.1
6	15	20.3	17.0	23.5	20.4
6	16	20.4	17.5	23.8	20.7
6	17	20.5	17.8	23.8	20.9
6	18	20.7	17.5	24.2	20.7
6	19	20.9	17.8	24.1	20.9
6	20	21.1	17.8	24.0	20.7
6	21	21.2	17.8	24.3	20.3
6	22	21.5	17.2	24.3	20.3
6	23	21.6	17.2	24.1	20.4
6	24	21.7	17.8	24.1	20.5
6	25	21.8	17.8	24.5	20.8
6	26	22.1	17.8	24.5	21.0
6	27	22.2	17.8	25.0	21.2
6	28	22.4	17.8	25.0	21.5
6	29	22.6	17.8	25.0	21.8
6	30	22.7	17.8	25.5	22.0
7	1	22.8	18.9	25.5	22.2
7	2	22.9	18.9	25.5	22.3
7	3	23.0	19.4	25.5	22.5
7	4	23.2	19.4	26.0	22.6
7	5	23.4	20.0	26.0	22.6
7	6	23.5	20.0	26.0	22.8
7	7	23.5	20.0	26.0	22.8
7	8	23.6	20.0	26.0	22.9
7	9	23.7	20.0	26.0	22.9
7	10	23.8	20.6	26.0	23.1
7	11	23.9	20.6	26.0	23.2
7	12	24.0	21.1	26.1	23.4
7	13	24.2	21.7	26.7	23.4
7	14	24.2	21.7	26.7	23.5
7	15	24.4	21.7	26.7	23.6
7	16	24.5	22.2	26.7	23.7
7	17	24.6	22.2	26.5	23.7
7	18	24.6	22.2	26.5	23.9
7	19	24.8	22.2	27.0	23.8
7	20	24.9	22.2	27.0	23.8
7	21	24.9	22.8	27.0	23.6
7	22	25.0	22.2	27.0	23.7
7	23	25.0	22.2	27.0	23.8
7	24	25.1	22.8	27.0	23.8
7	25	25.1	22.8	27.0	23.9
7	26	25.1	22.8	27.5	24.0
7	27	25.3	22.8	27.5	24.2
7	28	25.3	22.8	27.5	24.4
7	29	25.3	22.8	27.5	24.5
7	30	25.3	23.0	27.5	24.6
7	31	25.4	23.0	28.0	24.6
8	1	25.4	23.0	28.0	24.5
8	2	25.4	22.8	28.0	24.2
8	3	25.5	23.3	28.0	23.9
8	4	25.5	23.3	28.0	23.7
8	5	25.5	23.3	28.0	23.6
8	6	25.5	23.3	28.0	23.5

Table B-5 (Continued)

MONTH	DAY	LONG-TERM TEMPERATURE (1951-2008) MEAN	MINIMUM	MAXIMUM	2009 ACTUAL TEMPERATURES
8	7	25.5	23.3	28.0	23.6
8	8	25.5	23.3	28.0	23.5
8	9	25.5	23.3	28.0	23.5
8	10	25.5	23.3	28.0	23.7
8	11	25.5	22.8	28.0	23.9
8	12	25.4	22.8	28.1	24.0
8	13	25.4	22.2	28.5	24.0
8	14	25.3	22.2	28.5	24.1
8	15	25.2	22.2	28.4	24.4
8	16	25.2	22.2	28.4	24.6
8	17	25.1	22.2	28.1	24.9
8	18	25.1	22.8	28.0	25.1
8	19	25.1	22.2	27.7	25.3
8	20	25.1	22.8	27.6	25.4
8	21	25.0	22.2	27.5	25.7
8	22	24.9	22.2	27.5	25.6
8	23	24.8	22.8	27.0	25.7
8	24	24.8	22.2	27.0	25.9
8	25	24.7	21.7	27.0	26.1
8	26	24.6	21.7	27.0	26.3
8	27	24.6	22.2	26.5	26.2
8	28	24.6	22.2	26.5	26.0
8	29	24.5	22.2	26.7	25.6
8	30	24.5	22.2	26.5	25.7
8	31	24.4	22.2	26.5	25.3
9	1	24.3	22.2	26.5	24.9
9	2	24.2	22.2	26.7	24.7
9	3	24.1	22.2	26.1	24.6
9	4	24.1	22.2	26.0	24.5
9	5	24.0	21.7	26.0	24.4
9	6	24.0	22.0	26.0	24.2
9	7	23.8	21.7	26.0	24.1
9	8	23.7	21.7	26.0	23.9
9	9	23.6	21.7	25.6	23.8
9	10	23.5	21.1	25.6	23.6
9	11	23.4	21.1	25.6	23.0
9	12	23.3	21.1	25.6	22.6
9	13	23.1	20.0	25.6	22.7
9	14	23.0	18.9	25.5	22.7
9	15	22.8	17.8	25.5	22.7
9	16	22.6	17.2	25.5	22.4
9	17	22.4	17.2	25.5	22.3
9	18	22.2	16.7	25.5	22.0
9	19	22.2	16.7	25.5	21.8
9	20	22.0	17.2	25.5	21.7
9	21	21.7	16.7	25.0	21.6
9	22	21.5	16.1	25.0	21.6
9	23	21.2	16.1	25.0	21.7
9	24	21.1	15.6	24.5	21.6
9	25	20.9	15.6	24.5	21.4
9	26	20.8	15.6	24.0	21.2
9	27	20.6	16.1	24.0	21.0
9	28	20.4	15.6	23.5	20.9
9	29	20.2	15.6	23.5	20.5
9	30	20.0	15.6	23.0	20.1
10	1	19.8	16.1	22.7	19.7
10	2	19.6	15.6	22.5	19.5
10	3	19.5	15.6	22.6	19.5
10	4	19.2	15.6	22.7	19.4
10	5	19.0	15.0	22.7	19.2
10	6	18.8	15.0	22.7	19.0
10	7	18.7	15.0	22.6	18.7
10	8	18.4	14.4	22.6	18.3
10	9	18.1	14.4	22.4	18.2
10	10	18.0	14.4	22.2	18.0
10	11	17.8	13.9	22.0	17.6
10	12	17.6	13.3	21.5	17.2
10	13	17.3	13.3	21.1	17.1
10	14	17.1	12.8	21.1	16.7
10	15	16.9	12.2	20.5	16.2
10	16	16.7	12.2	20.3	15.8
10	17	16.5	12.8	20.2	15.4
10	18	16.3	12.2	20.2	14.9

Table B-5 (Continued)

MONTH	DAY	LONG-TERM TEMPERATURE (1951-2008) MEAN	MINIMUM	MAXIMUM	2009 ACTUAL TEMPERATURES
10	19	16.0	11.7	20.2	14.7
10	20	15.8	10.6	20.0	14.5
10	21	15.5	10.6	19.7	14.4
10	22	15.1	10.0	19.6	14.3
10	23	14.9	10.0	19.6	13.9
10	24	14.7	10.0	19.3	14.0
10	25	14.6	10.0	19.0	13.2
10	26	14.3	10.0	18.6	12.3
10	27	14.0	9.4	18.2	11.9
10	28	13.8	8.9	17.8	11.8
10	29	13.5	8.3	17.8	11.6
10	30	13.2	7.8	16.7	11.3
10	31	13.1	7.2	16.7	11.3
11	1	12.9	7.2	16.7	11.1
11	2	12.6	7.2	16.1	10.9
11	3	12.4	7.2	16.1	10.8
11	4	12.2	7.2	15.6	10.5
11	5	12.0	7.2	15.6	10.5
11	6	11.7	6.7	15.6	10.2
11	7	11.6	6.1	15.0	10.1
11	8	11.3	6.1	15.0	10.1
11	9	11.1	5.6	15.0	10.1
11	10	10.8	5.0	14.4	10.1
11	11	10.5	5.0	13.9	9.9
11	12	10.3	5.0	13.3	9.7
11	13	10.1	5.0	13.3	9.4
11	14	9.9	5.0	13.3	9.5
11	15	9.8	5.0	12.8	9.6
11	16	9.5	5.0	12.8	9.5
11	17	9.2	5.0	12.8	9.3
11	18	9.1	5.0	12.8	9.1
11	19	8.9	5.0	12.2	9.1
11	20	8.6	5.0	11.1	9.3
11	21	8.4	3.9	11.1	9.0
11	22	8.2	3.9	11.1	8.8
11	23	8.0	3.9	11.1	8.7
11	24	7.7	3.9	10.6	8.6
11	25	7.4	3.9	10.6	8.5
11	26	7.2	3.3	10.5	8.5
11	27	7.0	3.3	10.5	8.4
11	28	6.9	3.3	10.5	8.1
11	29	6.7	3.3	10.5	8.0
11	30	6.5	2.8	10.5	8.1
12	1	6.2	2.2	10.5	7.8
12	2	6.0	3.0	10.0	7.7
12	3	5.7	2.2	9.5	8.0
12	4	5.5	1.3	9.5	7.7
12	5	5.3	2.8	9.5	7.3
12	6	5.2	2.6	9.5	6.9
12	7	5.1	2.0	9.5	6.6
12	8	4.7	2.0	9.0	6.4
12	9	4.5	1.7	9.0	6.1
12	10	4.3	1.1	9.0	5.8
12	11	4.0	1.1	8.5	5.1
12	12	3.9	0.6	8.5	4.7
12	13	3.7	0.6	8.5	4.5
12	14	3.5	0.5	8.5	4.6
12	15	3.3	0.5	8.5	4.5
12	16	3.2	0.5	8.0	3.7
12	17	3.0	0.0	8.0	3.0
12	18	2.8	0.0	7.5	2.5
12	19	2.6	0.0	7.5	2.2
12	20	2.6	0.0	7.5	1.8
12	21	2.4	0.0	7.0	1.4
12	22	2.2	0.0	6.5	0.9
12	23	2.1	0.0	6.5	0.5
12	24	2.1	0.0	6.5	0.4
12	25	1.9	0.0	6.0	0.3
12	26	1.8	0.0	6.1	0.3
12	27	1.7	0.0	6.1	0.3
12	28	1.7	0.0	6.1	0.1
12	29	1.7	0.0	6.1	0.1
12	30	1.6	0.0	6.1	0.0
12	31	1.5	0.0	5.0	0.0

Table B-6 Average Annual Water Temperature (°C), Hudson River near Poughkeepsie, 1951 to 2009[1]

YEAR	TEMPERATURE	YEAR	TEMPERATURE
1951	11.66	1980	12.72
1952	12.25	1981	12.63
1953	12.87	1982	12.48
1954	11.92	1983	13.01
1955	12.40	1984	13.04
1956	11.92	1985	13.05
1957	13.03	1986	12.69
1958	12.18	1987	12.66
1959	12.90	1988	12.57
1960	11.29	1989	12.09
1961	12.17	1990	12.77
1962	11.63	1991	13.67
1963	11.82	1992	12.10
1964	12.99	1993	12.09
1965	12.51	1994	12.24
1966	12.75	1995	12.47
1967	12.05	1996	11.83
1968	13.10	1997	12.07
1969	12.59	1998	13.66
1970	12.79	1999	13.08
1971	12.31	2000	12.00
1972	11.35	2001	13.24
1973	12.73	2002	12.85
1974	11.61	2003	11.80
1975	12.37	2004	12.37
1976	11.43	2005	12.68
1977	11.97	2006	12.77
1978	12.27	2007	12.97
1979	12.49	2008	12.54
		2009	12.30

[1] Data from 1951 through 1992 from Poughkeepsie's Water Treatment Facility. Data from 1993 through 2009 from USGS gaging site 01372058 Hudson River below Poughkeepsie, NY.

Table B-7 Weighted Mean Temperature (°C) by Region and Week from 2009 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
16MAR09	3.1	3.1	2.5	3.1	3.2	3.3	3.0	.	.	.	.	.	.
23MAR09	4.4	4.4	4.1	4.4	3.9	3.6	3.7	.	.	.	.	.	.
30MAR09	5.7	6.0	5.7	5.5	5.8	5.9	5.9	.	.	.	.	.	.
06APR09	7.2	7.4	7.2	7.2	7.1	7.0	7.1	7.6	7.4	6.6	6.5	6.0	5.1
13APR09	7.6	7.9	8.0	8.7	8.2	7.8	7.7	7.5	7.1	7.1	6.7	6.6	6.7
20APR09	8.9	9.3	9.2	9.2	9.3	9.2	9.0	8.6	9.3	9.8	10.4	10.5	10.1
27APR09	12.2	13.2	14.0	13.3	12.5	11.4	11.5	11.8	12.6	13.1	13.4	12.9	12.9
04MAY09	12.4	13.8	14.2	14.1	13.6	12.4	12.7	13.6	14.7	14.9	15.0	15.2	14.7
11MAY09	14.4	15.3	15.7	15.8	15.6	14.7	15.3	15.5	15.7	15.8	16.3	15.6	15.5
18MAY09	15.0	15.5	15.7	15.6	15.7	16.0	16.7	16.8	16.9	17.1	16.9	16.8	16.3
25MAY09	16.3	17.6	18.4	19.0	18.7	18.2	18.0	18.0	18.2	18.3	18.3	18.1	18.2
01JUN09	17.2	17.9	18.7	19.2	19.1	18.7	18.8	18.9	19.0	18.4	18.3	18.0	17.2
08JUN09	18.5	19.3	19.9	20.3	20.6	19.7	19.9	19.7	19.7	19.7	19.8	19.5	19.7
15JUN09	18.7	19.4	20.1	21.0	21.2	20.5	20.6	20.7	21.0	.	.	.	.
22JUN09	21.3	21.6	21.8	22.2	21.3	21.0	21.1	20.6	20.5	20.5	20.1	19.7	19.7
29JUN09	21.4	22.4	23.0	23.4	22.5	21.8	21.8	21.8	21.9	22.2	22.2	22.6	23.0
06JUL09	21.4	22.5	22.8	23.2	23.0	22.4	22.6	22.6	22.9	22.7	22.4	21.6	21.7
13JUL09	21.2	22.4	22.9	23.7	23.2	22.9	23.2	23.5	.	.	.	.	.
20JUL09	22.0	22.7	24.3	24.5	24.5	23.7	23.7	23.4	23.5	23.5	23.6	23.3	23.5
27JUL09	23.3	24.7	25.4	25.8	25.3	24.4	24.5	24.5	.	.	.	.	.
03AUG09	23.5	24.6	26.0	25.5	25.2	24.6	24.4	23.7	23.5	23.1	22.8	22.6	22.5
10AUG09	24.3	25.3	25.5	26.1	25.4	24.4	24.4	24.4	.	.	.	.	.
17AUG09	24.4	25.6	27.0	27.1	26.0	25.4	25.6	25.5	25.6	25.3	25.6	25.7	26.0
24AUG09	26.0	26.9	27.3	27.1	26.4	25.9	26.0	26.3	.	.	.	.	.
31AUG09	22.5	23.3	23.6	24.3	24.6	24.2	24.4	24.9	24.0	23.7	23.2	22.8	22.2
07SEP09	23.4	24.1	24.5	25.0	25.3	24.3	24.1	24.0	.	.	.	.	.
14SEP09	21.4	21.8	22.4	23.2	23.5	23.0	22.7	22.3	21.8	21.4	21.2	21.1	20.9
21SEP09	21.3	21.5	21.8	22.5	23.3	22.0	21.7	21.7	.	.	.	.	.
28SEP09	19.2	19.3	19.5	20.9	21.3	20.8	20.4	20.0	19.6	19.4	19.2	19.2	19.0
05OCT09	19.0	19.2	19.4	20.1	20.8	19.5	19.1	19.0	.	.	.	.	.
12OCT09	16.1	16.4	16.8	16.6	17.7	17.0	17.2	17.1	16.2	15.5	15.0	14.5	13.8
26OCT09	14.3	14.7	15.0	14.9	14.8	14.1	13.7	12.2	11.3	10.6	10.3	10.0	9.8
09NOV09	12.7	12.1	12.0	11.6	11.4	10.5	10.4	10.1	9.7	9.6	9.3	8.8	8.1
30NOV09	11.2	10.8	10.0	9.8	10.0	8.6	8.2	8.0	7.3	7.0	7.0	6.9	6.3

Note: Dots (.) indicate no sampling.

Table B-8 Average Annual Temperature (°C) from Long River/Fall Juvenile Surveys, 1974 to 2009

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
2007	21.69
2008	22.22
2009	21.01

Table B-9 Mean Temperature (°C) by Region and Week from 2009 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
15JUN09	21.6	22.0	22.8	20.7	20.3	18.8	20.3	21.5	21.7	21.8	22.9	21.7
29JUN09	23.4	24.1	25.6	23.6	22.1	21.6	22.0	23.2	23.4	22.7	23.0	23.2
13JUL09	24.8	24.5	23.4	25.6	23.2	24.3	25.1	24.9	23.1	22.6	24.0	22.9
27JUL09	26.0	27.0	26.5	27.2	25.1	25.8	26.2	25.4	25.2	25.9	23.9	24.7
10AUG09	26.4	25.2	25.8	25.7	24.9	25.2	24.7	25.5	24.4	23.5	24.2	24.7
24AUG09	27.3	26.8	27.1	27.6	27.1	27.2	26.8	26.0	25.7	26.5	27.6	25.9
07SEP09	23.8	22.6	24.3	24.7	23.9	23.4	22.9	22.4	22.6	22.9	23.1	21.4
21SEP09	21.6	22.1	22.4	23.8	22.5	22.3	21.8	20.8	20.2	20.1	20.8	19.3
05OCT09	19.5	18.6	19.6	20.0	19.5	19.1	18.8	17.6	17.4	17.6	16.9	17.0
19OCT09	13.5	14.1	13.9	16.2	14.9	14.1	14.0	12.3	12.1	11.7	11.2	10.0

Note: Dots (.) indicate missing values.

Table B-10 Average Annual Temperature (°C) from Beach Seine Surveys, 1974 to 2009

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
2007	23.74
2008	23.85
2009	23.88

Table B-11 Weighted Mean Salinity (ppt) by Region and Week from 2009 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
16MAR09	8.2	3.1	0.7	0.2	0.2	0.1	0.1	.	.	.	.	.	.
23MAR09	17.6	11.0	6.9	6.7	3.4	0.9	0.1	.	.	.	.	.	.
30MAR09	12.8	7.7	4.3	1.5	0.4	0.1	0.1	.	.	.	.	.	.
06APR09	17.3	6.3	0.6	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
13APR09	12.3	8.0	4.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20APR09	16.9	11.4	8.6	7.1	5.1	2.4	0.5	0.1	0.1	0.1	0.1	0.1	0.1
27APR09	12.3	7.4	5.3	2.3	1.7	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
04MAY09	17.6	8.6	4.2	1.9	0.8	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
11MAY09	12.8	6.6	2.7	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18MAY09	11.4	5.4	4.6	3.8	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25MAY09	16.7	8.6	3.5	1.2	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
01JUN09	18.8	12.0	4.7	1.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
08JUN09	15.7	9.9	5.5	2.8	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15JUN09	18.1	11.9	5.0	2.0	1.0	0.1	0.1	0.1	0.1	.	.	.	.
22JUN09	7.5	3.0	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
29JUN09	15.9	7.9	2.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
06JUL09	13.4	7.5	5.6	2.7	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
13JUL09	14.5	7.8	4.5	2.2	0.5	0.1	0.1	0.1	.	.	.	.	.
20JUL09	17.2	13.1	4.9	2.7	1.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27JUL09	14.9	6.8	2.9	1.4	0.2	0.1	0.1	0.1	.	.	.	.	.
03AUG09	15.4	6.6	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10AUG09	13.2	6.0	3.1	0.7	0.2	0.1	0.1	0.1	.	.	.	.	.
17AUG09	20.6	12.3	4.3	3.6	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24AUG09	14.4	6.6	2.6	1.1	0.2	0.1	0.1	0.1	.	.	.	.	.
31AUG09	18.0	11.7	8.9	5.8	2.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1
07SEP09	15.4	9.4	6.2	4.2	2.8	0.5	0.1	0.1	.	.	.	.	.
14SEP09	21.2	16.1	9.0	5.9	4.1	2.2	0.8	0.1	0.1	0.1	0.1	0.1	0.1
21SEP09	16.5	9.9	7.1	5.0	3.4	0.8	0.3	0.1	.	.	.	.	.
28SEP09	18.2	12.4	9.0	5.3	4.1	2.1	0.7	0.1	0.1	0.1	0.1	0.1	0.1
05OCT09	15.9	10.8	7.0	5.1	3.7	1.1	0.2	0.1	.	.	.	.	.
12OCT09	21.6	13.1	5.8	3.2	2.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26OCT09	12.4	8.5	6.2	3.8	2.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
09NOV09	14.3	5.9	4.2	3.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
30NOV09	22.0	12.6	7.1	6.0	4.5	1.4	0.7	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 2009 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
15JUN09	3.9	2.8	1.4	0.8	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
29JUN09	1.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
13JUL09	4.3	2.5	1.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27JUL09	4.8	2.9	1.5	0.4	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
10AUG09	3.7	1.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24AUG09	5.5	2.9	1.8	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
07SEP09	8.4	5.7	3.9	2.3	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1
21SEP09	10.0	6.1	4.5	2.8	0.9	0.3	0.1	0.1	0.1	0.1	0.1	0.1
05OCT09	8.9	5.8	4.6	3.8	1.5	0.3	0.1	0.1	0.1	0.1	0.1	0.1
19OCT09	10.7	5.5	3.7	2.6	0.3	0.2	0.2	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 2009 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
16MAR09	12.7	12.9	13.4	13.4	13.5	13.3	13.5	.	.	.	.	.	.
23MAR09	10.0	10.8	11.3	10.8	11.8	12.4	12.8	.	.	.	.	.	.
30MAR09	11.5	12.0	11.7	11.3	11.4	12.0	12.3	.	.	.	.	.	.
06APR09	9.5	10.3	11.0	11.3	11.0	11.4	11.4	11.1	11.0	10.7	10.7	11.5	12.3
13APR09	9.8	9.6	10.0	10.5	10.6	11.0	11.4	11.6	11.9	11.3	11.6	11.8	12.8
20APR09	8.0	8.3	9.3	10.5	10.5	10.0	11.7	11.0	10.2	10.5	10.5	10.4	10.7
27APR09	8.0	8.4	8.9	10.2	10.6	11.1	11.3	10.6	10.5	10.6	10.6	10.2	10.2
04MAY09	7.4	8.2	9.1	9.4	9.6	10.5	10.7	9.8	9.9	10.2	9.4	9.7	10.3
11MAY09	6.8	7.4	8.1	9.1	9.3	9.8	9.9	9.8	9.0	8.9	8.8	8.7	9.0
18MAY09	7.5	8.2	8.6	8.0	8.8	9.5	9.6	10.2	10.5	9.9	9.3	9.1	9.3
25MAY09	6.3	7.2	7.8	7.7	7.8	8.4	9.2	9.3	9.2	9.3	9.4	8.6	8.4
01JUN09	6.1	6.4	7.1	7.6	7.7	8.1	8.5	8.7	9.0	9.1	9.1	8.9	9.6
08JUN09	5.7	5.7	6.2	6.4	6.4	7.3	7.8	8.2	8.6	8.8	10.1	9.7	9.0
15JUN09	5.9	5.7	6.6	6.4	6.5	7.9	7.8	7.8	8.1	.	.	.	.
22JUN09	6.0	6.7	7.3	6.8	6.7	7.7	7.9	7.9	8.3	8.4	7.9	7.8	8.6
29JUN09	6.3	6.6	7.0	7.2	7.4	6.8	6.3	7.0	7.8	8.0	8.0	6.9	7.1
06JUL09	6.2	6.8	6.6	6.7	6.4	7.4	7.9	8.4	8.4	7.9	7.9	7.8	7.6
13JUL09	5.5	5.7	5.8	6.1	6.7	7.0	7.2	7.2	.	.	.	.	.
20JUL09	4.7	4.7	6.6	6.4	6.1	6.4	6.6	6.9	7.5	8.0	9.5	9.2	8.6
27JUL09	4.7	5.8	6.4	6.2	6.7	7.0	7.5	7.3	.	.	.	.	.
03AUG09	4.8	5.5	6.9	7.1	6.2	6.4	6.3	6.1	6.4	6.8	7.3	7.8	7.1
10AUG09	5.2	6.0	5.6	5.6	6.5	6.6	6.4	6.1	.	.	.	.	.
17AUG09	4.6	4.9	6.4	5.9	5.4	5.6	5.9	5.9	7.3	7.2	7.7	7.9	8.0
24AUG09	3.7	4.4	5.0	4.7	5.3	6.0	5.9	6.2	.	.	.	.	.
31AUG09	4.2	4.8	5.0	5.2	5.1	5.6	6.4	6.8	7.2	7.5	8.3	8.6	8.9
07SEP09	4.8	5.3	6.1	6.2	6.0	6.6	7.0	7.0	.	.	.	.	.
14SEP09	5.1	5.1	6.1	6.4	5.8	6.1	6.7	7.0	8.1	8.5	8.6	9.6	8.7
21SEP09	5.2	6.0	7.0	7.0	6.5	7.0	7.5	7.5	.	.	.	.	.
28SEP09	5.0	6.1	6.6	6.6	6.5	6.8	7.3	7.4	7.9	8.3	8.2	9.2	9.0
05OCT09	5.6	6.3	7.3	7.3	7.1	7.6	7.9	7.8	.	.	.	.	.
12OCT09	6.2	7.0	8.1	8.0	8.2	8.4	8.4	8.2	9.0	10.0	10.8	10.6	10.6
26OCT09	7.9	8.3	8.7	8.7	9.0	9.5	9.7	10.7	11.2	10.9	11.2	11.7	12.6
09NOV09	8.1	9.5	9.8	10.0	10.8	10.8	10.7	10.8	10.8	11.0	11.8	12.6	12.9
30NOV09	7.0	7.4	9.2	10.3	10.2	10.8	11.2	11.6	12.0	12.2	12.5	12.7	13.5

Note: Dots (.) indicate no sampling.

Table B-14 Average Annual Dissolved Oxygen (mg/l) from Long River/Fall Juvenile Surveys, 1974 to 2009

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
2007	7.21
2008	6.81
2009	7.29

Table B-15 Mean Dissolved Oxygen (mg/L) by Region and Week from 2009 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
15JUN09	6.3	6.9	7.2	6.9	6.8	7.5	7.1	7.4	7.9	8.0	7.6	6.9
29JUN09	7.2	7.7	7.9	6.1	6.4	6.5	6.6	7.9	8.2	7.7	6.6	7.2
13JUL09	6.9	7.8	7.1	6.6	6.2	7.0	7.3	7.1	6.7	7.7	7.7	7.1
27JUL09	5.4	6.0	6.2	5.8	5.7	5.9	6.3	6.5	5.9	6.7	6.2	6.1
10AUG09	5.8	6.6	6.0	5.0	5.1	5.4	5.7	7.1	6.7	7.1	7.3	6.8
24AUG09	5.4	6.5	6.0	5.2	6.0	6.3	6.7	5.2	5.4	5.9	7.4	6.6
07SEP09	5.3	5.9	6.7	5.5	5.5	5.7	6.0	5.8	7.0	7.9	7.9	7.3
21SEP09	4.9	6.3	6.3	6.4	6.2	6.1	6.8	6.3	6.5	7.0	8.5	7.3
05OCT09	6.3	7.3	6.8	6.3	6.6	7.1	6.7	6.9	6.9	7.3	8.8	8.1
19OCT09	7.5	7.8	7.6	7.7	8.1	8.2	8.1	8.2	9.5	9.9	9.7	9.7

Note: Dots (.) indicate missing values.

Table B-16 Average Annual Dissolved Oxygen (mg/l) from Beach Seine Surveys, 1974 to 2009

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
2007	6.46
2008	6.86
2009	6.34

Table B-17 Weighted Mean Percent Oxygen Saturation by Region and Week from 2009 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
16MAR09	100.1	98.3	98.6	100.2	100.9	100.2	100.1	.	.	.	.	.	.
23MAR09	87.8	90.4	91.3	87.2	91.9	94.6	97.2	.	.	.	.	.	.
30MAR09	100.9	101.7	96.4	91.0	91.2	96.0	98.9	.	.	.	.	.	.
06APR09	89.0	89.6	91.7	93.8	91.4	94.0	94.6	93.2	92.0	87.6	86.9	92.5	96.9
13APR09	89.2	85.5	86.5	90.0	89.7	92.3	95.7	96.4	98.3	93.7	95.0	96.5	105.2
20APR09	77.7	78.7	85.7	96.1	94.8	88.7	101.3	94.6	89.1	93.0	94.1	93.7	94.7
27APR09	81.6	84.6	89.0	99.1	101.0	101.6	103.5	98.1	98.5	100.5	101.8	96.2	96.9
04MAY09	78.4	83.6	91.1	92.1	93.2	98.1	101.3	94.2	97.8	101.1	93.0	97.0	101.5
11MAY09	72.1	77.0	83.2	91.9	93.9	97.0	98.8	98.3	91.1	90.1	89.3	87.5	89.8
18MAY09	80.4	85.6	89.2	82.5	89.5	96.8	98.4	105.1	108.2	102.6	96.2	93.6	95.0
25MAY09	71.9	80.4	84.6	83.4	83.5	89.3	97.1	98.4	97.1	98.9	99.6	91.1	88.9
01JUN09	71.4	72.5	78.4	82.6	83.4	86.8	90.7	93.3	96.9	96.6	96.9	94.3	99.4
08JUN09	68.0	65.9	70.0	71.9	72.4	79.6	85.9	90.1	94.3	96.4	111.0	106.2	98.1
15JUN09	71.9	67.3	75.1	72.5	73.2	87.2	86.8	87.0	90.6	.	.	.	.
22JUN09	71.5	76.9	82.8	77.5	75.5	86.1	88.7	87.6	92.7	93.8	86.7	84.7	93.8
29JUN09	78.4	79.7	82.5	85.0	85.1	78.0	71.9	79.9	89.5	91.7	91.5	79.9	82.6
06JUL09	76.7	81.8	79.9	80.2	75.4	85.6	90.9	96.8	97.6	91.1	91.4	88.1	86.8
13JUL09	67.5	69.4	69.0	72.8	78.9	82.0	84.4	84.2	.	.	.	.	.
20JUL09	59.5	59.4	81.9	78.1	73.9	75.2	78.1	81.1	87.9	94.0	111.5	107.4	101.6
27JUL09	60.9	72.5	78.8	77.0	81.4	84.3	89.8	87.9	.	.	.	.	.
03AUG09	61.9	68.7	85.7	86.6	75.5	77.2	76.0	72.3	75.7	79.9	84.6	90.6	81.6
10AUG09	67.2	76.1	70.2	69.5	78.7	78.8	77.0	73.1	.	.	.	.	.
17AUG09	62.8	64.4	82.8	75.1	66.8	68.5	72.7	72.4	88.8	87.9	93.6	96.6	98.0
24AUG09	49.8	57.9	64.5	60.0	65.4	73.6	72.4	76.8	.	.	.	.	.
31AUG09	54.0	60.2	62.2	63.6	62.3	67.3	76.5	81.7	85.9	88.6	96.6	99.5	102.3
07SEP09	61.7	66.5	76.5	77.1	74.5	79.1	83.7	82.9	.	.	.	.	.
14SEP09	66.2	64.4	75.0	77.4	70.6	72.5	78.2	80.9	91.9	95.5	97.1	108.2	98.0
21SEP09	65.4	72.4	83.0	83.8	78.3	80.5	85.9	85.7	.	.	.	.	.
28SEP09	60.5	71.9	75.4	76.2	75.3	76.6	81.7	81.9	86.5	90.0	88.8	99.3	97.2
05OCT09	66.7	72.9	83.2	83.1	81.1	83.4	85.3	83.8	.	.	.	.	.
12OCT09	73.2	77.7	86.7	84.0	87.4	86.8	87.0	84.6	92.0	100.5	107.2	104.3	102.3
26OCT09	83.8	86.6	89.8	88.8	89.8	92.4	93.6	99.6	102.2	98.3	100.3	103.6	111.6
09NOV09	84.3	92.0	93.2	94.3	98.6	96.9	95.7	95.6	95.5	96.8	102.7	108.5	109.0
30NOV09	74.9	72.9	85.6	94.5	93.4	93.3	96.0	97.7	99.5	100.6	103.0	104.9	109.0

Note: Dots (.) indicate no sampling.

Table B-18 Mean Percent Oxygen Saturation by Region and Week from 2009 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
15JUN09	73.8	80.2	84.9	76.9	75.1	80.8	78.9	84.1	90.1	91.1	88.8	78.9
29JUN09	85.3	91.7	96.0	71.7	72.8	73.3	75.2	92.2	95.7	89.1	76.6	83.8
13JUL09	86.0	95.1	84.2	80.6	72.8	83.9	88.1	86.0	78.0	88.7	91.8	83.2
27JUL09	69.1	76.2	77.4	72.8	69.3	72.6	78.0	79.1	72.3	82.1	73.9	74.0
10AUG09	74.1	80.6	73.4	61.6	61.4	65.6	68.7	87.1	80.1	83.2	86.5	82.6
24AUG09	70.8	82.4	76.7	66.2	75.0	78.8	84.3	63.9	65.8	73.2	94.3	80.8
07SEP09	66.0	70.9	81.9	67.1	65.5	67.2	70.0	66.2	81.5	91.7	92.8	82.4
21SEP09	59.4	75.5	74.6	77.1	72.4	70.2	77.2	70.6	71.2	77.6	95.5	79.7
05OCT09	72.8	81.0	76.6	70.8	73.1	76.8	72.2	71.9	72.1	76.6	91.0	83.9
19OCT09	77.9	78.7	75.1	79.7	80.3	79.9	79.2	77.0	88.9	91.2	88.7	85.7

Note: Dots (.) indicate missing values.

Table B-19 Weighted Mean Conductivity (mS/cm @ 25°C) by Region and Week from 2009 Long River/Fall Juvenile Survey

WEEK BEGINNING MONDAY	REGIONS												
	BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
16MAR09	13.9	5.4	1.3	0.3	0.3	0.3	0.3	.	.	.	.	.	.
23MAR09	28.5	18.4	11.8	11.5	5.9	1.6	0.2	.	.	.	.	.	.
30MAR09	21.4	13.2	7.6	2.6	0.7	0.2	0.2	.	.	.	.	.	.
06APR09	28.2	10.7	1.0	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
13APR09	20.3	13.5	6.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
20APR09	27.3	18.8	14.5	12.0	8.7	4.2	1.0	0.2	0.2	0.2	0.2	0.2	0.2
27APR09	20.5	12.8	9.2	4.1	3.0	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2
04MAY09	28.7	14.6	7.4	3.3	1.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
11MAY09	21.2	11.3	4.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
18MAY09	19.1	9.4	7.8	6.6	3.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
25MAY09	27.3	14.6	6.2	2.1	0.9	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2
01JUN09	30.5	19.9	8.1	1.8	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
08JUN09	25.7	16.7	9.4	4.9	2.8	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
15JUN09	29.5	19.9	8.7	3.6	1.8	0.2	0.2	0.2	0.2	.	.	.	.
22JUN09	12.7	5.2	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
29JUN09	26.0	13.3	4.7	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
06JUL09	22.1	12.7	9.6	4.6	1.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
13JUL09	24.0	13.4	7.9	3.8	0.9	0.2	0.2	0.2	.	.	.	.	.
20JUL09	28.1	21.9	8.6	4.7	2.2	0.6	0.2	0.2	0.3	0.2	0.2	0.2	0.2
27JUL09	24.7	11.7	5.2	2.5	0.4	0.2	0.2	0.2	.	.	.	.	.
03AUG09	25.0	11.2	1.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10AUG09	21.8	10.4	5.4	1.2	0.3	0.2	0.2	0.2	.	.	.	.	.
17AUG09	33.2	20.5	7.5	6.3	1.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24AUG09	23.8	11.3	4.5	1.9	0.3	0.2	0.2	0.2	.	.	.	.	.
31AUG09	29.2	19.6	15.0	9.9	5.1	1.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2
07SEP09	25.3	16.1	10.7	7.4	4.8	0.9	0.2	0.2	.	.	.	.	.
14SEP09	34.0	26.5	15.3	10.1	7.2	3.9	1.4	0.2	0.2	0.2	0.2	0.2	0.2
21SEP09	27.1	16.8	12.3	8.7	6.0	1.5	0.4	0.2	.	.	.	.	.
28SEP09	29.7	20.6	15.3	9.2	7.1	3.7	1.2	0.2	0.2	0.2	0.2	0.3	0.2
05OCT09	26.2	18.3	12.0	8.9	6.5	1.9	0.4	0.2	.	.	.	.	.
12OCT09	34.6	21.8	10.0	5.6	4.3	0.5	0.2	0.2	0.3	0.3	0.2	0.2	0.2
26OCT09	20.5	14.4	10.6	6.6	3.5	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
09NOV09	23.6	10.2	7.3	6.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
30NOV09	35.2	21.0	12.3	10.4	7.8	2.5	1.2	0.3	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 2009 Beach Seine Survey

WEEK BEGINNING MONDAY	REGIONS											
	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL
15JUN09	6.8	4.9	2.5	1.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
29JUN09	2.0	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
13JUL09	7.5	4.4	2.2	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
27JUL09	8.4	5.1	2.6	0.7	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2
10AUG09	6.4	2.2	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
24AUG09	9.5	5.1	3.2	0.6	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
07SEP09	14.4	9.8	6.9	4.0	0.8	0.3	0.3	0.2	0.2	0.2	0.2	0.2
21SEP09	17.0	10.5	7.8	5.0	1.6	0.6	0.3	0.2	0.2	0.2	0.2	0.2
05OCT09	15.1	10.0	8.0	6.6	2.6	0.5	0.2	0.2	0.2	0.3	0.3	0.2
19OCT09	18.0	9.6	6.5	4.5	0.6	0.3	0.3	0.3	0.2	0.2	0.2	0.2

Note: Dots (.) indicate missing values.

Appendix C

Numbers of Fish Collected in the Long River (1988-2009), Fall Juvenile (1985-2009),and Beach Seine (1985-2009) Surveys

APPENDIX C

LIST OF TABLES

Table C-1 Total Number of Fish Collected in the Long River Survey, 1988-2009

	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	2007	2008	2009
Anadromous				
Alewife	153	2,474	5,054	183
Alosa spp.	75,365	155,009	73,937	77,940
American shad	800	995	1,115	987
Atlantic sturgeon	1	4	3	3
Atlantic tomcod	9,049	9.176	27,107	23,395
Blueback herring	177	2,366	2,881	195
Hickory shad	.	.	.	.
Rainbow smelt	1	3	.	1
Sea lamprey	1	1	2	.
Striped bass	109,061	532,870	176,428	511,009
Catadromous				
American eel	276	449	301	533
Estuarine				
Atlantic silverside	157	454	239	292
Banded killifish	.	.	2	7
Fat sleeper	.	.	.	.
Fourspine stickleback	.	.	.	.
Hogchoker	44,711	96,691	86,813	19,204
Inland silverside	162	195	168	171
Lined sea horse	.	.	2	.
Mummichog	1	.	3	2
Northern pipefish	36	246	135	130
Shortnose sturgeon	5	11	2	.
Threespine stickleback	.	.	.	.
White catfish	147	72	43	98
White perch	95,979	92,203	95,325	88,826
Freshwater				
Black bullhead	.	.	.	.
Black crappie	.	.	.	.
Bluegill	.	.	3	.
Brown bullhead	32	4	28	36
Brown trout	.	.	.	.
Carp	1,219	735	629	359
Catostomidae	.	.	.	.
Centrarchidae	151	40	183	56
Chain pickerel	.	.	.	.
Channel catfish	137	.	148	185
Common shiner	.	.	.	.
Creek chub	.	.	.	.
Cyprinidae	1,622	979	1,644	1,102
Emerald shiner	.	.	.	.
Fathead minnow	.	.	.	.
Freshwater drum	590	675	760	362
Gizzard shad	1,230	417	138	307
Golden shiner	7	.	1	.
Goldfish	.	.	.	.
Largemouth bass	.	16	1	.
Logperch	1	1	.	.
Northern hog sucker	.	.	.	.
Percidae	.	.	.	.

Table C-1 (Continued)

	2006	2007	2008	2009
Freshwater (cont.)				
Pumpkinseed	1	1	.	1
Rock bass	.	.	.	.
Satinfin shiner	.	.	.	.
Silvery minnow	.	.	.	.
Slimy sculpin	.	.	.	.
Smallmouth bass	3	.	.	2
Spotfin shiner	7	.	.	.
Spottail shiner	33	89	58	62
Tesselated darter	1,484	1,109	1,730	3,029
Walleye	105	54	12	5
White crappie	.	.	.	.
White sucker	12	2	3	6
Yellow bullhead	.	.	.	.
Yellow perch	538	243	487	218
Marine				
American sand lance	8	12	8	2
Atlantic cod	.	.	1	10
Atlantic croaker	2,000	378	273	1,075
Atlantic herring	48	2	148	88
Atlantic mackerel	.	21	.	464
Atlantic menhaden	10,562	22,125	13,606	13,108
Atlantic needlefish	.	.	2	1
Atlantic seasnail	.	.	.	.
Bay anchovy	374,336	1,036,876	1,955,290	856,886
Black sea bass	.	.	.	.
Blackcheek tonguefish	.	.	.	.
Blenniidae	.	.	.	1
Bluefish	18	28	23	18
Bothidae	.	.	.	.
Butterfish	37	20	165	133
Conger eel	13	55	36	15
Cottidae	.	.	.	.
Crevalle jack	.	1	1	.
Cunner	1,363	8,882	14,716	7,173
Cusk	.	1	.	.
Feather blenny	.	.	17	.
Fourbeard rockling	2,189	2,222	2,191	2,063
Fourspot flounder	.	.	2	.
Gadidae	.	.	.	.
Gobiidae	14,995	32,595	10,882	22,108
Goosefish	.	.	.	.
Grubby	620	638	788	3,647
Gulf stream flounder	.	.	.	.
Harvestfish	.	.	.	1
Inshore lizardfish	.	.	1	.
King mackerel	.	.	.	.
Labridae	.	192	2	.
Longhorn sculpin	.	.	.	.
Lookdown	.	.	.	.
Moonfish	.	.	1	1
Myoxocephalus spp.	.	.	.	.
Naked goby	94	41	5	34
Northern kingfish	.	.	.	32
Northern puffer	.	4	16	2

Table C-1 (Continued)

	2006	2007	2008	2009
Marine (cont.)				
Northern searobin	1	33	5	1
Northern stargazer	1	.	.	.
Oyster toadfish	.	.	3	3
Phycidae	2	.	16	1
Pinfish	.	.	.	.
Pleuronectidae	.	.	.	.
Pleuronectiformes	.	.	.	.
Pollack	.	.	.	.
Radiated shanny	.	.	.	.
Red hake	1	.	.	1
Rock gunnel	19	40	37	181
Rough silverside	55	144	14	123
Sciaenidae	.	.	.	.
Scup	.	.	.	.
Seaboard goby	235	68	35	27
Searobin	20	1,028	971	280
Sharptail goby	.	.	.	.
Silver hake	.	.	.	.
Silver perch	.	.	.	1
Smallmouth flounder	29	3	13	16
Spanish mackerel	.	.	.	.
Speckled worm eel	.	.	.	.
Spot	5	.	3	.
Spotted hake	144	18	63	99
Striped anchovy	.	4	12	.
Striped burrfish	1	.	.	.
Striped cuskeel	.	3	1	1
Striped killifish	.	.	.	.
Striped searobin	16	9	24	72
Summer flounder	18	12	30	154
Tautog	1,177	5,281	10,313	12,889
Tetraodontidae	.	.	.	.
Weakfish	17,960	52,305	59,310	33,795
Windowpane	978	2,825	2,389	2,883
Winter flounder	1,312	4,015	1,155	4,744
Witch flounder	.	.	.	1
Yellowtail flounder	.	.	2	1
Unidentified				
Acipenseridae	.	.	.	.
Atherinidae	.	.	9	.
Cyprinodontidae	.	1	.	3
Fundulus spp.	.	.	6	1
Gasterosteidae	.	.	.	.
Menidia spp.	3	2	2	1
Morone unidentified	3,677	3,299	1,671	1,461
Petromyzontidae	1	.	1	.
Unidentifiable	101	550	381	34

Table C-1 (Continued)

Sampling Statistics for Long River Survey, 1988-2009

	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	2007
Start Date	2-Mar	23-Mar	7-Mar	15-Mar	4-Mar	19-Mar	2-Mar	16-Mar	8-Mar	14-Mar
End Date	7-Oct	6-Oct	5-Oct	9-Oct	9-Oct	9-Oct	7-Oct	6-Oct	5-Oct	3-Oct
Volume Sampled (m3)	810,440	774,435	857,373	711,723	716,977	704,211	706,106	654,297	689,180	691,098
Sample Size	2,435	2,329	2,435	2,300	2,438	2,433	2,439	2,433	2,436	2,437

	2008	2009
Start Date	4-Mar	16-Mar
End Date	9-Oct	7-Oct
Volume Sampled (m3)	645,337	628,594
Sample Size	2,439	2,442

Table C-2 Total Number of Fish Collected in the Fall Juvenile Survey, 1985-2009

	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	.	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
Tesselated 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	2007	2008	2009
Anadromous				
Alewife	236	587	1,031	144
Alosa spp.	755	3,030	1,529	220
American shad	77	44	69	70
Atlantic sturgeon	14	35	24	30
Atlantic tomcod	1,007	1,121	1,290	2,495
Blueback herring	943	5,682	11,803	437
Hickory shad	.	.	1	.
Rainbow smelt	.	.	.	.
Sea lamprey	.	.	.	.
Striped bass	1,795	2,001	1,456	1,068
Catadromous				
American eel	448	163	241	350
Estuarine				
Atlantic silverside	29	50	14	3
Banded killifish	12	1	1	.
Fat sleeper	.	.	.	.
Fourspine stickleback	.	.	.	1
Hogchoker	15,079	12,945	36,104	42,149
Inland silverside	.	.	.	.
Lined sea horse	.	.	.	.
Mummichog	.	.	.	.
Northern pipefish	16	19	17	59
Shortnose sturgeon	28	20	17	12
White catfish	412	198	170	174
White mullet	5	.	.	.
White perch	7,151	3,904	8,551	9,631
Freshwater				
Black bullhead	.	.	.	.
Black crappie	.	.	.	.
Bluegill	1	.	2	.
Brook trout	.	.	.	.
Brown bullhead	505	191	278	742
Carp	2	2	3	6
Central mudminnow	.	.	.	.
Centrarchidae	.	.	2	2
Channel catfish	2,279	979	1,868	1,550
Cyprinidae	.	.	.	.
Emerald shiner	.	.	1	.
Fall fish	.	.	1	.
Fathead minnow	18	.	.	.
Freshwater drum	37	2	.	3
Gizzard shad	3	5	24	1
Golden shiner	2	.	.	.

Table C-2 (Continued)

	2006	2007	2008	2009
Freshwater (cont.)				
Goldfish	.	1	.	3
Grass carp	.	.	.	1
Largemouth bass	1	.	1	.
Logperch	.	187	.	.
Longear sunfish	.	1	.	.
Margined madtom	.	.		.
Northern hog sucker	.	.	1	.
Pumpkinseed	5	.	21	1
Redbreast sunfish	.	1	.	.
Rock bass	.	.	6	1
Satinfin shiner	.	.	.	.
Silvery minnow	.	.	.	.
Smallmouth bass	.	.	.	.
Spottail shiner	212	14	157	310
Tesselated darter	41	18	137	105
Walleye	.	.	.	.
White sucker	2	1	4	6
Yellow bullhead	.	.	.	.
Yellow perch	.	.	1	2
Marine				
Atlantic croaker	5,127	256	372	1,029
Atlantic cutlassfish	2	.	.	.
Atlantic herring	.	.	.	.
Atlantic menhaden	1,288	363	39	113
Atlantic needlefish	.	5	.	.
Bay anchovy	28,864	61,499	42,665	15,740
Black sea bass	.	.	.	.
Bluefish	30	13	32	18
Butterfish	58	12	157	31
Cobia	.	.	.	.
Conger eel	.	.	.	.
Crevalle jack	3	4	8	2
Cunner	.	.	.	.
Feather blenny	.	.	.	.
Fourspot flounder	.	.	2	2
Gobiidae	10	56	.	1
Goosefish	.	.	.	.
Gray snapper	.	.	.	.
Grubby	.	.	.	.
Inshore lizardfish	.	.	.	.
Longhorn sculpin	.	.	.	.
Lookdown	1	.	1	.
Moonfish	6	21	71	10
Naked goby	13	.	10	11
Northern kingfish	2	7	11	2
Northern puffer	.	1	.	.
Northern searobin	.	.	.	.

Table C-2 (Continued)

	2006	2007	2008	2009
Marine (cont.)				
Northern stargazer	.	.	.	3
Oyster toadfish	4	.	4	13
Red hake	1	.	3	25
Rock gunnel	.	.	.	.
Rough silverside	.	1	20	2
Scup	.	2	.	.
Seaboard goby	1	.	.	.
Searobin	.	12	1	.
Sciaenidae	.	4	.	.
Silver hake	3	1	20	12
Silver perch	.	.	.	17
Smallmouth flounder	.	.	.	.
Spanish mackerel	.	.	.	.
Spot	.	.	1	.
Spotfin butterflyfish	.	.	.	1
Spotted hake	71	15	228	127
Striped anchovy	.	2	.	.
Striped burrfish	.	.	.	.
Striped cuskeel	1	.	1	.
Striped searobin	78	225	111	108
Summer flounder	13	9	20	55
Tautog	.	.	.	.
Tetraodontidae	.	.	.	.
Weakfish	452	1,410	1,126	371
Windowpane	2	4	1	2
Winter flounder	4	4	25	3
Unidentified				
Morone unidentified	37	1	.	
Unidentifiable	.	.	.	

Table C-2 (Continued)

Sampling Statistics for Fall Juvenile Survey, 1985-2009

	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	2007	2008
Start Date	7-Jul	6-Jul	6-Jul	5-Jul	10-Jul	8-Jul	7-Jul	6-Jul	5-Jul	5-Jul	1-Jul	7-Jul
End Date	23-Nov	4-Dec	3-Dec	30-Nov	30-Nov	6-Dec	5-Dec	3-Dec	2-Dec	1-Dec	30-Nov	5-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	1,968,928	2,073,021
Sample Size	2,015	2,130	2,085	2,113	2,084	2,128	2,131	2,128	2,128	2,129	2,130	2,130

	2009
Start Date	6-Jul
End Date	4-Dec
Volume Sampled (m3)	1,928,891
Sample Size	2,130

Table C-3 Total Number of Fish Collected in the Beach Seine Survey, 1985-2009

	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
Rainbow trout	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
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

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.)																					
Butterfish	.	.	.	4	.	1	.	1	9	.	.	.	.	2	.	.	.	.	.	.	.
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	2007	2008	2009
Anadromous				
Alewife	601	3,579	4,127	1,315
Alosa spp.	1,297	24,989	33,233	11,793
American shad	697	2,681	781	2,135
Atlantic sturgeon	.	.	.	.
Atlantic tomcod	27	2	3	38
Blueback herring	3,911	55,828	29,603	2,529
Hickory shad	.	.	.	.
Rainbow smelt	.	.	.	.
Striped bass	4,348	12,882	5,459	4,052
Catadromous				
American eel	154	75	349	300
Estuarine				
Atlantic silverside	2,116	16,989	6,545	5,602
Banded killifish	1,283	2,252	5,021	3,757
Fat sleeper	.	.	.	.
Fourspine stickleback	27	3	9	276
Hogchoker	130	464	240	31
Inland silverside	5	3	26	70
Mummichog	25	93	278	95
Northern pipefish	56	452	426	154
Shortnose sturgeon	.	.	.	.
Threespine stickleback	.	1	.	42
White catfish	16	6	6	6
White mullet	.	2	2	.
White perch	7,707	4,596	7,400	6,446
Freshwater				
Black crappie	21	3	25	27
Blacknose dace	.	.	.	1
Bluegill	224	39	384	466
Bluntnose minnow	.	2	.	3
Bridle shiner	.	.	.	.
Brook silverside	4	1	16	.
Brook stickleback	.	.	.	.
Brown bullhead	141	35	276	206
Brown trout	.	.	.	.
Carp	69	34	56	86
Catostomidae	.	.	.	.
Centrarchidae	213	31	1,163	556
Chain pickerel	.	.	1	1
Channel catfish	100	15	32	70
Comely shiner	.	.	.	.
Common shiner	.	.	.	1

Table C-3 (Continued)

	2006	2007	2008	2009
Freshwater (cont.)				
Creek chub	.	.	.	.
Cutlips minnow	.	.	1	.
Cyprinidae	.	.	4	125
Emerald shiner	52	9	8	21
Fall fish	2	.	9	1
Fathead minnow	1	.	.	1
Freshwater drum	14	7	9	5
Gizzard shad	58	116	230	113
Golden shiner	231	91	488	703
Goldfish	2	7	3	2
Grass carp	.	.	.	.
Grass pickerel	.	.	.	.
Green sunfish	.	.	.	.
Largemouth bass	48	75	168	248
Logperch	3	7	3	4
Longear sunfish	.	.	.	.
Longnose dace	.	.	.	.
Mimic shiner	.	.	.	.
Northern hog sucker	.	1	1	.
Northern pike	9	1	7	.
Pugnose shiner	.	.	.	.
Pumpkinseed	569	439	3,113	1,274
Rainbow trout	.		.	1
Redbreast sunfish	87	55	337	171
Redfin pickerel	.	.	5	2
Rock bass	1	.	11	3
Rudd	.	.	7	4
Satinfin shiner	3	164	46	23
Shield darter	.	.	1	.
Silvery minnow	13	66	66	8
Smallmouth bass	81	97	57	52
Spotfin shiner	2	96	33	80
Spottail shiner	4,417	13,284	15,442	9,829
Swallowtail shiner	.	.	.	.
Tesselated darter	1,229	1,045	2,614	3,283
Tiger muskellunge	.	.	.	.
Trout perch	.	.	23	.
Walleye	.	.	.	.
White crappie	.	.	.	.
White sucker	36	81	43	27
Yellow perch	107	142	131	49
Marine				
Atlantic croaker	292	.	.	.
Atlantic herring	.	.	.	.
Atlantic menhaden	4,885	6,105	1,418	4,077
Atlantic needlefish	58	96	67	48
Bay anchovy	5,376	1,314	24,902	23,457

Table C-3 (Continued)

	2006	2007	2008	2009
Marine (cont.)				
Bluefish	169	719	414	244
Butterfish	.	.	.	.
Crevalle jack	21	.	6	6
Cunner	.	.	.	.
Fourbeard rockling	.	.	.	.
Fourspot flounder	.	.	2	.
Goosefish	.	.	.	.
Gray snapper	.	1	.	.
Grubby	.	.	.	.
Inshore lizardfish	1	.	6	.
Lookdown	.	.	.	2
Moonfish	.	.	1	.
Naked goby	5	19	34	15
Northern kingfish	6	59	32	8
Northern puffer	.	1	1	.
Northern searobin	.	.	.	.
Northern stargazer	.	2	1	.
Orangespotted filefish	.	.	.	.
Permit	.	1	.	.
Red hake	.	.	.	.
Rough silverside	9	.	19	.
Seaboard goby	.	.	.	1
Searobin	.	.	2	.
Silver hake	.	.	.	.
Silver perch	.	2	.	2
Smallmouth flounder	.	.	.	.
Spanish mackerel	.	.	.	.
Spot	22	.	.	1
Spotfin mojarra	.	.	.	.
Spotted goatfish	.	.	.	.
Spotted hake	2	.	.	.
Striped anchovy	4	1	3	.
Striped mullet	24	.	7	11
Striped searobin	1	12	11	.
Summer flounder	12	3	11	21
Tautog	.	11	.	.
Weakfish	.	9	2	2
Windowpane	.	.	.	.
Winter flounder	28	85	51	22
Unidentified				
Morone unidentified	.	2	.	5
Unidentifiable	.	.	.	.

Table C-3 (Continued)

Sampling Statistics for Beach Seine Survey, 1985-2009

	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	2007	2008
Start Date	16-Jun	15-Jun	14-Jun	13-Jun	19-Jun	18-Jun	17-Jun	15-Jun	14-Jun	12-Jun	11-Jun	17-Jun
End Date	23-Oct	21-Oct	22-Oct	18-Oct	25-Oct	23-Oct	22-Oct	21-Oct	20-Oct	19-Oct	18-Oct	24-Oct
Sample Size	1,000	1,000	994	1,000	952	1,000	1,000	1,000	1,000	1,000	1,000	1,000

	2009
Start Date	15-Jun
End Date	22-Oct
Sample Size	1,000

Appendix D

Annual Abundance Indices

APPENDIX D

CONTENTS

LIST OF FIGURES

LIST OF TABLES

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 2009.

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:

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

where

B	=	the BSS index for a species in a year;
Ct_{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:

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

where

$\overline{Y}_{wi}$	=	the average CPH in week *w* and region *i* and
$\overline{Y}_w$	=	the weighted average CPH in week *w.*

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):

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

where

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

The first stage variance component is estimated as:

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

The second stage variance component is estimated as:

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

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 2009, 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:

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

where

F_g	=	the FJS index (for gear *g*) for a species in a year;
Ct_{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:

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

where

$\overline{Y}_{iswg}$	=	the average density of a species in samples from region *i*, stratum *s*, week *w*, and gear *g* and
$\overline{Y}_{wg}$	=	the weighted average density of a species in samples from week *w*, and gear *g*.

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):

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

where

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

The first stage variance component is calculated as:

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

The second stage variance is calculated as:

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

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:

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

where

$\overline{Y}_{isw}$ = 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

$\overline{Y}_w$ = the weighted average density of a species in samples collected during week *w.*

Variance of the index was estimated using the following equation:

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

where

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

Then:

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

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.

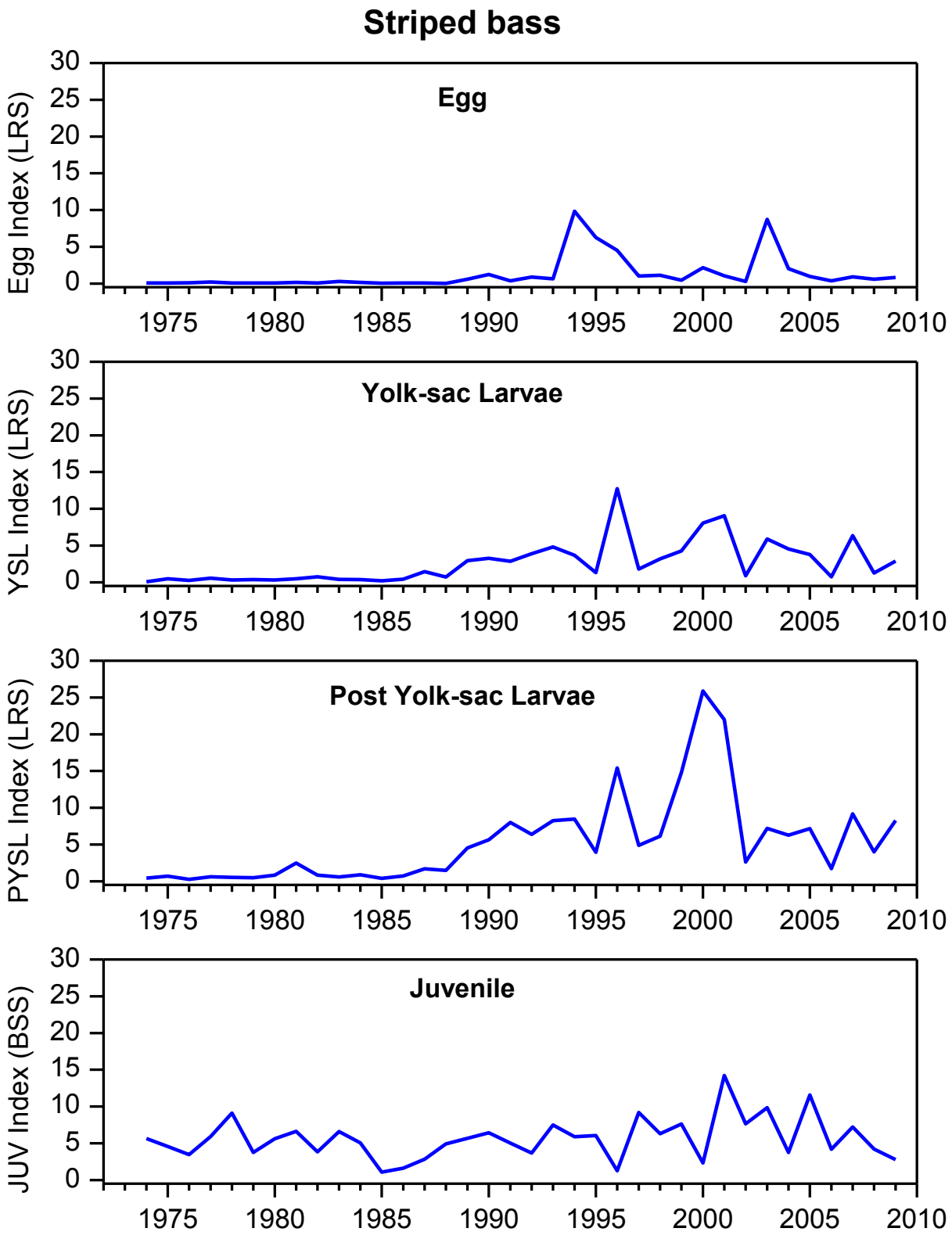


Figure D-1. Striped bass indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2009

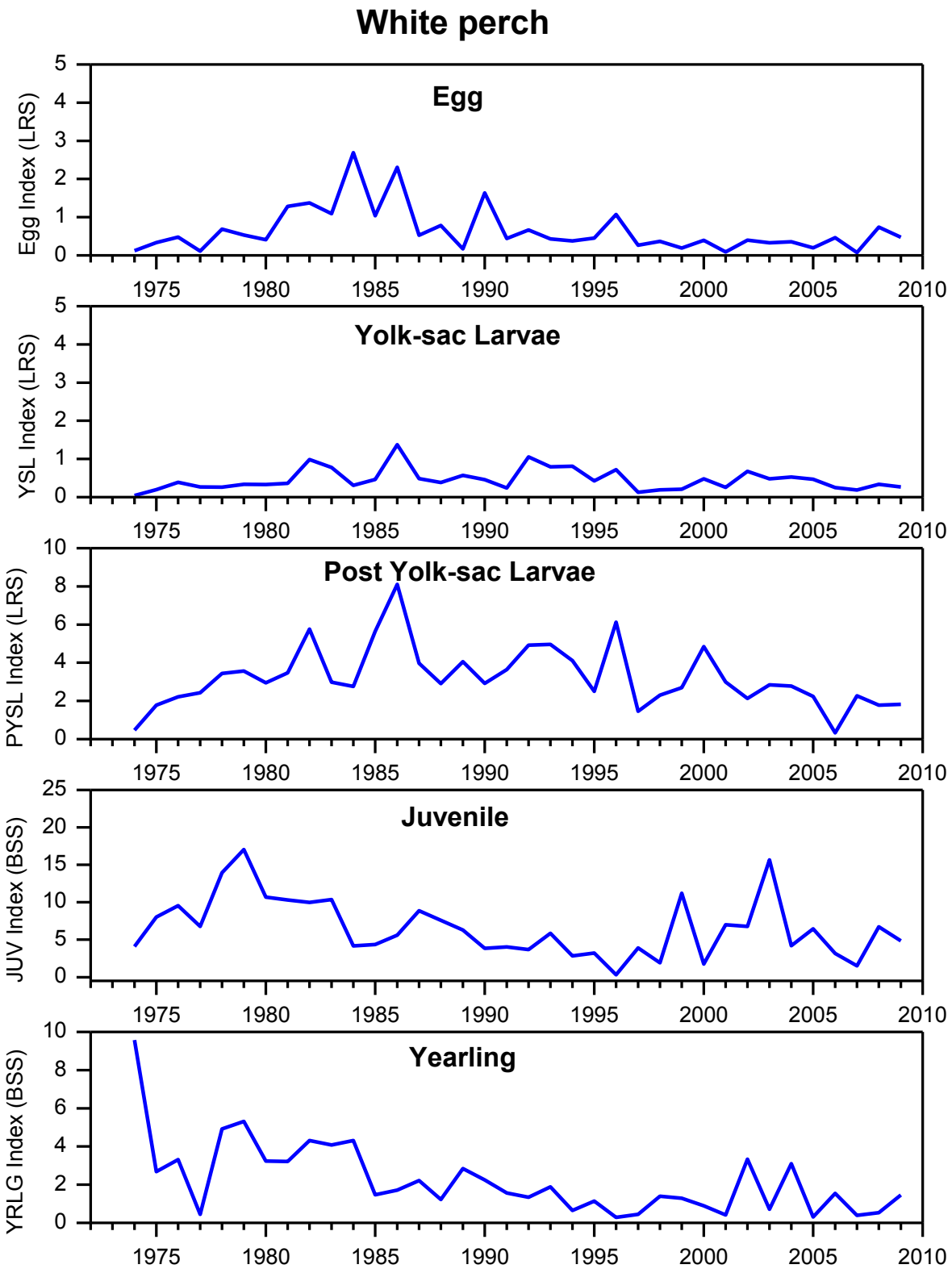


Figure D-2. White perch indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2009

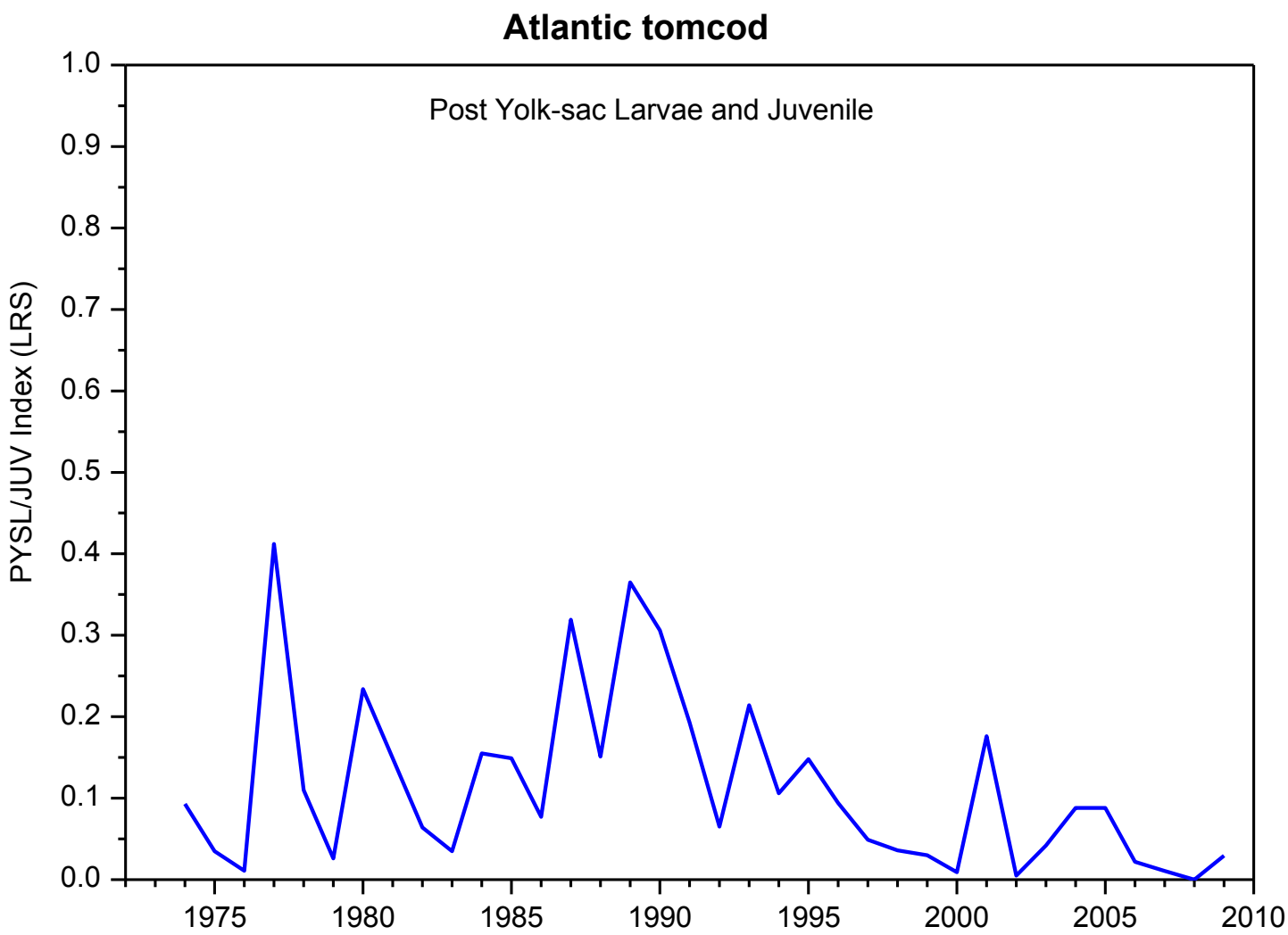


Figure D-3. Atlantic tomcod indices of annual abundance based on Long River Survey, 1974-2009

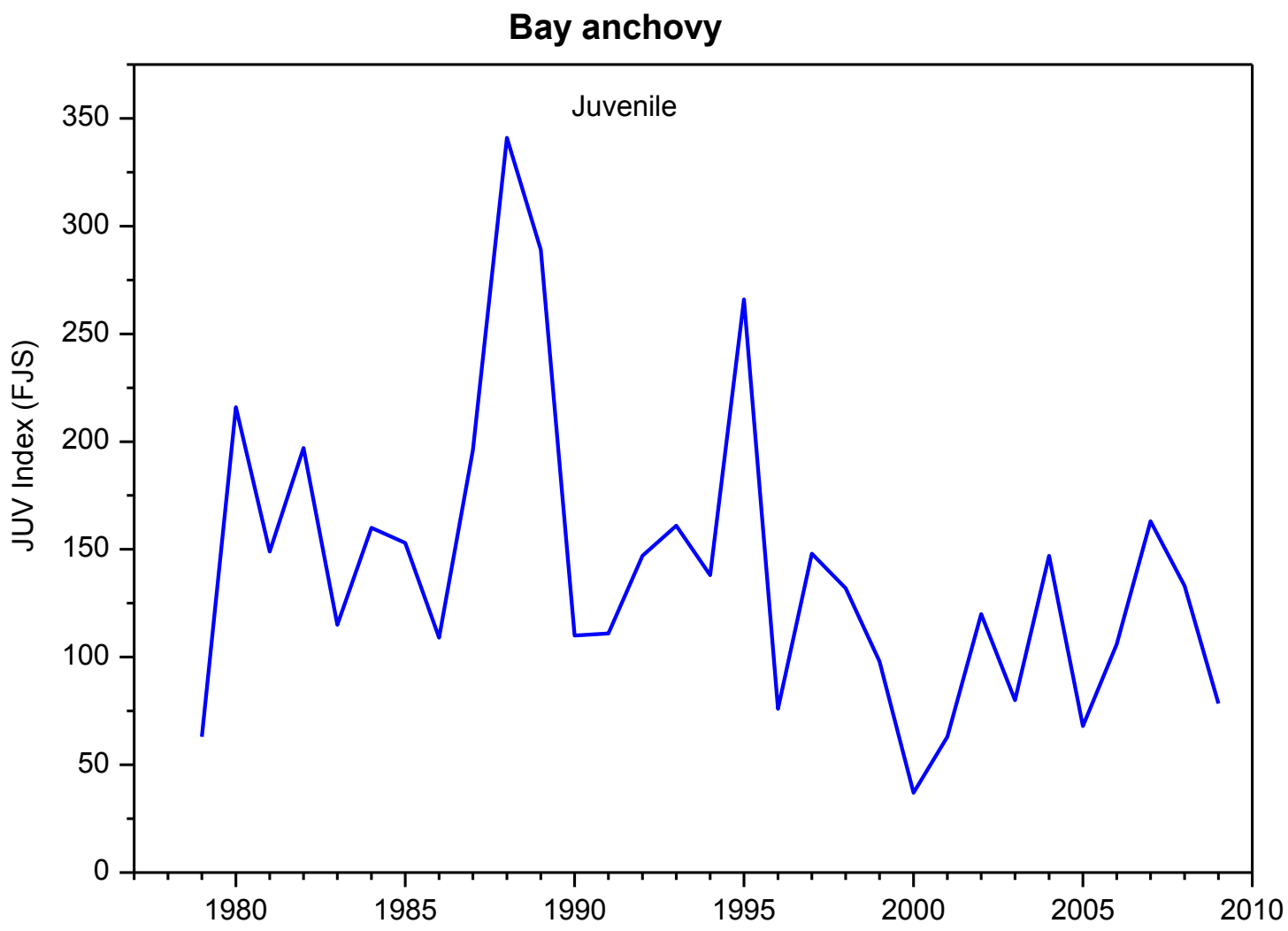


Figure D-4. Bay anchovy indices of annual abundance based on Fall Juvenile Survey, 1979-2009

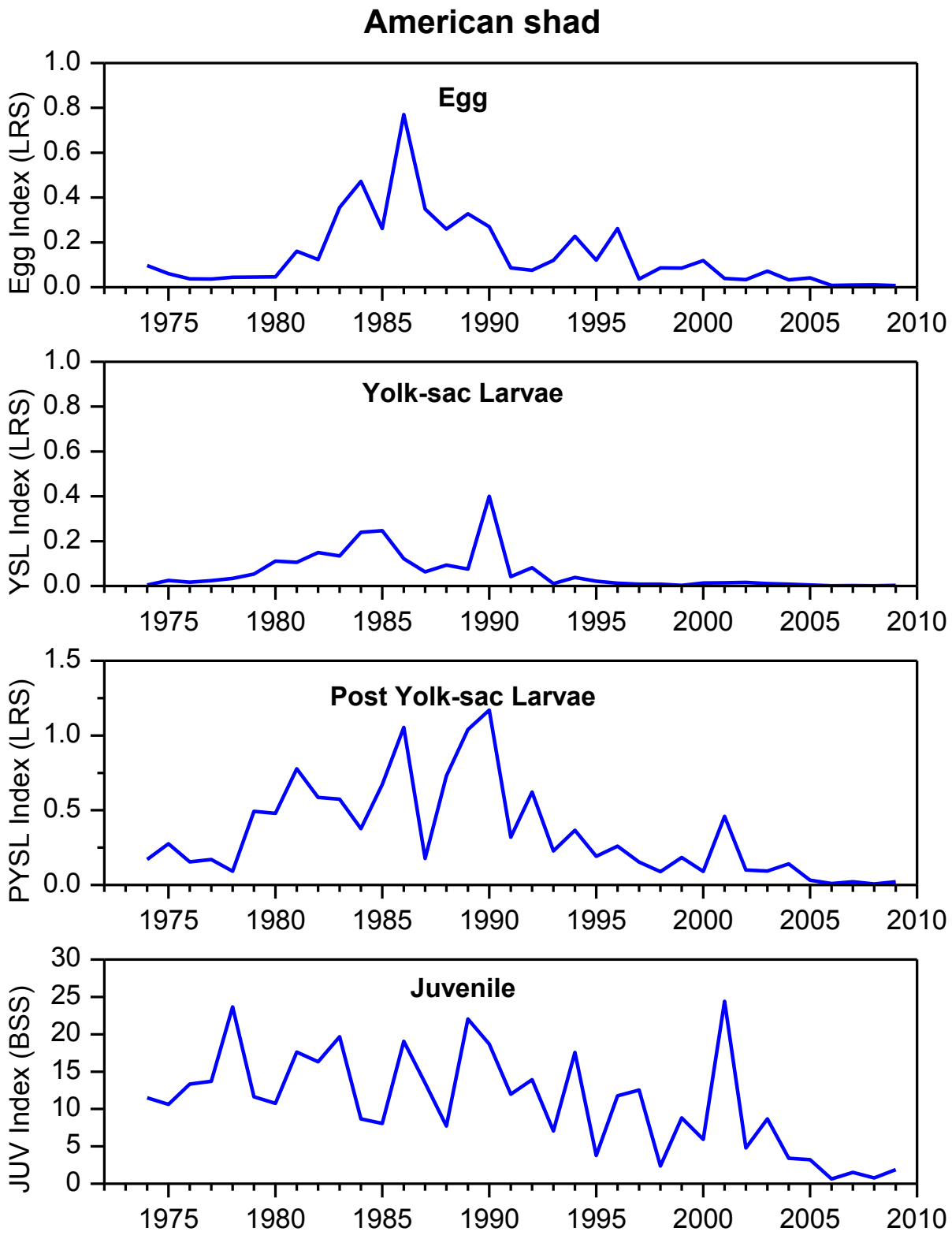


Figure D-5. American shad indices of annual abundance based on Long River Survey and Beach Seine Survey, 1974-2009

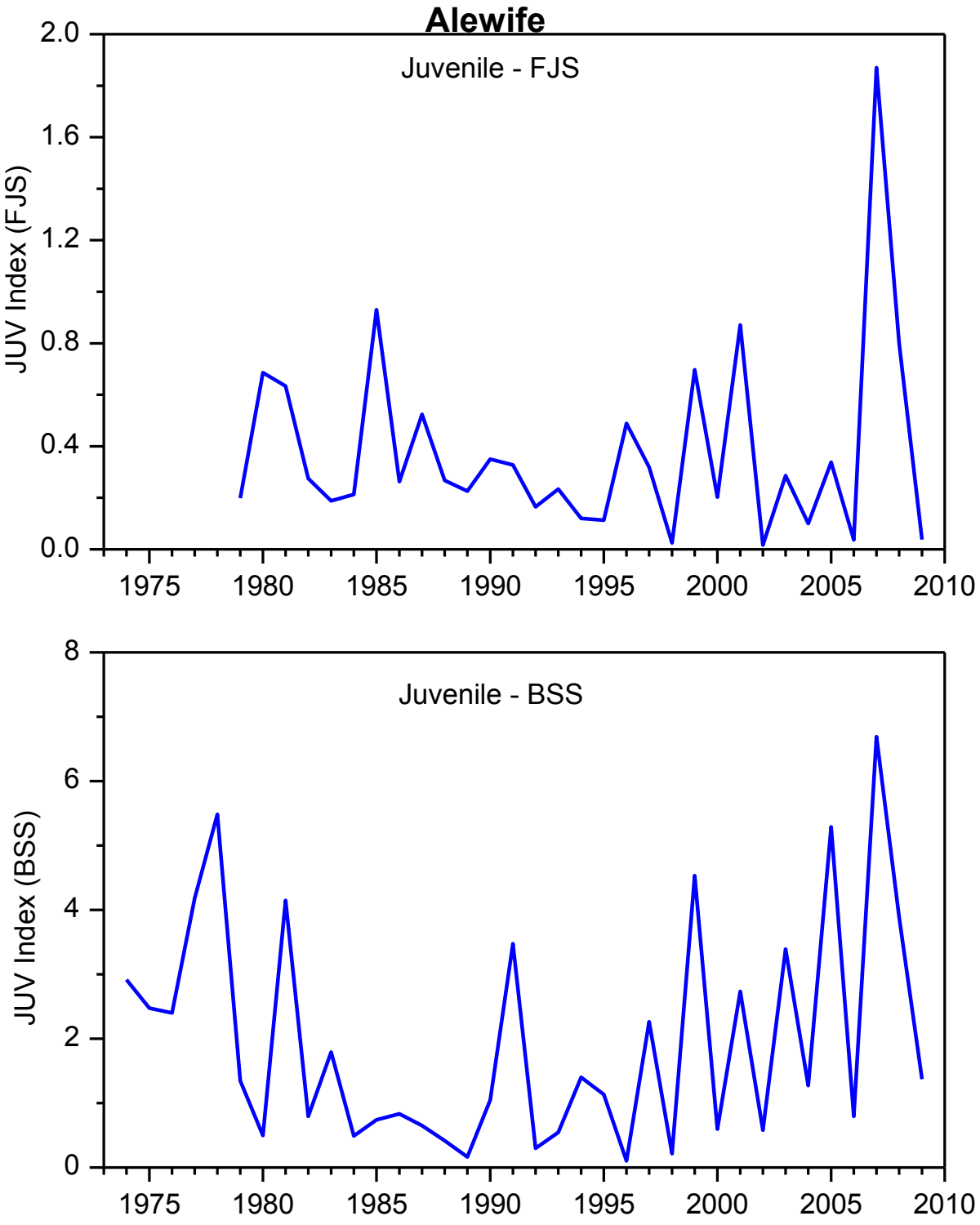


Figure D-6. Alewife indices of annual abundance based on Fall Juvenile Survey, 1979-2009, and Beach Seine Survey, 1974-2009

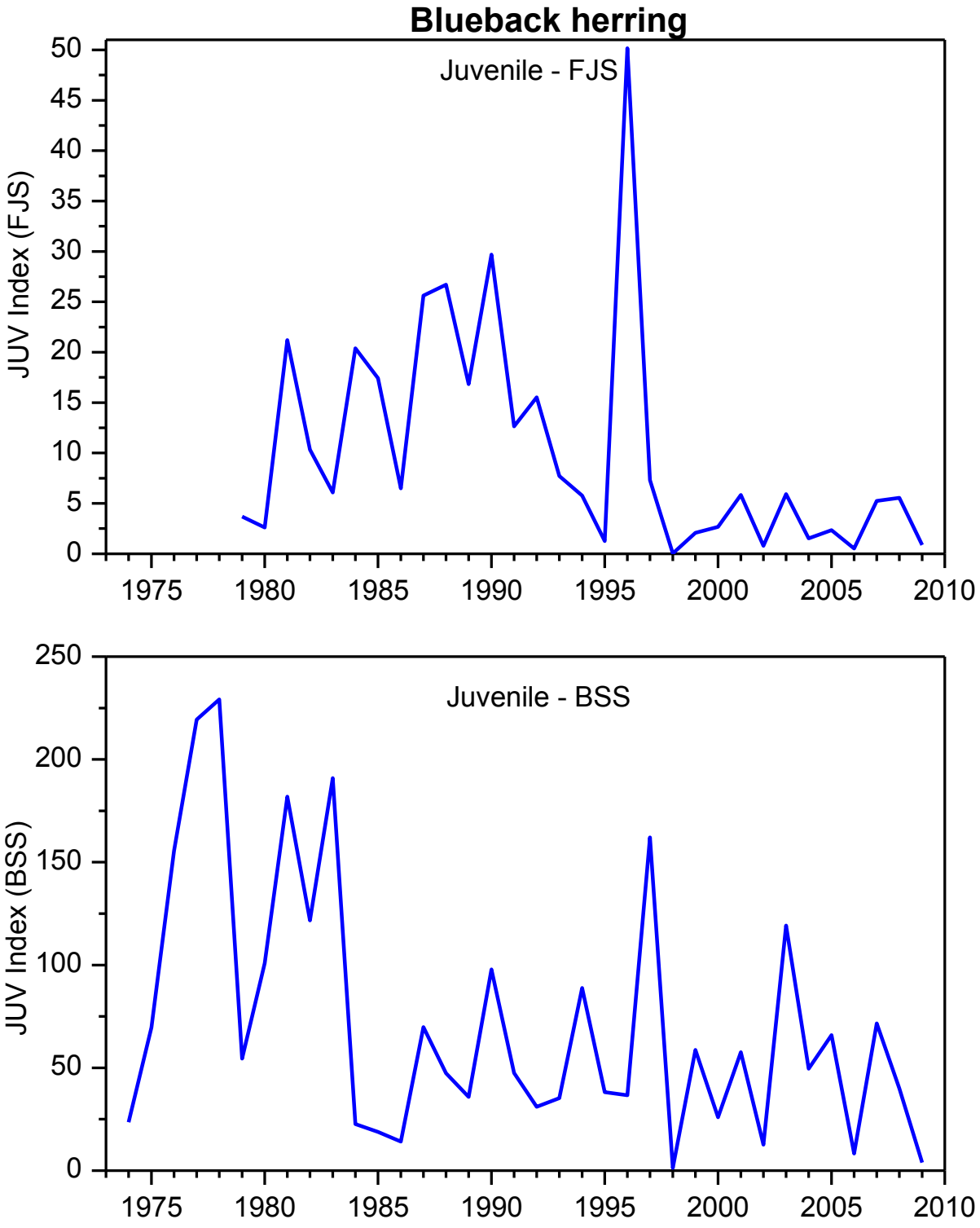


Figure D-7. Blueback herring indices of annual abundance based on Fall Juvenile Survey, 1979-2009, and Beach Seine Survey, 1974-2009

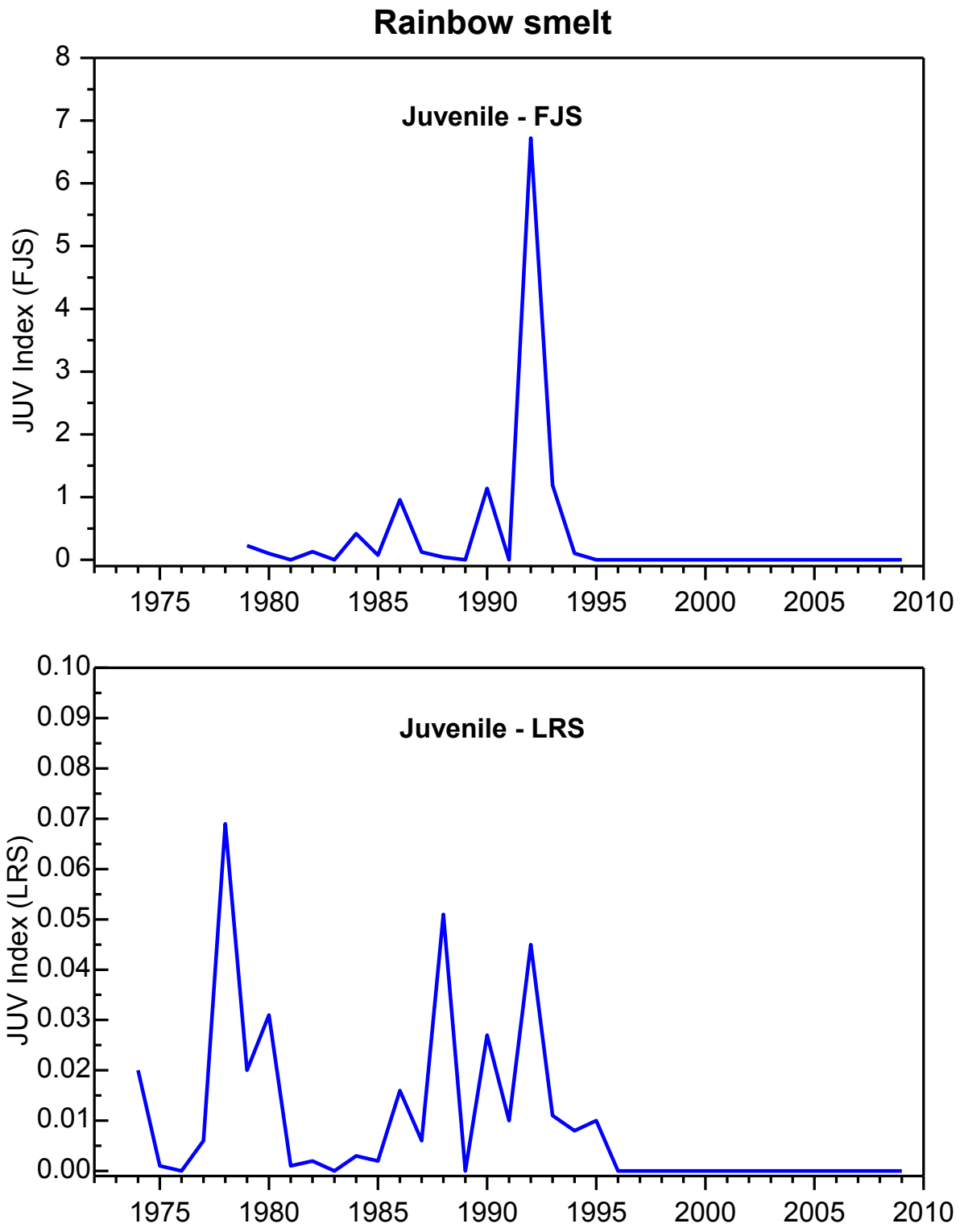


Figure D-8. Rainbow smelt indices of annual abundance based on Fall Juvenile Survey, 1979-2009, and Long River Survey, 1974-2009

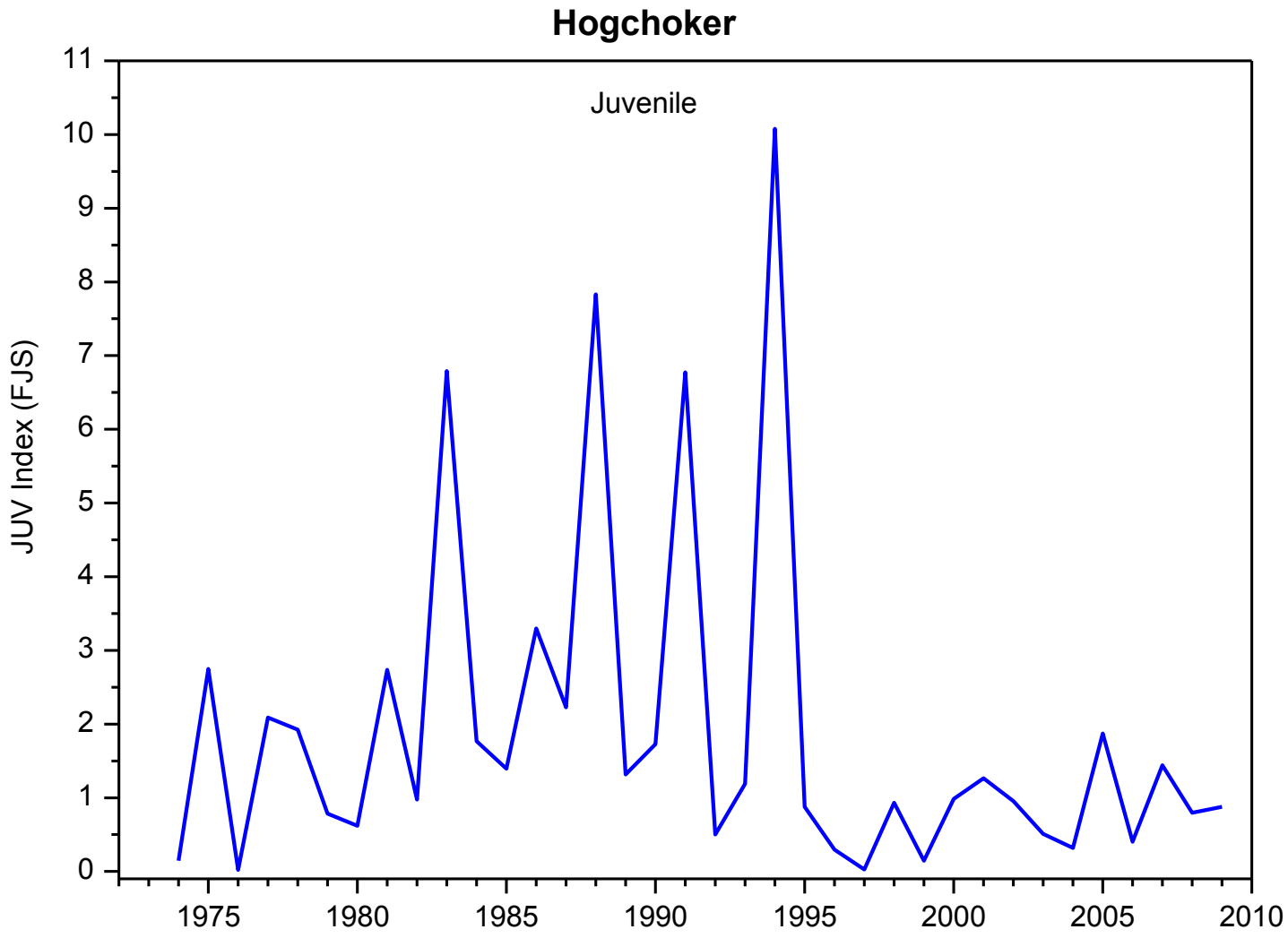


Figure D-9. Hogchoker indices of annual abundance based on Fall Juvenile Survey, 1974-2009

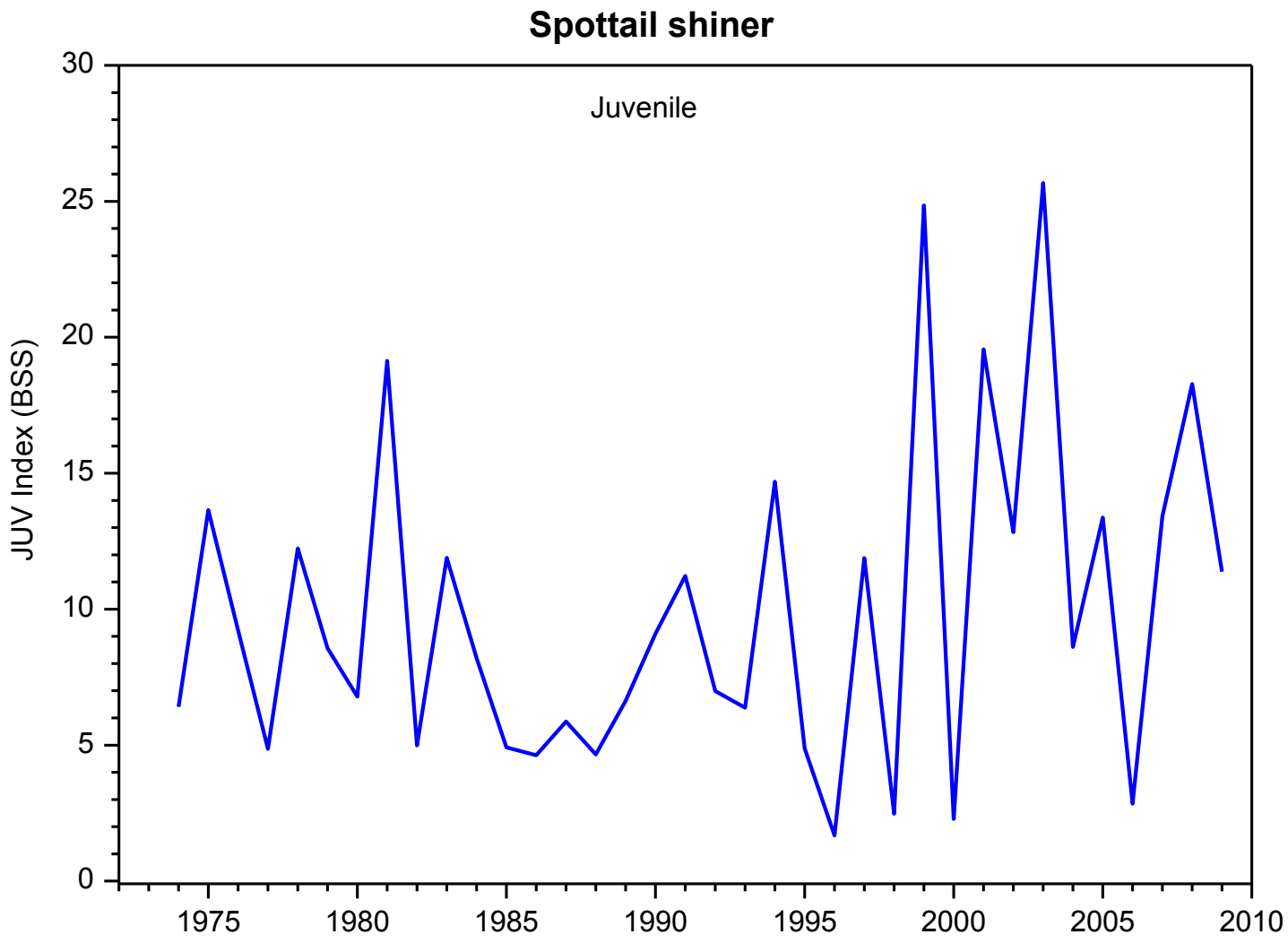


Figure D-10. Spottail shiner indices of annual abundance based on Beach Seine Survey, 1974-2009

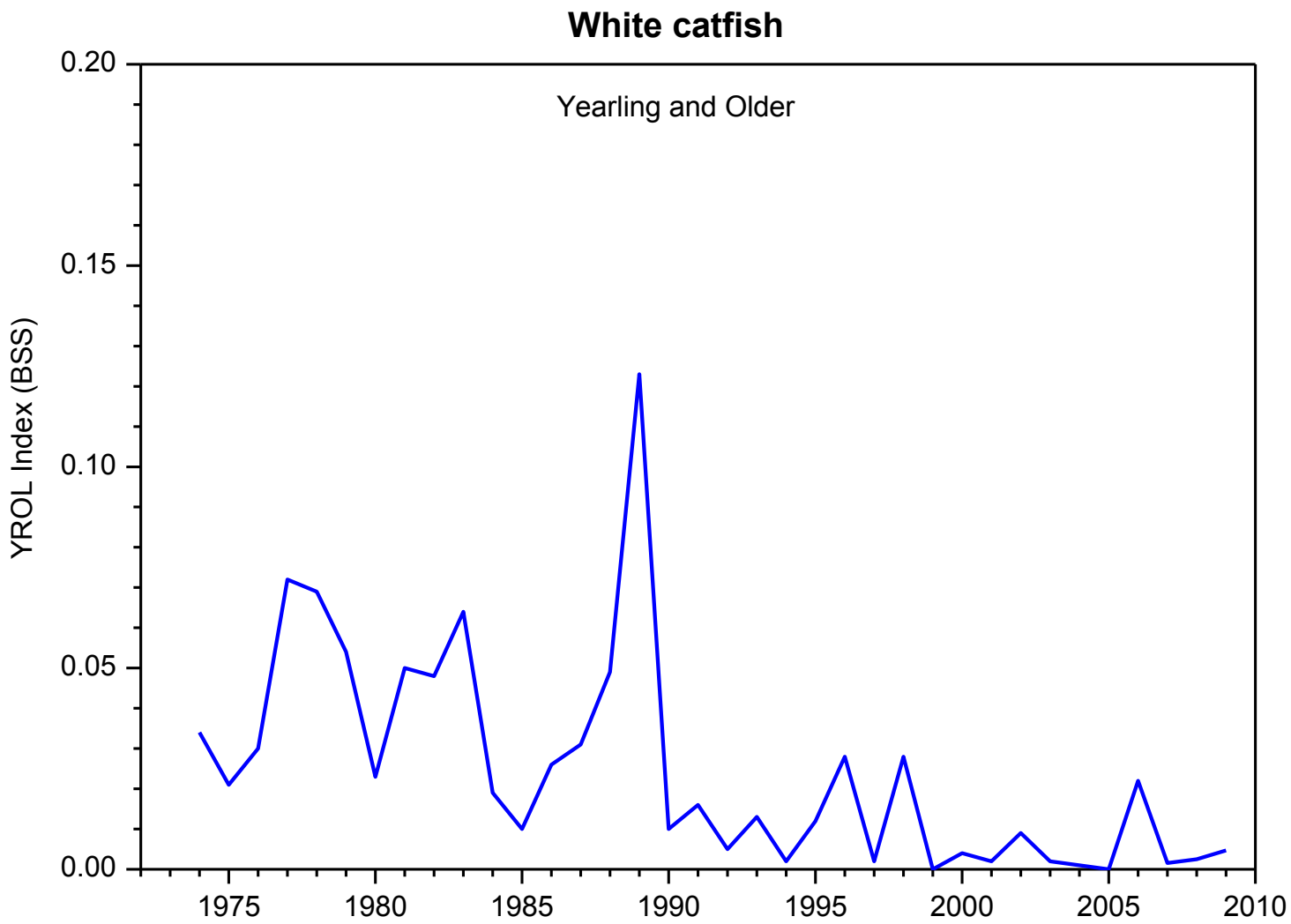


Figure D-11. White catfish indices of annual abundance based on Beach Seine Survey, 1974-2009

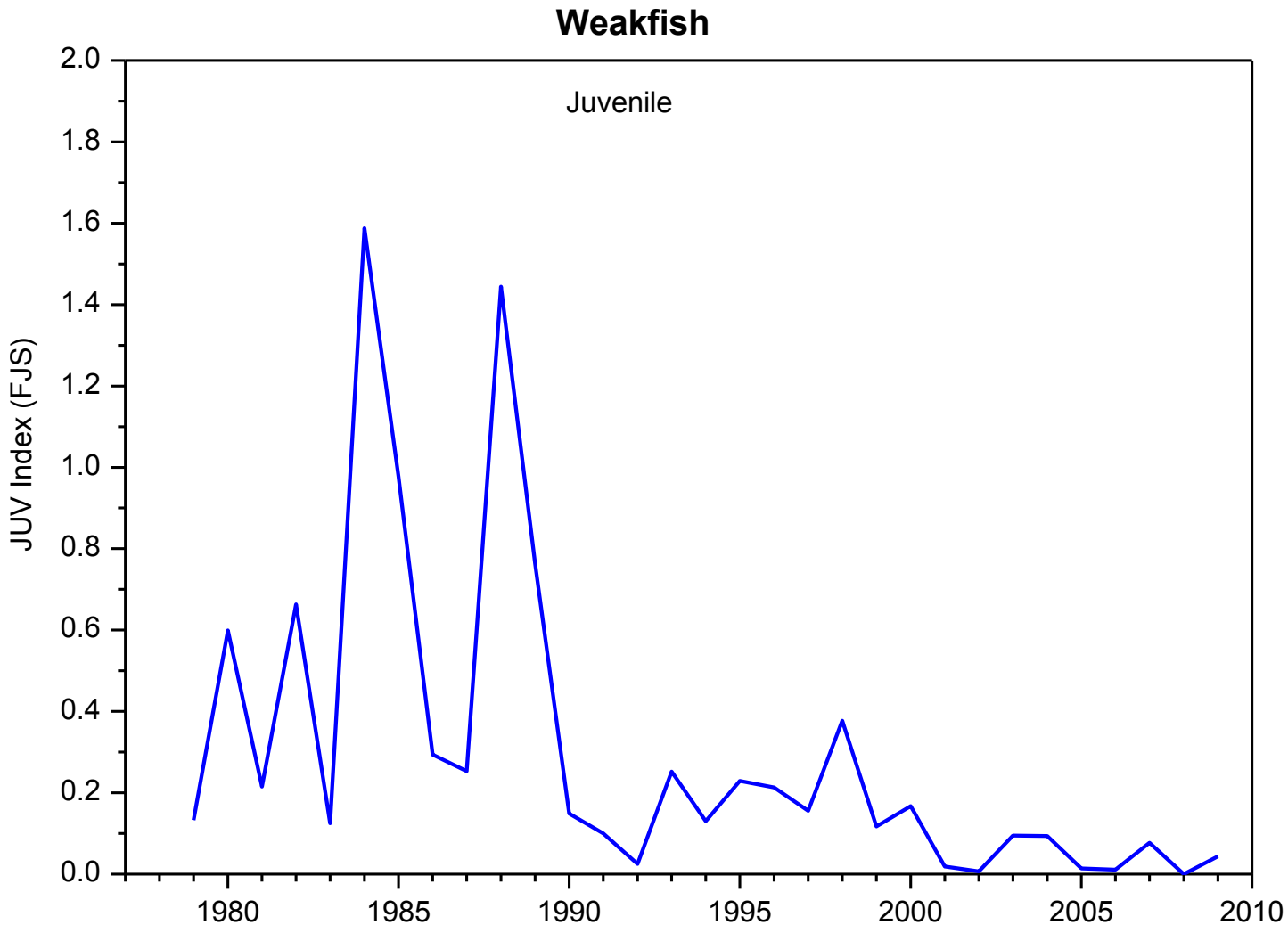


Figure D-12. Weakfish indices of annual abundance based on Fall Juvenile Survey, 1979-2009

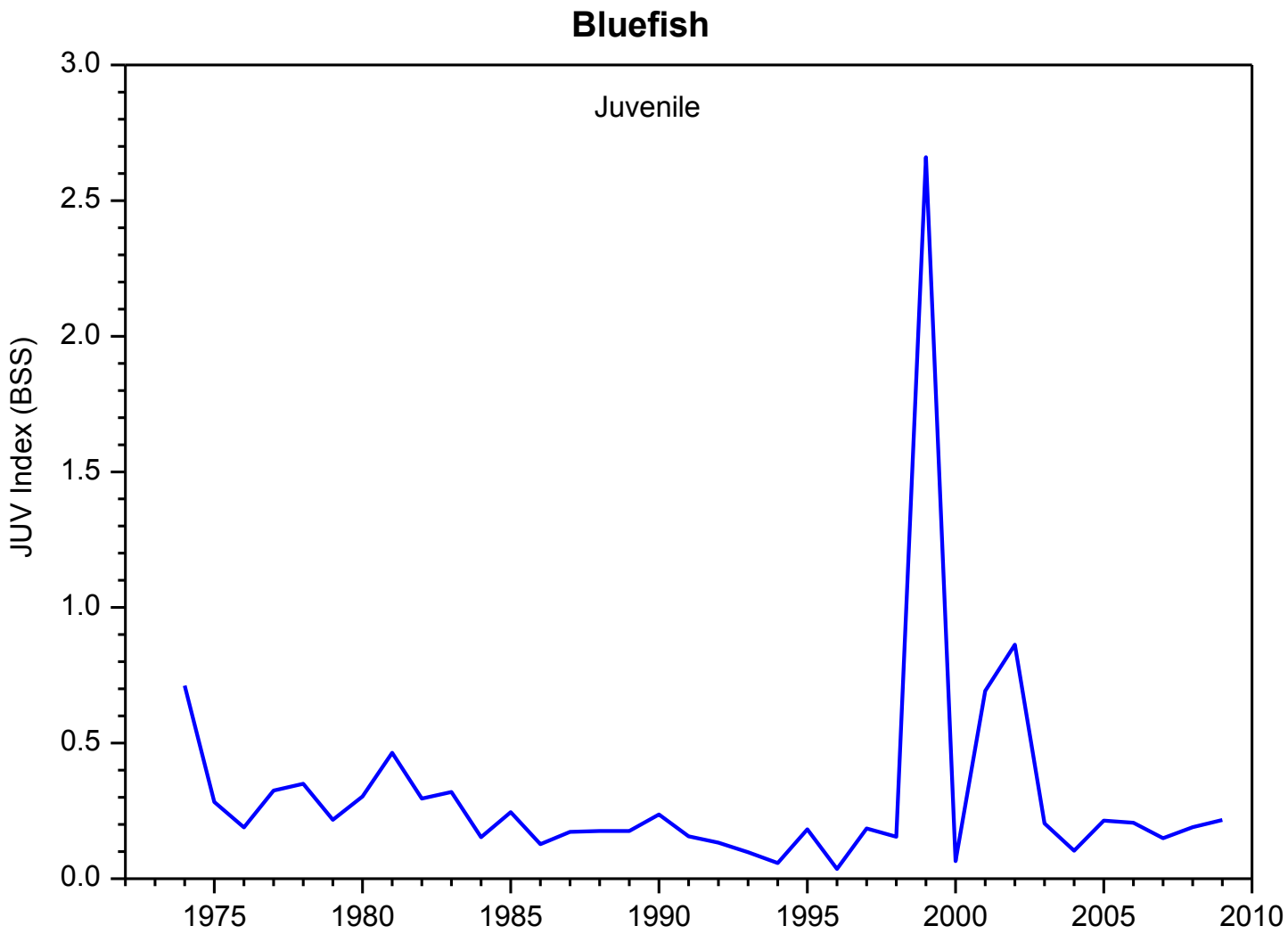


Figure D-13. Bluefish indices of annual abundance based on Beach Seine Survey, 1974-2009

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, 1974-2009

	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

Continued

	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.
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
2007	0.920	0.196	6.353	1.267	9.157	0.600	7.201	0.961
2008	0.580	0.106	1.268	0.169	3.995	0.476	4.203	0.548
2009	0.827	0.107	2.871	0.259	8.256	1.150	2.768	0.252

Table D-3 White Perch Indices of Annual Abundance Based on Long River Survey and Beach Seine Survey, 1974-2009

	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

Continued

	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.
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
2007	0.075	0.012	0.186	0.018	2.264	0.180	1.519	0.260	0.391	0.127
2008	0.739	0.070	0.338	0.030	1.777	0.114	6.729	1.362	0.533	0.533
2009	0.473	0.034	0.265	0.017	1.823	0.116	4.852	0.947	1.462	0.322

Table D-4 Atlantic Tomcod Indices of Annual Abundance Based on Long River Survey, 1974-2009

	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
2007	0.011	0.001
2008	<0.001	0.010
2009	0.029	0.005

Table D-5 Bay Anchovy Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2009

	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
2007	163	19
2008	133	14
2009	78	12

Table D-6 American Shad Indices of Annual Abundance Based on Long River Survey and Beach Seine Survey, 1974-2009

	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

Continued

	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.
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
2007	0.010	0.007	0.002	0.001	0.021	0.022	1.522	0.370
2008	0.011	0.003	0.001	0.000	0.006	0.003	0.774	0.143
2009	0.007	0.002	0.003	<0.001	0.021	0.010	1.880	0.389

Table D-7 Alewife Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2009, and Beach Seine Survey, 1974-2009

	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
2007	1.870	1.144	6.688	2.003
2008	0.800	0.542	3.888	0.999
2009	0.038	0.031	1.371	0.467

Table D-8 Blueback Herring Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2009, and Beach Seine Survey, 1974-2009

	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
2007	5.236	0.907	71.601	9.047
2008	5.557	1.353	39.985	8.850
2009	0.866	0.247	3.881	1.136

Table D-9 Rainbow Smelt Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2009, and Long River Survey, 1974-2009

	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
2007	0.000	0.000	0.000	0.000
2008	0.000	0.000	0.000	0.000
2009	0.000	0.000	0.000	0.000

Table D-10 Hogchoker Indices of Annual Abundance Based on Fall Juvenile Survey, 1974-2009

	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
2007	1.442	0.774
2008	0.796	0.206
2009	0.878	0.462

Table D-11 Spottail Shiner Indices of Annual Abundance Based on Beach Seine Survey, 1974-2009

	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
2007	13.419	3.931
2008	18.279	2.781
2009	11.380	5.983

Table D-12 White Catfish Indices of Annual Abundance Based on Beach Seine Survey, 1974-2009

	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
2007	0.002	0.002
2008	0.002	0.002
2009	0.005	0.003

Table D-13 Weakfish Indices of Annual Abundance Based on Fall Juvenile Survey, 1979-2009

	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
2007	0.077	0.054
2008	0.000	0.000
2009	0.044	0.021

Table D-14 Bluefish Indices of Annual Abundance Based on Beach Seine Survey, 1974-2009

	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
2007	0.149	0.026
2008	0.190	0.046
2009	0.217	0.030

Appendix E

Density and Standing Crop Estimates

APPENDIX E

LIST OF TABLES

APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

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APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

LIST OF TABLES (CONTINUED)

APPENDIX E

LIST OF TABLES (CONTINUED)

TABLE E-1 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	2.05	0.00	0.00	0.00	2.24	0.45
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.52	0.00	0.00	0.00	2.24	2.81
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	26.28	389.27	206.96	74.77	34.03	31.63	0.00	0.00	58.69
07MAY	SE	0.00	0.00	0.00	0.00	0.00	26.28	178.12	90.43	34.84	15.21	20.31	0.00	0.00	206.04
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	8.73	75.81	612.78	2097.68	932.27	126.95	12.92	6.01	0.71	1.73	298.12
13MAY	SE	0.00	0.00	0.00	6.47	42.83	462.08	933.83	487.97	50.82	6.27	3.67	0.71	1.73	1152.47
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.57	1.15	4.58	714.83	52.62	20.81	61.32	2.96	8.54	3.10	0.76	67.02
21MAY	SE	0.00	0.00	0.42	0.62	1.71	419.77	37.61	8.87	40.51	1.99	5.34	1.29	0.76	423.53
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	1.27	38.65	46.31	183.13	692.37	78.16	88.19	673.18	143.43	2.52	19.60	151.29
29MAY	SE	0.00	0.00	0.72	30.35	24.74	46.62	307.70	34.44	37.97	358.84	55.49	2.03	14.14	482.77
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	23333.52	0.00	34.09	78.98	718.36	336.12	11.71	159.51	20.15	3.90	382.99	8.87	1929.86
04JUN	SE	0.00	23333.52	0.00	30.13	35.06	579.91	76.18	6.18	61.70	8.57	2.31	359.29	3.50	23343.75
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-1 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.44	0.00	0.00	0.00	14.10	62.22	5.48	117.47	64.25	4.76	3.81	565.22	64.44
11JUN	SE	0.00	0.44	0.00	0.00	0.00	7.01	24.77	2.17	62.11	31.42	2.08	3.30	348.60	356.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	13.96	18.13	2.31	60.60	3.60	9.77	20.18	82.29	16.22
19JUN	SE	0.00	0.00	0.00	0.00	0.00	11.87	5.87	1.71	33.10	2.53	7.72	9.78	63.53	73.97
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.21	3.60	0.00	1.09	0.26	1.05	0.00	2.07	0.00	0.00	0.99	1.71	0.84
27JUN	SE	0.00	0.21	1.26	0.00	0.94	0.26	0.69	0.00	1.44	0.00	0.00	0.99	0.81	2.60
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	1.87	0.00	0.47	0.12	0.00	0.16	0.00	2.80	1.89	4.30	0.00	0.00	0.89
03JUL	SE	0.00	1.87	0.00	0.47	0.12	0.00	0.16	0.00	1.46	1.09	0.92	0.00	0.00	2.82
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	NS	NS	NS	NS	NS	0.02
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00						0.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST.CROP	0	0	0	0	0	0	0	466	339	0	0	0	159	964
30APR	SE	0	0	0	0	0	0	0	226	252	0	0	0	159	374
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST.CROP	0	0	0	0	0	5452	54416	61702	12373	4815	5576	0	0	144333
07MAY	SE	0	0	0	0	0	5452	24900	26959	5766	2151	3580	0	0	37778
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST.CROP	0	0	0	1290	15794	127125	293237	277941	21009	1828	1059	114	123	739521
13MAY	SE	0	0	0	956	8923	95861	130541	145480	8411	888	647	114	123	218053
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST.CROP	0	0	183	170	955	148295	7356	6205	10147	419	1505	499	54	175788
21MAY	SE	0	0	134	92	356	87084	5257	2645	6705	281	941	207	54	87547
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST.CROP	0	0	410	5710	9648	37991	96788	23303	14595	95235	25286	404	1395	310765
29MAY	SE	0	0	231	4484	5154	9671	43013	10267	6283	50766	9783	326	1006	69349
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	0	5353183	0	5036	16454	149028	46987	3492	26397	2850	687	61559	631	5666306
04JUN	SE	0	5353183	0	4451	7304	120306	10649	1841	10210	1212	408	57750	249	5354874
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	0	102	0	0	0	2924	8698	1635	19440	9090	839	613	40215	83556
11JUN	SE	0	102	0	0	0	1455	3463	647	10278	4445	366	530	24803	27487
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	0	0	0	0	0	2895	2535	688	10029	509	1722	3244	5855	27477
19JUN	SE	0	0	0	0	0	2462	821	510	5477	359	1361	1572	4520	7867
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	0	47	1159	0	226	54	147	0	343	0	0	159	121	2257
27JUN	SE	0	47	406	0	195	54	97	0	239	0	0	159	57	550
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST.CROP	0	430	0	70	25	0	22	0	463	268	757	0	0	2035
03JUL	SE	0	430	0	70	25	0	22	0	241	155	163	0	0	547
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST.CROP	0	0	0	0	0	27	0	0	NS	NS	NS	NS	NS	27
15JUL	SE	0	0	0	0	0	27	0	0						27
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	2.92	4.77	3.27	11.37	4.22	0.43	0.00	0.00	2.08
07MAY	SE	0.00	0.00	0.00	0.00	0.00	2.92	2.18	1.48	4.26	2.00	0.43	0.00	0.00	6.15
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.19	78.48	112.53	89.67	404.24	336.99	35.41	1.95	0.41	0.00	0.64	81.58
13MAY	SE	0.00	0.00	0.19	16.35	72.75	37.71	143.40	153.25	15.52	1.39	0.41	0.00	0.64	226.44
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.36	0.00	0.41	1.76	320.27	383.53	611.42	829.46	45.61	0.63	0.00	0.00	0.00	168.73
21MAY	SE	0.36	0.00	0.29	1.13	175.51	260.38	427.58	643.22	22.94	0.63	0.00	0.00	0.00	834.08
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.96	0.00	2.54	573.84	1939.38	7317.62	3123.11	886.63	487.09	99.09	34.31	1.60	1.83	1112.92
29MAY	SE	0.72	0.00	2.29	424.49	461.28	1899.22	1275.90	219.08	243.05	40.89	6.96	1.60	0.84	2395.15
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	466.35	671.32	765.16	987.20	2070.96	239.28	46.23	26.29	4.24	0.70	405.98
04JUN	SE	0.00	0.00	0.00	156.30	202.13	399.39	190.80	892.22	92.73	17.71	8.04	2.10	0.70	1032.59
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.50	1.63	330.12	255.18	370.69	276.65	126.25	48.51	27.12	0.00	110.51
11JUN	SE	0.00	0.00	0.00	0.50	1.63	87.52	69.03	240.00	82.89	33.92	11.76	10.95	0.00	279.83
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	17.66	240.36	201.45	31.83	184.71	44.94	120.06	20.66	0.67	66.33
19JUN	SE	0.00	0.00	0.00	0.00	16.68	106.73	88.29	11.45	55.67	17.60	51.25	9.73	0.67	160.40
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.98	0.78	1.06	1.58	45.92	53.10	148.56	12.76	5.40	6.61	6.85	0.00	21.81
27JUN	SE	0.00	0.73	0.47	0.53	1.06	13.05	20.30	46.27	4.33	2.37	5.56	6.85	0.00	53.17
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	2.78	0.00	0.00	0.27	1.66	6.19	41.53	11.78	15.71	44.28	17.90	0.57	0.50	11.01
03JUL	SE	2.78	0.00	0.00	0.27	1.05	3.04	17.01	7.12	6.22	16.06	11.88	0.57	0.50	28.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.27	NS	NS	NS	NS	NS	0.05
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.27						0.30
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	606	667	976	1881	597	76	0	0	4802
07MAY	SE	0	0	0	0	0	606	305	441	705	283	76	0	0	1112
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	60	11594	23444	18602	56509	100468	5860	275	72	0	45	216930
13MAY	SE	0	0	60	2416	15156	7823	20047	45688	2568	197	72	0	45	52845
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	75	0	131	260	66724	79565	85471	247289	7547	89	0	0	0	487152
21MAY	SE	75	0	94	167	36564	54018	59771	191765	3796	89	0	0	0	211225
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	200	0	819	84778	404043	1518082	436583	264334	80606	14018	6048	257	130	2809898
29MAY	SE	151	0	738	62713	96101	394005	178359	65316	40222	5785	1226	257	59	454026
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	68897	139860	158737	138001	617421	39598	6540	4635	681	50	1174420
04JUN	SE	0	0	0	23091	42111	82856	26672	266001	15346	2506	1417	338	50	284401
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	74	340	68485	35672	110514	45782	17861	8552	4359	0	291640
11JUN	SE	0	0	0	74	340	18156	9649	71551	13717	4799	2073	1760	0	75901
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	3679	49864	28161	9490	30566	6358	21165	3321	48	152654
19JUN	SE	0	0	0	0	3475	22142	12343	3413	9213	2489	9035	1563	48	29009
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	224	252	156	329	9526	7423	44290	2112	763	1166	1102	0	67342
27JUN	SE	0	167	151	78	221	2707	2837	13795	717	336	980	1102	0	14442
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	580	0	0	41	346	1283	5806	3512	2600	6264	3156	91	36	23714
03JUL	SE	580	0	0	41	219	631	2378	2124	1029	2272	2094	91	36	4644
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	27	0	80	NS	NS	NS	NS	NS	107
15JUL	SE	0	0	0	0	0	27	0	80						85
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-5 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.19	10.55	0.18	0.33	28.20	24.87	3.54	0.83	0.00	0.00	0.00	5.28
13MAY	SE	0.00	0.00	0.19	3.75	0.18	0.33	13.29	8.33	2.19	0.83	0.00	0.00	0.00	16.30
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.29	5.86	35.20	345.08	589.25	265.17	168.46	1.53	0.00	0.74	0.00	0.00	108.58
21MAY	SE	0.00	0.29	2.26	12.64	169.05	292.82	152.94	132.98	1.29	0.00	0.74	0.00	0.00	394.41
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	7.78	67.55	1007.37	16582.55	16870.81	21927.30	2274.66	302.42	90.50	101.47	42.35	0.00	0.00	4559.60
29MAY	SE	5.33	27.66	493.73	3827.98	4657.37	10145.22	616.40	81.07	46.19	45.05	3.80	0.00	0.00	11828.15
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	11.67	107.83	784.78	3603.51	4223.67	3456.41	3399.86	2298.20	237.61	113.36	56.23	4.34	1.00	1407.57
04JUN	SE	5.42	17.28	69.91	646.79	790.28	764.66	636.08	374.62	85.66	74.95	28.22	2.05	1.00	1480.37
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	5.81	28.09	31.26	298.61	467.82	1869.52	1876.01	769.86	511.26	353.66	190.80	33.56	0.00	495.10
11JUN	SE	2.24	10.98	9.28	90.06	120.49	164.31	263.33	183.31	116.06	116.87	17.14	13.06	0.00	424.71
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.44	0.75	11.33	220.39	475.35	1551.78	850.38	199.21	459.32	113.20	56.20	16.74	1.32	304.34
19JUN	SE	0.44	0.12	2.09	44.66	142.98	411.01	266.71	53.88	172.76	36.93	12.37	11.36	0.66	544.88
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	43.09	237.43	80.50	269.99	340.90	517.83	198.35	104.67	26.83	29.61	27.37	1.58	144.47
27JUN	SE	0.00	11.33	54.69	27.95	42.74	71.30	201.59	29.94	35.63	13.35	12.82	11.73	0.75	232.59
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	1.16	7.42	99.10	85.60	78.34	81.63	166.81	54.82	136.23	151.62	82.04	1.73	0.64	72.86
03JUL	SE	1.16	2.68	31.93	11.38	9.86	15.57	34.22	11.08	36.00	33.30	18.83	1.73	0.64	74.53
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.77	25.25	21.68	85.17	21.75	NS	NS	NS	NS	NS	19.33
15JUL	SE	0.00	0.00	0.00	0.55	7.67	5.58	16.84	5.64						20.14
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.95	4.55	62.41	1.14	NS	NS	NS	NS	NS	8.63
29JUL	SE	0.00	0.00	0.00	0.00	0.65	1.88	36.92	0.76						36.98
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.26	0.15	0.00	NS	NS	NS	NS	NS	0.05
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.26	0.10	0.00						0.28
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	61	1559	37	68	3942	7414	585	118	0	0	0	13784
13MAY	SE	0	0	61	554	37	68	1857	2484	363	118	0	0	0	3175
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	67	1887	5200	71894	122243	37068	50224	253	0	131	0	0	288966
21MAY	SE	0	67	727	1868	35220	60747	21379	39646	213	0	131	0	0	83448
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	1627	15497	324182	2449852	3514802	4548946	317977	90161	14976	14356	7466	0	0	11299842
29MAY	SE	1113	6345	158889	565533	970298	2104684	86167	24169	7643	6374	670	0	0	2392572
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	2439	24737	252552	532371	879945	717052	475270	685170	39321	16037	9913	698	71	3635576
04JUN	SE	1134	3964	22497	95554	164645	158633	88918	111688	14176	10604	4976	330	71	287480
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	1214	6445	10061	44116	97465	387843	262249	229521	84605	50032	33638	5394	0	1212582
11JUN	SE	468	2520	2985	13306	25103	34087	36811	54650	19206	16533	3022	2098	0	83558
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	91	171	3645	32559	99034	321925	118875	59393	76011	16014	9908	2691	94	740412
19JUN	SE	91	28	673	6598	29789	85266	37284	16064	28588	5225	2180	1826	47	103452
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	9885	76408	11893	56248	70721	72387	59135	17322	3796	5220	4399	112	387526
27JUN	SE	0	2599	17599	4130	8905	14791	28181	8925	5897	1889	2260	1885	53	39401
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	243	1703	31893	12647	16321	16935	23318	16343	22544	21449	14463	278	45	178183
03JUL	SE	243	614	10274	1681	2054	3231	4784	3305	5958	4711	3320	278	45	15036
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	114	5260	4497	11906	6483	NS	NS	NS	NS	NS	28260
15JUL	SE	0	0	0	81	1598	1157	2354	1681						3502
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	197	944	8725	341	NS	NS	NS	NS	NS	10206
29JUL	SE	0	0	0	0	135	389	5161	226						5183
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	54	21	0	NS	NS	NS	NS	NS	75
13AUG	SE	0	0	0	0	0	54	13	0						56
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-7 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-7 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.05	0.00	0.20	0.23	0.00	3.21	0.00	0.00	0.00	0.28
27JUN	SE	0.00	0.00	0.00	0.00	0.05	0.00	0.20	0.23	0.00	3.21	0.00	0.00	0.00	3.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.29	0.61	0.27	1.11	1.68	0.00	2.35	0.71	0.00	0.68	0.59
03JUL	SE	0.00	0.00	0.00	0.29	0.54	0.27	0.36	0.71	0.00	1.53	0.71	0.00	0.68	2.10
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	2.85	2.20	3.61	4.06	NS	NS	NS	NS	NS	1.59
15JUL	SE	0.00	0.00	0.00	0.00	1.42	1.33	1.58	1.88						3.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.59	21.80	0.26	1.00	2.39	0.00	NS	NS	NS	NS	NS	3.26
29JUL	SE	0.00	0.00	0.59	16.38	0.16	0.62	1.06	0.00						16.44
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.29	0.70	0.37	0.99	0.00	NS	NS	NS	NS	NS	0.29
13AUG	SE	0.00	0.00	0.00	0.29	0.27	0.12	0.47	0.00						0.63
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	3.37	0.90	1.51	1.86	0.00	NS	NS	NS	NS	NS	0.96
27AUG	SE	0.00	0.00	0.00	1.31	0.77	1.35	1.41	0.00						2.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	NS	NS	NS	NS	NS	0.10
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00						0.74
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.46	0.97	0.50	0.00	0.05	0.00	NS	NS	NS	NS	NS	0.25
23SEP	SE	0.00	0.00	0.46	0.62	0.27	0.00	0.05	0.00						0.81
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	1.37	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.17
07OCT	SE	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00						0.63
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	9	0	28	70	0	454	0	0	0	561
27JUN	SE	0	0	0	0	9	0	28	70	0	454	0	0	0	461
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	42	128	55	156	501	0	333	126	0	48	1389
03JUL	SE	0	0	0	42	112	55	50	211	0	217	126	0	48	360
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	594	456	505	1211	NS	NS	NS	NS	NS	2767
15JUL	SE	0	0	0	0	296	276	220	561						726
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	191	3221	54	207	334	0	NS	NS	NS	NS	NS	4007
29JUL	SE	0	0	191	2420	33	128	148	0						2436
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	44	145	77	138	0	NS	NS	NS	NS	NS	403
13AUG	SE	0	0	0	44	56	26	66	0						100
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	498	188	314	259	0	NS	NS	NS	NS	NS	1260
27AUG	SE	0	0	0	193	160	281	198	0						425
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	111	0	NS	NS	NS	NS	NS	111
10SEP	SE	0	0	0	0	0	0	103	0						103
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	147	143	103	0	7	0	NS	NS	NS	NS	NS	400
23SEP	SE	0	0	147	91	55	0	7	0						181
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	285	0	0	0	NS	NS	NS	NS	NS	285
07OCT	SE	0	0	0	0	132	0	0	0						132
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.31	3.22	4.70	3.66	11.33	0.65	5.22	0.73	0.12	0.65	2.35
10JUL	SE	0.00	0.00	0.00	0.23	1.21	1.22	1.26	6.86	0.43	1.89	0.30	0.12	0.38	7.46
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.15	0.22	0.29	0.57	0.09	0.36	3.37	7.24	0.51	0.00	0.99
24JUL	SE	0.00	0.00	0.00	0.13	0.12	0.19	0.29	0.03	0.36	1.43	5.25	0.51	0.00	5.49
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.06	0.14	1.70	0.16	0.22	1.31	0.01	0.65	1.23	0.00	1.17	1.12	0.00	0.60
07AUG	SE	0.04	0.05	0.63	0.11	0.14	0.61	0.01	0.46	0.82	0.00	1.04	1.12	0.00	2.01
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.06	0.63	0.36	0.01	0.30	0.83	0.00	0.00	0.07	0.69	0.00	0.23
20AUG	SE	0.00	0.00	0.04	0.26	0.16	0.01	0.13	0.54	0.00	0.00	0.07	0.58	0.00	0.87
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.15	0.35	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.05
03SEP	SE	0.00	0.00	0.00	0.09	0.35	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.38
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.03	0.15	0.42	0.05	0.27	0.40	0.00	0.00	0.20	0.43	0.12	0.00	0.16
17SEP	SE	0.00	0.03	0.05	0.25	0.03	0.25	0.15	0.00	0.00	0.13	0.34	0.12	0.00	0.55
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.05	0.36	1.22	0.35	0.01	0.08	0.01	0.02	0.00	0.00	0.00	0.00	0.16
01OCT	SE	0.00	0.03	0.19	0.50	0.29	0.01	0.04	0.01	0.02	0.00	0.00	0.00	0.00	0.62
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.49	0.89	0.19	0.01	0.36	0.06	0.49	0.00	0.33	0.25	0.00	0.24
16OCT	SE	0.00	0.00	0.16	0.25	0.12	0.01	0.35	0.03	0.42	0.00	0.19	0.12	0.00	0.68
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.13	0.03	0.02	0.00	0.00	0.00	0.00	0.10	0.03	0.00	0.00	0.02
29OCT	SE	0.00	0.00	0.08	0.03	0.02	0.00	0.00	0.00	0.00	0.05	0.03	0.00	0.00	0.10
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.38	0.32	0.16	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.07
13NOV	SE	0.15	0.09	0.14	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.06	0.00	0.14	0.62	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
04DEC	SE	0.06	0.00	0.14	0.33	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	46	672	974	511	3378	108	739	128	20	46	6621
10JUL	SE	0	0	0	33	251	252	176	2044	72	268	53	20	27	2102
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	23	46	60	80	27	60	477	1276	82	0	2130
24JUL	SE	0	0	0	19	26	40	40	10	60	203	925	82	0	955
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	12	31	546	23	46	272	1	193	203	0	207	180	0	1714
07AUG	SE	8	11	202	16	30	127	1	138	136	0	184	180	0	402
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	19	93	76	2	42	247	0	0	12	111	0	601
20AUG	SE	0	0	13	39	34	2	18	162	0	0	12	93	0	196
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	22	72	0	0	0	0	18	0	0	0	112
03SEP	SE	0	0	0	14	72	0	0	0	0	18	0	0	0	76
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	6	47	62	10	56	56	0	0	28	75	19	0	360
17SEP	SE	0	6	15	37	6	52	20	0	0	18	61	19	0	96
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	12	115	180	72	2	11	4	3	0	0	0	0	400
01OCT	SE	0	7	61	74	61	2	5	4	3	0	0	0	0	114
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	158	132	41	2	50	19	80	0	59	40	0	580
16OCT	SE	0	0	53	37	25	2	49	8	69	0	34	20	0	117
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	42	5	5	0	0	0	0	14	5	0	0	70
29OCT	SE	0	0	26	5	3	0	0	0	0	7	5	0	0	28
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	80	72	53	0	5	0	3	0	0	0	0	0	0	213
13NOV	SE	30	20	44	0	3	0	3	0	0	0	0	0	0	57
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	13	0	44	92	15	2	0	0	0	0	0	0	0	165
04DEC	SE	13	0	44	49	12	2	0	0	0	0	0	0	0	68
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	4.00	1.00	0.00	7.00	1.33	0.00	0.25	2.75	1.47	0.11	0.08	1.50
18JUN	SE	0.00	2.09	0.58	0.00	3.61	1.33	0.00	0.25	2.09	0.92	0.07	0.08	4.98
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	6.67	1.18	2.00	32.67	0.67	0.33	1.50	12.50	10.13	2.07	2.95	0.00	6.05
02JUL	SE	4.70	0.60	1.84	23.25	0.67	0.33	1.00	6.89	3.37	0.93	0.90	0.00	25.07
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	3.33	3.27	2.14	1.00	5.33	2.00	7.38	21.63	7.38	1.40	5.95	2.17	5.25
15JUL	SE	1.67	0.89	0.51	0.58	4.37	1.53	4.25	6.24	2.26	0.51	1.75	0.88	9.58
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	1.00	10.00	3.93	1.00	3.40	0.00	1.40	0.00	0.60	2.78	3.40	0.57	2.34
30JUL	SE	0.32	4.12	1.51	0.77	1.21	0.00	0.87	0.00	0.40	1.66	0.88	0.57	5.12
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	1.40	5.38	22.00	9.00	4.80	1.83	0.20	0.40	10.00	2.33	0.30	4.14	5.15
13AUG	SE	1.40	1.44	8.80	4.39	2.03	0.79	0.20	0.24	3.96	0.87	0.15	1.44	11.14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	9.17	14.71	0.80	0.40	1.17	0.20	0.20	0.00	0.11	1.20	1.29	2.44
27AUG	SE	0.00	2.34	4.47	0.37	0.24	0.31	0.20	0.20	0.00	0.11	0.88	0.99	5.26
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.40	6.58	19.07	3.60	0.20	0.33	0.40	0.20	0.60	0.11	1.00	0.29	2.73
11SEP	SE	0.40	1.45	7.42	3.11	0.20	0.21	0.40	0.20	0.40	0.11	0.89	0.29	8.27
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.20	4.67	20.50	3.60	0.40	1.50	1.60	0.60	2.20	0.11	0.90	0.14	3.04
24SEP	SE	0.20	1.19	10.24	1.44	0.40	1.15	1.17	0.40	1.36	0.11	0.50	0.14	10.65
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.60	3.96	6.36	11.00	1.40	0.17	0.40	0.00	0.60	1.22	3.20	0.00	2.41
08OCT	SE	0.40	1.22	1.76	2.26	0.68	0.17	0.24	0.00	0.40	0.78	1.82	0.00	3.80
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.60	1.13	1.79	1.80	0.20	0.67	0.40	0.00	0.20	0.11	0.10	0.00	0.58
22OCT	SE	0.40	0.30	0.85	0.37	0.20	0.49	0.40	0.00	0.20	0.11	0.10	0.00	1.27
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	182	27	0	18	14	0	< 0.5	24	26	2	1	294
18JUN	SE	0	95	16	0	10	14	0	< 0.5	18	16	1	1	101
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	50	54	54	301	2	4	11	16	87	36	58	0	672
02JUL	SE	35	27	49	214	2	4	7	9	29	16	18	0	228
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	25	149	58	9	14	21	52	27	63	25	117	29	590
15JUL	SE	13	40	14	5	12	16	30	8	19	9	34	12	72
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	8	454	106	9	9	0	10	0	5	49	67	8	724
30JUL	SE	2	187	41	7	3	0	6	0	3	29	17	8	195
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	11	244	592	83	13	20	1	< 0.5	86	41	6	56	1153
13AUG	SE	11	66	237	40	5	8	1	< 0.5	34	15	3	20	253
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	416	396	7	1	12	1	< 0.5	0	2	24	17	878
27AUG	SE	0	106	120	3	1	3	1	< 0.5	0	2	17	13	162
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	3	299	513	33	1	4	3	< 0.5	5	2	20	4	886
11SEP	SE	3	66	200	29	1	2	3	< 0.5	3	2	18	4	213
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	2	212	551	33	1	16	11	1	19	2	18	2	868
24SEP	SE	2	54	275	13	1	12	8	< 0.5	12	2	10	2	282
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	5	180	171	101	4	2	3	0	5	21	63	0	555
08OCT	SE	3	55	47	21	2	2	2	0	3	14	36	0	85
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	5	51	48	17	1	7	3	0	2	2	2	0	136
22OCT	SE	3	14	23	3	1	5	3	0	2	2	2	0	28
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.81	0.76	0.58	0.29	0.00	0.00	NS	NS	NS	NS	NS	NS	0.35
25MAR	SE	0.00	0.71	0.46	0.58	0.29	0.00	0.00							1.06
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	2.12	0.96	0.94	0.57	0.18	0.00	0.00	NS	NS	NS	NS	NS	NS	0.68
01APR	SE	0.92	0.96	0.94	0.57	0.18	0.00	0.00							1.74
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
09APR	SE	0.00	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.00	0.00	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.03
30APR	SE	0.00	0.00	0.00	0.20	0.00	0.00	0.25	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
04MAY-	DENSITY	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
07MAY	SE	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13MAY	SE	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
29MAY	SE	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.65	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
04JUN	SE	0.00	0.00	0.34	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-13 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	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	0.02
11JUN	SE	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.04
19JUN	SE	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.40
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.09	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01
27JUN	SE	0.00	0.09	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.11
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	NS	NS	NS	NS	NS	0.04
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.02
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.04
27AUG	SE	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00						0.33
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	NS	NS	NS	NS	NS	0.01
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00						0.05
	NO. TOWS	6	11	13	14	13	8	10	6						81
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
07OCT	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-14 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	187	244	85	61	0	0	NS	NS	NS	NS	NS	NS	577
25MAR	SE	0	162	148	85	61	0	0							243
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	443	221	302	85	38	0	0	NS	NS	NS	NS	NS	NS	1087
01APR	SE	192	221	302	85	38	0	0							430
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	450	0	0	0	0	0	0	0	0	0	0	0	450
09APR	SE	0	274	0	0	0	0	0	0	0	0	0	0	0	274
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	30	0	0	35	0	0	0	0	0	0	65
30APR	SE	0	0	0	30	0	0	35	0	0	0	0	0	0	46
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	0	93	0	0	0	0	0	0	0	0	0	93
07MAY	SE	0	0	0	93	0	0	0	0	0	0	0	0	0	93
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	61	0	0	0	0	0	0	0	0	0	0	61
13MAY	SE	0	0	61	0	0	0	0	0	0	0	0	0	0	61
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	61	0	0	0	0	0	0	0	0	0	61
29MAY	SE	0	0	0	61	0	0	0	0	0	0	0	0	0	61
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	208	320	0	0	0	0	0	0	0	0	0	528
04JUN	SE	0	0	108	103	0	0	0	0	0	0	0	0	0	149
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	57	0	0	0	0	0	0	0	0	57
11JUN	SE	0	0	0	0	49	0	0	0	0	0	0	0	0	49
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	36	0	0	0	0	0	44	0	0	0	80
19JUN	SE	0	0	0	36	0	0	0	0	0	44	0	0	0	57
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	21	0	0	0	0	7	0	0	0	0	0	0	28
27JUN	SE	0	21	0	0	0	0	7	0	0	0	0	0	0	22
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	42	0	NS	NS	NS	NS	NS	42
29JUL	SE	0	0	0	0	0	0	42	0						42
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	29	0	0	0	NS	NS	NS	NS	NS	29
13AUG	SE	0	0	0	0	29	0	0	0						29
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	48	0	0	0	0	NS	NS	NS	NS	NS	48
27AUG	SE	0	0	0	48	0	0	0	0						48
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	7	0	NS	NS	NS	NS	NS	7
23SEP	SE	0	0	0	0	0	0	7	0						7
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.12	0.00	0.02
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.12	0.00	0.15
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	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	0.09	0.01
24JUL	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	0.09	0.10
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.05	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
07AUG	SE	0.00	0.00	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.04
20AUG	SE	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.38
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.01
03SEP	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
17SEP	SE	0.00	0.00	0.03	0.03	0.01	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
28SEP-	DENSITY	0.00	0.00	0.09	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
01OCT	SE	0.00	0.00	0.05	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.07	0.00	0.00	0.24	< 0.005	0.01	0.00	0.00	0.00	0.00	0.00	0.03
16OCT	SE	0.00	0.00	0.04	0.00	0.00	0.24	< 0.005	0.01	0.00	0.00	0.00	0.00	0.00	0.24
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.03	0.00	0.15	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
29OCT	SE	0.03	0.00	0.13	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.03	0.12	0.13	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
13NOV	SE	0.03	0.06	0.13	0.06	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.17
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.08	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
04DEC	SE	0.00	0.00	0.08	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	20	0	19	0	39
10JUL	SE	0	0	0	0	0	0	0	0	0	12	0	19	0	22
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	8	0	1	0	0	0	0	0	0	0	7	16
24JUL	SE	0	0	8	0	1	0	0	0	0	0	0	0	7	10
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	16	11	3	0	0	0	0	0	0	0	0	30
07AUG	SE	0	0	11	6	3	0	0	0	0	0	0	0	0	13
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	19	1	0	0	0	0	52	0	0	0	72
20AUG	SE	0	0	0	14	1	0	0	0	0	52	0	0	0	54
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	1	0	0	0	0	0	11	0	0	12
03SEP	SE	0	0	0	0	1	0	0	0	0	0	11	0	0	11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	9	5	1	0	0	0	0	0	0	0	0	15
17SEP	SE	0	0	9	5	1	0	0	0	0	0	0	0	0	10
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	28	5	4	0	0	0	0	0	0	0	0	37
01OCT	SE	0	0	16	5	4	0	0	0	0	0	0	0	0	17
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	21	0	0	50	1	4	0	0	0	0	0	76
16OCT	SE	0	0	14	0	0	50	1	4	0	0	0	0	0	52
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	6	0	47	0	2	0	0	0	0	0	0	0	0	56
29OCT	SE	6	0	42	0	2	0	0	0	0	0	0	0	0	42
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	6	27	43	14	0	0	0	0	0	5	0	0	0	95
13NOV	SE	6	14	43	10	0	0	0	0	0	5	0	0	0	47
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	26	0	5	0	0	0	0	0	0	0	0	32
04DEC	SE	0	0	26	0	5	0	0	0	0	0	0	0	0	27
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.64	0.14	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.16	0.17	0.11
18JUN	SE	0.00	0.31	0.14	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.12	0.11	0.45
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.64	0.00	0.00	2.00	0.00	0.75	1.63	0.88	0.13	0.42	0.25	0.56
02JUL	SE	0.00	0.64	0.00	0.00	2.00	0.00	0.75	1.10	0.40	0.13	0.18	0.18	2.53
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.18	0.43	0.00	0.00	0.00	0.50	0.13	0.50	0.07	0.11	0.00	0.16
15JUL	SE	0.00	0.12	0.30	0.00	0.00	0.00	0.27	0.13	0.27	0.07	0.07	0.00	0.52
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.10	0.29	0.06
30JUL	SE	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.10	0.18	0.27
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.20	0.17	0.07	0.20	0.60	0.00	0.00	0.20	0.00	0.11	0.00	0.00	0.13
13AUG	SE	0.20	0.08	0.07	0.20	0.40	0.00	0.00	0.20	0.00	0.11	0.00	0.00	0.55
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.00	0.21	0.00	0.00	0.17	0.20	0.00	0.20	0.00	0.10	0.00	0.07
27AUG	SE	0.00	0.00	0.15	0.00	0.00	0.17	0.20	0.00	0.20	0.00	0.10	0.00	0.38
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.04	0.07	0.00	0.00	0.00	0.40	0.00	0.00	0.11	0.00	0.00	0.05
11SEP	SE	0.00	0.04	0.07	0.00	0.00	0.00	0.24	0.00	0.00	0.11	0.00	0.00	0.28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	0.54	0.00	0.00	0.00	0.17	0.20	0.00	0.00	0.00	0.00	0.00	0.08
24SEP	SE	0.00	0.42	0.00	0.00	0.00	0.17	0.20	0.00	0.00	0.00	0.00	0.00	0.49
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.67	0.07	0.20	0.00	0.00	0.20	0.00	0.20	0.11	0.30	0.00	0.15
08OCT	SE	0.00	0.42	0.07	0.20	0.00	0.00	0.20	0.00	0.20	0.11	0.21	0.00	0.60
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.14	0.03
22OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.14	0.25
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	29	4	0	0	0	2	0	0	0	3	2	40
18JUN	SE	0	14	4	0	0	0	2	0	0	0	2	2	15
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	29	0	0	5	0	5	2	8	2	8	3	63
02JUL	SE	0	29	0	0	5	0	5	1	3	2	3	2	30
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	8	12	0	0	0	4	< 0.5	4	1	2	0	31
15JUL	SE	0	6	8	0	0	0	2	< 0.5	2	1	1	0	10
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	4	0	0	0	0	0	0	0	4	2	4	14
30JUL	SE	0	4	0	0	0	0	0	0	0	3	2	3	6
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	2	8	2	2	2	0	0	< 0.5	0	2	0	0	17
13AUG	SE	2	4	2	2	1	0	0	< 0.5	0	2	0	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	6	0	0	2	1	0	2	0	2	0	13
27AUG	SE	0	0	4	0	0	2	1	0	2	0	2	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	2	2	0	0	0	3	0	0	2	0	0	9
11SEP	SE	0	2	2	0	0	0	2	0	0	2	0	0	4
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	25	0	0	0	2	1	0	0	0	0	0	28
24SEP	SE	0	19	0	0	0	2	1	0	0	0	0	0	19
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	30	2	2	0	0	1	0	2	2	6	0	45
08OCT	SE	0	19	2	2	0	0	1	0	2	2	4	0	20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	2	3
22OCT	SE	0	0	0	0	0	0	1	0	0	0	0	2	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-19 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	1.60	0.45	0.35	0.29	0.00	0.00	NS	NS	NS	NS	NS	NS	0.39
25MAR	SE	0.00	1.40	0.45	0.35	0.29	0.00	0.00							1.54
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.26	0.32	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.08
01APR	SE	0.26	0.32	0.00	0.00	0.00	0.00	0.00							0.41
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
09APR	SE	0.35	0.00	0.00	0.00	0.00	0.00	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	126
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.06
30APR	SE	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.58
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.01
13MAY	SE	0.00	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	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-19 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	NS	NS	NS	NS	NS	0.01
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00						0.05
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	368	146	52	61	0	0	NS	NS	NS	NS	NS	NS	627
25MAR	SE	0	321	146	52	61	0	0							362
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	54	74	0	0	0	0	0	NS	NS	NS	NS	NS	NS	127
01APR	SE	54	74	0	0	0	0	0							91
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	73	0	0	0	0	0	0	0	0	0	0	0	0	73
09APR	SE	73	0	0	0	0	0	0	0	0	0	0	0	0	73
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	44	0	0	0	0	0	0	0	0	0	89	0	133
30APR	SE	0	44	0	0	0	0	0	0	0	0	0	89	0	99
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	27	0	0	0	0	27
13MAY	SE	0	0	0	0	0	0	0	0	27	0	0	0	0	27
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-20 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	7	0	NS	NS	NS	NS	NS	7
15JUL	SE	0	0	0	0	0	0	7	0						7
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-21 REGIONAL DENSITY (NO./1,000m3) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
10JUL	SE	0.00	0.00	0.00	0.04	0.00	0.00	0.01	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
07AUG	SE	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	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
17SEP	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	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.02
01OCT	SE	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
16OCT	SE	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	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
29OCT	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	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	1.09	0.04	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
13NOV	SE	1.02	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	< 0.005
04DEC	SE	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.04
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-22 REGIONAL STANDING CROP (IN THOUSANDS) OF STRIPED BASS OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	5	0	0	1	0	0	0	0	0	0	6
10JUL	SE	0	0	0	5	0	0	1	0	0	0	0	0	0	5
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	8	0	0	0	0	0	0	0	0	0	8
07AUG	SE	0	0	0	5	0	0	0	0	0	0	0	0	0	5
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	0	1
03SEP	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
14SEP-	ST. CROP	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17SEP	SE	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	7	0	0	0	0	1	68	0	0	0	0	0	76
01OCT	SE	0	7	0	0	0	0	1	68	0	0	0	0	0	68
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	9	0	0	0	0	0	0	0	0	0	0	9
16OCT	SE	0	0	9	0	0	0	0	0	0	0	0	0	0	9
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	0	1
29OCT	SE	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	229	10	0	5	0	0	0	0	0	0	0	0	0	243
13NOV	SE	214	6	0	5	0	0	0	0	0	0	0	0	0	214
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	5	0	0	0	0	0	0	0	0	5	0	0	0	10
04DEC	SE	5	0	0	0	0	0	0	0	0	5	0	0	0	7
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.14	0.00	0.33	0.00	0.13	0.00	0.13	0.13	0.05	0.00	0.08
18JUN	SE	0.00	0.00	0.14	0.00	0.33	0.00	0.13	0.00	0.13	0.09	0.05	0.00	0.42
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.01
02JUL	SE	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.11
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.03
30JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	CPUE	0.00	0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
11SEP	SE	0.00	0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	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
24SEP	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
05OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.02
08OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	4	0	1	0	1	0	1	2	1	0	10
18JUN	SE	0	0	4	0	1	0	1	0	1	2	1	0	5
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	4	0	0	0	0	0	0	0	0	1	0	5
02JUL	SE	0	4	0	0	0	0	0	0	0	0	1	0	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	6	0	6
30JUL	SE	0	0	0	0	0	0	0	0	0	0	3	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	2	2	0	0	0	0	0	0	0	0	0	4
11SEP	SE	0	2	2	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
21SEP-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	2
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	4	0	0	4
08OCT	SE	0	0	0	0	0	0	0	0	0	3	0	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	6.77	3.19	15.75	2.00
23APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	5.09	2.14	6.95	8.88
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	14.27	52.88	233.02	154.77	35.03
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	11.51	23.15	110.64	64.79	130.80
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	6.56	3.27	10.22	702.09	243.13	35.37	110.05	85.44
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	4.41	1.32	4.20	265.98	97.47	12.73	51.00	288.18
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.18	75.11	1.32	24.19	135.01	618.19	147.99	900.48	146.34
13MAY	SE	0.00	0.00	0.00	0.00	0.00	0.18	50.70	0.73	8.58	107.05	180.75	80.12	190.66	299.24
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	4.25	174.78	10.15	3.85	682.77	18.11	226.41	27.16	88.27
21MAY	SE	0.00	0.00	0.00	0.00	0.00	3.19	91.93	4.72	2.04	187.90	8.91	93.23	7.70	229.40
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	18.34	0.00	0.00	0.00	0.00	2.39	18.95	52.67	2.93	26.96	348.37	1696.77	1053.79	247.78
29MAY	SE	18.34	0.00	0.00	0.00	0.00	1.43	11.29	46.62	1.44	20.82	133.32	555.19	307.74	650.99
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.42	57.42	9.91	19.97	12.11	624.53	37.31	197.84	407.62	105.16
04JUN	SE	0.00	0.00	0.00	0.00	0.21	39.65	4.30	15.68	4.77	307.70	14.21	66.45	102.93	334.29
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-25 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.32	1.47	3.25	0.95	62.28	78.32	39.20	14.29
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.32	1.21	1.69	0.95	31.79	38.53	19.68	53.74
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.35	0.45	0.00	0.00	0.33	0.44	1.20	2.66	22.61	23.27	1.46	4.06
19JUN	SE	0.00	0.00	0.35	0.45	0.00	0.00	0.21	0.25	1.20	2.66	19.79	13.53	1.46	24.20
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	2.13	1.72	0.31
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	1.51	1.28	1.98
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	1.64	0.00	0.00	0.00	0.00	0.00	1.98	1.11	0.00	0.00	0.36
03JUL	SE	0.00	0.00	0.00	1.64	0.00	0.00	0.00	0.00	0.00	1.45	1.11	0.00	0.00	2.45
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST.CROP	0	0	0	0	0	0	0	0	44	0	1193	513	1120	2871
23APR	SE	0	0	0	0	0	0	0	0	44	0	897	343	494	1081
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST.CROP	0	0	0	0	0	0	0	0	78	2019	9323	37454	11012	59887
30APR	SE	0	0	0	0	0	0	0	0	55	1628	4082	17784	4610	18890
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST.CROP	0	0	0	0	0	0	916	975	1692	99324	42862	5684	7830	159284
07MAY	SE	0	0	0	0	0	0	616	394	695	37629	17184	2046	3629	41588
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST.CROP	0	0	0	0	0	37	10500	393	4003	19100	108984	23787	64068	230872
13MAY	SE	0	0	0	0	0	37	7087	217	1419	15144	31865	12877	13565	40581
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST.CROP	0	0	0	0	0	881	24432	3025	638	96591	3193	36391	1933	167084
21MAY	SE	0	0	0	0	0	661	12851	1406	338	26582	1570	14985	548	33190
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST.CROP	3833	0	0	0	0	496	2649	15704	484	3814	61417	272725	74976	436098
29MAY	SE	3833	0	0	0	0	296	1578	13900	238	2946	23504	89236	21895	95990
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	0	0	0	0	87	11913	1386	5954	2005	88353	6577	31798	29002	177074
04JUN	SE	0	0	0	0	43	8225	600	4674	789	43530	2505	10681	7324	46469
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	0	0	0	0	0	0	45	437	538	135	10980	12589	2789	27513
11JUN	SE	0	0	0	0	0	0	45	361	280	135	5604	6193	1401	8482
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	0	0	113	67	0	0	46	130	198	376	3986	3740	104	8760
19JUN	SE	0	0	113	67	0	0	29	75	198	376	3489	2175	104	4138
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	0	0	0	0	0	0	24	0	0	0	0	342	123	488
27JUN	SE	0	0	0	0	0	0	24	0	0	0	0	242	91	260
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST.CROP	0	0	0	242	0	0	0	0	0	280	195	0	0	717
03JUL	SE	0	0	0	242	0	0	0	0	0	206	195	0	0	372
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.04
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.53
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.97	1.36	6.24	119.37	230.41	302.03	101.22	19.95	60.12
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.97	0.56	2.14	66.70	63.14	91.62	31.09	6.74	133.59
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	2.04	5.00	30.70	187.56	223.92	64.02	77.13	220.43	189.44	76.94
13MAY	SE	0.00	0.00	0.00	0.00	1.76	3.34	9.93	68.09	62.78	17.73	18.77	88.59	118.30	176.64
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.20	0.43	7.50	14.05	59.70	60.76	19.18	50.05	19.08	60.11	37.04	25.24
21MAY	SE	0.00	0.00	0.20	0.43	2.91	6.44	23.78	13.73	12.03	23.99	8.47	33.25	26.69	58.43
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	12.13	0.00	11.18	10.76	11.80	49.34	25.17	228.14	285.66	48.78
29MAY	SE	0.00	0.00	0.00	0.00	8.02	0.00	4.64	6.02	3.92	10.38	6.82	48.07	95.51	108.28
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.45	4.28	12.96	15.33	51.83	20.92	60.36	55.19	136.74	108.44	35.88
04JUN	SE	0.00	0.00	0.00	0.45	3.24	6.06	4.85	22.05	8.36	23.76	16.58	32.36	18.98	53.61
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	4.70	6.19	14.40	12.97	23.70	22.38	134.23	137.13	27.36
11JUN	SE	0.00	0.00	0.00	0.00	0.00	1.76	2.44	7.12	2.79	10.92	4.38	61.56	28.34	69.28
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	4.36	9.55	5.12	18.06	19.90	23.67	124.77	13.65	16.85
19JUN	SE	0.00	0.00	0.00	0.00	0.00	2.70	3.46	2.87	5.80	4.71	15.77	51.31	4.34	54.63
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.10	0.00	0.98	0.00	3.18	1.41	2.04	1.13	2.38	2.20	4.84	0.00	1.40
27JUN	SE	0.00	0.10	0.00	0.77	0.00	1.29	0.62	1.83	0.72	0.93	2.20	2.53	0.00	4.32
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.27	0.00	0.72	0.68	0.21	3.36	5.41	5.23	2.36	4.65	1.76
03JUL	SE	0.00	0.00	0.00	0.27	0.00	0.61	0.47	0.21	1.67	4.59	5.23	1.30	2.97	7.90
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	NS	NS	NS	NS	NS	0.02
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00						0.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	159	0	0	0	0	0	159
30APR	SE	0	0	0	0	0	0	0	159	0	0	0	0	0	159
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	0	0	0	202	190	1861	19754	32597	53247	16269	1420	125537
07MAY	SE	0	0	0	0	0	202	78	638	11038	8933	16151	4998	479	22094
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	0	425	1037	4292	55918	37056	9056	13598	35431	13479	170292
13MAY	SE	0	0	0	0	367	694	1388	20299	10389	2508	3310	14240	8417	28520
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	65	64	1563	2915	8346	18115	3175	7080	3364	9662	2636	56984
21MAY	SE	0	0	65	64	607	1336	3324	4093	1990	3393	1494	5345	1899	8936
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	2528	0	1563	3208	1953	6981	4437	36669	20324	77663
29MAY	SE	0	0	0	0	1670	0	648	1795	648	1469	1202	7727	6796	10786
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	66	893	2689	2143	15451	3462	8540	9729	21979	7715	72666
04JUN	SE	0	0	0	66	674	1257	678	6574	1383	3361	2923	5201	1351	9815
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	975	865	4294	2146	3353	3945	21575	9756	46910
11JUN	SE	0	0	0	0	0	364	341	2122	462	1544	772	9895	2016	10485
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	904	1334	1528	2989	2816	4174	20055	971	34771
19JUN	SE	0	0	0	0	0	560	483	855	961	667	2780	8248	309	8860
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	22	0	144	0	659	197	609	187	336	388	778	0	3321
27JUN	SE	0	22	0	114	0	268	87	544	119	132	388	407	0	859
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	40	0	149	95	62	556	766	921	379	331	3299
03JUL	SE	0	0	0	40	0	126	65	62	277	649	921	209	211	1208
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	26	0	0	NS	NS	NS	NS	NS	26
15JUL	SE	0	0	0	0	0	26	0	0						26
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-29 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	1.65	2.43	2.32	0.00	0.53
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	1.06	1.65	1.25	0.00	2.37
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.19	4.42	7.36	1.05	29.05	585.75	735.98	824.86	244.61	19.04	0.00	188.64
13MAY	SE	0.00	0.00	0.19	2.52	1.84	1.05	13.98	152.79	189.67	215.03	69.71	11.43	0.00	332.80
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	1.88	213.17	240.74	1304.20	1199.13	51.27	233.87	81.35	6.66	0.00	256.33
21MAY	SE	0.00	0.00	0.00	0.80	82.24	99.36	398.83	686.68	15.91	100.48	36.84	4.60	0.00	811.77
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.76	0.60	3.20	38.00	121.28	579.94	523.37	281.84	146.79	367.76	249.13	354.75	14.49	206.30
29MAY	SE	0.76	0.60	1.96	10.47	26.14	345.90	162.32	103.12	29.61	81.61	44.20	102.98	10.28	421.46
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	3.65	42.28	73.31	228.86	545.29	1002.66	456.77	460.06	701.10	178.11	1.00	284.08
04JUN	SE	0.00	0.00	1.17	10.01	26.07	82.87	48.33	194.51	62.73	125.75	238.36	104.42	1.00	367.82
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.12	0.36	3.06	15.31	127.26	429.57	664.64	479.43	1084.02	792.97	687.11	98.11	337.07
11JUN	SE	0.00	0.12	0.36	1.79	4.19	15.47	79.20	109.77	58.41	433.88	149.65	225.50	44.55	534.30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.88	0.14	5.53	43.31	285.19	471.69	349.36	650.58	368.54	293.69	947.03	5.34	263.17
19JUN	SE	0.00	0.65	0.14	2.30	13.14	110.53	91.34	80.92	97.28	103.18	204.70	454.70	3.53	544.11
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	1.54	2.80	48.22	159.84	277.74	249.90	181.70	200.75	247.18	174.07	62.27	0.54	123.58
27JUN	SE	0.00	1.54	2.50	14.13	69.91	47.02	86.45	62.92	72.38	65.04	21.79	37.08	0.54	173.38
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	9.55	17.89	10.91	33.82	74.31	35.76	50.69	131.02	61.86	21.67	1.99	34.57
03JUL	SE	0.00	0.00	5.00	3.71	1.32	10.96	26.60	12.03	6.98	19.32	13.90	5.33	1.99	40.74
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	7.46	11.60	25.34	17.19	NS	NS	NS	NS	NS	7.70
15JUL	SE	0.00	0.00	0.00	0.00	6.84	3.15	8.28	5.77						12.59
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.50	15.58	5.34	NS	NS	NS	NS	NS	2.80
29JUL	SE	0.00	0.00	0.00	0.00	0.00	1.38	12.42	1.89						12.64
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.14	0.25	0.77	0.00	NS	NS	NS	NS	NS	0.14
13AUG	SE	0.00	0.00	0.00	0.00	0.14	0.25	0.67	0.00						0.73
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	74	234	428	374	0	1109
07MAY	SE	0	0	0	0	0	0	0	0	74	149	290	201	0	391
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	60	653	1533	217	4060	174632	121793	116693	43124	3060	0	465826
13MAY	SE	0	0	60	373	384	217	1954	45552	31387	30420	12289	1838	0	64375
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	277	44410	49944	182316	357501	8484	33086	14342	1071	0	691432
21MAY	SE	0	0	0	118	17133	20613	55754	204724	2633	14215	6494	739	0	214454
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	159	137	1029	5614	25267	120312	73162	84027	24291	52027	43920	57019	1031	487995
29MAY	SE	159	137	632	1546	5446	71759	22691	30745	4900	11545	7793	16553	731	84466
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	1174	6246	15273	47478	76226	298925	75589	65084	123601	28628	71	738295
04JUN	SE	0	0	375	1478	5432	17192	6756	57991	10381	17790	42022	16783	71	78790
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	28	115	453	3190	26401	60050	198152	79339	153356	139797	110440	6980	778300
11JUN	SE	0	28	115	264	872	3208	11071	32726	9666	61381	26383	36245	3170	84176
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	202	45	816	9024	59164	65938	104155	107660	52138	51776	152218	380	603516
19JUN	SE	0	148	45	340	2738	22929	12769	24125	16098	14597	36088	73084	251	91621
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	352	901	7123	33300	57619	34934	54171	33221	34969	30688	10009	38	297326
27JUN	SE	0	352	804	2088	14566	9754	12085	18757	11978	9202	3841	5960	38	32996
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	3072	2642	2272	7016	10388	10661	8389	18536	10905	3483	142	77505
03JUL	SE	0	0	1608	548	276	2273	3718	3585	1155	2733	2450	856	142	7097
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	1554	2406	3542	5124	NS	NS	NS	NS	NS	12626
15JUL	SE	0	0	0	0	1425	653	1157	1720						2599
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	312	2178	1592	NS	NS	NS	NS	NS	4081
29JUL	SE	0	0	0	0	0	286	1736	563						1847
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	29	52	108	0	NS	NS	NS	NS	NS	188
13AUG	SE	0	0	0	0	29	52	94	0						111
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-31 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.26	0.00	0.00	0.08
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.26	0.00	0.00	0.83
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.20	2.28	0.00	0.36	0.00	0.00	0.26
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.20	1.15	0.00	0.36	0.00	0.00	1.29
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.92	0.12	3.52	0.00	NS	NS	NS	NS	NS	0.57
15JUL	SE	0.00	0.00	0.00	0.00	0.88	0.12	3.09	0.00						3.22
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.76	0.00	0.00	0.26	3.28	0.84	NS	NS	NS	NS	NS	0.64
29JUL	SE	0.00	0.00	0.44	0.00	0.00	0.26	1.51	0.48						1.67
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	2.21	3.75	1.17	NS	NS	NS	NS	NS	0.89
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.94	2.22	0.28						2.43
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.04	1.75	1.74	0.28	NS	NS	NS	NS	NS	0.48
27AUG	SE	0.00	0.00	0.00	0.00	0.04	1.01	0.89	0.28						1.37
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	NS	NS	NS	NS	NS	0.03
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00						0.15
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	1.33	1.88	NS	NS	NS	NS	NS	0.41
23SEP	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.54	0.41						0.68
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	2.97	0.58	NS	NS	NS	NS	NS	0.44
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.58						1.96
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	233	0	0	47	0	0	280
27JUN	SE	0	0	0	0	0	0	0	233	0	0	47	0	0	238
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	81	59	378	0	63	0	0	580
03JUL	SE	0	0	0	0	0	0	58	59	191	0	63	0	0	217
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	191	26	492	0	NS	NS	NS	NS	NS	709
15JUL	SE	0	0	0	0	183	26	432	0						470
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	246	0	0	54	458	250	NS	NS	NS	NS	NS	1008
29JUL	SE	0	0	142	0	0	54	212	144						298
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	459	524	348	NS	NS	NS	NS	NS	1331
13AUG	SE	0	0	0	0	0	194	310	83						375
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	9	362	243	85	NS	NS	NS	NS	NS	700
27AUG	SE	0	0	0	0	9	210	124	85						258
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	30	0	NS	NS	NS	NS	NS	30
10SEP	SE	0	0	0	0	0	0	21	0						21
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	9	0	186	562	NS	NS	NS	NS	NS	757
23SEP	SE	0	0	0	0	9	0	76	124						145
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	415	173	NS	NS	NS	NS	NS	587
07OCT	SE	0	0	0	0	0	0	262	173						314
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-33 REGIONAL DENSITY (NO./1,000m3) OF WHITE PERCH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.79	0.42	0.07	0.00	0.00	0.00	0.12
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.34	0.25	0.07	0.00	0.00	0.00	0.49
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.22	0.02	0.44	0.44	0.06	0.39	1.38	0.00	0.00	0.00	0.23
24JUL	SE	0.00	0.00	0.00	0.15	0.02	0.24	0.17	0.02	0.39	0.71	0.00	0.00	0.00	0.87
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.73	1.91	0.41	0.00	1.03	0.00	0.00	0.31
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.45	1.05	0.39	0.00	1.03	0.00	0.00	1.59
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.02	0.00	0.37	0.60	0.00	0.32	0.00	0.00	0.00	0.10
20AUG	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.12	0.60	0.00	0.32	0.00	0.00	0.00	0.69
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.02	0.00	0.06	0.00	0.00	0.01
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.02	0.00	0.06	0.00	0.00	0.09
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.19	0.67	0.06	0.00	0.00	0.00	0.09
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.08	0.42	0.06	0.00	0.00	0.00	0.45
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.03	0.30	0.18	0.25	0.35	0.14	0.00	0.00	0.10
01OCT	SE	0.00	0.00	0.00	0.00	0.01	0.02	0.16	0.08	0.08	0.14	0.08	0.00	0.00	0.25
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.39	1.38	1.85	0.75	0.00	0.19	0.12	0.00	0.36
16OCT	SE	0.00	0.00	0.00	0.00	0.01	0.22	0.48	0.90	0.38	0.00	0.19	0.12	0.00	1.14
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.03	1.81	0.79	0.93	1.37	0.11	0.00	0.00	0.39
29OCT	SE	0.00	0.00	0.00	0.00	0.01	0.01	0.54	0.31	0.24	0.62	0.06	0.00	0.00	0.92
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.78	0.18	0.89	0.22	1.07	0.47	0.12	0.00	0.00	0.29
13NOV	SE	0.00	0.00	0.00	0.00	0.19	0.03	0.34	0.07	0.23	0.21	0.05	0.00	0.00	0.51
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.28	0.33	3.74	0.28	0.36	0.03	0.00	0.00	0.00	0.39
04DEC	SE	0.00	0.00	0.00	0.00	0.14	0.08	1.01	0.15	0.12	0.03	0.00	0.00	0.00	1.04
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	49	0	236	70	9	0	0	0	364
10JUL	SE	0	0	0	0	0	49	0	102	41	9	0	0	0	121
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	32	4	91	62	18	65	196	0	0	0	467
24JUL	SE	0	0	0	22	4	49	23	7	65	100	0	0	0	133
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	102	570	68	0	182	0	0	923
07AUG	SE	0	0	0	0	0	0	63	312	65	0	182	0	0	372
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	4	0	52	179	0	45	0	0	0	280
20AUG	SE	0	0	0	0	3	0	17	179	0	45	0	0	0	185
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	8	4	3	0	11	0	0	25
03SEP	SE	0	0	0	0	0	0	8	4	3	0	11	0	0	14
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	0	0	38	57	110	9	0	0	0	214
17SEP	SE	0	0	0	0	0	0	16	25	70	9	0	0	0	77
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	3	7	41	55	42	50	24	0	0	221
01OCT	SE	0	0	0	0	3	3	23	25	14	19	14	0	0	43
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	1	80	193	551	125	0	33	19	0	1002
16OCT	SE	0	0	0	0	1	47	68	269	63	0	33	19	0	291
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	2	6	253	235	154	193	19	0	0	863
29OCT	SE	0	0	0	0	2	3	76	93	40	88	10	0	0	155
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	163	36	125	65	176	67	21	0	0	653
13NOV	SE	0	0	0	0	40	7	47	20	38	30	9	0	0	82
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	58	68	523	83	59	4	0	0	0	796
04DEC	SE	0	0	0	0	29	16	141	44	20	4	0	0	0	153
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.25	2.75	0.67	0.05	0.00	0.64
02JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.71	1.81	0.67	0.05	0.00	3.33
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.09	0.71	0.00	0.33	2.00	4.13	22.75	1.13	0.33	0.16	0.00	2.64
15JUL	SE	0.00	0.09	0.71	0.00	0.33	2.00	2.59	8.55	0.48	0.16	0.12	0.00	9.20
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.50	1.57	0.60	2.00	0.00	0.20	2.60	0.80	1.11	0.70	2.00	1.01
30JUL	SE	0.00	0.35	1.07	0.60	1.55	0.00	0.20	1.69	0.49	0.63	0.47	2.00	3.43
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.17	13.86	10.60	3.20	1.00	3.20	23.00	14.60	8.33	0.10	0.14	6.52
13AUG	SE	0.00	0.13	7.11	6.57	1.71	0.82	2.18	12.19	7.84	4.33	0.10	0.14	18.19
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.54	9.29	0.60	1.20	0.67	3.80	13.00	0.60	1.33	20.00	0.14	4.26
27AUG	SE	0.00	0.32	4.16	0.40	0.73	0.67	2.06	6.24	0.40	0.65	13.75	0.14	15.86
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	1.17	24.50	0.00	0.60	0.50	20.00	7.80	4.40	6.00	8.40	0.14	6.13
11SEP	SE	0.00	0.52	15.11	0.00	0.40	0.34	13.20	1.83	3.23	2.84	2.97	0.14	20.83
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	1.21	35.29	4.40	1.80	1.67	2.40	2.80	1.60	0.33	10.20	0.00	5.14
24SEP	SE	0.00	0.83	14.96	2.69	1.36	0.84	1.69	1.39	1.03	0.17	5.17	0.00	16.34
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.88	4.36	9.00	2.40	0.00	2.00	0.80	0.80	0.67	1.70	0.00	1.88
08OCT	SE	0.00	0.44	2.31	1.52	0.87	0.00	1.26	0.49	0.80	0.24	0.70	0.00	3.41
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	1.25	0.93	4.60	5.60	0.00	1.80	0.20	0.40	0.44	0.30	0.29	1.32
22OCT	SE	0.00	0.85	0.43	2.54	2.62	0.00	1.80	0.20	0.40	0.34	0.21	0.29	4.23
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	5	24	12	1	0	42
02JUL	SE	0	0	0	0	0	0	0	3	16	12	1	0	20
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	4	19	0	1	21	29	28	10	6	3	0	122
15JUL	SE	0	4	19	0	1	21	18	11	4	3	2	0	36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	23	42	6	5	0	1	3	7	20	14	27	148
30JUL	SE	0	16	29	6	4	0	1	2	4	11	9	27	46
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	8	373	98	8	11	23	29	126	146	2	2	824
13AUG	SE	0	6	191	61	5	9	15	15	67	76	2	2	226
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	25	250	6	3	7	27	16	5	23	394	2	757
27AUG	SE	0	14	112	4	2	7	15	8	3	11	271	2	294
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	53	659	0	2	5	142	10	38	105	165	2	1181
11SEP	SE	0	24	406	0	1	4	94	2	28	50	59	2	426
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	55	949	41	5	18	17	3	14	6	201	0	1308
24SEP	SE	0	38	402	25	4	9	12	2	9	3	102	0	418
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	40	117	83	6	0	14	1	7	12	33	0	313
08OCT	SE	0	20	62	14	2	0	9	1	7	4	14	0	69
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	57	25	42	15	0	13	< 0.5	3	8	6	4	173
22OCT	SE	0	38	11	23	7	0	13	< 0.5	3	6	4	4	49
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.55	0.95	0.57	44.10	49.22	5.96	NS	NS	NS	NS	NS	NS	14.48
25MAR	SE	0.00	0.45	0.60	0.28	24.27	27.79	3.24							37.05
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.00	0.00	0.62	3.58	3.32	12.42	6.22	NS	NS	NS	NS	NS	NS	3.74
01APR	SE	0.00	0.00	0.62	1.48	1.35	6.64	2.78							7.50
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.00	0.00	0.82	3.49	7.18	1.03	0.00	1.21	2.92	0.31	1.70	0.70	0.00	1.49
09APR	SE	0.00	0.00	0.51	2.22	4.24	0.47	0.00	1.21	2.92	0.31	1.26	0.70	0.00	5.96
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	0.00	0.00	0.00	4.56	1.75	0.60	0.00	15.51	5.36	1.61	0.00	0.63	0.00	2.31
16APR	SE	0.00	0.00	0.00	4.09	0.74	0.48	0.00	6.16	4.99	1.61	0.00	0.63	0.00	9.13
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	0.41	0.00	0.00	0.00	0.00	2.45	1.35	12.63	13.97	0.65	0.00	0.00	0.00	2.42
23APR	SE	0.41	0.00	0.00	0.00	0.00	1.26	0.68	6.42	3.29	0.65	0.00	0.00	0.00	7.40
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.20	2.37	3.26	2.22	0.73	0.15	0.00	0.00	0.00	0.00	0.69
30APR	SE	0.00	0.00	0.00	0.20	1.68	0.62	2.06	0.73	0.15	0.00	0.00	0.00	0.00	2.84
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.18	0.42	0.06	1.80	1.08	1.27	0.47	0.00	0.42	0.00	0.00	0.44
07MAY	SE	0.00	0.00	0.18	0.42	0.06	1.18	0.45	0.87	0.47	0.00	0.42	0.00	0.00	1.72
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.22	0.00	0.66	0.24	0.00	0.00	0.42	0.00	0.00	0.00	0.12
13MAY	SE	0.00	0.00	0.00	0.22	0.00	0.66	0.24	0.00	0.00	0.42	0.00	0.00	0.00	0.85
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.23	0.28	0.34	0.00	0.00	0.00	0.99	0.00	0.00	0.14
21MAY	SE	0.00	0.00	0.00	0.00	0.23	0.28	0.34	0.00	0.00	0.00	0.99	0.00	0.00	1.11
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	1.89	0.20	0.00	0.32	0.00	0.00	2.11	2.06	0.99	0.00	0.58
29MAY	SE	0.00	0.00	0.00	1.03	0.20	0.00	0.19	0.00	0.00	1.27	1.50	0.99	0.00	2.45
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.24	1.73	0.00	0.00	0.00	0.45	0.00	0.65	1.12	0.00	0.00	0.32
04JUN	SE	0.00	0.00	0.24	0.72	0.00	0.00	0.00	0.20	0.00	0.65	0.80	0.00	0.00	1.30
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.52	0.23	0.13	0.46	0.21	0.65	0.00	0.00	0.65	0.00	0.22
11JUN	SE	0.00	0.00	0.00	0.52	0.14	0.13	0.35	0.21	0.31	0.00	0.00	0.65	0.00	1.00
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.12	0.61	0.17	0.00	0.00	1.27	1.04	0.00	0.00	0.25
19JUN	SE	0.00	0.00	0.00	0.00	0.12	0.61	0.17	0.00	0.00	0.51	0.67	0.00	0.00	1.06
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	1.85	0.00	0.15	0.00	0.00	0.00	0.49	1.00	0.29	0.64	5.95	0.51	0.54	0.88
27JUN	SE	1.85	0.00	0.15	0.00	0.00	0.00	0.33	0.81	0.29	0.37	3.89	0.51	0.54	4.49
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.58	0.00	0.09
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.58	0.00	0.69
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	NS	NS	NS	NS	NS	0.10
29JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48						0.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	NS	NS	NS	NS	NS	0.03
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00						0.14
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	2.33	0.27	NS	NS	NS	NS	NS	0.32
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.27						1.06
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.27	0.76	0.88	NS	NS	NS	NS	NS	0.36
10SEP	SE	0.00	0.00	0.00	0.00	0.00	1.27	0.62	0.01						1.41
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.89	NS	NS	NS	NS	NS	0.35
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.89						1.54
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.58	NS	NS	NS	NS	NS	0.32
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.29						0.98
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	127	305	83	9187	10211	834	NS	NS	NS	NS	NS	NS	20748
25MAR	SE	0	104	192	42	5057	5766	453							7686
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	201	530	692	2576	869	NS	NS	NS	NS	NS	NS	4868
01APR	SE	0	0	201	219	281	1379	389							1490
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	265	516	1495	214	0	361	483	43	300	113	0	3791
09APR	SE	0	0	163	327	884	97	0	361	483	43	222	113	0	1163
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	674	364	125	0	4625	887	228	0	101	0	7004
16APR	SE	0	0	0	604	153	100	0	1836	825	228	0	101	0	2124
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	86	0	0	0	0	509	189	3766	2312	93	0	0	0	6954
23APR	SE	86	0	0	0	0	262	95	1915	544	93	0	0	0	2014
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	0	30	493	676	311	217	26	0	0	0	0	1752
30APR	SE	0	0	0	30	349	128	288	217	26	0	0	0	0	520
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	58	62	12	374	151	379	77	0	74	0	0	1187
07MAY	SE	0	0	58	62	12	245	64	259	77	0	74	0	0	387
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	33	0	138	34	0	0	59	0	0	0	263
13MAY	SE	0	0	0	33	0	138	34	0	0	59	0	0	0	157
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	47	59	48	0	0	0	174	0	0	328
21MAY	SE	0	0	0	0	47	59	48	0	0	0	174	0	0	196
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	280	42	0	44	0	0	298	363	159	0	1185
29MAY	SE	0	0	0	153	42	0	27	0	0	180	265	159	0	392
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	77	255	0	0	0	133	0	91	198	0	0	754
04JUN	SE	0	0	77	107	0	0	0	60	0	91	141	0	0	222
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-38 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	77	48	28	64	62	108	0	0	104	0	491
11JUN	SE	0	0	0	77	30	28	50	62	52	0	0	104	0	166
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	24	126	24	0	0	180	184	0	0	538
19JUN	SE	0	0	0	0	24	126	24	0	0	72	119	0	0	191
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	387	0	48	0	0	0	69	297	49	91	1048	83	38	2110
27JUN	SE	387	0	48	0	0	0	46	242	49	53	686	83	38	835
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	102	0	0	93	0	196
03JUL	SE	0	0	0	0	0	0	0	0	63	0	0	93	0	113
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	250	NS	NS	NS	NS	NS	250
29JUL	SE	0	0	0	0	0	0	0	144						144
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	51	0	0	NS	NS	NS	NS	NS	51
13AUG	SE	0	0	0	0	0	29	0	0						29
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	325	81	NS	NS	NS	NS	NS	406
27AUG	SE	0	0	0	0	0	0	143	81						165
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	263	106	262	NS	NS	NS	NS	NS	632
10SEP	SE	0	0	0	0	0	263	87	2						277
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	271	267	NS	NS	NS	NS	NS	538
23SEP	SE	0	0	0	0	0	0	176	267						319
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	279	174	NS	NS	NS	NS	NS	453
07OCT	SE	0	0	0	0	0	0	130	87						157
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.18	0.74	0.32	0.00	0.91	0.00	0.19
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.09	0.38	0.32	0.00	0.53	0.00	0.75
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.55	0.33	0.18	0.06	0.21	0.00	0.00	0.06	0.00	0.00	0.11
24JUL	SE	0.00	0.00	0.00	0.35	0.33	0.18	0.04	0.21	0.00	0.00	0.06	0.00	0.00	0.56
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.05	0.03	0.00	0.02	0.00	0.04	0.42	0.07	0.69	0.00	0.10
07AUG	SE	0.00	0.00	0.00	0.05	0.02	0.00	0.01	0.00	0.04	0.35	0.07	0.58	0.00	0.68
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.33	0.14	0.22	0.47	0.51	0.41	0.00	0.41	0.76	0.63	0.30
20AUG	SE	0.00	0.00	0.00	0.10	0.07	0.22	0.16	0.26	0.38	0.00	0.24	0.52	0.40	0.89
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.03	0.01	0.02	0.31	0.04	0.14	0.52	0.13	0.11	0.00	0.10
03SEP	SE	0.00	0.00	0.00	0.03	0.01	0.02	0.13	0.03	0.06	0.25	0.07	0.11	0.00	0.32
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.00	0.20	0.34	1.26	0.53	1.40	0.24	1.11	0.39
17SEP	SE	0.00	0.00	0.00	0.00	0.01	0.00	0.09	0.17	0.35	0.24	0.55	0.24	1.11	1.34
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.02	0.05	0.41	0.21	2.14	0.43	0.95	0.38	0.00	0.35
01OCT	SE	0.00	0.00	0.00	0.00	0.01	0.04	0.22	0.12	0.81	0.28	0.50	0.38	0.00	1.09
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.09	0.30	1.27	1.73	0.84	0.36	0.38	0.24	1.47	0.51
16OCT	SE	0.00	0.00	0.00	0.00	0.06	0.27	0.34	0.63	0.32	0.09	0.14	0.24	0.92	1.27
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.02	0.03	0.15	0.01	1.94	3.09	2.53	1.89	0.49	0.15	0.00	0.79
29OCT	SE	0.00	0.00	0.02	0.03	0.07	0.01	1.03	0.97	0.70	0.88	0.17	0.11	0.00	1.82
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.03	0.26	0.34	0.46	2.91	0.07	0.95	0.72	1.46	0.68	0.16	0.00	0.00	0.62
13NOV	SE	0.03	0.10	0.34	0.17	1.06	0.04	0.20	0.28	0.31	0.25	0.11	0.00	0.00	1.25
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.02	0.11	0.73	1.20	0.42	2.07	0.73	1.41	0.41	0.03	0.04	0.00	0.55
04DEC	SE	0.00	0.02	0.08	0.36	0.41	0.09	0.39	0.17	0.23	0.16	0.03	0.04	0.00	0.76
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	39	54	123	46	0	146	0	408
10JUL	SE	0	0	0	0	0	0	23	25	63	46	0	86	0	121
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	81	69	38	8	62	0	0	11	0	0	269
24JUL	SE	0	0	0	51	69	38	5	62	0	0	11	0	0	113
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	7	6	0	2	0	6	59	12	111	0	203
07AUG	SE	0	0	0	7	4	0	2	0	6	50	12	92	0	106
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	49	29	47	65	153	68	0	72	121	45	649
20AUG	SE	0	0	0	16	15	45	23	78	62	0	42	83	28	150
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	5	3	4	43	11	23	74	23	18	0	202
03SEP	SE	0	0	0	5	3	4	18	8	10	35	13	18	0	47
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	3	0	28	102	209	75	247	38	79	780
17SEP	SE	0	0	0	0	3	0	12	52	59	34	96	38	79	156
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	4	10	57	64	355	61	167	61	0	778
01OCT	SE	0	0	0	0	3	8	30	35	133	39	87	61	0	181
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	19	63	178	516	139	51	67	38	104	1175
16OCT	SE	0	0	0	0	12	56	48	188	53	12	24	38	65	224
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	6	4	31	2	272	922	418	268	87	24	0	2032
29OCT	SE	0	0	6	4	14	2	144	290	115	124	31	18	0	368
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	7	59	108	69	607	14	133	215	241	96	29	0	0	1578
13NOV	SE	7	22	108	26	221	8	28	83	51	36	20	0	0	271
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	5	37	108	250	87	290	219	233	57	6	6	0	1298
04DEC	SE	0	5	26	54	86	19	55	51	38	23	6	6	0	138
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	1.73	2.71	8.33	0.67	2.00	0.63	4.25	2.50	0.47	16.16	1.50	3.41
18JUN	SE	0.00	1.08	1.23	2.03	0.67	0.58	0.50	1.91	1.09	0.35	5.38	0.83	6.51
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.67	3.00	1.71	6.00	0.00	0.33	0.25	4.38	8.13	2.80	5.53	1.75	2.88
02JUL	SE	0.67	1.20	1.13	5.51	0.00	0.33	0.16	3.15	4.97	1.53	2.29	1.22	8.79
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.27	0.71	0.33	3.33	0.67	1.00	3.25	5.13	0.47	9.84	1.08	2.17
15JUL	SE	0.00	0.19	0.36	0.33	2.33	0.33	0.87	1.36	2.17	0.19	2.58	0.68	4.50
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.83	0.43	2.00	1.40	0.00	0.00	1.40	1.60	2.33	4.00	5.00	1.58
30JUL	SE	0.00	0.55	0.36	1.30	0.68	0.00	0.00	0.51	1.36	1.65	1.38	1.72	3.51
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	1.42	2.21	7.00	2.00	1.00	2.40	3.00	0.80	0.56	4.20	3.14	2.31
13AUG	SE	0.00	0.81	0.74	5.03	1.22	1.00	1.60	1.67	0.58	0.29	3.56	1.83	7.13
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.42	1.71	4.00	2.20	3.83	4.40	1.00	0.40	0.78	2.60	1.00	1.86
27AUG	SE	0.00	0.20	0.66	2.85	1.56	2.69	3.92	1.00	0.40	0.66	0.69	1.00	6.06
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.58	0.14	0.20	3.60	2.50	0.00	2.40	3.80	1.22	6.00	3.86	2.03
11SEP	SE	0.00	0.25	0.14	0.20	3.36	2.31	0.00	2.40	2.33	0.64	2.20	3.37	6.67
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	0.75	1.21	0.20	0.40	0.50	3.20	0.00	0.00	0.44	1.70	0.00	0.70
24SEP	SE	0.00	0.52	0.55	0.20	0.40	0.34	1.43	0.00	0.00	0.24	1.01	0.00	2.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	1.88	0.29	2.40	0.60	0.00	0.60	0.40	0.00	0.67	1.50	0.14	0.71
08OCT	SE	0.00	0.75	0.16	1.12	0.60	0.00	0.40	0.24	0.00	0.55	0.64	0.14	1.78
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.08	0.50	0.20	0.60	0.33	0.60	0.00	0.00	0.00	0.00	0.00	0.19
22OCT	SE	0.00	0.08	0.37	0.20	0.40	0.33	0.60	0.00	0.00	0.00	0.00	0.00	0.90
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	78	73	77	2	21	4	5	22	8	318	20	629
18JUN	SE	0	49	33	19	2	6	4	2	9	6	106	11	124
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	5	136	46	55	0	4	2	5	70	49	109	24	505
02JUL	SE	5	54	30	51	0	4	1	4	43	27	45	17	107
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	12	19	3	9	7	7	4	44	8	194	15	322
15JUL	SE	0	9	10	3	6	4	6	2	19	3	51	9	57
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	38	12	18	4	0	0	2	14	41	79	68	275
30JUL	SE	0	25	10	12	2	0	0	1	12	29	27	23	56
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	64	60	65	5	11	17	4	7	10	83	43	367
13AUG	SE	0	37	20	46	3	11	11	2	5	5	70	25	99
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	19	46	37	6	41	31	1	3	14	51	14	263
27AUG	SE	0	9	18	26	4	29	28	1	3	12	14	14	57
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	27	4	2	9	27	0	3	33	21	118	52	296
11SEP	SE	0	12	4	2	9	25	0	3	20	11	43	46	73
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	34	33	2	1	5	23	0	0	8	33	0	139
24SEP	SE	0	24	15	2	1	4	10	0	0	4	20	0	36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	85	8	22	2	0	4	< 0.5	0	12	30	2	164
08OCT	SE	0	34	4	10	2	0	3	< 0.5	0	10	13	2	40
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	4	13	2	2	4	4	0	0	0	0	0	28
22OCT	SE	0	4	10	2	1	4	4	0	0	0	0	0	12
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	5.18	6.64	4.01	42.99	4.26	0.38	NS	NS	NS	NS	NS	NS	9.07
25MAR	SE	0.00	3.02	3.18	2.03	21.40	2.99	0.32							22.15
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	2.45	4.78	9.94	6.32	0.41	0.66	0.00	NS	NS	NS	NS	NS	NS	3.51
01APR	SE	1.15	2.05	7.54	3.31	0.37	0.57	0.00							8.59
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.80	1.75	1.32	2.43	0.45	0.00	0.00	0.30	0.00	0.00	2.76	2.55	1.04	1.03
09APR	SE	0.47	0.52	0.54	0.69	0.20	0.00	0.00	0.30	0.00	0.00	1.66	2.15	0.60	3.02
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	0.42	0.27	0.00	0.63	0.80	0.00	0.00	1.71	0.28	0.00	0.00	0.00	0.00	0.32
16APR	SE	0.42	0.27	0.00	0.21	0.29	0.00	0.00	0.91	0.28	0.00	0.00	0.00	0.00	1.13
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	0.00	0.00	0.00	0.18	0.71	2.64	1.68	0.00	0.00	0.33	0.00	0.00	0.00	0.43
23APR	SE	0.00	0.00	0.00	0.18	0.71	1.05	0.87	0.00	0.00	0.33	0.00	0.00	0.00	1.58
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.40	4.33	0.74	0.29	1.57	0.51	0.43	0.00	0.00	0.00	0.64
30APR	SE	0.00	0.00	0.00	0.23	2.81	0.37	0.26	0.52	0.51	0.43	0.00	0.00	0.00	2.97
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.32	0.00	0.61	0.38	0.00	0.26	1.06	0.16	0.89	0.43	0.00	0.41	0.35
07MAY	SE	0.00	0.32	0.00	0.20	0.19	0.00	0.26	0.51	0.16	0.45	0.43	0.00	0.41	1.04
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.45	0.00	0.00	0.24	0.66	1.50	1.25	0.00	0.00	0.00	0.32
13MAY	SE	0.00	0.00	0.00	0.26	0.00	0.00	0.24	0.17	0.89	1.25	0.00	0.00	0.00	1.58
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.23	0.23	0.00	0.26	1.18	0.19	0.31	0.24	0.00	0.00	0.20
21MAY	SE	0.00	0.00	0.00	0.23	0.23	0.00	0.26	0.72	0.19	0.31	0.24	0.00	0.00	0.94
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	1.49	0.49	0.61	0.52	0.19	1.09	0.64	0.63	0.00	4.61	0.79
29MAY	SE	0.00	0.00	0.00	0.91	0.44	0.61	0.45	0.19	0.44	0.64	0.63	0.00	2.86	3.28
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.60	0.81	3.26	0.79	0.14	1.14	1.14	1.04	0.61	1.12	0.68	2.81	1.09
04JUN	SE	0.00	0.60	0.60	1.02	0.56	0.14	0.43	0.76	1.04	0.35	0.52	0.68	2.81	3.56
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.16	0.59	0.00	0.55	0.28	0.00	0.48	0.00	0.00	0.57	2.04	0.36
11JUN	SE	0.00	0.00	0.16	0.30	0.00	0.55	0.19	0.00	0.19	0.00	0.00	0.57	2.04	2.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.17	1.53	1.29	0.00	1.89	0.22	0.33	2.50	0.68	1.92	4.01	1.12
19JUN	SE	0.00	0.00	0.17	0.71	0.71	0.00	0.74	0.22	0.20	1.14	0.68	1.14	2.32	3.18
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.68	0.59	1.78	0.04	0.00	2.34	1.76	0.28	0.96	0.26	0.51	0.54	0.75
27JUN	SE	0.00	0.68	0.26	1.13	0.04	0.00	1.10	0.88	0.17	0.96	0.26	0.51	0.54	2.32
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	1.47	0.29	0.00	0.26	1.03	3.00	1.68	5.31	0.33	0.00	0.64	1.08
03JUL	SE	0.00	0.00	0.55	0.29	0.00	0.15	0.65	0.97	0.77	3.82	0.33	0.00	0.64	4.18
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.46	0.00	0.00	1.77	0.00	NS	NS	NS	NS	NS	0.28
15JUL	SE	0.00	0.00	0.00	0.46	0.00	0.00	1.01	0.00						1.11
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	1.26	0.00	0.86	1.46	0.57	NS	NS	NS	NS	NS	0.52
29JUL	SE	0.00	0.00	0.00	0.89	0.00	0.66	0.96	0.28						1.50
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.43	0.29	0.45	0.11	3.47	1.49	NS	NS	NS	NS	NS	0.78
13AUG	SE	0.00	0.00	0.43	0.29	0.45	0.11	0.31	1.49						1.67
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.22	0.00	0.19	0.67	0.00	3.23	1.13	NS	NS	NS	NS	NS	0.68
27AUG	SE	0.00	0.22	0.00	0.19	0.35	0.00	1.18	0.76						1.47
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	2.21	0.00	0.00	0.44	0.00	1.07	0.00	NS	NS	NS	NS	NS	0.47
10SEP	SE	0.00	2.21	0.00	0.00	0.44	0.00	0.97	0.00						2.45
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	1.93	2.20	NS	NS	NS	NS	NS	0.53
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.24	1.14						1.18
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.31	0.28	3.42	0.58	NS	NS	NS	NS	NS	0.57
07OCT	SE	0.00	0.00	0.00	0.00	0.31	0.16	1.82	0.58						1.94
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	1189	2138	593	8956	883	52	NS	NS	NS	NS	NS	NS	13812
25MAR	SE	0	693	1022	300	4459	621	44							4678
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	512	1097	3198	933	86	136	0	NS	NS	NS	NS	NS	NS	5963
01APR	SE	240	471	2425	489	76	118	0							2534
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	167	403	424	359	93	0	0	90	0	0	487	409	74	2507
09APR	SE	98	119	173	102	42	0	0	90	0	0	293	346	43	530
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	87	62	0	93	167	0	0	509	47	0	0	0	0	965
16APR	SE	87	62	0	31	61	0	0	270	47	0	0	0	0	302
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	0	0	0	27	148	547	235	0	0	46	0	0	0	1003
23APR	SE	0	0	0	27	148	217	122	0	0	46	0	0	0	294
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	0	60	902	153	41	469	84	61	0	0	0	1769
30APR	SE	0	0	0	34	584	77	36	154	84	61	0	0	0	620
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	73	0	89	78	0	36	316	26	126	75	0	29	849
07MAY	SE	0	73	0	30	39	0	36	153	26	63	75	0	29	209
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	66	0	0	34	196	249	177	0	0	0	721
13MAY	SE	0	0	0	38	0	0	34	49	148	177	0	0	0	241
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	34	47	0	36	352	32	44	43	0	0	587
21MAY	SE	0	0	0	34	47	0	36	214	32	44	43	0	0	235
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	220	102	126	72	56	181	90	111	0	328	1286
29MAY	SE	0	0	0	134	91	126	63	56	73	90	111	0	203	341
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	138	259	482	165	29	160	341	172	86	197	109	200	2337
04JUN	SE	0	138	192	151	117	29	60	228	172	50	91	109	200	491
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-44 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE PERCH OLDER-THAN-YEARLING IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	50	87	0	114	39	0	79	0	0	91	145	606
11JUN	SE	0	0	50	44	0	114	26	0	32	0	0	91	145	220
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	54	226	269	0	264	65	55	354	120	309	285	2001
19JUN	SE	0	0	54	105	148	0	103	65	33	161	120	183	165	391
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	156	190	262	9	0	327	523	47	136	47	83	38	1819
27JUN	SE	0	156	85	167	9	0	154	262	29	136	47	83	38	426
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	475	42	0	54	144	895	277	751	58	0	45	2741
03JUL	SE	0	0	177	42	0	31	91	290	128	540	58	0	45	663
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	68	0	0	248	0	NS	NS	NS	NS	NS	316
15JUL	SE	0	0	0	68	0	0	141	0						156
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	186	0	179	205	170	NS	NS	NS	NS	NS	740
29JUL	SE	0	0	0	132	0	136	134	85						248
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	139	44	93	24	485	444	NS	NS	NS	NS	NS	1229
13AUG	SE	0	0	139	44	93	24	43	444						479
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	51	0	28	139	0	452	336	NS	NS	NS	NS	NS	1006
27AUG	SE	0	51	0	28	72	0	165	226						295
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	507	0	0	92	0	150	0	NS	NS	NS	NS	NS	749
10SEP	SE	0	507	0	0	92	0	136	0						533
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	26	269	657	NS	NS	NS	NS	NS	952
23SEP	SE	0	0	0	0	0	26	34	341						344
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	64	58	477	173	NS	NS	NS	NS	NS	773
07OCT	SE	0	0	0	0	64	33	254	173						316
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.26	1.95	1.55	0.70	0.01	2.26	1.89	2.42	1.48	2.40	0.24	1.88	1.31
10JUL	SE	0.00	0.26	0.68	0.28	0.31	0.01	1.20	0.36	0.96	0.39	1.52	0.12	0.79	2.51
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.10	0.80	1.31	0.89	0.02	0.44	1.42	1.67	0.92	1.94	0.55	0.84	0.84
24JUL	SE	0.00	0.08	0.28	0.43	0.42	0.01	0.16	0.46	0.53	0.36	1.15	0.55	0.32	1.68
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.83	0.43	0.50	0.22	0.19	1.59	1.53	0.82	1.13	1.92	2.18	0.22	0.89
07AUG	SE	0.00	0.44	0.20	0.24	0.09	0.08	0.42	0.54	0.24	0.65	0.84	1.31	0.22	1.93
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.45	1.66	0.28	0.08	0.51	0.40	0.87	0.85	0.81	2.26	4.96	1.01
20AUG	SE	0.00	0.00	0.18	0.40	0.10	0.03	0.15	0.21	0.41	0.39	< 0.005	2.01	2.85	3.57
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.26	0.29	0.15	0.17	2.32	0.49	0.78	1.52	1.01	0.00	1.71	0.67
03SEP	SE	0.00	0.00	0.08	0.08	0.06	0.04	0.71	0.12	0.19	0.64	0.24	0.00	0.55	1.16
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.59	0.23	0.57	0.09	0.39	0.60	3.21	1.20	1.63	1.77	3.03	1.02
17SEP	SE	0.00	0.00	0.20	0.11	0.37	0.04	0.09	0.26	0.85	0.29	0.85	1.24	1.67	2.47
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.03	1.01	0.96	0.26	0.17	0.52	0.51	3.80	0.82	1.18	1.29	2.94	1.04
01OCT	SE	0.00	0.03	0.27	0.43	0.07	0.08	0.24	0.17	1.17	0.24	0.47	0.27	1.47	2.06
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.03	0.35	1.61	0.40	0.42	0.74	1.11	1.66	1.82	1.78	1.08	0.73	3.35	1.16
16OCT	SE	0.03	0.25	0.48	0.15	0.13	0.38	0.28	0.55	0.52	0.33	0.15	0.54	2.97	3.22
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.06	0.12	1.42	0.52	0.86	0.16	2.22	4.57	2.48	2.37	1.69	0.29	0.06	1.29
29OCT	SE	0.06	0.05	0.55	0.20	0.22	0.06	0.66	1.22	0.64	0.63	0.55	0.13	0.06	1.86
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	1.48	6.01	1.81	3.29	1.37	0.18	1.27	0.82	2.08	1.53	0.84	0.31	0.05	1.62
13NOV	SE	0.56	1.21	1.01	0.71	0.38	0.08	0.21	0.35	0.40	0.26	0.24	0.17	0.05	1.98
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.11	1.26	3.22	4.43	1.65	0.16	0.90	0.23	0.96	1.67	0.39	0.40	0.17	1.20
04DEC	SE	0.05	0.25	1.28	1.00	0.36	0.03	0.27	0.07	0.26	0.62	0.15	0.20	0.12	1.86
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	61	628	229	145	2	316	565	400	210	424	39	134	3152
10JUL	SE	0	61	218	41	66	2	168	108	160	55	267	20	57	448
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	24	256	193	186	4	61	425	277	130	341	88	60	2045
24JUL	SE	0	19	90	64	88	3	22	136	87	52	204	88	23	315
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	191	138	73	46	40	222	457	135	160	338	351	15	2167
07AUG	SE	0	101	66	36	19	16	58	161	40	92	149	211	15	350
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	146	245	58	16	72	119	145	120	143	363	353	1778
20AUG	SE	0	0	57	59	22	5	21	64	68	55	1	323	203	406
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	84	42	31	36	324	148	129	215	178	0	122	1307
03SEP	SE	0	0	25	12	12	9	99	37	31	91	42	0	39	157
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	190	34	119	19	54	177	531	169	287	285	215	2081
17SEP	SE	0	0	66	16	76	7	12	79	140	41	150	200	119	339
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	6	324	142	53	34	72	153	628	117	208	207	209	2153
01OCT	SE	0	6	86	63	15	17	34	51	193	34	83	44	105	272
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	7	80	519	60	88	153	156	494	302	253	191	117	238	2657
16OCT	SE	7	57	154	21	27	79	38	165	87	47	26	88	211	355
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	12	27	458	76	180	33	311	1362	410	335	298	47	5	3553
29OCT	SE	12	11	177	29	46	13	92	365	106	90	96	21	5	453
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	310	1379	583	486	284	38	178	244	343	217	148	51	4	4265
13NOV	SE	116	277	326	105	78	16	30	106	66	37	42	28	4	484
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	23	288	1036	654	344	33	126	68	158	237	68	64	12	3112
04DEC	SE	10	57	413	147	74	7	38	22	43	88	26	32	9	463
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.33	3.55	2.00	0.67	0.33	0.33	2.38	1.88	1.38	0.67	2.89	6.00	1.87
18JUN	SE	0.33	1.82	1.29	0.33	0.33	0.33	1.15	0.74	0.91	0.33	0.78	2.38	3.81
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	2.67	6.18	1.43	0.67	0.00	1.00	1.00	3.88	3.38	2.67	3.47	0.50	2.24
02JUL	SE	0.67	3.74	1.27	0.33	0.00	1.00	0.46	2.09	1.98	1.24	1.87	0.34	5.55
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.33	1.64	1.57	0.33	0.33	0.00	0.38	0.88	0.50	0.87	3.16	1.00	0.92
15JUL	SE	0.33	0.85	0.65	0.33	0.33	0.00	0.26	0.52	0.27	0.38	1.40	0.44	2.04
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.88	1.29	2.20	0.20	0.17	0.00	0.00	0.20	0.00	0.20	0.00	0.43
30JUL	SE	0.00	0.57	0.82	1.50	0.20	0.17	0.00	0.00	0.20	0.00	0.13	0.00	1.83
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	2.29	1.71	3.20	0.60	0.17	0.00	0.80	0.20	0.67	0.60	2.14	1.03
13AUG	SE	0.00	0.93	0.79	2.01	0.40	0.17	0.00	0.37	0.20	0.33	0.27	1.03	2.67
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.79	0.86	1.60	0.00	0.00	0.20	0.40	0.00	0.22	1.30	1.00	0.53
27AUG	SE	0.00	0.36	0.36	1.36	0.00	0.00	0.20	0.40	0.00	0.15	0.47	1.00	1.89
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.20	1.33	0.36	0.20	1.40	0.17	0.00	1.60	0.20	0.67	1.10	2.43	0.80
11SEP	SE	0.20	0.98	0.23	0.20	0.93	0.17	0.00	1.60	0.20	0.37	0.46	1.59	2.73
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.40	0.42	1.29	2.80	0.20	0.17	3.00	0.60	5.40	0.11	1.60	0.14	1.34
24SEP	SE	0.24	0.23	0.40	2.13	0.20	0.17	1.90	0.24	5.40	0.11	0.64	0.14	6.18
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	3.20	7.96	0.14	0.20	0.00	0.00	0.20	0.60	0.00	0.33	0.90	0.14	1.14
08OCT	SE	1.28	6.76	0.14	0.20	0.00	0.00	0.20	0.40	0.00	0.24	0.48	0.14	6.92
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	1.00	0.63	0.57	0.40	0.80	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.36
22OCT	SE	0.45	0.32	0.44	0.24	0.80	0.00	0.00	0.00	0.00	0.00	0.60	0.00	1.25
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	3	161	54	6	1	4	17	2	12	12	57	82	409
18JUN	SE	3	83	35	3	1	4	8	1	8	6	15	32	98
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	20	281	38	6	0	11	7	5	29	47	68	7	519
02JUL	SE	5	170	34	3	0	11	3	3	17	22	37	5	180
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	3	74	42	3	1	0	3	1	4	15	62	14	222
15JUL	SE	3	38	17	3	1	0	2	1	2	7	27	6	51
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	40	35	20	1	2	0	0	2	0	4	0	103
30JUL	SE	0	26	22	14	1	2	0	0	2	0	3	0	37
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	104	46	29	2	2	0	1	2	12	12	29	238
13AUG	SE	0	42	21	19	1	2	0	< 0.5	2	6	5	14	53
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	36	23	15	0	0	1	< 0.5	0	4	26	14	119
27AUG	SE	0	16	10	13	0	0	1	< 0.5	0	3	9	14	28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	2	61	10	2	4	2	0	2	2	12	22	33	149
11SEP	SE	2	44	6	2	2	2	0	2	2	7	9	22	51
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	3	19	35	26	1	2	21	1	46	2	31	2	189
24SEP	SE	2	11	11	20	1	2	13	< 0.5	46	2	13	2	56
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	24	362	4	2	0	0	1	1	0	6	18	2	419
08OCT	SE	10	307	4	2	0	0	1	< 0.5	0	4	9	2	307
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	8	28	15	4	2	0	0	0	0	0	18	0	75
22OCT	SE	3	14	12	2	2	0	0	0	0	0	12	0	23
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-49 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-50 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	2.86	7.50	48.15	21.65	6.85	9.69	2.16	NS	NS	NS	NS	NS	NS	14.12
18MAR	SE	1.18	3.73	28.31	2.88	2.60	1.63	1.67							28.94
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	DENSITY	0.00	0.00	0.46	1.69	29.94	9.98	5.65	NS	NS	NS	NS	NS	NS	6.82
25MAR	SE	0.00	0.00	0.46	0.79	13.83	2.72	1.99							14.26
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.90	1.16	0.00	NS	NS	NS	NS	NS	NS	0.29
01APR	SE	0.00	0.00	0.00	0.00	0.85	0.71	0.00							1.11
	NO. TOWS	10	10	11	11	10	10	12							74
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	598	1721	15497	3199	1427	2010	302	NS	NS	NS	NS	NS	NS	24753
18MAR	SE	248	856	9111	426	542	338	233							9189
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	147	250	6237	2071	789	NS	NS	NS	NS	NS	NS	9493
25MAR	SE	0	0	147	116	2881	565	279							2955
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	187	242	0	NS	NS	NS	NS	NS	NS	428
01APR	SE	0	0	0	0	177	148	0							231
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	140.03	81.94	239.49	16.78	35.61	24.43	9.26	NS	NS	NS	NS	NS	NS	78.22
18MAR	SE	21.09	34.42	195.03	3.06	6.39	2.20	3.18							199.32
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	DENSITY	1.45	6.09	45.98	176.77	398.31	112.93	10.22	NS	NS	NS	NS	NS	NS	107.39
25MAR	SE	0.77	3.45	7.91	19.64	201.46	67.10	1.78							213.43
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	214.89	61.72	236.23	253.38	21.96	0.56	0.00	NS	NS	NS	NS	NS	NS	112.68
01APR	SE	136.30	51.70	131.19	59.37	5.29	0.56	0.00							204.97
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	5.84	129.29	97.28	0.35	0.06	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	17.93
09APR	SE	5.84	54.87	41.28	0.25	0.06	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	68.91
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	28.58	254.53	32.81	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.57
16APR	SE	15.07	193.60	16.90	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	194.95
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	412.08	328.61	76.66	25.87	10.18	99.43	104.37	0.00	0.00	0.00	0.00	0.00	0.00	81.32
23APR	SE	162.13	240.83	18.45	17.78	6.08	40.82	32.54	0.00	0.00	0.00	0.00	0.00	0.00	296.15
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	112.87	87.30	24.75	61.84	224.14	124.36	24.99	1.61	0.00	0.00	0.00	0.00	0.00	50.91
30APR	SE	30.66	35.85	11.77	21.71	106.28	45.73	16.10	0.94	0.00	0.00	0.00	0.00	0.00	128.39
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	21.82	76.19	26.53	27.72	14.18	58.15	34.33	0.19	0.00	0.00	0.00	0.00	0.00	19.93
07MAY	SE	12.43	63.31	18.25	12.12	8.58	18.94	27.29	0.19	0.00	0.00	0.00	0.00	0.00	76.28
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.63	7.02	4.28	0.35	3.98	1.03	0.34	0.00	0.00	0.00	0.00	0.00	1.36
13MAY	SE	0.00	0.63	4.71	1.85	0.17	3.98	1.03	0.34	0.00	0.00	0.00	0.00	0.00	6.56
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	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
21MAY	SE	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	29268	18798	77072	2479	7418	5069	1294	NS	NS	NS	NS	NS	NS	141398
18MAR	SE	4407	7896	62762	452	1332	457	445							63429
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	302	1396	14797	26115	82983	23428	1428	NS	NS	NS	NS	NS	NS	150449
25MAR	SE	160	791	2544	2902	41972	13921	249							44396
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	44916	14160	76021	37433	4575	117	0	NS	NS	NS	NS	NS	NS	177221
01APR	SE	28488	11862	42218	8772	1102	117	0							53036
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	1221	29662	31306	52	13	0	44	0	0	0	0	0	0	62297
09APR	SE	1221	12587	13285	37	13	0	44	0	0	0	0	0	0	18342
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	5974	58394	10560	521	0	0	0	0	0	0	0	0	0	75450
16APR	SE	3151	44415	5439	521	0	0	0	0	0	0	0	0	0	44861
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	86129	75389	24671	3822	2120	20626	14590	0	0	0	0	0	0	227347
23APR	SE	33887	55250	5936	2627	1266	8468	4549	0	0	0	0	0	0	65857
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	23592	20029	7964	9136	46697	25798	3493	481	0	0	0	0	0	137190
30APR	SE	6408	8224	3788	3208	22142	9488	2251	282	0	0	0	0	0	26810
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	4562	17480	8536	4095	2955	12064	4799	56	0	0	0	0	0	54545
07MAY	SE	2599	14524	5871	1790	1788	3928	3815	56	0	0	0	0	0	16987
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	144	2259	633	72	825	145	101	0	0	0	0	0	4179
13MAY	SE	0	144	1516	273	36	825	145	101	0	0	0	0	0	1763
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	60	0	0	0	0	0	0	0	0	0	60
21MAY	SE	0	0	0	42	0	0	0	0	0	0	0	0	0	42
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-54 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.00	0.20	0.72	2.32	8.05	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07
30APR	SE	0.00	0.20	0.42	2.07	6.18	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.54
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	11.82	22.74	11.78	15.98	10.14	46.03	42.82	1.05	0.47	1.78	0.00	0.00	0.00	12.66
07MAY	SE	1.26	11.34	8.28	6.42	6.57	14.77	22.18	0.63	0.47	1.17	0.00	0.00	0.00	31.55
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	115.51	18.18	26.66	27.29	15.59	38.80	14.27	1.20	7.63	0.00	0.97	0.00	0.00	20.47
13MAY	SE	67.50	4.92	13.00	8.89	14.49	35.35	10.77	0.84	6.27	0.00	0.48	0.00	0.00	80.27
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	145.76	1.45	0.17	5.99	56.31	69.43	0.00	1.75	0.00	0.00	0.00	0.00	0.00	21.60
21MAY	SE	84.18	1.11	0.17	5.99	56.31	66.22	0.00	1.58	0.00	0.00	0.00	0.00	0.00	121.17
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	97.39	54.55	9.50	45.81	37.51	102.29	7.07	7.73	0.00	0.00	0.61	0.00	0.00	27.88
29MAY	SE	28.53	21.48	3.73	22.39	15.56	31.59	2.65	2.88	0.00	0.00	0.37	0.00	0.00	55.19
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	74.49	72.62	42.59	34.55	8.76	42.18	19.27	6.29	1.42	0.00	0.00	0.68	0.00	23.30
04JUN	SE	25.41	24.70	6.64	9.48	4.36	19.38	6.11	1.26	0.80	0.00	0.00	0.68	0.00	42.72
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	29.38	6.87	9.73	18.99	9.70	20.56	36.25	1.25	0.78	1.58	0.35	0.00	0.68	10.47
11JUN	SE	21.33	2.78	3.57	12.14	4.70	6.13	13.98	0.72	0.24	0.95	0.35	0.00	0.68	29.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	9.02	9.83	32.15	59.15	17.01	5.55	1.51	0.18	0.31	0.00	0.59	2.66	10.61
19JUN	SE	0.00	5.65	5.89	7.02	15.82	7.49	2.27	0.89	0.18	0.31	0.00	0.59	0.67	20.72
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	8.14	21.93	19.89	4.34	16.70	16.61	7.04	3.30	0.43	0.00	0.37	0.00	0.59	7.64
27JUN	SE	2.00	16.29	3.71	1.85	4.84	5.95	2.77	2.15	0.29	0.00	0.37	0.00	0.59	18.93
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	23.15	8.95	17.04	8.62	0.24	12.56	5.66	2.05	1.05	0.00	0.00	0.00	0.00	6.10
03JUL	SE	16.49	2.88	7.53	2.05	0.24	3.70	1.61	0.77	0.44	0.00	0.00	0.00	0.00	18.92
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	1.87	0.00	0.91	3.32	4.18	6.86	0.54	NS	NS	NS	NS	NS	2.21
15JUL	SE	0.00	1.87	0.00	0.53	2.02	1.69	1.98	0.54						3.86
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	10.72	2.48	0.00	1.28	6.72	13.99	5.99	5.70	NS	NS	NS	NS	NS	5.86
29JUL	SE	1.96	1.38	0.00	1.28	4.66	2.88	1.15	3.61						7.20
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.39	27.86	2.95	3.95	9.42	3.47	NS	NS	NS	NS	NS	6.01
13AUG	SE	0.00	0.00	0.39	7.38	1.31	1.02	5.00	0.83						9.11
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	1.36	2.89	0.13	1.42	0.00	NS	NS	NS	NS	NS	0.72
27AUG	SE	0.00	0.00	0.00	1.00	0.93	0.13	0.83	0.00						1.61
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.44	0.00	0.74	0.38	0.00	NS	NS	NS	NS	NS	0.19
10SEP	SE	0.00	0.00	0.00	0.44	0.00	0.41	0.33	0.00						0.69
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.25	2.88	0.00	NS	NS	NS	NS	NS	0.39
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.14	1.92	0.00						1.93
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.29	NS	NS	NS	NS	NS	0.04
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.29						0.30
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	47	231	343	1678	551	0	0	0	0	0	0	0	2851
30APR	SE	0	47	134	305	1287	92	0	0	0	0	0	0	0	1333
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	2470	5216	3790	2361	2112	9550	5986	313	77	251	0	0	0	32127
07MAY	SE	264	2601	2665	948	1369	3064	3101	189	77	165	0	0	0	5981
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	24142	4171	8580	4031	3247	8050	1995	357	1262	0	171	0	0	56006
13MAY	SE	14108	1130	4182	1313	3018	7333	1505	250	1037	0	85	0	0	16906
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	30466	333	54	885	11731	14403	0	522	0	0	0	0	0	58395
21MAY	SE	17595	254	54	885	11731	13737	0	471	0	0	0	0	0	25238
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	20356	12515	3057	6768	7815	21220	988	2304	0	0	107	0	0	75131
29MAY	SE	5963	4927	1200	3308	3241	6554	370	859	0	0	66	0	0	11249
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	15570	16660	13705	5104	1825	8750	2693	1874	236	0	0	109	0	66526
04JUN	SE	5311	5667	2136	1400	908	4022	854	377	133	0	0	109	0	9206
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	6141	1575	3131	2805	2020	4266	5068	374	129	224	63	0	48	25843
11JUN	SE	4458	637	1148	1794	980	1272	1954	215	39	135	63	0	48	5594
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	2069	3165	4749	12324	3529	776	449	29	44	0	95	189	27419
19JUN	SE	0	1296	1896	1037	3296	1554	317	266	29	44	0	95	48	4452
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	1702	5031	6402	641	3480	3445	984	984	72	0	65	0	42	22848
27JUN	SE	418	3738	1194	274	1007	1234	388	640	48	0	65	0	42	4330
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	4839	2053	5484	1273	49	2607	791	611	174	0	0	0	0	17881
03JUL	SE	3446	662	2422	302	49	768	225	230	73	0	0	0	0	4355
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	428	0	135	693	868	959	161	NS	NS	NS	NS	NS	3243
15JUL	SE	0	428	0	78	420	350	277	161						769
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	2240	569	0	189	1400	2902	838	1700	NS	NS	NS	NS	NS	9837
29JUL	SE	410	316	0	189	971	598	160	1076						1670
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	127	4116	614	820	1317	1034	NS	NS	NS	NS	NS	8029
13AUG	SE	0	0	127	1091	273	211	698	247						1369
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	201	602	26	198	0	NS	NS	NS	NS	NS	1027
27AUG	SE	0	0	0	148	194	26	116	0						272
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	66	0	153	52	0	NS	NS	NS	NS	NS	271
10SEP	SE	0	0	0	66	0	85	46	0						116
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	51	403	0	NS	NS	NS	NS	NS	455
23SEP	SE	0	0	0	0	0	30	269	0						270
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	8	86	NS	NS	NS	NS	NS	95
07OCT	SE	0	0	0	0	0	0	8	86						87
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	1.67	1.26	0.18	0.41	4.71	1.98	2.37	1.53	0.10	0.33	0.00	0.00	0.00	1.12
10JUL	SE	0.73	0.40	0.10	0.12	2.53	0.75	0.70	0.27	0.04	0.25	0.00	0.00	0.00	2.88
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	5.31	1.60	1.66	0.15	2.91	4.80	4.27	0.42	0.02	0.00	0.06	0.00	0.00	1.63
24JUL	SE	1.46	0.52	1.28	0.07	1.66	0.95	0.79	0.13	0.02	0.00	0.06	0.00	0.00	2.89
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	2.53	0.83	0.77	4.25	1.67	1.54	0.29	0.90	0.04	0.00	0.00	0.56	0.00	1.03
07AUG	SE	1.08	0.23	0.34	1.14	0.76	0.64	0.13	0.46	0.03	0.00	0.00	0.56	0.00	2.05
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.15	0.21	0.00	0.03	9.88	4.96	1.78	0.95	0.12	0.00	0.00	0.00	0.00	1.39
20AUG	SE	0.12	0.10	0.00	0.03	5.48	1.24	1.04	0.88	0.06	0.00	0.00	0.00	0.00	5.79
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.43	0.13	0.00	0.00	0.00	0.09	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.06
03SEP	SE	0.08	0.06	0.00	0.00	0.00	0.04	0.06	0.02	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	210
14SEP-	DENSITY	0.00	0.18	0.06	0.00	0.00	0.01	0.17	0.03	0.06	0.00	0.00	0.00	0.00	0.04
17SEP	SE	0.00	0.07	0.04	0.00	0.00	0.01	0.06	0.02	0.04	0.00	0.00	0.00	0.00	0.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.06	0.18	0.16	0.03	0.01	0.02	0.09	0.11	0.12	0.21	0.00	0.00	0.00	0.08
01OCT	SE	0.04	0.10	0.14	0.03	0.01	0.02	0.06	0.07	0.10	0.14	0.00	0.00	0.00	0.26
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.12	0.03	0.08	0.15	0.21	0.10	0.02	0.13	0.00	0.00	0.11	0.07
16OCT	SE	0.00	0.00	0.06	0.03	0.02	0.09	0.12	0.05	0.02	0.13	0.00	0.00	0.11	0.25
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.02	0.09	0.16	0.16	0.00	0.00	0.00	0.04
29OCT	SE	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.05	0.09	0.09	0.00	0.00	0.00	0.15
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.07	0.00	0.01	0.07	0.06	0.07	0.00	0.07	0.00	0.00	0.00	0.03
13NOV	SE	0.00	0.00	0.07	0.00	0.01	0.06	0.03	0.05	0.00	0.04	0.00	0.00	0.00	0.12
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.02	0.00	0.01	0.00	0.07	0.05	0.05	0.03	0.00	0.00	0.00	0.02
04DEC	SE	0.00	0.00	0.02	0.00	0.01	0.00	0.05	0.03	0.03	0.03	0.00	0.00	0.00	0.07
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-58 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	349	288	58	60	981	411	332	456	17	47	0	0	0	2999
10JUL	SE	153	92	33	18	527	155	98	80	7	35	0	0	0	594
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	1111	367	535	22	606	995	597	125	3	0	10	0	0	4371
24JUL	SE	305	120	411	10	346	197	111	38	3	0	10	0	0	670
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	528	190	248	628	348	320	41	267	6	0	0	90	0	2667
07AUG	SE	226	53	110	169	158	133	18	138	4	0	0	90	0	406
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	31	49	0	4	2058	1029	249	284	20	0	0	0	0	3725
20AUG	SE	25	23	0	4	1143	258	145	261	9	0	0	0	0	1209
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	90	30	0	0	0	19	14	8	0	0	0	0	0	162
03SEP	SE	16	14	0	0	0	8	9	5	0	0	0	0	0	25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	41	20	0	0	3	24	10	10	0	0	0	0	107
17SEP	SE	0	17	13	0	0	3	8	7	7	0	0	0	0	25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	13	41	52	4	1	4	13	32	20	30	0	0	0	211
01OCT	SE	9	23	44	4	1	4	9	20	16	20	0	0	0	60
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	37	4	16	31	29	30	3	19	0	0	7	178
16OCT	SE	0	0	19	4	4	19	17	14	3	19	0	0	7	41
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	7	0	3	26	26	22	0	0	0	84
29OCT	SE	0	0	0	0	5	0	3	16	16	13	0	0	0	26
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	22	0	3	14	9	21	0	9	0	0	0	77
13NOV	SE	0	0	22	0	3	12	4	16	0	6	0	0	0	30
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	6	0	2	0	9	14	9	4	0	0	0	45
04DEC	SE	0	0	6	0	2	0	7	10	4	4	0	0	0	15
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.55	0.43	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
18JUN	SE	0.00	0.55	0.43	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	1.00	0.18	0.00	4.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
02JUL	SE	1.00	0.12	0.00	4.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.77
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.09	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
15JUL	SE	0.00	0.09	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	CPUE	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13AUG	SE	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	CPUE	0.00	0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
08OCT	SE	0.00	0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	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
22OCT	SE	0.00	0.00	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-60 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC TOMCOD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	25	12	9	0	0	0	0	0	0	0	0	46
18JUN	SE	0	25	12	9	0	0	0	0	0	0	0	0	29
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	8	8	0	43	0	0	0	0	0	0	0	0	59
02JUL	SE	8	6	0	43	0	0	0	0	0	0	0	0	44
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	4	8	0	0	0	0	0	0	0	0	0	12
15JUL	SE	0	4	5	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	4
13AUG	SE	0	3	0	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	2	2	0	0	0	0	0	0	0	0	0	4
08OCT	SE	0	2	2	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-61 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.28	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.04
01APR	SE	0.28	0.00	0.00	0.00	0.00	0.00	0.00							0.28
	NO. TOWS	10	10	11	11	10	10	12							74
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-61 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	58	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	58
01APR	SE	58	0	0	0	0	0	0							58
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
20JUL-	DENSITY	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
24JUL	SE	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.03	0.00	0.85	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.07
20AUG	SE	0.00	0.00	0.00	0.03	0.00	0.85	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.85
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
28SEP-	DENSITY	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
01OCT	SE	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.04	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
16OCT	SE	0.00	0.04	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.02	0.00	0.03	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01
29OCT	SE	0.00	0.00	0.02	0.00	0.02	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.04
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.07	0.07	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01
13NOV	SE	0.05	0.04	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.07
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.07	0.20	0.20	0.10	0.00	0.04	0.03	0.02	0.09	0.03	0.00	0.00	0.06
04DEC	SE	0.00	0.04	0.06	0.08	0.03	0.00	0.03	0.02	0.02	0.04	0.03	0.00	0.00	0.13
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	7	0	0	0	0	0	0	0	0	0	0	0	0	7
24JUL	SE	7	0	0	0	0	0	0	0	0	0	0	0	0	7
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	4	0	177	1	0	0	0	0	0	0	181
20AUG	SE	0	0	0	4	0	177	1	0	0	0	0	0	0	177
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	6	10	0	0	0	1	0	0	0	0	0	0	16
01OCT	SE	0	6	10	0	0	0	1	0	0	0	0	0	0	11
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	8	0	4	0	2	0	0	0	0	0	0	0	14
16OCT	SE	0	8	0	4	0	2	0	0	0	0	0	0	0	9
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	6	0	7	3	0	0	0	4	0	0	0	20
29OCT	SE	0	0	6	0	4	2	0	0	0	4	0	0	0	8
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	14	16	0	0	2	0	0	0	0	4	0	0	0	36
13NOV	SE	9	9	0	0	2	0	0	0	0	4	0	0	0	14
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	15	65	30	21	0	6	10	3	12	6	0	0	168
04DEC	SE	0	8	20	12	7	0	4	7	3	6	6	0	0	28
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-65 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ATLANTIC TOMCOD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	16.64	5.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67
21MAY	SE	10.16	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.51
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	33627.92	1698.07	1.54	0.40	0.43	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	2717.60
29MAY	SE	3673.91	1597.40	1.54	0.40	0.43	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	4006.16
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	20032.23	67401.99	119.83	1.82	2.56	2.89	0.00	0.00	0.66	0.00	0.00	0.00	0.99	6735.61
04JUN	SE	4467.23	24913.23	66.13	0.69	1.41	1.60	0.00	0.00	0.66	0.00	0.00	0.00	0.99	25310.66
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	34994.37	11609.19	880.39	18.59	0.20	0.13	0.49	0.00	0.78	0.00	0.00	0.00	0.00	3654.16
11JUN	SE	6820.11	4682.89	314.99	7.41	0.13	0.13	0.33	0.00	0.78	0.00	0.00	0.00	0.00	8279.04
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	20615.47	10719.25	411.26	5.87	4.03	0.64	0.49	32.54	1.20	0.00	0.00	0.00	0.00	2445.44
19JUN	SE	9350.54	2224.04	130.48	5.21	3.00	0.64	0.49	32.54	1.20	0.00	0.00	0.00	0.00	9612.34
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	8478.08	159.60	3.99	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	664.82
27JUN	SE	2109.05	127.17	2.13	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2112.88
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	36391.00	10545.40	108.24	0.00	0.04	0.00	0.00	0.00	0.57	0.00	15.21	0.00	0.00	3620.04
03JUL	SE	8651.44	3733.29	73.71	0.00	0.04	0.00	0.00	0.00	0.57	0.00	14.17	0.00	0.00	9422.87
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	27957.84	32615.38	4847.75	5.92	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	8178.36
15JUL	SE	10160.23	15863.32	2100.03	5.30	0.00	0.00	0.00	0.00						18954.82
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	19107.99	7555.26	0.75	1.44	0.68	21.18	0.35	1.41	NS	NS	NS	NS	NS	3336.13
29JUL	SE	3898.63	3120.16	0.75	1.17	0.64	20.38	0.35	0.89						4993.51
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	3334.86	1377.68	81.38	0.83	0.00	0.00	0.00	0.86	NS	NS	NS	NS	NS	599.45
13AUG	SE	1228.86	337.61	50.56	0.83	0.00	0.00	0.00	0.86						1275.39
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	31.43	1.36	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	4.10
27AUG	SE	23.39	1.36	0.00	0.00	0.00	0.00	0.00	0.00						23.43
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.03
23SEP	SE	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00						0.22
	NO. TOWS	6	11	13	14	13	8	10	6						81
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
07OCT	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-68 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST.CROP	3478	1177	0	0	0	0	0	0	0	0	0	0	0	4654
21MAY	SE	2124	610	0	0	0	0	0	0	0	0	0	0	0	2210
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST.CROP	7028660	389572	496	60	90	0	64	0	0	0	0	0	0	7418942
29MAY	SE	767895	366475	496	60	90	0	51	0	0	0	0	0	0	850863
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	4186991	15463384	38563	269	533	600	0	0	110	0	0	0	70	19690520
04JUN	SE	933708	5715600	21283	102	293	332	0	0	110	0	0	0	70	5791403
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	7314267	2663383	283319	2746	42	28	69	0	128	0	0	0	0	10263981
11JUN	SE	1425489	1074350	101369	1095	28	28	47	0	128	0	0	0	0	1787882
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	4308896	2459213	132348	867	840	133	69	9700	198	0	0	0	0	6912264
19JUN	SE	1954382	510240	41991	770	624	133	69	9700	198	0	0	0	0	2020350
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	1772025	36615	1284	0	193	0	0	0	0	0	0	0	0	1810117
27JUN	SE	440818	29175	684	0	193	0	0	0	0	0	0	0	0	441783
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST.CROP	7606178	2419329	34834	0	9	0	0	0	94	0	2682	0	0	10063126
03JUL	SE	1808261	856492	23721	0	9	0	0	0	94	0	2499	0	0	2000988
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST.CROP	5843543	7482629	1560063	875	0	0	0	0	NS	NS	NS	NS	NS	14887110
15JUL	SE	2123617	3639367	675815	783	0	0	0	0						4267490
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	3993812	1733331	240	213	142	4394	49	420	NS	NS	NS	NS	NS	5732602
29JUL	SE	814865	715828	240	172	134	4229	49	265						1084635
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	697028	316068	26188	123	0	0	0	256	NS	NS	NS	NS	NS	1039662
13AUG	SE	256847	77455	16271	123	0	0	0	256						268764
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	6569	312	0	0	0	0	0	0	NS	NS	NS	NS	NS	6881
27AUG	SE	4889	312	0	0	0	0	0	0						4899
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	46	0	0	0	NS	NS	NS	NS	NS	46
23SEP	SE	0	0	0	0	46	0	0	0						46
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
29MAY	SE	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	19.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49
04JUN	SE	16.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.01
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	73.45	0.46	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.71
11JUN	SE	73.45	0.46	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.45
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	138.07	71.90	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.17
19JUN	SE	66.71	59.44	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	89.35
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
27JUN	SE	0.00	0.00	0.00	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
29JUN-	DENSITY	14.28	12.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07
03JUL	SE	14.28	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.62
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	127	0	0	0	0	0	0	0	0	0	0	0	0	127
29MAY	SE	127	0	0	0	0	0	0	0	0	0	0	0	0	127
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	4061	0	0	0	0	0	0	0	0	0	0	0	0	4061
04JUN	SE	3347	0	0	0	0	0	0	0	0	0	0	0	0	3347
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	15352	105	97	0	0	0	0	0	0	0	0	0	0	15554
11JUN	SE	15352	105	97	0	0	0	0	0	0	0	0	0	0	15353
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	28857	16494	99	0	0	0	0	0	0	0	0	0	0	45451
19JUN	SE	13943	13636	99	0	0	0	0	0	0	0	0	0	0	19502
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	2985	2892	0	0	0	0	0	0	0	0	0	0	0	5876
03JUL	SE	2985	2742	0	0	0	0	0	0	0	0	0	0	0	4053
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
29MAY	SE	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.03
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	5.40	3.04	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
04JUN	SE	2.29	1.97	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	39.33	2.51	13.98	2.40	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.49
11JUN	SE	18.06	0.96	6.08	1.73	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.16
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	435.64	344.84	128.79	6.08	2.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.63
19JUN	SE	107.80	222.48	46.91	1.29	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	251.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	224.52	419.99	18.88	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.05
27JUN	SE	95.06	244.32	9.50	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	262.33
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	2779.70	554.06	626.77	1.92	0.04	0.00	0.00	0.00	2.27	0.00	0.00	0.00	0.00	304.98
03JUL	SE	861.70	243.89	284.47	1.08	0.04	0.00	0.00	0.00	2.27	0.00	0.00	0.00	0.00	939.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	5782.38	6204.94	4250.68	2251.09	419.21	4.35	3.14	1.63	NS	NS	NS	NS	NS	2364.68
15JUL	SE	3070.99	1586.99	523.73	322.01	204.87	1.57	1.73	0.82						3517.03
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	947.05	3441.22	2637.72	1308.92	270.74	50.04	108.64	52.64	NS	NS	NS	NS	NS	1102.12
29JUL	SE	131.16	562.78	611.20	262.46	59.52	44.13	12.78	39.84						885.22
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	3777.09	2136.26	2414.59	1084.37	977.17	187.49	359.17	125.41	NS	NS	NS	NS	NS	1382.69
13AUG	SE	951.90	542.96	471.63	305.10	210.53	28.07	139.78	56.29						1258.68
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	2559.91	2880.15	2149.45	1106.53	40.08	50.62	253.75	139.82	NS	NS	NS	NS	NS	1147.54
27AUG	SE	1151.16	310.35	476.42	318.61	13.90	18.93	69.88	49.37						1325.83
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	98.53	189.65	466.29	943.49	959.60	34.15	296.06	93.97	NS	NS	NS	NS	NS	385.22
10SEP	SE	34.06	66.31	212.57	234.89	411.24	14.52	67.38	39.22						530.40
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	120.02	93.45	195.90	820.51	97.21	53.73	250.58	107.44	NS	NS	NS	NS	NS	217.35
23SEP	SE	46.87	41.78	60.15	172.80	22.91	42.27	63.29	39.04						212.75
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	46.00	368.46	33.14	688.99	295.84	7.68	57.57	51.03	NS	NS	NS	NS	NS	193.59
07OCT	SE	22.65	280.28	11.56	168.94	97.91	1.27	13.66	23.76						343.64
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	634	0	0	0	0	0	0	0	0	0	0	0	0	634
29MAY	SE	634	0	0	0	0	0	0	0	0	0	0	0	0	634
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	1129	698	609	0	0	0	0	0	0	0	0	0	0	2437
04JUN	SE	479	451	341	0	0	0	0	0	0	0	0	0	0	741
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	8220	576	4498	355	27	0	0	0	0	0	0	0	0	13676
11JUN	SE	3775	221	1958	255	27	0	0	0	0	0	0	0	0	4266
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	91055	79114	41445	899	601	0	0	0	0	0	0	0	0	213113
19JUN	SE	22531	51041	15097	190	529	0	0	0	0	0	0	0	0	57801
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	46928	96353	6077	39	0	0	0	0	0	0	0	0	0	149397
27JUN	SE	19868	56051	3057	39	0	0	0	0	0	0	0	0	0	59547
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	580993	127112	201703	284	9	0	0	0	376	0	0	0	0	910476
03JUL	SE	180106	55953	91544	160	9	0	0	0	376	0	0	0	0	209641
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	1208591	1423538	1367917	332569	87336	903	438	486	NS	NS	NS	NS	NS	4421780
15JUL	SE	641878	364087	168542	47573	42681	326	241	243						759643
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	197944	789487	848847	193376	56405	10380	15187	15694	NS	NS	NS	NS	NS	2127320
29JUL	SE	27414	129113	196692	38774	12401	9155	1786	11879						240821
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	789460	490101	777042	160201	203581	38895	50209	37388	NS	NS	NS	NS	NS	2546876
13AUG	SE	198960	124565	151777	45075	43861	5823	19540	16781						287734
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	535053	660765	691716	163476	8350	10502	35471	41685	NS	NS	NS	NS	NS	2147019
27AUG	SE	240606	71200	153316	47070	2895	3928	9769	14718						298359
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	20595	43510	150057	139388	199919	7084	41387	28015	NS	NS	NS	NS	NS	629954
10SEP	SE	7119	15213	68408	34702	85677	3013	9419	11691						117222
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	25085	21439	63043	121220	20252	11147	35029	32031	NS	NS	NS	NS	NS	329246
23SEP	SE	9796	9586	19357	25529	4772	8769	8847	11640						39086
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	9614	84533	10666	101789	61634	1593	8047	15214	NS	NS	NS	NS	NS	293089
07OCT	SE	4735	64303	3721	24959	20398	264	1910	7083						72553
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-73 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-73 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	12.70	20.29	0.00	0.00	0.00	2.96	0.00	NS	NS	NS	NS	NS	4.49
29JUL	SE	0.00	12.70	20.29	0.00	0.00	0.00	2.07	0.00						24.02
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	7.86	70.65	140.95	46.93	22.90	38.61	31.84	9.85	NS	NS	NS	NS	NS	46.20
13AUG	SE	3.95	33.70	50.01	21.11	11.94	20.86	11.59	4.83						69.52
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	170.62	510.73	686.95	73.52	16.16	72.98	74.83	24.04	NS	NS	NS	NS	NS	203.73
27AUG	SE	75.01	41.94	160.83	21.56	4.61	28.86	33.12	10.63						189.16
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	217.04	255.75	402.32	458.12	13.84	26.91	224.49	31.48	NS	NS	NS	NS	NS	203.75
10SEP	SE	213.85	84.64	82.53	120.53	5.77	10.55	58.75	17.98						279.56
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	210.22	130.29	440.23	566.34	17.28	52.15	134.82	310.30	NS	NS	NS	NS	NS	232.70
23SEP	SE	82.92	57.04	119.56	91.76	9.24	14.88	38.43	87.54						205.65
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	203.23	434.11	211.92	214.57	45.32	74.43	128.99	62.85	NS	NS	NS	NS	NS	171.93
07OCT	SE	101.55	50.23	28.65	42.46	13.41	12.60	80.24	26.50						151.45
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-74 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	2913	6528	0	0	0	414	0	NS	NS	NS	NS	NS	9854
29JUL	SE	0	2913	6528	0	0	0	290	0						7154
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	1643	16209	45359	6933	4772	8009	4451	2936	NS	NS	NS	NS	NS	90311
13AUG	SE	826	7731	16095	3118	2488	4328	1620	1439						18943
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	35661	117173	221067	10861	3368	15140	10460	7166	NS	NS	NS	NS	NS	420897
27AUG	SE	15678	9621	51758	3186	961	5987	4630	3170						55638
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	45365	58675	129470	67681	2883	5583	31382	9387	NS	NS	NS	NS	NS	350426
10SEP	SE	44697	19419	26558	17807	1202	2189	8213	5359						59158
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	43938	29891	141673	83669	3599	10819	18847	92511	NS	NS	NS	NS	NS	424947
23SEP	SE	17332	13087	38477	13556	1925	3087	5373	26099						53471
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	42478	99595	68199	31700	9443	15440	18032	18739	NS	NS	NS	NS	NS	303625
07OCT	SE	21225	11523	9219	6272	2795	2615	11217	7901						30174
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-75 REGIONAL DENSITY (NO./1,000m3) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
20JUL-	DENSITY	0.00	0.00	0.10	45.39	28.12	3.47	0.97	1.10	0.00	0.00	0.00	0.00	0.00	6.09
24JUL	SE	0.00	0.00	0.10	30.44	15.88	3.47	0.70	0.75	0.00	0.00	0.00	0.00	0.00	34.52
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	10.24	12.34	1.40	1.69	8.28	20.42	13.60	37.80	1.27	2.09	1.03	0.00	0.00	8.47
07AUG	SE	5.27	4.96	0.60	1.23	3.28	9.09	6.31	16.80	1.27	1.09	1.03	0.00	0.00	21.76
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	6.62	87.99	80.67	206.07	0.00	10.16	104.09	14.47	12.06	0.98	0.00	0.00	40.24
20AUG	SE	0.00	5.02	24.69	27.51	103.12	0.00	7.39	35.37	4.22	6.91	0.98	0.00	0.00	115.75
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	7.51	25.11	104.21	45.89	44.62	43.48	29.36	20.60	24.74	10.59	292.60	184.84	0.33	64.14
03SEP	SE	6.72	12.58	37.04	23.77	13.11	12.04	20.89	6.22	12.62	5.61	264.06	171.62	0.33	319.84
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	6.33	18.41	80.09	71.51	77.98	23.31	53.75	101.10	17.02	42.15	1.24	51.89	25.52	43.87
17SEP	SE	3.54	7.03	28.60	18.31	36.24	3.98	18.47	29.68	10.11	23.08	1.05	20.64	17.03	71.54
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	1.70	103.02	64.48	34.69	57.45	21.92	20.79	27.47	35.00	32.40	0.14	24.70	0.10	32.60
01OCT	SE	0.90	59.35	29.50	8.89	23.13	5.71	13.28	8.41	22.75	10.16	0.08	7.35	0.10	77.21
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	23.33	61.40	30.04	27.10	20.19	22.32	35.91	32.91	0.06	0.35	0.00	0.13	0.00	19.52
16OCT	SE	6.18	12.95	11.51	9.19	2.09	4.15	7.90	9.12	0.03	0.35	0.00	0.13	0.00	24.29
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.57	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
29OCT	SE	0.24	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.09	0.14	0.08	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
13NOV	SE	0.05	0.07	0.07	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
04DEC	SE	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-76 REGIONAL STANDING CROP (IN THOUSANDS) OF BAY ANCHOVY YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	31	6706	5859	719	135	328	0	0	0	0	0	13778
24JUL	SE	0	0	31	4496	3308	719	98	225	0	0	0	0	0	5634
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	2139	2830	452	250	1725	4236	1902	11270	210	295	182	0	0	25492
07AUG	SE	1102	1137	192	182	684	1885	883	5008	210	154	182	0	0	5707
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	1519	28316	11918	42932	0	1420	31034	2395	1707	172	0	0	121414
20AUG	SE	0	1152	7944	4064	21483	0	1033	10546	698	977	172	0	0	25617
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	1570	5760	33537	6780	9296	9021	4104	6141	4094	1498	51584	29710	23	163117
03SEP	SE	1406	2886	11920	3511	2731	2498	2920	1855	2088	794	46552	27584	23	55887
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	1324	4224	25774	10565	16246	4835	7513	30142	2816	5963	219	8340	1816	119777
17SEP	SE	740	1613	9205	2705	7550	825	2581	8848	1672	3265	186	3318	1212	16242
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	355	23634	20751	5124	11968	4548	2907	8190	5792	4584	25	3970	7	91854
01OCT	SE	189	13616	9493	1313	4819	1184	1857	2507	3764	1438	15	1181	7	18145
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	4876	14087	9667	4004	4207	4631	5019	9812	10	50	0	21	0	56385
16OCT	SE	1292	2970	3704	1357	435	861	1104	2718	5	50	0	21	0	5966
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	120	346	0	0	0	0	0	0	0	0	0	0	0	466
29OCT	SE	50	169	0	0	0	0	0	0	0	0	0	0	0	176
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	19	31	26	18	0	0	0	0	0	0	0	0	0	94
13NOV	SE	10	15	22	18	0	0	0	0	0	0	0	0	0	34
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	5	0	7	0	0	0	0	0	0	0	0	0	0	12
04DEC	SE	5	0	7	0	0	0	0	0	0	0	0	0	0	9
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	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
10AUG-	CPUE	1.80	226.13	0.00	0.20	0.40	0.00	0.00	0.00	1.40	0.00	0.00	0.14	19.17
13AUG	SE	1.80	222.18	0.00	0.20	0.40	0.00	0.00	0.00	1.40	0.00	0.00	0.14	222.19
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	14.60	59.04	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	8.20	4.14	7.33
27AUG	SE	8.81	39.79	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60	4.14	41.27
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	6.20	13.58	0.00	34.80	0.00	0.00	0.00	0.00	0.40	1.78	2.80	0.14	4.98
11SEP	SE	2.01	8.72	0.00	34.80	0.00	0.00	0.00	0.00	0.40	1.78	1.32	0.14	36.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	7.20	33.71	1.64	22.60	133.40	112.67	0.20	32.00	45.20	0.00	277.30	18.86	57.06
24SEP	SE	3.14	22.45	0.92	17.24	122.93	111.67	0.20	18.50	45.20	0.00	164.59	18.69	241.28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	1.20	28.75	59.29	1.80	38.20	1096.33	12.20	3.80	24.80	66.78	3.00	0.57	111.39
08OCT	SE	1.20	12.46	36.18	1.56	24.45	1060.90	10.54	3.80	15.58	66.78	1.62	0.43	1064.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	13.60	12.33	1.07	8.00	3.00	22.00	1.60	0.40	0.00	0.00	0.00	0.00	5.17
22OCT	SE	5.84	9.96	0.73	4.60	2.76	22.00	1.60	0.40	0.00	0.00	0.00	0.00	25.48
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	8	0	0	0	0	0	0	0	0	0	0	8
30JUL	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
10AUG-	ST. CROP	14	10274	0	2	1	0	0	0	12	0	0	2	10305
13AUG	SE	14	10095	0	2	1	0	0	0	12	0	0	2	10095
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	110	2683	0	18	0	0	0	0	0	0	161	56	3029
27AUG	SE	66	1808	0	18	0	0	0	0	0	0	90	56	1812
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	47	617	0	321	0	0	0	0	3	31	55	2	1076
11SEP	SE	15	396	0	321	0	0	0	0	3	31	26	2	512
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	54	1532	44	208	352	1200	1	40	389	0	5456	256	9532
24SEP	SE	24	1020	25	159	324	1189	1	23	389	0	3238	254	3646
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	9	1306	1594	17	101	11677	87	5	214	1172	59	8	16248
08OCT	SE	9	566	973	14	64	11300	75	5	134	1172	32	6	11417
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	102	560	29	74	8	234	11	< 0.5	0	0	0	0	1019
22OCT	SE	44	453	20	42	7	234	11	< 0.5	0	0	0	0	514
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.32	5.34	2.09	3.54	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
30APR	SE	0.32	2.17	1.46	1.88	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	6.57	3.83	16.68	5.51	0.16	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	2.56
07MAY	SE	2.95	1.70	6.61	3.02	0.10	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	8.04
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	31.11	10.52	22.64	3.68	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.24
13MAY	SE	5.47	2.44	11.68	1.42	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.20
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	8.05	23.07	27.11	24.99	4.76	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.83
21MAY	SE	3.94	3.57	15.38	9.09	3.78	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.04
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	152.79	245.73	124.44	18.92	2.51	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.97
29MAY	SE	17.03	48.28	34.00	4.35	1.83	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.65
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	20.12	418.73	69.20	24.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.97
04JUN	SE	4.21	130.48	14.14	9.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.68
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	132.67	86.97	28.18	69.59	23.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.19
11JUN	SE	59.10	34.60	7.25	23.74	7.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.22
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	23.63	50.78	55.36	89.86	58.67	7.11	0.00	0.79	0.00	0.00	0.00	0.00	0.00	22.02
19JUN	SE	7.02	14.62	16.92	11.93	26.15	6.41	0.00	0.79	0.00	0.00	0.00	0.00	0.00	37.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	53.91	50.67	29.90	4.44	2.17	0.67	0.49	0.00	0.00	0.00	0.00	0.00	0.00	10.94
27JUN	SE	37.46	9.11	7.10	1.69	0.86	0.56	0.40	0.00	0.00	0.00	0.00	0.00	0.00	39.25
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	70.63	98.42	49.96	1.61	0.09	0.27	1.04	0.00	0.00	0.00	0.00	0.00	0.00	17.08
03JUL	SE	30.37	32.75	9.78	0.71	0.09	0.27	0.87	0.00	0.00	0.00	0.00	0.00	0.00	45.74
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	148.31	174.46	101.25	36.84	5.99	0.00	1.26	0.81	NS	NS	NS	NS	NS	58.62
15JUL	SE	40.83	39.05	13.49	10.69	2.63	0.00	0.82	0.47						59.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	140.29	73.42	28.22	20.24	8.15	0.13	1.49	0.00	NS	NS	NS	NS	NS	33.99
29JUL	SE	19.66	23.25	9.97	4.87	3.10	0.13	0.88	0.00						32.57
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	36.83	4.65	10.04	55.96	6.22	5.87	1.60	1.71	NS	NS	NS	NS	NS	15.36
13AUG	SE	12.29	3.91	4.91	23.45	2.91	2.63	0.59	1.71						27.55
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	122.04	89.98	49.67	64.39	7.83	3.22	7.52	8.19	NS	NS	NS	NS	NS	44.10
27AUG	SE	38.14	18.06	19.83	18.02	2.96	1.34	3.19	2.49						50.26
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	27.49	31.51	6.53	8.29	4.03	2.33	32.39	0.29	NS	NS	NS	NS	NS	14.11
10SEP	SE	23.64	17.46	4.51	3.93	1.75	1.30	16.20	0.29						34.16
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	17.48	19.29	4.35	7.79	2.54	6.47	4.17	2.46	NS	NS	NS	NS	NS	8.07
23SEP	SE	10.51	10.12	2.07	3.24	0.83	4.69	2.08	1.33						16.02
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	16.04	10.10	9.10	9.83	6.05	6.13	7.77	0.87	NS	NS	NS	NS	NS	8.23
07OCT	SE	5.28	7.25	3.40	3.78	2.25	3.63	4.94	< 0.005						12.21
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	67	1225	672	523	136	0	0	0	0	0	0	0	0	2623
30APR	SE	67	497	469	278	136	0	0	0	0	0	0	0	0	753
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	1374	878	5368	813	34	0	65	0	0	0	0	0	0	8532
07MAY	SE	616	389	2128	447	21	0	65	0	0	0	0	0	0	2294
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	6503	2413	7287	544	29	0	0	0	0	0	0	0	0	16776
13MAY	SE	1143	560	3758	210	29	0	0	0	0	0	0	0	0	3974
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	1683	5292	8723	3692	991	176	0	0	0	0	0	0	0	20558
21MAY	SE	824	820	4950	1343	788	176	0	0	0	0	0	0	0	5321
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	31936	56376	40046	2795	522	250	0	0	0	0	0	0	0	131926
29MAY	SE	3559	11077	10940	642	382	250	0	0	0	0	0	0	0	15990
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	4205	96064	22271	3626	0	0	0	0	0	0	0	0	0	126166
04JUN	SE	880	29936	4552	1439	0	0	0	0	0	0	0	0	0	30327
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	27730	19952	9068	10281	4808	0	0	0	0	0	0	0	0	71839
11JUN	SE	12353	7937	2334	3507	1537	0	0	0	0	0	0	0	0	15353
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	4940	11651	17815	13276	12223	1476	0	237	0	0	0	0	0	61616
19JUN	SE	1467	3354	5445	1762	5448	1330	0	237	0	0	0	0	0	8812
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	11268	11625	9622	656	452	140	68	0	0	0	0	0	0	33831
27JUN	SE	7830	2089	2286	249	178	116	56	0	0	0	0	0	0	8427
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	14764	22580	16076	238	18	55	145	0	0	0	0	0	0	53877
03JUL	SE	6348	7513	3148	105	18	55	122	0	0	0	0	0	0	10328
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	31000	40024	32584	5443	1249	0	176	241	NS	NS	NS	NS	NS	110716
15JUL	SE	8534	8959	4340	1579	548	0	115	139						13220
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	29322	16843	9082	2990	1697	27	208	0	NS	NS	NS	NS	NS	60170
29JUL	SE	4109	5334	3210	720	646	27	123	0						7523
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	7697	1066	3232	8267	1295	1218	223	511	NS	NS	NS	NS	NS	23509
13AUG	SE	2570	898	1580	3465	606	546	83	511						4779
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	25508	20642	15984	9513	1631	668	1052	2442	NS	NS	NS	NS	NS	77440
27AUG	SE	7972	4144	6382	2663	616	277	445	742						11391
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	5746	7230	2103	1225	840	484	4528	87	NS	NS	NS	NS	NS	22243
10SEP	SE	4942	4006	1453	580	365	269	2265	87						6947
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	3653	4426	1401	1151	529	1343	583	732	NS	NS	NS	NS	NS	13817
23SEP	SE	2198	2321	667	479	173	973	290	398						3480
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	3352	2317	2927	1452	1260	1272	1086	260	NS	NS	NS	NS	NS	13925
07OCT	SE	1103	1664	1094	559	469	753	690	1						2600
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	8.36	44.62	4.46	4.13	4.03	0.47	0.39	0.00	0.00	0.00	0.00	0.00	0.00	5.11
10JUL	SE	8.36	29.31	2.33	2.61	3.30	0.32	0.39	0.00	0.00	0.00	0.00	0.00	0.00	30.86
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	59.65	73.25	28.12	20.48	9.01	1.53	0.68	1.23	0.00	0.34	0.00	0.00	0.00	14.94
24JUL	SE	21.38	14.90	6.24	6.07	4.37	0.68	0.44	0.80	0.00	0.34	0.00	0.00	0.00	27.85
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	4.19	1.55	0.35	0.90	0.95	7.96	0.36	7.07	0.82	1.04	1.03	1.12	0.00	2.10
07AUG	SE	2.70	0.46	0.20	0.44	0.63	2.50	0.35	3.94	0.52	1.04	1.03	1.12	0.00	5.81
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	4.96	21.77	95.74	11.78	88.22	4.31	2.95	4.04	3.33	11.24	0.00	3.07	0.00	19.34
20AUG	SE	3.73	10.71	36.29	4.57	38.93	1.05	1.58	2.95	1.45	5.98	0.00	2.27	0.00	55.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	2.09	2.84	1.11	0.12	20.86	9.18	3.27	1.50	0.75	3.07	0.00	3.02	0.00	3.68
03SEP	SE	1.90	1.48	0.87	0.12	5.33	3.09	2.81	0.85	0.75	3.07	0.00	3.02	0.00	8.50
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	1.84	2.90	1.95	1.42	1.86	4.17	0.30	5.10	0.42	6.71	0.00	3.42	3.04	2.55
17SEP	SE	0.89	1.51	0.89	0.94	0.95	1.34	0.17	1.89	0.42	4.66	0.00	3.42	1.77	6.91
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.96	6.52	2.38	0.62	1.35	1.85	4.74	11.17	1.21	1.71	0.00	0.00	0.00	2.50
01OCT	SE	0.23	3.93	1.59	0.32	0.72	0.89	4.68	3.89	0.84	1.34	0.00	0.00	0.00	7.68
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	3.20	6.11	6.51	3.79	5.30	9.18	4.62	1.08	2.64	0.00	0.00	0.00	0.00	3.26
16OCT	SE	1.14	2.64	3.55	0.95	2.18	1.80	3.22	0.49	1.84	0.00	0.00	0.00	0.00	6.61
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	1.26	1.75	0.16	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.25
29OCT	SE	0.61	0.74	0.13	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.97
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.40	0.72	0.37	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
13NOV	SE	0.17	0.19	0.20	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	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
04DEC	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	1748	10238	1436	610	839	98	54	0	0	0	0	0	0	15023
10JUL	SE	1748	6725	751	386	688	66	54	0	0	0	0	0	0	7034
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	12467	16804	9050	3026	1877	317	95	368	0	47	0	0	0	44051
24JUL	SE	4468	3419	2008	897	911	140	61	239	0	47	0	0	0	6116
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	875	357	113	133	197	1652	51	2107	135	147	182	180	0	6128
07AUG	SE	564	105	65	66	132	519	48	1176	86	147	182	180	0	1450
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	1037	4995	30809	1741	18380	893	412	1205	551	1590	0	494	0	62108
20AUG	SE	780	2458	11678	675	8110	218	222	878	240	846	0	366	0	14526
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	436	651	357	18	4345	1905	457	446	125	434	0	485	0	9658
03SEP	SE	397	339	281	18	1110	640	393	253	125	434	0	485	0	1628
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	385	666	629	209	387	865	42	1521	69	949	0	549	217	6486
17SEP	SE	185	346	287	139	197	278	23	564	69	659	0	549	126	1203
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	201	1495	767	92	282	384	663	3330	201	242	0	0	0	7657
01OCT	SE	48	901	513	48	151	185	654	1159	140	190	0	0	0	1721
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	668	1403	2094	560	1104	1905	645	323	437	0	0	0	0	9139
16OCT	SE	239	605	1142	141	453	374	450	146	304	0	0	0	0	1551
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	263	400	53	5	3	0	1	0	0	0	0	0	0	724
29OCT	SE	127	170	42	5	3	0	1	0	0	0	0	0	0	217
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	84	166	119	125	0	0	0	0	0	0	0	0	0	493
13NOV	SE	36	44	66	69	0	0	0	0	0	0	0	0	0	111
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04DEC	SE	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.33	0.73	0.00	1.33	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
18JUN	SE	0.33	0.38	0.00	1.33	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	8.67	5.27	0.14	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67
02JUL	SE	6.77	3.55	0.14	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.72
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	1.00	8.82	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.00	0.00	0.00	0.85
15JUL	SE	1.00	7.55	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.00	0.00	0.00	7.62
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	10.80	1.17	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
30JUL	SE	5.86	0.53	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.90
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.80	0.08	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.18
13AUG	SE	0.80	0.08	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1.45
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	7.40	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63
27AUG	SE	5.02	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.02
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	1.20	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
11SEP	SE	0.97	0.00	0.21	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
21SEP-	CPUE	0.20	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.03
24SEP	SE	0.20	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.23
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	1.54	0.00	0.00	0.00	10.67	0.00	0.00	0.00	0.22	0.00	0.00	1.04
08OCT	SE	0.00	1.50	0.00	0.00	0.00	10.67	0.00	0.00	0.00	0.22	0.00	0.00	10.77
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.08	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
22OCT	SE	0.00	0.08	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	3	33	0	12	6	0	0	0	0	0	0	0	54
18JUN	SE	3	17	0	12	6	0	0	0	0	0	0	0	22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	65	240	4	55	0	0	0	0	0	0	0	0	364
02JUL	SE	51	161	4	55	0	0	0	0	0	0	0	0	178
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	8	401	0	0	0	0	0	< 0.5	2	0	0	0	410
15JUL	SE	8	343	0	0	0	0	0	< 0.5	2	0	0	0	343
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	81	53	0	4	0	0	0	0	0	0	0	0	138
30JUL	SE	44	24	0	4	0	0	0	0	0	0	0	0	50
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	6	4	0	11	0	0	0	0	0	0	2	0	23
13AUG	SE	6	4	0	11	0	0	0	0	0	0	2	0	13
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	56	6	0	0	0	0	0	0	0	0	0	0	61
27AUG	SE	38	4	0	0	0	0	0	0	0	0	0	0	38
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	9	0	6	0	0	0	0	0	0	0	0	0	15
11SEP	SE	7	0	6	0	0	0	0	0	0	0	0	0	9
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	2	2	0	0	0	0	0	0	0	0	2	0	5
24SEP	SE	2	2	0	0	0	0	0	0	0	0	2	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	70	0	0	0	114	0	0	0	4	0	0	188
08OCT	SE	0	68	0	0	0	114	0	0	0	4	0	0	133
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	4	0	4	0	0	0	0	0	0	0	0	7
22OCT	SE	0	4	0	4	0	0	0	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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	1.95	0.15
16APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95	1.95
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
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	1.10	0.08
23APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.75	6.90	0.67
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.75	3.13	3.28
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	1.23	0.61	4.98	0.56
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.57	0.61	3.08	3.22
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.00	82.76	6.52
13MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.00	60.66	60.69
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91	0.00	2.43	0.00	0.41
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	0.00	1.92	0.00	3.16
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56	46.95	17.74	5.33
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93	25.51	9.32	27.23
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.00	2.70	6.54	4.31	3.04
04JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.02	1.60	3.39	2.24	15.64
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-85 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67	0.66	0.33
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	0.66	2.28
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.03
19JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.37
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	138	138
16APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	138	138
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	78	78
23APR	SE	0	0	0	0	0	0	0	0	0	0	0	0	78	78
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST.CROP	0	0	0	0	0	0	0	0	0	156	0	121	491	768
30APR	SE	0	0	0	0	0	0	0	0	0	90	0	121	223	269
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	63	216	98	355	731
07MAY	SE	0	0	0	0	0	0	0	0	0	63	100	98	219	268
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	348	0	5889	6237
13MAY	SE	0	0	0	0	0	0	0	0	0	0	348	0	4316	4330
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	412	0	391	0	803
21MAY	SE	0	0	0	0	0	0	0	0	0	356	0	308	0	470
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	803	7546	1262	9612
29MAY	SE	0	0	0	0	0	0	0	0	0	0	341	4100	663	4168
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	3679	475	1052	307	5512
04JUN	SE	0	0	0	0	0	0	0	0	0	2125	283	544	159	2218
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	589	47	636
11JUN	SE	0	0	0	0	0	0	0	0	0	0	0	351	47	354
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	65	0	0	65
19JUN	SE	0	0	0	0	0	0	0	0	0	0	65	0	0	65
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.44	1.23	0.23
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.65	1.23	1.44
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	2.86	10.89	1.09
13MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	2.52	5.97	6.50
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	13.39	1.13
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	3.22	3.45
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.59	4.49	0.85
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.02	3.22	5.96
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	5.55	0.84
04JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.66	2.49	5.28
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.17
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.00	2.26
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00	1.19	0.15
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.85	1.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	68	231	87	386
07MAY	SE	0	0	0	0	0	0	0	0	0	0	68	104	87	152
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	79	459	775	1313
13MAY	SE	0	0	0	0	0	0	0	0	0	0	79	406	425	593
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	199	953	1152
21MAY	SE	0	0	0	0	0	0	0	0	0	0	0	199	229	303
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	1059	320	1379
29MAY	SE	0	0	0	0	0	0	0	0	0	0	0	807	229	839
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	860	395	1255
04JUN	SE	0	0	0	0	0	0	0	0	0	0	0	748	177	769
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	364	0	364
11JUN	SE	0	0	0	0	0	0	0	0	0	0	0	364	0	364
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	105	0	0	85	189
03JUL	SE	0	0	0	0	0	0	0	0	0	105	0	0	61	121
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.77	0.00	0.12
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.77	0.00	1.13
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52	4.52	0.54
13MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	2.38	2.55
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	29.80	10.74	3.22
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	14.93	7.22	16.64
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.82	18.28	4.24
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.68	14.53	17.46
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.48	8.37	2.53
04JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.19	6.26	14.60
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.33	0.00	1.18
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.51	0.00	6.51
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.66	14.21	16.35	2.94
19JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.34	10.04	10.11
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.73	1.53	9.12	0.00	0.92
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.73	1.18	6.45	0.00	6.62
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	1.03	2.31	1.17	0.44
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.67	1.29	0.84	2.10
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	146	124	0	270
07MAY	SE	0	0	0	0	0	0	0	0	0	0	146	124	0	192
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	405	322	726
13MAY	SE	0	0	0	0	0	0	0	0	0	0	0	146	170	224
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	241	4790	764	5795
21MAY	SE	0	0	0	0	0	0	0	0	0	0	241	2400	514	2466
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	5918	1301	7218
29MAY	SE	0	0	0	0	0	0	0	0	0	0	0	1556	1034	1868
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	3935	596	4531
04JUN	SE	0	0	0	0	0	0	0	0	0	0	0	2120	445	2166
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	2464	0	2464
11JUN	SE	0	0	0	0	0	0	0	0	0	0	0	1046	0	1046
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	1350	2285	1163	4798
19JUN	SE	0	0	0	0	0	0	0	0	0	0	196	55	715	743
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	88	103	271	1465	0	1926
27JUN	SE	0	0	0	0	0	0	0	0	88	103	209	1036	0	1066
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	179	182	371	84	816
03JUL	SE	0	0	0	0	0	0	0	0	0	179	119	207	60	304
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-91 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.43	2.02	0.00	0.23
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.43	0.96	0.00	1.18
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05	3.48	12.69	0.50	1.52
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	1.37	4.25	0.50	5.01
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00	NS	NS	NS	NS	NS	0.09
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00						0.69
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.28	NS	NS	NS	NS	NS	0.04
29JUL	SE	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.28						0.29
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.44	0.00	0.00	1.29	0.30	NS	NS	NS	NS	NS	0.25
13AUG	SE	0.00	0.00	0.00	0.44	0.00	0.00	1.29	0.30						1.39
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	NS	NS	NS	NS	NS	0.03
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00						0.26
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	2.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.33
10SEP	SE	2.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00						2.64
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.01
23SEP	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00						0.04
	NO. TOWS	6	11	13	14	13	8	10	6						81
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	88	0	76	324	0	488
27JUN	SE	0	0	0	0	0	0	0	0	88	0	76	154	0	193
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	432	614	2040	36	3122
03JUL	SE	0	0	0	0	0	0	0	0	0	312	242	684	36	790
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	142	0	0	NS	NS	NS	NS	NS	142
15JUL	SE	0	0	0	0	0	142	0	0						142
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	17	0	0	83	NS	NS	NS	NS	NS	100
29JUL	SE	0	0	0	0	17	0	0	83						85
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	65	0	0	180	89	NS	NS	NS	NS	NS	334
13AUG	SE	0	0	0	65	0	0	180	89						211
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	54	0	0	NS	NS	NS	NS	NS	54
27AUG	SE	0	0	0	0	0	54	0	0						54
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	552	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	552
10SEP	SE	552	0	0	0	0	0	0	0						552
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	9	0	0	0	NS	NS	NS	NS	NS	9
23SEP	SE	0	0	0	0	9	0	0	0						9
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	1.30	1.29	2.18	0.33	0.40
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.82	1.01	1.07	0.22	1.70
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.19	0.34	0.04	0.02	0.00	1.10	4.91	0.00	0.51
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.19	0.28	0.03	0.02	0.00	1.04	4.91	0.00	5.03
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.04
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.42
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.03	0.00	0.00	0.00	< 0.005	0.00	0.00	0.33	0.07	0.25	0.00	0.05
20AUG	SE	0.00	0.00	0.03	0.00	0.00	0.00	< 0.005	0.00	0.00	0.33	0.07	0.25	0.00	0.42
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.08
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.51
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.12	0.00	0.01
17SEP	SE	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.12	0.00	0.13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01
01OCT	SE	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.03	0.03	0.00	0.03	0.00	0.04	0.00	0.04	0.00	0.07	0.00	0.00	0.02
16OCT	SE	0.00	0.03	0.03	0.00	0.02	0.00	0.04	0.00	0.03	0.00	0.07	0.00	0.00	0.09
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	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
29OCT	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	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
04DEC	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	5	0	0	184	228	351	24	792
10JUL	SE	0	0	0	0	0	0	5	0	0	116	179	172	15	274
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	40	47	13	3	0	194	789	0	1086
24JUL	SE	0	0	0	0	0	39	39	9	3	0	184	789	0	812
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	46	0	0	0	0	0	0	26	72
07AUG	SE	0	0	0	0	0	46	0	0	0	0	0	0	26	53
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	10	0	0	0	1	0	0	47	12	40	0	109
20AUG	SE	0	0	10	0	0	0	1	0	0	47	12	40	0	64
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	163	0	163
03SEP	SE	0	0	0	0	0	0	0	0	0	0	0	82	0	82
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	11	0	0	0	0	4	0	0	0	19	0	35
17SEP	SE	0	0	11	0	0	0	0	4	0	0	0	19	0	23
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	10	0	0	0	0	0	0	0	0	0	7	17
01OCT	SE	0	0	10	0	0	0	0	0	0	0	0	0	7	12
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	7	9	0	6	0	5	0	7	0	12	0	0	46
16OCT	SE	0	7	9	0	4	0	5	0	4	0	12	0	0	19
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	0	4
29OCT	SE	0	4	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04DEC	SE	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-95 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF AMERICAN SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.13	0.73	4.47	7.00	1.05
18JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.13	0.43	2.36	2.84	3.72
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.00	2.33	0.00	0.00	0.00	7.50	5.88	8.00	8.37	3.25	2.94
02JUL	SE	0.00	0.00	0.00	1.86	0.00	0.00	0.00	2.20	2.94	3.62	3.82	2.89	7.28
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	1.67	0.00	0.00	2.00	1.25	0.88	8.40	7.21	1.42	1.90
15JUL	SE	0.00	0.00	0.00	0.33	0.00	0.00	1.86	0.67	0.48	3.54	4.37	1.24	6.12
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.08	0.29	1.40	0.80	6.17	0.40	1.00	1.20	1.22	0.20	0.14	1.08
30JUL	SE	0.00	0.06	0.22	0.68	0.37	1.66	0.40	0.63	0.97	0.98	0.13	0.14	2.43
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	2.00	2.14	4.00	1.00	4.33	2.20	0.40	2.40	2.33	7.30	13.86	3.50
13AUG	SE	0.00	1.15	0.78	1.38	0.32	1.94	0.37	0.24	1.36	1.09	2.07	7.00	8.02
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	1.92	2.36	6.80	1.00	6.00	0.60	2.40	1.80	0.56	1.90	7.00	2.69
27AUG	SE	0.00	1.58	0.95	2.92	0.55	2.19	0.60	1.94	1.20	0.24	1.79	2.51	5.67
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.25	9.21	0.20	0.80	4.33	4.00	0.60	0.20	1.33	1.20	1.14	1.94
11SEP	SE	0.00	0.18	6.23	0.20	0.37	2.19	3.05	0.60	0.20	0.50	0.47	0.86	7.40
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	2.50	0.29	2.40	0.00	1.83	1.20	0.60	0.00	0.44	1.10	0.43	0.90
24SEP	SE	0.00	1.92	0.19	1.36	0.00	0.91	0.80	0.60	0.00	0.29	0.35	0.30	2.78
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.54	5.57	2.20	0.40	2.00	0.80	0.20	0.20	1.00	0.60	1.29	1.23
08OCT	SE	0.00	0.30	3.57	1.56	0.40	0.58	0.37	0.20	0.20	0.76	0.40	0.84	4.17
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.54	0.50	1.60	0.40	1.67	0.00	0.00	0.00	0.00	0.00	0.14	0.40
22OCT	SE	0.00	0.20	0.36	0.68	0.40	1.12	0.00	0.00	0.00	0.00	0.00	0.14	1.43
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	1	< 0.5	1	13	88	95	198
18JUN	SE	0	0	0	0	0	0	1	< 0.5	1	8	46	39	61
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	22	0	0	0	9	51	140	165	44	431
02JUL	SE	0	0	0	17	0	0	0	3	25	64	75	39	110
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	15	0	0	14	2	8	147	142	19	347
15JUL	SE	0	0	0	3	0	0	13	1	4	62	86	17	108
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	4	8	13	2	66	3	1	10	21	4	2	134
30JUL	SE	0	3	6	6	1	18	3	1	8	17	3	2	28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	91	58	37	3	46	16	< 0.5	21	41	144	188	644
13AUG	SE	0	52	21	13	1	21	3	< 0.5	12	19	41	95	122
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	87	63	63	3	64	4	3	15	10	37	95	445
27AUG	SE	0	72	25	27	1	23	4	2	10	4	35	34	98
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	11	248	2	2	46	28	1	2	23	24	16	403
11SEP	SE	0	8	168	2	1	23	22	1	2	9	9	12	172
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	114	8	22	0	20	9	1	0	8	22	6	207
24SEP	SE	0	87	5	13	0	10	6	1	0	5	7	4	89
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	25	150	20	1	21	6	< 0.5	2	18	12	17	272
08OCT	SE	0	14	96	14	1	6	3	< 0.5	2	13	8	11	100
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	25	13	15	1	18	0	0	0	0	0	2	74
22OCT	SE	0	9	10	6	1	12	0	0	0	0	0	2	19
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.80	0.00	0.08
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.80	0.00	0.85
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-97 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	52	128	0	180
29MAY	SE	0	0	0	0	0	0	0	0	0	0	52	128	0	138
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-98 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-99 REGIONAL DENSITY (NO./1,000m3) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	< 0.005
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	11	0	0	11
01OCT	SE	0	0	0	0	0	0	0	0	0	0	11	0	0	11
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-101 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF AMERICAN SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.08	0.01
18JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.08	0.11
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	1	0	1	2
18JUN	SE	0	0	0	0	0	0	0	0	0	1	0	1	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
13APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.05
16APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.63
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.72	16.49	132.18	11.72
23APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	13.58	59.42	60.98
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	21.34	152.78	327.03	38.56
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	4.12	69.83	124.78	143.05
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.88	28.08	104.78	410.91	41.93
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.88	18.91	69.26	202.99	215.31
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.47	1.67	130.78	189.07	3641.64	304.94
13MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.47	1.67	28.66	94.43	865.30	870.91
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.19	20.18	0.00	121.48	92.68	18.05
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.19	9.03	0.00	59.73	36.41	70.53
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	17.10	1020.42	1597.06	202.70
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	11.73	175.60	353.39	394.79
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.20	20.44	2.83	67.79	1139.52	94.69
04JUN	SE	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.20	9.24	1.94	21.99	420.09	420.77
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	8.24	15.23	1.92
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	6.06	8.15	10.27
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
19JUN	SE	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
27JUN	SE	0.00	0.00	0.00	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
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.00	0.00	0.09
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.00	0.00	1.11
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-104 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	101	0	101
16APR	SE	0	0	0	0	0	0	0	0	0	0	0	101	0	101
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	657	2650	9404	12711
23APR	SE	0	0	0	0	0	0	0	0	0	0	364	2183	4228	4772
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST.CROP	0	0	0	0	0	0	0	57	0	0	3763	24557	23268	51644
30APR	SE	0	0	0	0	0	0	0	57	0	0	726	11224	8878	14329
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST.CROP	0	0	0	0	0	0	0	0	74	125	4951	16841	29236	51227
07MAY	SE	0	0	0	0	0	0	0	0	74	125	3333	11132	14442	18537
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST.CROP	0	0	0	0	0	0	0	177	78	236	23056	30389	259099	313034
13MAY	SE	0	0	0	0	0	0	0	177	78	236	5053	15178	61566	63611
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST.CROP	0	0	0	0	0	29	0	0	32	2855	0	19526	6594	29035
21MAY	SE	0	0	0	0	0	29	0	0	32	1277	0	9600	2591	10026
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	77	3015	164014	113630	280735
29MAY	SE	0	0	0	0	0	0	0	0	0	77	2069	28224	25144	37856
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	0	0	0	0	0	29	0	0	34	2892	499	10897	81076	95426
04JUN	SE	0	0	0	0	0	29	0	0	34	1307	341	3535	29889	30128
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	265	1324	1084	2672
11JUN	SE	0	0	0	0	0	0	0	0	0	0	265	974	580	1164
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	0	0	0	67	0	0	0	0	0	0	0	0	0	67
19JUN	SE	0	0	0	67	0	0	0	0	0	0	0	0	0	67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	195	0	0	195
03JUL	SE	0	0	0	0	0	0	0	0	0	0	195	0	0	195
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.04
23APR	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	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.51	0.43	0.47	0.00	0.39	0.21
30APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.51	0.43	0.47	0.00	0.39	1.06
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.05	3.76	2.21	12.39	56.80	27.43	8.06
07MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62	2.39	1.55	4.73	16.72	7.19	19.03
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.19	0.00	1.23	2.81	4.24	7.71	9.93	9.22	390.26	622.70	80.64
13MAY	SE	0.00	0.00	0.00	0.19	0.00	1.06	1.13	2.24	3.42	3.54	4.01	103.16	240.56	261.84
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.79	0.05	6.01	1.89	9.46	12.74	127.75	119.12	21.37
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.79	0.05	3.53	1.03	6.24	5.37	49.36	36.09	61.81
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	3.33	0.00	0.00	0.00	0.00	0.90	0.00	0.00	1.18	5.64	5.34	202.48	223.98	34.07
29MAY	SE	2.52	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.73	3.08	2.73	36.40	36.57	51.83
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	5.44	3.61	0.00	0.00	0.00	0.00	0.04	0.16	1.30	14.13	12.38	187.90	234.82	35.37
04JUN	SE	5.44	3.61	0.00	0.00	0.00	0.00	0.04	0.16	0.78	6.36	6.98	53.49	46.39	71.73
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	3.11	0.46	0.00	0.00	0.00	0.00	0.00	0.86	0.53	4.04	0.34	5.47	32.48	3.64
11JUN	SE	3.11	0.46	0.00	0.00	0.00	0.00	0.00	0.86	0.53	4.04	0.34	2.92	5.09	7.86
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	1.74	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.33	3.35	12.72	7.83	28.55	4.21
19JUN	SE	1.74	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.33	3.05	9.00	5.66	13.31	17.40
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	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
27JUN	SE	0.00	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	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	1.23	0.00	0.19
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.62	0.00	1.35
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	84	0	84
23APR	SE	0	0	0	0	0	0	0	0	0	0	0	84	0	84
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	0	0	0	0	129	0	85	61	84	0	28	387
30APR	SE	0	0	0	0	0	0	76	0	85	61	84	0	28	156
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	0	0	0	0	156	312	622	312	2184	9129	1952	14668
07MAY	SE	0	0	0	0	0	0	86	185	396	220	834	2687	511	2902
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	28	0	254	393	1265	1276	1405	1625	62727	44305	113278
13MAY	SE	0	0	0	28	0	220	158	669	565	501	706	16581	17115	23864
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	164	7	1792	312	1338	2247	20533	8475	34868
21MAY	SE	0	0	0	0	0	164	7	1051	170	882	946	7933	2568	8507
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	695	0	0	0	0	188	0	0	195	797	941	32545	15936	51298
29MAY	SE	527	0	0	0	0	188	0	0	120	435	481	5850	2602	6461
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	1136	828	0	0	0	0	5	48	215	1999	2183	30201	16708	53322
04JUN	SE	1136	828	0	0	0	0	5	48	129	900	1231	8597	3301	9440
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	651	105	0	0	0	0	0	256	88	572	61	879	2311	4922
11JUN	SE	651	105	0	0	0	0	0	256	88	572	61	470	362	1091
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	364	0	0	0	0	0	23	0	55	474	2243	1258	2031	6447
19JUN	SE	364	0	0	0	0	0	23	0	55	432	1586	909	947	2136
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	0	0	24	0	0	0	0	0	0	24
27JUN	SE	0	0	0	0	0	0	24	0	0	0	0	0	0	24
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	169	0	198	0	367
03JUL	SE	0	0	0	0	0	0	0	0	0	169	0	99	0	196
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
20APR-	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
23APR	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.74	0.00	1.05	19.67	4.51	2.91	59.80	79.47	9.49	13.66
07MAY	SE	0.00	0.00	0.00	0.00	0.74	0.00	0.57	3.16	2.45	1.91	29.50	15.90	8.29	34.82
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.91	0.00	0.00	0.60	5.64	5.24	8.71	10.57	27.34	126.99	44.72	179.46	6.42	32.05
13MAY	SE	0.91	0.00	0.00	0.45	1.88	3.85	2.29	4.19	7.20	57.14	21.74	56.95	3.84	84.20
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.37	0.00	0.57	1.77	7.40	2.57	37.44	152.89	155.64	714.53	1079.67	519.45	31.70	208.00
21MAY	SE	0.37	0.00	0.42	1.16	2.40	1.27	15.23	74.67	53.52	193.99	227.61	231.34	13.28	389.63
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	1.59	0.42	0.35	2.77	12.89	12.45	61.06	261.68	816.51	957.53	1302.59	1321.38	365.48
29MAY	SE	0.00	1.18	0.27	0.35	0.99	7.07	3.42	32.81	57.34	152.01	115.31	284.58	292.11	455.13
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	4.00	4.98	0.00	0.43	5.74	6.60	20.77	314.19	409.14	2205.21	2081.24	1298.40	213.39	504.93
04JUN	SE	2.05	3.80	0.00	0.31	1.93	1.87	4.02	137.95	83.64	335.69	295.61	446.13	54.62	654.34
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.64	0.00	4.11	1.22	0.23	16.92	58.98	251.66	1063.86	2063.77	1461.42	805.03	573.93	484.75
11JUN	SE	0.64	0.00	2.24	0.61	0.12	7.09	16.45	58.18	243.84	457.98	285.95	150.81	90.20	620.94
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	7.95	2.30	4.39	0.49	0.51	33.64	82.39	250.27	474.33	594.27	377.96	1730.81	258.55	293.68
19JUN	SE	4.87	1.56	1.89	0.49	0.24	15.68	7.42	58.55	104.40	140.07	205.65	436.69	127.61	532.50
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.93	0.31	0.35	2.93	4.27	14.33	42.97	76.13	179.09	275.07	170.70	30.75	1.65	61.50
27JUN	SE	0.93	0.31	0.35	0.60	1.47	3.31	7.39	20.12	57.89	80.88	49.22	11.32	0.80	113.66
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	1.87	1.67	2.32	1.22	1.53	9.40	16.50	19.78	156.15	115.43	25.06	15.62	28.20
03JUL	SE	0.00	1.87	1.41	0.60	0.91	0.62	3.14	5.14	5.40	35.19	33.41	6.55	9.72	50.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	4.67	3.48	NS	NS	NS	NS	NS	1.03
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.13	2.93	2.08						3.60
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	2.08	0.00	0.84	NS	NS	NS	NS	NS	0.37
29JUL	SE	0.00	0.00	0.00	0.00	0.00	2.08	0.00	0.84						2.25
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	6.31	0.00	7.43	0.00	0.00	0.00	NS	NS	NS	NS	NS	1.72
13AUG	SE	0.00	0.00	6.31	0.00	6.78	0.00	0.00	0.00						9.27
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	10	0	0	0	0	0	0	0	0	10
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	154	0	147	5864	746	411	10543	12774	675	31314
07MAY	SE	0	0	0	0	154	0	80	941	405	270	5201	2555	590	5923
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	190	0	0	89	1175	1087	1218	3153	4525	17965	7884	28845	457	66589
13MAY	SE	190	0	0	66	391	798	319	1251	1191	8084	3832	9153	273	12954
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	77	0	183	262	1541	533	5234	45581	25756	101084	190341	83493	2256	456341
21MAY	SE	77	0	134	172	501	264	2128	22261	8856	27443	40126	37184	945	65770
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	365	137	51	577	2675	1741	18203	43304	115511	168809	209367	94015	654754
29MAY	SE	0	272	86	51	205	1468	478	9782	9490	21504	20328	45740	20783	59900
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	836	1142	0	64	1196	1370	2903	93671	67706	311971	366913	208694	15182	1071648
04JUN	SE	428	872	0	45	402	388	562	41127	13841	47490	52116	71707	3886	109603
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	134	0	1323	180	48	3509	8245	75029	176052	291962	257642	129393	40834	984351
11JUN	SE	134	0	720	90	25	1471	2300	17345	40352	64791	50411	24239	6418	96463
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	1662	528	1412	72	106	6978	11517	74615	78494	84071	66633	278196	18396	622680
19JUN	SE	1017	358	608	72	51	3254	1037	17455	17277	19816	36256	70190	9079	85631
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	194	71	114	433	890	2973	6007	22697	29636	38913	30093	4942	118	137082
27JUN	SE	194	71	114	88	306	687	1032	5999	9580	11442	8678	1820	57	18412
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	430	539	343	253	318	1315	4919	3273	22091	20349	4028	1111	58968
03JUL	SE	0	430	452	89	190	129	438	1532	893	4978	5890	1052	692	8053
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	27	652	1037	NS	NS	NS	NS	NS	1716
15JUL	SE	0	0	0	0	0	27	410	620						744
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	432	0	252	NS	NS	NS	NS	NS	684
29JUL	SE	0	0	0	0	0	432	0	252						500
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	2032	0	1548	0	0	0	NS	NS	NS	NS	NS	3580
13AUG	SE	0	0	2032	0	1413	0	0	0						2475
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-109 REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-109 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-110 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-110 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-111 REGIONAL DENSITY (NO./1,000m3) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	2.32	2.11	0.39	2.48	0.62	9.11	1.73	2.64	2.30	1.82
10JUL	SE	0.00	0.00	0.00	0.00	1.77	0.99	0.39	1.56	0.59	2.81	1.03	1.49	1.05	4.39
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.66	< 0.005	0.04	14.65	5.54	7.24	1.57	0.45	2.40
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.98	< 0.005	0.03	12.23	2.71	5.25	0.89	0.37	13.65
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.12	0.36	1.66	0.44	0.68	1.03	2.61	0.00	0.61
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.71	0.36	0.54	0.44	0.43	1.03	1.35	0.00	2.04
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.21	0.93	0.33	0.00	0.00	0.00	0.14
20AUG	SE	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.21	0.93	0.33	0.00	0.00	0.00	1.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-112 REGIONAL STANDING CROP (IN THOUSANDS) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	483	438	54	741	102	1289	305	424	164	4001
10JUL	SE	0	0	0	0	369	206	54	465	97	397	181	239	75	812
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	345	1	13	2425	784	1276	252	32	5127
24JUL	SE	0	0	0	0	0	204	1	9	2024	383	925	143	26	2272
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	233	51	496	73	96	181	420	0	1549
07AUG	SE	0	0	0	0	0	146	51	162	73	61	181	216	0	373
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	79	0	0	0	0	0	61	155	47	0	0	0	342
20AUG	SE	0	79	0	0	0	0	0	61	155	47	0	0	0	190
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-113 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ALOSA SPP. YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.67	3.00	35.88	11.75	54.13	27.73	23.32	10.75	13.93
18JUN	SE	0.00	0.00	0.00	0.00	0.67	3.00	29.09	8.01	35.93	7.62	6.08	3.60	48.15
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.27	0.00	12.67	0.33	1.33	16.25	650.38	291.38	69.27	3.42	0.33	87.14
02JUL	SE	0.00	0.19	0.00	9.39	0.33	1.33	14.32	214.75	152.46	41.78	1.05	0.14	267.21
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.50	34.38	26.88	20.53	5.68	13.00	8.41
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.50	16.05	17.98	11.57	4.19	8.62	28.41
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.40	1.44	0.30	0.00	0.51
30JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15	0.77	0.15	0.00	4.23
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.04	0.00	0.40	0.00	0.00	0.40	1.20	2.20	0.78	0.00	2.29	0.61
13AUG	SE	0.00	0.04	0.00	0.40	0.00	0.00	0.40	1.20	0.97	0.78	0.00	1.97	2.68
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.29	0.07	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.10	0.43	0.09
27AUG	SE	0.00	0.29	0.07	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.10	0.30	0.48
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	2	32	255	15	466	487	459	146	1860
18JUN	SE	0	0	0	0	2	32	206	10	309	134	120	49	417
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	12	0	117	1	14	115	806	2508	1216	67	5	4862
02JUL	SE	0	9	0	87	1	14	102	266	1312	734	21	2	1533
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	4	43	231	360	112	177	926
15JUL	SE	0	0	0	0	0	0	4	20	155	203	82	117	294
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	38	25	6	0	69
30JUL	SE	0	0	0	0	0	0	0	0	36	13	3	0	38
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	2	0	4	0	0	3	1	19	14	0	31	74
13AUG	SE	0	2	0	4	0	0	3	1	8	14	0	27	32
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	13	2	0	0	0	0	< 0.5	0	0	2	6	23
27AUG	SE	0	13	2	0	0	0	0	< 0.5	0	0	2	4	14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-115 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.18	0.16
27JUN	SE	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.18	1.36
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.53	5.48	1.00	0.48	0.00	7.27	0.58	0.00	1.18
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.38	3.63	0.82	0.48	0.00	4.51	0.58	0.00	5.90
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.78	1.77	2.32	1.08	NS	NS	NS	NS	NS	0.74
15JUL	SE	0.00	0.00	0.00	0.00	0.61	0.81	1.65	0.71						2.06
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.33	3.74	0.28	NS	NS	NS	NS	NS	0.67
29JUL	SE	0.00	0.00	0.00	0.00	0.00	0.87	1.77	0.28						1.99
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	NS	NS	NS	NS	NS	0.10
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82						0.82
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.01
23SEP	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00						0.04
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.90	0.00	0.04	0.00	0.00	0.29	NS	NS	NS	NS	NS	0.15
07OCT	SE	0.00	0.00	0.90	0.00	0.04	0.00	0.00	0.29						0.94
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	108	0	0	0	0	0	0	0	0	91	84	284
27JUN	SE	0	0	108	0	0	0	0	0	0	0	0	91	84	165
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	109	766	299	80	0	1281	93	0	2628
03JUL	SE	0	0	0	0	0	78	507	243	80	0	795	93	0	984
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	163	367	325	322	NS	NS	NS	NS	NS	1175
15JUL	SE	0	0	0	0	128	168	230	213						378
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	275	523	84	NS	NS	NS	NS	NS	882
29JUL	SE	0	0	0	0	0	180	248	84						317
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	243	NS	NS	NS	NS	NS	243
27AUG	SE	0	0	0	0	0	0	0	243						243
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	9	0	0	0	NS	NS	NS	NS	NS	9
23SEP	SE	0	0	0	0	9	0	0	0						9
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	289	0	9	0	0	86	NS	NS	NS	NS	NS	383
07OCT	SE	0	0	289	0	9	0	0	86						301
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.25	0.22	0.04
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.13	0.13	0.18
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.82	0.34	1.04	0.00	0.00	0.18
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.51	0.34	1.04	0.00	0.00	1.21
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.34	1.03	1.12	0.00	0.24
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.34	1.03	1.12	0.00	1.62
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.37	0.00	0.14	0.63	0.00	0.10
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.37	0.00	0.08	0.52	0.00	0.67
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
03SEP	SE	0.00	0.00	0.00	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
14SEP-	DENSITY	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.29	0.59	0.00	0.07
17SEP	SE	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.20	0.42	0.00	0.47
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.14	0.21	0.00	0.00	0.03
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.14	0.14	0.00	0.00	0.20
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.21	0.85	0.82	1.07	0.00	0.23
16OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.14	0.39	0.39	1.07	0.00	1.21
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.08	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01
29OCT	SE	0.00	0.04	0.00	0.00	0.00	0.00	0.02	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
09NOV-	DENSITY	0.00	0.02	0.00	0.06	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13NOV	SE	0.00	0.02	0.00	0.06	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
04DEC	SE	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	5	0	0	0	0	41	16	61
10JUL	SE	0	0	0	0	0	0	5	0	0	0	0	20	9	23
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	0	4	26	136	48	183	0	0	399
24JUL	SE	0	0	0	0	0	0	4	14	84	48	183	0	0	208
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	191	0	49	181	180	0	601
07AUG	SE	0	0	0	0	0	0	0	136	0	49	181	180	0	294
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	60	62	0	24	101	0	247
20AUG	SE	0	0	0	0	0	0	0	60	62	0	14	83	0	120
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	6	0	0	0	0	0	0	0	4	0	50	95	0	156
17SEP	SE	6	0	0	0	0	0	0	0	4	0	36	68	0	77
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	0	9	3	20	37	0	0	69
01OCT	SE	0	0	0	0	0	0	0	6	3	20	25	0	0	32
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	2	1	10	35	120	145	172	0	485
16OCT	SE	0	0	0	0	0	2	1	7	23	56	68	172	0	195
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	18	0	0	0	0	7	0	0	0	0	0	0	24
29OCT	SE	0	8	0	0	0	0	3	0	0	0	0	0	0	9
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	5	0	10	5	0	4	0	0	0	0	0	0	23
13NOV	SE	0	5	0	10	3	0	3	0	0	0	0	0	0	12
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	5	0	0	5	0	0	0	0	0	0	0	0	10
04DEC	SE	0	5	0	0	3	0	0	0	0	0	0	0	0	6
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.40	0.21	0.00	0.06
02JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.40	0.16	0.00	0.45
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.27	0.00	0.00	0.00	0.00	1.13	22.50	3.88	5.13	0.74	0.25	2.82
15JUL	SE	0.00	0.19	0.00	0.00	0.00	0.00	0.55	7.66	1.88	2.21	0.33	0.25	8.22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.00	0.14	0.20	0.40	0.17	0.00	0.00	1.20	4.11	2.40	0.00	0.72
30JUL	SE	0.00	0.00	0.10	0.20	0.24	0.17	0.00	0.00	0.73	1.85	0.70	0.00	2.14
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.17	2.29	0.40	0.20	1.50	0.20	2.20	0.00	1.67	1.40	0.14	0.85
13AUG	SE	0.00	0.17	1.11	0.24	0.20	1.02	0.20	1.50	0.00	1.33	0.93	0.14	2.71
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.46	1.93	0.00	0.20	1.83	0.40	0.80	0.00	2.44	0.00	0.00	0.67
27AUG	SE	0.00	0.31	1.10	0.00	0.20	1.83	0.24	0.80	0.00	1.25	0.00	0.00	2.64
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.75	28.07	0.00	0.00	0.67	0.00	1.40	0.00	0.78	1.50	0.00	2.76
11SEP	SE	0.00	0.31	15.34	0.00	0.00	0.42	0.00	1.40	0.00	0.43	1.39	0.00	15.48
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	1.33	0.50	0.20	0.00	2.83	0.60	0.00	1.00	0.33	1.70	0.57	0.76
24SEP	SE	0.00	0.86	0.37	0.20	0.00	1.64	0.40	0.00	1.00	0.33	1.21	0.57	2.59
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.21	8.64	0.20	0.00	1.17	0.20	0.00	0.00	0.11	0.70	1.00	1.02
08OCT	SE	0.00	0.15	7.25	0.20	0.00	0.83	0.20	0.00	0.00	0.11	0.52	1.00	7.39
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.00	0.43	1.80	1.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.28
22OCT	SE	0.00	0.00	0.36	1.07	0.77	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1.37
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	< 0.5	0	7	4	0	11
02JUL	SE	0	0	0	0	0	0	0	< 0.5	0	7	3	0	8
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	12	0	0	0	0	8	28	33	90	14	3	190
15JUL	SE	0	9	0	0	0	0	4	9	16	39	7	3	45
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	4	2	1	2	0	0	10	72	47	0	138
30JUL	SE	0	0	3	2	1	2	0	0	6	33	14	0	36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	8	61	4	1	16	1	3	0	29	28	2	152
13AUG	SE	0	8	30	2	1	11	1	2	0	23	18	2	44
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	21	52	0	1	20	3	1	0	43	0	0	139
27AUG	SE	0	14	29	0	1	20	2	1	0	22	0	0	44
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	34	755	0	0	7	0	2	0	14	30	0	841
11SEP	SE	0	14	413	0	0	4	0	2	0	8	27	0	414
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	61	13	2	0	30	4	0	9	6	33	8	166
24SEP	SE	0	39	10	2	0	17	3	0	9	6	24	8	52
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	9	232	2	0	12	1	0	0	2	14	14	287
08OCT	SE	0	7	195	2	0	9	1	0	0	2	10	14	196
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	12	17	3	0	0	0	0	0	2	0	33
22OCT	SE	0	0	10	10	2	0	0	0	0	0	2	0	14
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.20	0.00	0.00	NS	NS	NS	NS	NS	NS	0.03
18MAR	SE	0.00	0.00	0.00	0.00	0.20	0.00	0.00							0.20
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	DENSITY	0.00	1.29	0.00	0.92	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.32
25MAR	SE	0.00	1.29	0.00	0.44	0.00	0.00	0.00							1.36
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.77	0.10	0.84	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.24
01APR	SE	0.77	0.10	0.46	0.00	0.00	0.00	0.00							0.91
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.00	0.25	0.55	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
09APR	SE	0.00	0.25	0.55	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	0.68	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
16APR	SE	0.68	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
23APR	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	0.21
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.11	0.35	0.58	0.54	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.12
30APR	SE	0.00	0.11	0.25	0.42	0.49	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.70
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.12	0.00	0.21	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.03
07MAY	SE	0.00	0.12	0.00	0.21	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.24
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13MAY	SE	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.12
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.00	0.00	1.22
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.06	0.00	0.04	0.56	0.00	0.65	2.08	0.76	0.00	0.32
04JUN	SE	0.00	0.00	0.00	0.00	0.06	0.00	0.04	0.56	0.00	0.65	0.87	0.76	0.00	1.44
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-121 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.07
11JUN	SE	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.71
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
19JUN	SE	0.00	0.00	0.00	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
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	0.59	0.05
27JUN	SE	0.00	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	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.03
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.36
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	NS	NS	NS	NS	NS	0.01
29JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00						0.05
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.12	0.00	0.00	NS	NS	NS	NS	NS	0.02
13AUG	SE	0.00	0.00	0.00	0.00	0.04	0.12	0.00	0.00						0.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.02
27AUG	SE	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00						0.19
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.04
23SEP	SE	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00						0.34
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	NS	NS	NS	NS	NS	0.04
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29						0.29
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	43	0	0	NS	NS	NS	NS	NS	NS	43
18MAR	SE	0	0	0	0	43	0	0							43
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	296	0	137	0	0	0	NS	NS	NS	NS	NS	NS	432
25MAR	SE	0	296	0	64	0	0	0							302
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	162	23	269	0	0	0	0	NS	NS	NS	NS	NS	NS	453
01APR	SE	162	23	148	0	0	0	0							220
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	57	176	56	0	0	0	0	0	0	0	0	0	288
09APR	SE	0	57	176	32	0	0	0	0	0	0	0	0	0	187
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	141	0	0	32	0	0	0	0	0	0	0	0	0	173
16APR	SE	141	0	0	32	0	0	0	0	0	0	0	0	0	145
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	0	0	0	55	0	0	0	0	0	0	0	0	0	55
23APR	SE	0	0	0	32	0	0	0	0	0	0	0	0	0	32
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	25	113	85	113	0	6	0	0	0	0	0	0	342
30APR	SE	0	25	80	62	103	0	6	0	0	0	0	0	0	147
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	26	0	31	0	0	6	0	0	0	0	0	0	63
07MAY	SE	0	26	0	31	0	0	6	0	0	0	0	0	0	41
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	0	0	0	14	0	0	0	0	0	0	0	0	14
13MAY	SE	0	0	0	0	14	0	0	0	0	0	0	0	0	14
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	275	0	0	275
29MAY	SE	0	0	0	0	0	0	0	0	0	0	214	0	0	214
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	12	0	5	167	0	91	367	121	0	764
04JUN	SE	0	0	0	0	12	0	5	167	0	91	154	121	0	274
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	43	0	0	0	0	0	0	0	104	0	147
11JUN	SE	0	0	0	43	0	0	0	0	0	0	0	104	0	112
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	42	42
27JUN	SE	0	0	0	0	0	0	0	0	0	0	0	0	42	42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	63	0	0	63
03JUL	SE	0	0	0	0	0	0	0	0	0	0	63	0	0	63
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	8	0	NS	NS	NS	NS	NS	8
29JUL	SE	0	0	0	0	0	0	8	0						8
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	8	26	0	0	NS	NS	NS	NS	NS	34
13AUG	SE	0	0	0	0	8	26	0	0						27
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	29	0	0	0	0	NS	NS	NS	NS	NS	29
27AUG	SE	0	0	0	29	0	0	0	0						29
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	50	0	0	0	0	NS	NS	NS	NS	NS	50
23SEP	SE	0	0	0	50	0	0	0	0						50
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	87	NS	NS	NS	NS	NS	87
07OCT	SE	0	0	0	0	0	0	0	87						87
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.02
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
24JUL	SE	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	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
07AUG	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	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.02
20AUG	SE	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.15
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.01
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.09	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.02	0.13	0.00	0.00	0.00	0.02
17SEP	SE	0.09	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.00	0.00	0.00	0.12
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.21	0.14	0.00	0.00	0.03
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.13	0.08	0.00	0.00	0.16
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.07	0.00	0.00	0.02
16OCT	SE	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.00	0.00	0.11
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
29OCT	SE	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	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	< 0.005
13NOV	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	0.02
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	40	0	42
10JUL	SE	0	0	0	0	0	2	0	0	0	0	0	40	0	40
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	7	0	0	0	0	0	0	0	0	0	0	0	0	7
24JUL	SE	7	0	0	0	0	0	0	0	0	0	0	0	0	7
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0	4
07AUG	SE	0	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	45	0	0	0	0	0	0	0	24	0	0	69
20AUG	SE	0	0	23	0	0	0	0	0	0	0	24	0	0	33
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	3	10	0	0	0	13
03SEP	SE	0	0	0	0	0	0	0	0	3	10	0	0	0	10
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	18	0	18	0	0	0	0	0	3	18	0	0	0	58
17SEP	SE	18	0	13	0	0	0	0	0	3	11	0	0	0	25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	0	4	0	30	25	0	0	59
01OCT	SE	0	0	0	0	0	0	0	4	0	19	15	0	0	24
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	7	0	0	0	0	0	0	0	21	12	0	0	40
16OCT	SE	0	7	0	0	0	0	0	0	0	12	12	0	0	19
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	6	0	6	0	0	0	0	0	0	0	0	0	0	12
29OCT	SE	6	0	6	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
09NOV-	ST. CROP	0	0	5	0	2	0	0	0	0	0	0	0	0	7
13NOV	SE	0	0	5	0	2	0	0	0	0	0	0	0	0	5
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-125 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ALEWIFE YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.26	0.33	0.08
18JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.18	0.26	0.46
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.05	0.00	0.03
02JUL	SE	0.00	0.00	0.00	0.00	0.00	0.33	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
13JUL-	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
15JUL	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	CPUE	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
13AUG	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
24AUG-	CPUE	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
27AUG	SE	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.04	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
11SEP	SE	0.00	0.04	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	CPUE	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
08OCT	SE	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	7	5	5	17
18JUN	SE	0	0	0	0	0	0	0	0	0	6	4	3	8
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	0	0	4	0	0	0	0	1	0	5
02JUL	SE	0	0	0	0	0	4	0	0	0	0	1	0	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	1	0	0	1
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	11	0	0	0	0	0	0	0	0	0	0	11
13AUG	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
24AUG-	ST. CROP	0	17	0	0	0	0	0	0	0	0	0	0	17
27AUG	SE	0	12	0	0	0	0	0	0	0	0	0	0	12
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	2	12	0	0	0	0	0	0	0	0	0	13
11SEP	SE	0	2	10	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	4
08OCT	SE	0	4	0	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-127 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BLUEBACK HERRING YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.12	5.29	0.00	NS	NS	NS	NS	NS	0.68
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.12	5.29	0.00						5.29
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.00	NS	NS	NS	NS	NS	0.28
29JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.00						2.26
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	3.33	5.36	0.86	NS	NS	NS	NS	NS	1.19
13AUG	SE	0.00	0.00	0.00	0.00	0.00	1.41	5.36	0.86						5.61
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.26	2.02	0.27	NS	NS	NS	NS	NS	0.32
27AUG	SE	0.00	0.00	0.00	0.00	0.04	0.15	1.04	0.27						1.09
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.62	7.52	0.29	NS	NS	NS	NS	NS	1.05
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.62	1.93	0.29						2.05
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.87	NS	NS	NS	NS	NS	0.20
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.87						0.95
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.29	NS	NS	NS	NS	NS	0.19
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.29						0.39
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	26	739	0	NS	NS	NS	NS	NS	765
15JUL	SE	0	0	0	0	0	26	739	0						740
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	316	0	NS	NS	NS	NS	NS	316
29JUL	SE	0	0	0	0	0	0	316	0						316
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	691	749	256	NS	NS	NS	NS	NS	1696
13AUG	SE	0	0	0	0	0	293	749	256						844
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	9	53	282	81	NS	NS	NS	NS	NS	426
27AUG	SE	0	0	0	0	9	31	145	81						170
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	128	1051	87	NS	NS	NS	NS	NS	1267
10SEP	SE	0	0	0	0	0	128	270	87						311
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	105	258	NS	NS	NS	NS	NS	364
23SEP	SE	0	0	0	0	0	0	55	258						264
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	176	86	NS	NS	NS	NS	NS	262
07OCT	SE	0	0	0	0	0	0	37	86						94
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.22	0.03
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.22	0.25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.04	16.20	1.01	2.03	2.72	0.00	1.70
24JUL	SE	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.02	8.96	0.45	0.05	1.97	0.00	9.18
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.22	0.01	2.68	0.44	0.00	5.24	20.61	0.00	2.25
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.22	0.01	1.25	0.44	0.00	5.17	9.52	0.00	10.91
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.24	0.07	1.28	2.24	0.34	0.07	4.67	0.41	0.72
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.23	0.04	0.59	1.83	0.34	0.07	3.32	0.29	3.87
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.86	0.06	3.64	7.22	0.09	0.92
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.53	0.06	3.58	3.60	0.09	5.11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.20	0.47	0.40	11.79	5.36	1.41
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.13	0.39	0.17	8.35	3.69	9.14
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.56	1.14	0.21	2.20	2.22	0.49
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.43	0.52	0.07	1.38	1.13	1.91
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.54	1.94	1.51	0.20	0.69	0.17	1.31	0.95	0.56
16OCT	SE	0.00	0.00	0.00	0.00	0.01	0.32	1.79	0.59	0.08	0.40	0.10	0.83	0.54	2.19
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	19	16	35
10JUL	SE	0	0	0	0	0	0	0	0	0	0	0	19	16	25
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	1	2	4	13	2680	142	359	438	0	3639
24JUL	SE	0	0	0	0	1	2	4	6	1483	64	8	316	0	1517
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	46	1	800	73	0	923	3313	0	5156
07AUG	SE	0	0	0	0	0	46	1	372	73	0	911	1530	0	1821
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	49	10	383	371	48	12	751	30	1652
20AUG	SE	0	0	0	0	0	47	6	176	303	48	12	533	21	642
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	4	0	142	9	642	1160	7	1963
03SEP	SE	0	0	0	0	0	0	4	0	88	9	631	579	7	861
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	0	0	0	10	33	67	71	1896	382	2458
17SEP	SE	0	0	0	0	0	0	0	7	22	55	30	1343	263	1370
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	4	0	93	161	36	353	158	805
01OCT	SE	0	0	0	0	0	0	4	0	70	74	12	222	80	258
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	3	111	271	451	34	97	29	211	67	1275
16OCT	SE	0	0	0	0	3	66	250	177	14	57	17	134	38	348
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.07	0.16	0.00	0.03
02JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.07	0.09	0.00	0.17
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.50	0.60	0.79	0.42	0.55
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14	1.50	0.24	0.54	0.23	2.69
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.00	0.00	0.00	2.40	2.17	0.00	10.00	25.60	30.33	0.20	0.00	5.89
30JUL	SE	0.00	0.00	0.00	0.00	1.17	1.38	0.00	7.75	15.06	24.95	0.13	0.00	30.21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.00	0.00	17.00	0.20	6.33	0.80	2.00	8.00	7.89	2.90	61.43	8.88
13AUG	SE	0.00	0.00	0.00	11.38	0.20	2.86	0.80	1.55	4.92	3.10	1.19	40.85	42.94
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.00	0.00	0.00	4.20	6.00	5.20	0.40	3.40	0.33	0.20	0.71	1.70
27AUG	SE	0.00	0.00	0.00	0.00	2.20	3.32	4.47	0.40	2.09	0.17	0.13	0.47	6.37
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.00	0.79	0.00	0.00	19.50	25.00	8.80	1.20	23.78	1.20	7.43	7.31
11SEP	SE	0.00	0.00	0.65	0.00	0.00	12.21	14.79	4.86	0.73	11.44	0.33	3.15	23.09
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	0.00	0.00	0.40	0.00	32.17	8.80	1.60	6.40	0.89	2.20	7.71	5.01
24SEP	SE	0.00	0.00	0.00	0.40	0.00	17.07	5.25	0.87	3.23	0.51	1.67	4.97	18.92
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	2.80	6.29	0.94
08OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.85	1.85	4.78	5.46
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.00	0.21	0.40	1.00	1.17	0.60	0.60	0.00	0.00	1.40	1.00	0.53
22OCT	SE	0.00	0.00	0.15	0.40	1.00	1.17	0.40	0.60	0.00	0.00	1.19	0.72	2.23
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	< 0.5	0	1	3	0	4
02JUL	SE	0	0	0	0	0	0	0	< 0.5	0	1	2	0	2
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	0	4	13	11	16	6	49
15JUL	SE	0	0	0	0	0	0	0	3	13	4	11	3	18
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	0	0	6	23	0	12	220	533	4	0	799
30JUL	SE	0	0	0	0	3	15	0	10	130	438	3	0	457
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	0	0	157	1	67	6	2	69	138	57	835	1332
13AUG	SE	0	0	0	105	1	30	6	2	42	54	23	555	570
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	0	0	11	64	37	< 0.5	29	6	4	10	161
27AUG	SE	0	0	0	0	6	35	32	< 0.5	18	3	3	6	52
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	0	21	0	0	208	177	11	10	417	24	101	969
11SEP	SE	0	0	17	0	0	130	105	6	6	201	6	43	266
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	0	0	4	0	343	62	2	55	16	43	105	630
24SEP	SE	0	0	0	4	0	182	37	1	28	9	33	68	202
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	39	55	85	180
08OCT	SE	0	0	0	0	0	0	0	0	0	33	36	65	81
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	6	4	3	12	4	1	0	0	28	14	71
22OCT	SE	0	0	4	4	3	12	3	1	0	0	23	10	29
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	1.73	0.25	0.29	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.32
25MAR	SE	0.00	1.13	0.25	0.29	0.00	0.00	0.00							1.20
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.61	0.00	3.15	1.02	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.68
01APR	SE	0.61	0.00	1.35	0.59	0.00	0.00	0.00							1.59
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.00	0.24	0.18	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
09APR	SE	0.00	0.24	0.18	0.19	0.00	0.00	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	126
13APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.07
16APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.88
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
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
23APR	SE	0.00	0.00	0.00	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
27APR-	DENSITY	0.71	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.07
30APR	SE	0.71	0.00	0.00	0.00	0.00	0.00	0.25	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
13MAY	SE	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.20	0.20	0.00	0.00	0.43	0.81	0.00	5.06	1.97	1.96	0.82
29MAY	SE	0.00	0.00	0.00	0.20	0.20	0.00	0.00	0.28	0.34	0.00	1.46	1.97	1.96	3.18
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	1.15	0.29	0.00	0.00	1.23	1.58	0.69	0.00	0.38
04JUN	SE	0.00	0.00	0.00	0.00	0.00	1.02	0.25	0.00	0.00	0.86	0.94	0.69	0.00	1.79
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.21	0.00	0.00	0.34	0.00	0.00	0.06
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.21	0.00	0.00	0.34	0.00	0.00	0.44
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	396	80	43	0	0	0	NS	NS	NS	NS	NS	NS	519
25MAR	SE	0	260	80	43	0	0	0							276
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	128	0	1013	151	0	0	0	NS	NS	NS	NS	NS	NS	1292
01APR	SE	128	0	433	88	0	0	0							460
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	54	57	28	0	0	0	0	0	0	0	0	0	140
09APR	SE	0	54	57	28	0	0	0	0	0	0	0	0	0	84
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	0	0	0	0	263	0	0	0	0	0	263
16APR	SE	0	0	0	0	0	0	0	263	0	0	0	0	0	263
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	148	0	0	0	0	0	35	0	0	0	0	0	0	184
30APR	SE	148	0	0	0	0	0	35	0	0	0	0	0	0	152
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	108	0	0	0	0	0	0	0	0	0	0	0	108
13MAY	SE	0	108	0	0	0	0	0	0	0	0	0	0	0	108
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	30	42	0	0	127	134	0	892	317	139	1682
29MAY	SE	0	0	0	30	42	0	0	84	56	0	257	317	139	446
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	0	238	40	0	0	174	278	111	0	840
04JUN	SE	0	0	0	0	0	212	36	0	0	121	166	111	0	318
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-134 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	26	62	0	0	61	0	0	148
11JUN	SE	0	0	0	0	0	0	26	62	0	0	61	0	0	91
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	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
13NOV	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-136 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	5	0	0	0	0	0	0	0	0	0	0	0	5
13NOV	SE	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-137 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BLUEBACK HERRING YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	0.16	1.08	0.30
18JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.09	0.69	2.36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.03
02JUL	SE	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.23
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	2.75
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.07
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.80
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	42	3	15	60
18JUN	SE	0	0	0	0	0	0	0	0	0	40	2	9	41
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	0	0	4	0	0	0	0	0	0	4
02JUL	SE	0	0	0	0	0	4	0	0	0	0	0	0	4
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	24	0	0	0	24
15JUL	SE	0	0	0	0	0	0	0	0	24	0	0	0	24
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	7	0	0	0	7
13AUG	SE	0	0	0	0	0	0	0	0	7	0	0	0	7
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	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
29OCT	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	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	1	0	0	0	0	0	0	1
29OCT	SE	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-141 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	CPUE	0.00	0.91	10.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
02JUL	SE	0.00	0.91	9.19	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.24
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	CPUE	0.00	0.00	0.00	0.60	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
30JUL	SE	0.00	0.00	0.00	0.60	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.00	0.00	0.00	0.60	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.06
13AUG	SE	0.00	0.00	0.00	0.00	0.60	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.62
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	CPUE	0.00	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.03
08OCT	SE	0.00	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.28
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
22OCT	SE	0.00	0.00	0.00	0.00	0.20	0.00	0.00	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-142 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	41	269	3	0	0	0	0	0	0	0	0	313
02JUL	SE	0	41	247	3	0	0	0	0	0	0	0	0	251
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	6	2	0	0	0	0	0	0	0	8
30JUL	SE	0	0	0	6	2	0	0	0	0	0	0	0	6
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	0	0	0	2	2	0	0	0	0	0	0	3
13AUG	SE	0	0	0	0	2	2	0	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	2	0	0	1	0	0	0	0	0	3
08OCT	SE	0	0	0	2	0	0	1	0	0	0	0	0	2
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	0	0	1	0	0	0	0	0	0	0	1
22OCT	SE	0	0	0	0	1	0	0	0	0	0	0	0	1
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-144 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-145 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
18JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	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
02JUL	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
13JUL-	CPUE	0.00	0.00	0.14	1.67	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.16
15JUL	SE	0.00	0.00	0.14	1.67	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	1.68
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	CPUE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.08
24SEP	SE	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.87
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-146 REGIONAL STANDING CROP (IN THOUSANDS) OF GIZZARD SHAD YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	1	1
18JUN	SE	0	0	0	0	0	0	0	0	0	0	0	1	1
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	4
02JUL	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
13JUL-	ST. CROP	0	0	4	15	0	0	0	0	1	0	0	0	20
15JUL	SE	0	0	4	15	0	0	0	0	1	0	0	0	16
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	2	0	0	0	0	0	0	0	0	0	2
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	4	0	0	0	0	0	0	0	0	12	15
24SEP	SE	0	0	4	0	0	0	0	0	0	0	0	12	12
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-147 REGIONAL DENSITY (NO./1,000m3) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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	0.68	0.05
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.68
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-148 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	48	48
03JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	48	48
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-15O (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-152 REGIONAL STANDING CROP (IN THOUSANDS) OF RAINBOW SMELT YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	96.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.41
29MAY	SE	82.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.79
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-155 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	388.25	55.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.11
11JUN	SE	297.04	55.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	302.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	84.83	363.87	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.52
19JUN	SE	18.31	257.64	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	258.29
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	1705.30	6.58	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.74
27JUN	SE	867.48	2.56	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	867.48
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	7774.41	1033.70	5.27	0.00	0.04	0.00	0.17	0.00	0.00	0.00	0.35	0.00	0.00	678.00
03JUL	SE	2154.20	941.11	3.26	0.00	0.04	0.00	0.17	0.00	0.00	0.00	0.35	0.00	0.00	2350.80
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	353.15	10.00	0.00	0.49	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	45.45
15JUL	SE	176.66	4.96	0.00	0.49	0.00	0.00	0.00	0.00						176.73
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	2232.82	3.66	0.00	0.00	0.00	0.60	0.00	0.00	NS	NS	NS	NS	NS	279.64
29JUL	SE	1299.41	2.59	0.00	0.00	0.00	0.60	0.00	0.00						1299.42
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	90.00	86.40	0.00	0.00	0.00	0.00	0.00	3.72	NS	NS	NS	NS	NS	22.52
13AUG	SE	20.84	51.45	0.00	0.00	0.00	0.00	0.00	3.44						55.62
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	9.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	1.19
27AUG	SE	9.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00						9.52
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-156 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER EGGS IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST.CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST.CROP	20131	0	0	0	0	0	0	0	0	0	0	0	0	20131
29MAY	SE	17305	0	0	0	0	0	0	0	0	0	0	0	0	17305
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST.CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST.CROP	81148	12670	0	0	0	0	0	0	0	0	0	0	0	93818
11JUN	SE	62085	12670	0	0	0	0	0	0	0	0	0	0	0	63365
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST.CROP	17731	83480	0	0	24	0	0	0	0	0	0	0	0	101235
19JUN	SE	3826	59107	0	0	24	0	0	0	0	0	0	0	0	59231
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST.CROP	356430	1510	228	0	0	0	0	0	0	0	0	0	0	358168
27JUN	SE	181314	588	228	0	0	0	0	0	0	0	0	0	0	181315
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST.CROP	1624949	237152	1695	0	9	0	23	0	0	0	62	0	0	1863890
03JUL	SE	450255	215909	1048	0	9	0	23	0	0	0	62	0	0	499347
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST.CROP	73813	2294	0	72	0	0	0	0	NS	NS	NS	NS	NS	76178
15JUL	SE	36923	1138	0	72	0	0	0	0						36941
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST.CROP	466688	840	0	0	0	125	0	0	NS	NS	NS	NS	NS	467653
29JUL	SE	271594	594	0	0	0	125	0	0						271594
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST.CROP	18811	19822	0	0	0	0	0	1110	NS	NS	NS	NS	NS	39744
13AUG	SE	4356	11803	0	0	0	0	0	1026						12623
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST.CROP	1989	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	1989
27AUG	SE	1989	0	0	0	0	0	0	0						1989
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST.CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-157 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
11JUN	SE	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
19JUN	SE	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.81
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.05
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.64
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.21	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
03JUL	SE	0.00	0.21	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	11.50	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	1.44
15JUL	SE	0.00	0.00	11.50	0.00	0.00	0.00	0.00	0.00						11.50
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	96	0	0	0	0	0	0	0	0	0	0	96
11JUN	SE	0	0	96	0	0	0	0	0	0	0	0	0	0	96
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	1006	0	0	0	0	0	0	0	0	0	0	0	0	1006
19JUN	SE	1006	0	0	0	0	0	0	0	0	0	0	0	0	1006
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	91	0	0	0	91
27JUN	SE	0	0	0	0	0	0	0	0	0	91	0	0	0	91
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	49	321	0	0	0	0	0	0	0	0	0	0	370
03JUL	SE	0	49	321	0	0	0	0	0	0	0	0	0	0	325
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	3702	0	0	0	0	0	NS	NS	NS	NS	NS	3702
15JUL	SE	0	0	3702	0	0	0	0	0						3702
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-159 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
27JUN	SE	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
03JUL	SE	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-160 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-16O (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER POST YOLK-SAC LARVAE IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	42	0	0	0	0	0	0	0	0	0	0	42
27JUN	SE	0	0	42	0	0	0	0	0	0	0	0	0	0	42
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	154	0	0	0	0	0	0	0	0	0	0	0	154
03JUL	SE	0	154	0	0	0	0	0	0	0	0	0	0	0	154
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-161 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-161 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.00	NS	NS	NS	NS	NS	0.09
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.00						0.68
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.19	0.44	0.00	0.39	0.00	NS	NS	NS	NS	NS	0.13
27AUG	SE	0.00	0.00	0.00	0.19	0.28	0.00	0.34	0.00						0.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	NS	NS	NS	NS	NS	0.04
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00						0.32
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.70	0.00	0.12	2.18	0.00	NS	NS	NS	NS	NS	0.38
23SEP	SE	0.00	0.00	0.00	0.70	0.00	0.12	0.26	0.00						0.76
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.15	0.00	0.35	0.29	NS	NS	NS	NS	NS	0.10
07OCT	SE	0.00	0.00	0.00	0.00	0.15	0.00	0.35	0.29						0.48
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	142	0	0	NS	NS	NS	NS	NS	142
13AUG	SE	0	0	0	0	0	142	0	0						142
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	28	92	0	54	0	NS	NS	NS	NS	NS	175
27AUG	SE	0	0	0	28	59	0	48	0						81
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	45	0	NS	NS	NS	NS	NS	45
10SEP	SE	0	0	0	0	0	0	45	0						45
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	104	0	25	305	0	NS	NS	NS	NS	NS	434
23SEP	SE	0	0	0	104	0	25	36	0						113
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	32	0	49	87	NS	NS	NS	NS	NS	168
07OCT	SE	0	0	0	0	32	0	49	87						105
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-163 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.18	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02
20AUG	SE	0.00	0.00	0.00	0.18	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.20
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	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
03SEP	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	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.03	0.02	0.00	0.00	0.00	0.00	0.01
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.03	0.02	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.06	0.06	0.00	0.06	0.54	0.38	1.12	0.19	0.00	0.00	0.00	0.20	0.20
01OCT	SE	0.00	0.06	0.06	0.00	0.04	0.38	0.16	0.55	0.08	0.00	0.00	0.00	0.12	0.71
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.63	0.48	0.34	0.12	0.16	0.00	0.00	0.00	0.13
16OCT	SE	0.00	0.00	0.00	0.00	0.01	0.32	0.36	0.15	0.10	0.16	0.00	0.00	0.00	0.54
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.00	0.12	0.09	3.49	0.00	0.00	0.00	0.00	0.00	0.00	0.28
29OCT	SE	0.00	0.00	0.00	0.00	0.08	0.04	3.22	0.00	0.00	0.00	0.00	0.00	0.00	3.22
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.07	0.03	0.23	0.00	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.03
13NOV	SE	0.00	0.00	0.05	0.03	0.13	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.14	0.36	0.16	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.06
04DEC	SE	0.00	0.00	0.00	0.09	0.10	0.07	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.18
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	27	15	0	2	0	0	0	0	0	0	44
20AUG	SE	0	0	0	27	14	0	2	0	0	0	0	0	0	31
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	5	0	0	0	0	0	0	0	0	0	5
03SEP	SE	0	0	0	5	0	0	0	0	0	0	0	0	0	5
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	0	3	9	9	3	0	0	0	0	24
17SEP	SE	0	0	0	0	0	3	9	9	3	0	0	0	0	13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	14	19	0	13	112	52	333	32	0	0	0	14	590
01OCT	SE	0	14	19	0	7	79	22	165	14	0	0	0	8	187
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	3	131	67	100	20	22	0	0	0	343
16OCT	SE	0	0	0	0	2	66	51	45	17	22	0	0	0	99
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	25	19	488	0	0	0	0	0	0	532
29OCT	SE	0	0	0	0	17	8	450	0	0	0	0	0	0	450
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	23	5	47	0	15	5	0	0	0	0	0	95
13NOV	SE	0	0	16	5	27	0	8	5	0	0	0	0	0	33
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	20	75	34	19	0	0	0	0	0	0	148
04DEC	SE	0	0	0	13	22	15	13	0	0	0	0	0	0	32
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-165 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	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
08SEP-	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
11SEP	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	CPUE	0.00	0.00	0.07	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
08OCT	SE	0.00	0.00	0.07	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	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
22OCT	SE	0.00	0.00	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-166 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	2
27AUG	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
08SEP-	ST. CROP	0	2	4	0	0	0	0	0	0	0	0	0	6
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	2	2	0	0	0	0	0	0	0	0	4
08OCT	SE	0	0	2	2	0	0	0	0	0	0	0	0	3
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-167 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.29	1.51	0.21	0.00	NS	NS	NS	NS	NS	NS	0.29
25MAR	SE	0.00	0.00	0.00	0.29	1.51	0.21	0.00							1.55
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.00	0.00	0.26	0.64	0.18	0.00	0.78	NS	NS	NS	NS	NS	NS	0.27
01APR	SE	0.00	0.00	0.26	0.32	0.18	0.00	0.78							0.90
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	DENSITY	0.00	0.00	0.00	1.09	4.13	0.20	0.34	1.21	0.00	0.00	0.00	0.00	0.00	0.54
09APR	SE	0.00	0.00	0.00	0.65	1.82	0.20	0.34	1.21	0.00	0.00	0.00	0.00	0.00	2.32
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	0.00	0.00	0.00	0.61	5.30	0.75	0.66	1.03	0.85	0.00	0.00	0.00	0.00	0.71
16APR	SE	0.00	0.00	0.00	0.61	3.89	0.75	0.66	1.03	0.85	0.00	0.00	0.00	0.00	4.27
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.28	5.91	1.38	4.82	0.83	0.98	0.37	0.00	0.00	1.12
23APR	SE	0.00	0.00	0.00	0.00	0.16	1.98	0.94	3.52	0.83	0.98	0.37	0.00	0.00	4.36
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.20	1.39	3.78	10.72	3.88	0.93	0.16	0.43	0.00	0.00	0.00	1.65
30APR	SE	0.00	0.00	0.20	0.68	2.19	3.70	1.83	0.58	0.16	0.43	0.00	0.00	0.00	4.78
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	1.28	0.16	3.28	0.06	20.11	4.11	1.06	0.62	0.44	0.00	0.00	0.00	2.39
07MAY	SE	0.00	1.28	0.16	0.99	0.06	1.60	2.47	0.70	0.62	0.44	0.00	0.00	0.00	3.52
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	3.31	5.52	5.53	14.50	0.41	1.99	0.52	0.00	1.17	1.25	0.49	0.00	0.00	2.67
13MAY	SE	1.73	5.24	1.15	1.67	0.35	1.99	0.52	0.00	0.43	1.25	0.49	0.00	0.00	6.40
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	1.12	0.00	0.92	3.86	4.58	0.64	0.58	0.00	0.00	0.00	0.00	0.00	0.90
21MAY	SE	0.00	0.58	0.00	0.92	3.86	3.85	0.35	0.58	0.00	0.00	0.00	0.00	0.00	5.60
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	3.49	0.33	14.18	1.93	6.24	5.30	0.86	0.68	1.08	1.60	0.80	0.00	2.81
29MAY	SE	0.00	0.94	0.33	5.12	1.33	1.54	0.82	0.55	0.47	1.08	0.81	0.80	0.00	5.92
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	1.69	24.38	7.02	6.68	0.27	3.05	6.47	2.14	0.21	0.89	2.40	0.76	0.00	4.30
04JUN	SE	1.03	19.50	3.73	2.20	0.22	1.17	1.10	1.47	0.21	0.55	0.47	0.76	0.00	20.15
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	3.88	2.83	3.24	3.09	0.42	0.37	2.74	0.00	0.31	0.00	1.45	1.40	0.00	1.52
11JUN	SE	2.50	2.09	1.39	1.56	0.15	0.25	1.25	0.00	0.19	0.00	1.15	0.70	0.00	4.30
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	8.53	4.01	11.96	0.91	0.25	0.50	0.87	0.17	0.31	0.37	0.60	2.67	2.40
19JUN	SE	0.00	4.29	1.33	2.64	0.32	0.14	0.27	0.62	0.17	0.31	0.37	0.60	1.76	5.61
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	25.39	3.70	4.59	0.25	1.32	0.83	1.85	0.00	0.14	0.32	0.89	0.00	0.54	3.06
27JUN	SE	24.01	3.25	1.72	0.25	0.67	0.36	0.91	0.00	0.14	0.32	0.60	0.00	0.54	24.34
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	4.83	0.76	10.38	1.67	0.60	1.03	1.49	0.41	0.60	1.53	1.39	0.00	0.00	1.90
03JUL	SE	4.83	0.76	3.93	1.06	0.37	0.54	0.67	0.24	0.28	0.75	0.58	0.00	0.00	6.50
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	12.11	18.83	0.00	0.46	0.04	0.13	0.33	0.00	NS	NS	NS	NS	NS	3.99
15JUL	SE	11.06	18.38	0.00	0.46	0.04	0.13	0.33	0.00						21.46
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	23.31	5.30	4.47	0.30	0.91	1.50	1.70	NS	NS	NS	NS	NS	4.69
29JUL	SE	0.00	7.22	2.66	2.32	0.18	0.23	0.64	0.01						8.07
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	1.13	1.07	13.51	2.00	4.44	1.23	2.68	3.81	NS	NS	NS	NS	NS	3.73
13AUG	SE	1.13	0.86	6.47	0.91	2.25	0.44	1.18	1.46						7.31
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	3.07	1.15	8.40	7.12	2.05	23.98	1.95	NS	NS	NS	NS	NS	5.97
27AUG	SE	0.00	1.43	0.74	6.26	4.14	0.66	14.85	0.77						16.75
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	2.33	4.16	0.00	2.76	4.05	15.69	NS	NS	NS	NS	NS	3.62
10SEP	SE	0.00	0.00	2.33	2.63	0.00	1.65	2.82	9.15						10.33
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	4.91	4.90	1.46	4.59	16.94	9.52	NS	NS	NS	NS	NS	5.29
23SEP	SE	0.00	0.00	2.70	2.57	1.05	0.96	6.41	6.93						10.25
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	3.00	0.00	6.31	3.80	11.87	24.49	13.67	NS	NS	NS	NS	NS	7.89
07OCT	SE	0.00	1.51	0.00	6.31	1.76	5.68	4.11	5.71						11.27
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	43	314	43	0	NS	NS	NS	NS	NS	NS	400
25MAR	SE	0	0	0	43	314	43	0							320
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	85	94	37	0	109	NS	NS	NS	NS	NS	NS	325
01APR	SE	0	0	85	48	37	0	109							151
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	161	860	42	48	361	0	0	0	0	0	1472
09APR	SE	0	0	0	96	379	42	48	361	0	0	0	0	0	536
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	90	1105	155	92	307	141	0	0	0	0	1889
16APR	SE	0	0	0	90	809	155	92	307	141	0	0	0	0	900
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	0	0	0	0	58	1226	193	1438	138	139	64	0	0	3257
23APR	SE	0	0	0	0	34	411	131	1050	138	139	64	0	0	1154
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	64	205	789	2224	543	276	26	61	0	0	0	4187
30APR	SE	0	0	64	100	456	767	256	173	26	61	0	0	0	954
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	294	51	484	12	4172	574	317	103	63	0	0	0	6070
07MAY	SE	0	294	51	147	12	333	345	208	103	63	0	0	0	631
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	692	1267	1780	2142	86	413	72	0	194	177	87	0	0	6909
13MAY	SE	362	1203	370	247	73	413	72	0	72	177	87	0	0	1414
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	258	0	136	804	951	90	174	0	0	0	0	0	2413
21MAY	SE	0	133	0	136	804	798	50	174	0	0	0	0	0	1163
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	801	106	2095	402	1294	740	258	112	153	283	128	0	6372
29MAY	SE	0	215	106	756	278	319	115	165	78	153	143	128	0	957
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	353	5593	2259	987	57	633	904	639	34	126	423	121	0	12129
04JUN	SE	215	4473	1199	325	47	244	154	437	34	78	84	121	0	4680
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-168 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	810	650	1043	456	88	76	384	0	51	0	255	224	0	4037
11JUN	SE	523	480	447	230	31	52	175	0	31	0	202	113	0	920
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	1957	1291	1767	191	51	70	261	27	44	65	97	190	6010
19JUN	SE	0	984	427	390	67	30	37	185	27	44	65	97	125	1173
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	5307	850	1476	36	276	173	259	0	23	46	158	0	38	8640
27JUN	SE	5019	746	552	36	140	76	127	0	23	46	105	0	38	5110
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	1009	173	3339	247	124	214	209	123	100	216	246	0	0	6000
03JUL	SE	1009	173	1263	156	77	113	93	71	47	106	102	0	0	1651
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	2531	4319	0	68	9	26	46	0	NS	NS	NS	NS	NS	7000
15JUL	SE	2312	4217	0	68	9	26	46	0						4810
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	5348	1706	660	64	188	210	506	NS	NS	NS	NS	NS	8682
29JUL	SE	0	1656	857	343	38	48	90	4						1899
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	236	246	4347	295	925	254	375	1135	NS	NS	NS	NS	NS	7814
13AUG	SE	236	196	2081	135	468	91	165	436						2211
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	704	372	1240	1484	426	3352	583	NS	NS	NS	NS	NS	8161
27AUG	SE	0	329	239	924	862	137	2076	229						2479
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	750	614	0	572	566	4678	NS	NS	NS	NS	NS	7180
10SEP	SE	0	0	750	389	0	342	395	2728						2903
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	1579	724	304	953	2368	2839	NS	NS	NS	NS	NS	8767
23SEP	SE	0	0	868	379	219	200	897	2066						2461
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	689	0	932	792	2462	3423	4077	NS	NS	NS	NS	NS	12375
07OCT	SE	0	347	0	932	367	1177	574	1703						2396
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-169 REGIONAL DENSITY (NO./1,000m3) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.48	22.78	1.31	3.71	2.68	5.71	5.58	3.25	0.92	3.67	2.11	0.12	0.77	4.08
10JUL	SE	0.29	7.17	0.48	1.05	0.44	4.02	1.60	0.93	0.46	0.52	1.07	0.12	0.46	8.63
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	16.37	19.19	16.24	10.08	1.63	0.77	7.10	1.78	0.46	1.76	0.11	0.00	0.00	5.81
24JUL	SE	3.25	4.80	12.27	1.89	0.58	0.17	2.11	0.52	0.17	0.45	0.11	0.00	0.00	13.90
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	1.32	36.79	1.89	5.35	2.23	0.68	2.26	1.09	0.66	0.87	0.63	0.00	0.00	4.14
07AUG	SE	0.52	12.46	0.63	2.07	0.82	0.19	0.62	0.27	0.19	0.87	0.41	0.00	0.00	12.74
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.07	4.02	12.76	17.33	4.98	4.22	8.57	0.97	0.36	0.18	0.27	0.00	0.74	4.19
20AUG	SE	0.04	1.29	2.20	3.10	1.36	1.19	4.20	0.30	0.13	0.18	0.27	0.00	0.43	6.12
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.91	2.72	4.85	3.87	1.94	4.84	4.45	2.65	0.68	0.55	0.13	0.11	0.00	2.13
03SEP	SE	0.52	1.76	1.65	0.87	0.63	1.60	1.22	0.79	0.37	0.24	0.13	0.11	0.00	3.49
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.80	8.31	14.81	8.68	12.10	10.54	21.57	10.21	5.24	4.77	2.48	0.00	4.29	7.98
17SEP	SE	0.42	3.26	3.24	1.73	3.26	5.31	2.37	3.03	0.90	0.44	0.50	0.00	0.59	8.92
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.26	7.55	9.71	5.35	16.55	7.90	14.26	21.01	5.58	8.54	4.22	1.40	4.21	8.20
01OCT	SE	0.15	3.11	2.25	2.66	4.87	2.21	3.61	6.48	1.52	2.16	1.78	1.40	2.23	11.07
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.15	5.04	7.45	6.64	5.64	17.11	31.66	19.94	8.91	12.13	2.78	0.00	0.52	9.07
16OCT	SE	0.09	1.85	2.53	1.75	0.92	5.15	8.02	6.78	3.62	1.12	1.30	0.00	0.52	12.92
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.03	0.06	1.35	0.48	24.10	29.13	10.10	4.58	5.79	3.07	2.46	0.00	0.06	6.25
29OCT	SE	0.03	0.05	0.54	0.42	6.96	6.83	3.90	0.58	1.55	1.01	0.44	0.00	0.06	10.71
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.04	4.62	1.50	7.61	15.89	10.75	20.87	6.00	5.36	4.10	0.77	0.05	0.00	5.97
13NOV	SE	0.04	1.15	0.54	3.64	3.76	2.57	2.71	1.72	0.76	1.63	0.40	0.05	0.00	7.03
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	2.32	4.94	15.42	12.38	11.84	13.48	4.97	2.58	2.59	0.82	0.12	0.12	5.51
04DEC	SE	0.00	0.69	0.86	3.43	3.51	2.03	2.04	1.40	0.77	0.69	0.39	0.12	0.12	6.06
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	101	5226	421	548	559	1184	780	969	152	519	373	19	55	10905
10JUL	SE	62	1646	154	155	91	833	224	276	75	74	189	19	32	1907
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	3422	4403	5225	1490	340	160	993	531	76	249	20	0	0	16909
24JUL	SE	680	1102	3950	280	120	36	295	154	27	64	20	0	0	4182
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	275	8441	607	791	465	141	315	324	109	124	112	0	0	11703
07AUG	SE	110	2858	203	306	171	40	87	81	32	124	71	0	0	2895
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	14	923	4106	2561	1038	876	1199	289	59	26	48	0	53	11191
20AUG	SE	9	295	708	459	284	247	587	90	22	26	48	0	31	1139
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	190	624	1561	572	405	1003	622	791	113	78	22	18	0	5998
03SEP	SE	109	404	531	129	131	332	170	236	61	33	22	18	0	832
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	166	1906	4766	1282	2521	2186	3016	3043	867	675	437	0	305	21169
17SEP	SE	89	747	1044	256	680	1102	331	902	149	62	89	0	42	2087
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	54	1733	3124	791	3447	1639	1993	6264	924	1209	743	224	299	22445
01OCT	SE	31	713	724	392	1016	459	504	1932	251	306	314	224	158	2598
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	31	1155	2398	980	1175	3549	4426	5943	1475	1716	489	0	37	23375
16OCT	SE	19	424	815	259	191	1069	1122	2020	599	159	229	0	37	2805
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	6	14	433	71	5022	6043	1413	1365	958	434	434	0	4	16196
29OCT	SE	6	10	172	62	1450	1417	545	173	256	143	77	0	4	2136
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	9	1059	483	1125	3310	2230	2918	1790	887	580	135	8	0	14534
13NOV	SE	9	265	175	538	784	534	379	512	127	231	70	8	0	1330
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	532	1590	2278	2580	2456	1884	1483	427	367	145	20	8	13770
04DEC	SE	0	157	277	507	731	420	285	418	127	97	68	20	8	1164
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.11	0.00	0.05
18JUN	SE	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.07	0.00	0.36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
02JUL	SE	0.00	0.00	0.00	0.67	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
13JUL-	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
15JUL	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
27JUL-	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
30JUL	SE	0.00	0.04	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.04	0.14	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
13AUG	SE	0.00	0.04	0.10	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.13	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.10	0.00	0.03
27AUG	SE	0.00	0.09	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.10	0.00	0.21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.20	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
11SEP	SE	0.20	0.04	0.00	0.00	0.00	0.00	0.00	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
21SEP-	CPUE	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
24SEP	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	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
08OCT	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	0.20
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	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
22OCT	SE	0.00	0.00	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-172 REGIONAL STANDING CROP (IN THOUSANDS) OF HOGCHOKER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	3	0	0	0	0	0	0	0	1	0	2	0	6
18JUN	SE	3	0	0	0	0	0	0	0	1	0	1	0	3
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	12	0	0	0	0	0	0	0	0	12
02JUL	SE	0	0	0	6	0	0	0	0	0	0	0	0	6
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	4
15JUL	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
27JUL-	ST. CROP	0	2	4	0	0	0	0	0	0	0	0	0	6
30JUL	SE	0	2	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
10AUG-	ST. CROP	0	2	4	2	0	0	0	0	0	0	0	0	8
13AUG	SE	0	2	3	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
24AUG-	ST. CROP	0	6	0	0	0	2	0	0	0	0	2	0	9
27AUG	SE	0	4	0	0	0	2	0	0	0	0	2	0	5
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	2	2	0	0	0	0	0	0	0	0	0	0	3
11SEP	SE	2	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
21SEP-	ST. CROP	0	0	0	2	0	0	0	0	0	0	0	0	2
24SEP	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
05OCT-	ST. CROP	0	0	0	2	0	0	0	0	0	0	0	0	2
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-173 REGIONAL DENSITY (NO./1,000m3) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	0.05	0.00	NS	NS	NS	NS	NS	0.02
15JUL	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.05	0.00						0.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	NS	NS	NS	NS	NS	0.04
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29						0.29
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-174 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	26	7	0	NS	NS	NS	NS	NS	33
15JUL	SE	0	0	0	0	0	26	7	0						27
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	88	NS	NS	NS	NS	NS	88
13AUG	SE	0	0	0	0	0	0	0	88						88
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	< 0.005
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.56	0.00	0.06
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.56	0.00	0.60
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.04
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.50
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
03SEP	SE	0.00	0.00	0.00	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
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	0.21	0.02
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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	0.21	0.02
16OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	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	0.13	0.01
29OCT	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	0.08	0.09
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.06	0.00	0.00	0.01
13NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.00	0.00	0.05
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	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	0.05	0.01
04DEC	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	0.05	0.06
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	11	0	0	11
10JUL	SE	0	0	0	0	0	0	0	0	0	0	11	0	0	11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	65	0	0	0	90	0	155
07AUG	SE	0	0	0	0	0	0	0	65	0	0	0	90	0	111
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	81	0	81
20AUG	SE	0	0	0	0	0	0	0	0	0	0	0	81	0	81
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	15	15
17SEP	SE	0	0	0	0	0	0	0	0	0	0	0	0	9	9
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	15	15
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	15	15
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	3	0	0	0	0	0	9	12
29OCT	SE	0	0	0	0	0	0	3	0	0	0	0	0	6	7
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	5	11	0	0	16
13NOV	SE	0	0	0	0	0	0	0	0	0	5	7	0	0	9
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	4	7
04DEC	SE	0	0	0	4	0	0	0	0	0	0	0	0	4	5
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.14	9.67	0.67	0.67	4.50	0.25	29.00	3.73	10.00	8.17	5.57
18JUN	SE	0.00	0.00	0.14	9.67	0.33	0.67	3.67	0.25	17.45	1.21	9.01	4.26	22.65
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.14	0.33	0.00	4.67	17.13	5.50	6.38	9.73	11.74	25.92	6.79
02JUL	SE	0.00	0.00	0.14	0.33	0.00	4.67	13.23	2.35	3.39	3.60	4.80	15.47	22.11
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	0.00	1.00	3.33	5.00	25.13	5.50	2.87	9.79	6.67	4.94
15JUL	SE	0.00	0.00	0.00	0.00	1.00	3.33	2.42	9.51	3.56	1.20	5.40	4.04	12.96
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.00	0.07	0.20	10.80	3.33	0.80	6.60	0.60	3.00	2.90	7.86	3.01
30JUL	SE	0.00	0.00	0.07	0.20	5.69	2.11	0.58	2.40	0.40	2.28	1.07	2.83	7.58
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.00	0.21	2.60	1.00	2.33	10.80	22.60	8.80	18.44	2.90	8.14	6.49
13AUG	SE	0.00	0.00	0.15	1.66	0.32	1.20	6.41	12.11	5.02	11.19	2.68	2.46	18.86
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.00	0.07	0.20	7.80	0.83	8.00	13.00	3.00	5.67	1.80	1.14	3.46
27AUG	SE	0.00	0.00	0.07	0.20	4.61	0.83	5.81	6.20	2.14	3.48	0.77	1.14	10.62
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.00	0.00	0.00	1.80	1.67	20.60	12.20	15.20	15.56	9.60	0.29	6.41
11SEP	SE	0.00	0.00	0.00	0.00	1.36	1.67	12.59	3.53	6.08	5.66	2.42	0.18	15.82
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	0.00	0.00	0.00	1.40	0.83	5.40	11.80	6.80	15.78	4.10	135.57	15.14
24SEP	SE	0.00	0.00	0.00	0.00	0.75	0.54	3.17	10.14	5.83	12.72	1.42	124.91	126.15
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.00	0.00	1.00	0.40	0.50	6.20	28.20	8.40	27.67	13.50	3.29	7.43
08OCT	SE	0.00	0.00	0.00	1.00	0.24	0.34	5.23	9.09	3.61	22.35	7.55	2.68	26.23
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.00	0.00	0.40	9.40	0.50	0.80	14.80	2.40	7.78	4.90	9.29	4.19
22OCT	SE	0.00	0.00	0.00	0.40	8.41	0.34	0.58	1.77	2.40	2.92	1.88	6.90	11.82
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	4	89	2	7	32	< 0.5	250	66	197	111	757
18JUN	SE	0	0	4	89	1	7	26	< 0.5	150	21	177	58	258
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	4	3	0	50	122	7	55	171	231	352	994
02JUL	SE	0	0	4	3	0	50	94	3	29	63	95	210	263
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	3	36	35	31	47	50	193	91	486
15JUL	SE	0	0	0	0	3	36	17	12	31	21	106	55	132
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	0	2	2	28	36	6	8	5	53	57	107	303
30JUL	SE	0	0	2	2	15	22	4	3	3	40	21	38	66
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	0	6	24	3	25	77	28	76	324	57	111	729
13AUG	SE	0	0	4	15	1	13	46	15	43	196	53	33	217
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	2	2	21	9	57	16	26	99	35	16	282
27AUG	SE	0	0	2	2	12	9	41	8	18	61	15	16	81
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	0	0	0	5	18	146	15	131	273	189	4	781
11SEP	SE	0	0	0	0	4	18	89	4	52	99	48	3	152
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	0	0	0	4	9	38	15	59	277	81	1842	2324
24SEP	SE	0	0	0	0	2	6	23	13	50	223	28	1697	1713
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	0	0	9	1	5	44	35	72	486	266	45	963
08OCT	SE	0	0	0	9	1	4	37	11	31	392	149	36	424
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	0	0	4	25	5	6	18	21	137	96	126	438
22OCT	SE	0	0	0	4	22	4	4	2	21	51	37	94	117
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	NS	NS	NS	NS	NS	NS	0.01
25MAR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06							0.06
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
06APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.03
09APR	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.33
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.01
21MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.80	1.96	0.33
29MAY	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.80	1.14	1.54
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.69	0.70	0.17
04JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.69	0.70	1.28
	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.57	0.68	0.15
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.57	0.68	1.13
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81	0.00	0.00	0.00	0.22
19JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81	0.00	0.00	0.00	2.81
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.37	1.01	1.18	0.20
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.37	0.51	1.18	1.34
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	2.50	0.00	0.56	0.00	0.26
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	2.10	0.00	0.56	0.00	2.19
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.56	NS	NS	NS	NS	NS	0.11
29JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.56						0.64
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	NS	NS	NS	NS	NS	0.01
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00						0.06
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	NS	NS	NS	NS	NS	0.08
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00						0.66
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	9	NS	NS	NS	NS	NS	NS	9
25MAR	SE	0	0	0	0	0	0	9							9
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	59	0	0	59
09APR	SE	0	0	0	0	0	0	0	0	0	0	59	0	0	59
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	43	0	0	0	0	0	43
21MAY	SE	0	0	0	0	0	0	0	43	0	0	0	0	0	43
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	263	128	140	531
29MAY	SE	0	0	0	0	0	0	0	0	0	0	116	128	81	191
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	145	111	50	306
04JUN	SE	0	0	0	0	0	0	0	0	0	0	145	111	50	189
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-18O (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	125	91	48	265
11JUN	SE	0	0	0	0	0	0	0	0	0	0	125	91	48	162
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	398	0	0	0	398
19JUN	SE	0	0	0	0	0	0	0	0	0	398	0	0	0	398
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	0	0	14	0	0	0	65	162	84	326
27JUN	SE	0	0	0	0	0	0	14	0	0	0	65	81	84	135
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	51	353	0	91	0	495
03JUL	SE	0	0	0	0	0	0	0	0	51	296	0	91	0	314
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	45	166	NS	NS	NS	NS	NS	211
29JUL	SE	0	0	0	0	0	0	45	166						172
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	14	0	NS	NS	NS	NS	NS	14
13AUG	SE	0	0	0	0	0	0	8	0						8
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	136	0	0	NS	NS	NS	NS	NS	136
27AUG	SE	0	0	0	0	0	136	0	0						136
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.02	2.02	0.23	0.73	1.55	0.35
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.02	1.31	0.15	0.35	0.66	1.52
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.11	0.12	0.00	0.00	0.02
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.11	0.07	0.00	0.00	0.14
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.14	0.13	0.00	0.02
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.08	0.13	0.00	0.15
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.00	0.03	0.32	0.07	0.00	0.11	0.04
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.00	0.02	0.32	0.07	0.00	0.11	0.34
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.11	0.06	0.00	0.09	0.02
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.06	0.00	0.09	0.13
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02	1.43	0.00	0.00	0.11	0.12
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.60	0.00	0.00	0.11	0.61
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	1.94	0.21	0.00	0.00	0.18
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.95	0.07	0.00	0.00	0.95
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.14	0.00	0.24	0.10	0.04
16OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.14	0.00	0.12	0.10	0.21
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.07	0.00	0.32	0.00	0.04	1.14	0.14
29OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.12	0.00	0.04	0.40	0.43
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.09	0.07	0.74	0.56	0.00	0.00	0.12
13NOV	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.05	0.31	0.26	0.00	0.00	0.42
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.02	0.00	0.00	0.09	0.06	0.02	0.04	0.08	0.55	0.43	0.10
04DEC	SE	0.00	0.00	0.00	0.02	0.00	0.00	0.06	0.04	0.02	0.04	0.06	0.18	0.17	0.27
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-182 REGIONAL STANDING CROP (IN THOUSANDS) OF SPOTTAIL SHINER YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	2	0	9	4	286	40	117	110	569
10JUL	SE	0	0	0	0	0	2	0	6	4	185	26	57	47	201
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	0	0	12	0	16	21	0	0	50
24JUL	SE	0	0	0	0	0	0	0	9	0	16	12	0	0	22
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	5	0	0	25	21	0	50
07AUG	SE	0	0	0	0	0	0	0	5	0	0	14	21	0	26
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	1	0	6	45	12	0	8	71
20AUG	SE	0	0	0	0	0	0	1	0	4	45	12	0	8	47
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	7	16	11	0	7	40
03SEP	SE	0	0	0	0	0	0	0	0	4	9	11	0	7	16
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	0	0	0	14	3	203	0	0	8	228
17SEP	SE	0	0	0	0	0	0	0	10	3	85	0	0	8	86
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	0	42	0	274	36	0	0	352
01OCT	SE	0	0	0	0	0	0	0	17	0	134	12	0	0	136
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	6	4	0	19	0	38	7	75
16OCT	SE	0	0	0	0	0	0	6	4	0	19	0	19	7	29
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	37	20	0	45	0	6	81	188
29OCT	SE	0	0	0	0	0	0	12	15	0	16	0	6	28	38
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	0	0	17	26	11	105	98	0	0	258
13NOV	SE	0	0	0	0	0	0	11	14	9	44	46	0	0	67
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	4	0	0	12	19	3	5	14	89	31	177
04DEC	SE	0	0	0	4	0	0	8	10	3	5	10	28	12	36
	NO. TOWS	12	16	13	12	15	12	15	10	9	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.00	0.00	0.00	0.00	1.00	2.00	5.50	17.13	7.38	14.87	12.95	2.67	5.29
18JUN	SE	0.00	0.00	0.00	0.00	0.58	0.58	3.77	4.19	4.00	9.05	3.98	2.49	12.34
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	CPUE	0.00	0.00	0.00	1.67	0.00	12.33	21.50	22.50	1.00	8.73	14.32	0.00	6.84
02JUL	SE	0.00	0.00	0.00	1.20	0.00	12.33	15.93	10.10	0.73	4.75	5.24	0.00	23.66
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	CPUE	0.00	0.00	0.00	0.00	13.67	2.00	14.63	25.38	6.88	8.87	13.95	0.17	7.13
15JUL	SE	0.00	0.00	0.00	0.00	12.20	2.00	8.50	10.02	3.82	2.89	6.32	0.17	19.71
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.00	0.04	0.00	0.40	3.40	0.00	0.40	9.40	0.00	3.22	3.40	15.57	2.99
30JUL	SE	0.00	0.04	0.00	0.24	1.54	0.00	0.40	4.08	0.00	0.85	0.73	8.73	9.83
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	0.00	0.00	0.00	0.80	4.40	0.83	0.00	11.00	3.40	3.67	0.30	1.57	2.16
13AUG	SE	0.00	0.00	0.00	0.49	4.15	0.83	0.00	5.30	1.91	2.25	0.30	0.81	7.47
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.00	0.07	0.00	5.00	0.00	3.60	22.40	0.00	1.56	1.20	0.00	2.82
27AUG	SE	0.00	0.00	0.07	0.00	3.35	0.00	2.42	8.85	0.00	0.44	0.71	0.00	9.80
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.00	0.04	0.00	0.00	0.00	6.00	2.00	19.40	2.40	4.22	10.10	0.00	3.68
11SEP	SE	0.00	0.04	0.00	0.00	0.00	6.00	1.14	7.21	2.40	1.61	2.57	0.00	10.21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	CPUE	0.00	0.00	0.00	0.00	1.00	0.17	11.40	8.20	2.00	5.33	8.30	9.57	3.83
24SEP	SE	0.00	0.00	0.00	0.00	1.00	0.17	4.70	5.79	2.00	2.43	2.99	9.24	12.68
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.00	0.04	0.07	0.40	0.20	0.00	12.80	14.00	4.20	7.44	6.40	0.00	3.80
08OCT	SE	0.00	0.04	0.07	0.40	0.20	0.00	11.59	8.31	1.83	3.93	2.35	0.00	15.10
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.00	0.04	0.00	0.60	1.80	2.17	3.20	2.20	1.20	2.67	2.50	0.57	1.41
22OCT	SE	0.00	0.04	0.00	0.40	1.32	1.64	2.27	0.58	0.97	1.26	2.08	0.37	4.13
	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	3	21	39	21	63	261	255	36	700
18JUN	SE	0	0	0	0	2	6	27	5	34	159	78	34	186
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	15	0	131	153	28	9	153	282	0	771
02JUL	SE	0	0	0	11	0	131	113	13	6	83	103	0	219
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
13JUL-	ST. CROP	0	0	0	0	36	21	104	31	59	156	274	2	684
15JUL	SE	0	0	0	0	32	21	60	12	33	51	124	2	156
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	0	2	0	4	9	0	3	12	0	57	67	212	364
30JUL	SE	0	2	0	2	4	0	3	5	0	15	14	119	121
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	0	0	0	7	12	9	0	14	29	64	6	21	162
13AUG	SE	0	0	0	5	11	9	0	7	16	40	6	11	48
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	0	2	0	13	0	26	28	0	27	24	0	119
27AUG	SE	0	0	2	0	9	0	17	11	0	8	14	0	27
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	0	2	0	0	0	64	14	24	21	74	199	0	398
11SEP	SE	0	2	0	0	0	64	8	9	21	28	51	0	90
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	0	0	0	3	2	81	10	17	94	163	130	500
24SEP	SE	0	0	0	0	3	2	33	7	17	43	59	126	150
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	0	2	2	4	1	0	91	17	36	131	126	0	409
08OCT	SE	0	2	2	4	1	0	82	10	16	69	46	0	118
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	0	2	0	6	5	23	23	3	10	47	49	8	175
22OCT	SE	0	2	0	4	3	17	16	1	8	22	41	5	53
	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 YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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 YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.02
27JUN	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.23
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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 YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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 YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	70	0	0	0	0	0	70
27JUN	SE	0	0	0	0	0	0	0	70	0	0	0	0	0	70
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-187 REGIONAL DENSITY (NO./1,000m3) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
23APR	SE	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	NS	NS	NS	NS	NS	0.02
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00						0.13
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	21	0	0	0	0	0	0	0	21
23APR	SE	0	0	0	0	0	21	0	0	0	0	0	0	0	21
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	26	0	0	NS	NS	NS	NS	NS	26
27AUG	SE	0	0	0	0	0	26	0	0						26
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	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, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	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	< 0.005
10JUL	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	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
07AUG	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	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.01	0.02	0.00	0.00	0.00	0.00	< 0.005
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	0.01	0.02	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
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
03SEP	SE	0.00	0.00	0.00	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
14SEP-	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	< 0.005
17SEP	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	0.01
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	< 0.005
16OCT	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	0.02
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.03	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
29OCT	SE	0.00	0.00	0.00	0.03	0.00	0.01	0.02	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.03	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13NOV	SE	0.00	0.00	0.00	0.00	0.02	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
04DEC	SE	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-190 REGIONAL STANDING CROP (IN THOUSANDS) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	4	0	0	0	0	0	0	0	4
10JUL	SE	0	0	0	0	0	3	0	0	0	0	0	0	0	3
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	0	2
24JUL	SE	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	5	0	0	0	0	0	0	5
07AUG	SE	0	0	0	0	0	0	5	0	0	0	0	0	0	5
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	1	4	3	0	0	0	0	7
20AUG	SE	0	0	0	0	0	0	1	4	3	0	0	0	0	5
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	4	0	0	0	0	0	4
17SEP	SE	0	0	0	0	0	0	0	4	0	0	0	0	0	4
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	0	2
01OCT	SE	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	6	0	0	0	0	6
16OCT	SE	0	0	0	0	0	0	0	0	4	0	0	0	0	4
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	4	0	3	3	0	0	0	0	0	0	10
29OCT	SE	0	0	0	4	0	2	3	0	0	0	0	0	0	5
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	7	15	3	0	0	0	0	0	0	24
13NOV	SE	0	0	0	0	5	10	3	0	0	0	0	0	0	11
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	4	3	0	0	0	0	0	0	0	0	6
04DEC	SE	0	0	0	4	3	0	0	0	0	0	0	0	0	5
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-191 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF ATLANTIC STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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 SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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 SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
27AUG	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
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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 SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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 SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
27AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-195 REGIONAL DENSITY (NO./1,000m3) OF SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	< 0.005
10JUL	SE	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	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
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
24JUL	SE	0.00	0.00	0.00	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	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	< 0.005
07AUG	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	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	< 0.005
20AUG	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	0.02
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
16OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.03	0.00	0.00	0.00	< 0.005
13NOV	SE	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.04
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	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
04DEC	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-196 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	4	0	0	0	3	0	0	0	0	7
10JUL	SE	0	0	0	0	4	0	0	0	3	0	0	0	0	5
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24JUL	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	2	0	0	3	0	0	0	0	5
07AUG	SE	0	0	0	0	0	2	0	0	3	0	0	0	0	4
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	3	0	0	0	0	3
20AUG	SE	0	0	0	0	0	0	0	0	3	0	0	0	0	3
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	0	2
01OCT	SE	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	2	0	0	0	0	0	0	0	2
16OCT	SE	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	3	0	0	3	4	0	0	0	11
13NOV	SE	0	0	0	0	0	3	0	0	3	4	0	0	0	6
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04DEC	SE	0	4	0	0	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-197 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-198 REGIONAL STANDING CROP (IN THOUSANDS) OF SHORTNOSE STURGEON YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-199 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-199 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	NS	NS	NS	NS	NS	0.04
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30						0.30
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	NS	NS	NS	NS	NS	0.04
27AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00						0.23
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.48	0.11	0.29	NS	NS	NS	NS	NS	0.11
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.48	0.06	0.29						0.56
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.43	NS	NS	NS	NS	NS	0.07
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.43						0.45
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.14	0.65	0.29	NS	NS	NS	NS	NS	0.14
07OCT	SE	0.00	0.00	0.00	0.00	0.00	0.14	0.33	0.29						0.46
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-200 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-200 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	89	NS	NS	NS	NS	NS	89
13AUG	SE	0	0	0	0	0	0	0	89						89
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	0	0	48	0	NS	NS	NS	NS	NS	48
27AUG	SE	0	0	0	0	0	0	32	0						32
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	99	16	87	NS	NS	NS	NS	NS	202
10SEP	SE	0	0	0	0	0	99	9	87						132
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	26	0	129	NS	NS	NS	NS	NS	155
23SEP	SE	0	0	0	0	0	26	0	129						132
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	29	90	87	NS	NS	NS	NS	NS	207
07OCT	SE	0	0	0	0	0	29	46	87						103
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-201 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
20JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.22	0.49	0.39	0.00	0.00	0.54	0.00	0.13
24JUL	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.09	0.19	0.39	0.00	0.00	0.54	0.00	0.70
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	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
07AUG	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	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.01
20AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.18
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	< 0.005
03SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	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
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.01
17SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.07
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.01
01OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.02	0.00	0.00	0.07	0.00	0.00	0.01
16OCT	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.00	0.07	0.00	0.00	0.09
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.03	0.00	0.03	0.03	0.00	0.00	0.02
29OCT	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.02	0.00	0.03	0.03	0.00	0.00	0.08
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	< 0.005
13NOV	SE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-202 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	0	0	0	0	0	2	30	146	65	0	0	87	0	330
24JUL	SE	0	0	0	0	0	2	12	57	65	0	0	87	0	123
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	4	0	0	0	0	0	0	0	0	0	4
07AUG	SE	0	0	0	4	0	0	0	0	0	0	0	0	0	4
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	54	0	0	0	0	0	54
20AUG	SE	0	0	0	0	0	0	0	54	0	0	0	0	0	54
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	0	0	0	0	4	4	0	0	0	0	0	8
03SEP	SE	0	0	0	0	0	0	4	4	0	0	0	0	0	6
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	0	0	0	0	15	9	0	0	0	0	0	24
17SEP	SE	0	0	0	0	0	0	9	6	0	0	0	0	0	11
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	0	0	0	18	3	0	0	0	0	21
01OCT	SE	0	0	0	0	0	0	0	7	3	0	0	0	0	8
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	11	5	0	0	12	0	0	28
16OCT	SE	0	0	0	0	0	0	7	5	0	0	12	0	0	15
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	2	19	10	0	4	4	0	0	39
29OCT	SE	0	0	0	0	0	2	8	7	0	4	4	0	0	13
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	0	2	0	0	0	4	0	0	0	6
13NOV	SE	0	0	0	0	0	2	0	0	0	4	0	0	0	4
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-203 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-204 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	2	0	0	0	0	0	0	0	0	0	2
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-205 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
06APR-	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	0.01
09APR	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	0.00	0.15
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	DENSITY	0.00	0.00	0.00	0.21	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
16APR	SE	0.00	0.00	0.00	0.21	0.46	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
20APR-	DENSITY	0.00	0.00	0.00	0.00	0.14	0.20	0.00	0.30	0.23	0.00	0.00	0.00	0.00	0.07
23APR	SE	0.00	0.00	0.00	0.00	0.14	0.13	0.00	0.30	0.23	0.00	0.00	0.00	0.00	0.42
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	DENSITY	0.00	0.00	0.00	0.20	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
30APR	SE	0.00	0.00	0.00	0.20	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	DENSITY	0.00	0.00	0.19	0.00	0.06	0.00	0.00	0.17	0.16	0.00	0.00	0.00	0.00	0.04
07MAY	SE	0.00	0.00	0.19	0.00	0.06	0.00	0.00	0.17	0.16	0.00	0.00	0.00	0.00	0.30
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	DENSITY	0.00	0.21	0.18	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
13MAY	SE	0.00	0.21	0.18	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	DENSITY	0.00	0.00	0.00	0.23	0.00	0.79	0.00	0.00	0.19	0.32	0.00	0.00	0.00	0.12
21MAY	SE	0.00	0.00	0.00	0.23	0.00	0.79	0.00	0.00	0.19	0.32	0.00	0.00	0.00	0.91
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.22	0.22	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.05
04JUN	SE	0.00	0.00	0.22	0.22	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.41
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-205 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.05
11JUN	SE	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.36
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	DENSITY	0.00	0.00	0.00	0.28	0.24	0.00	0.00	0.00	0.00	2.87	4.60	0.00	0.00	0.62
19JUN	SE	0.00	0.00	0.00	0.28	0.15	0.00	0.00	0.00	0.00	1.40	2.40	0.00	0.00	2.80
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.00	0.00	0.00	0.12	0.00	0.05	0.91	0.00	0.00	0.00	0.00	0.00	0.08
27JUN	SE	0.00	0.00	0.00	0.00	0.12	0.00	0.05	0.91	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
29JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.01
03JUL	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.15
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.39	0.00	0.00	0.00	0.20	0.29	NS	NS	NS	NS	NS	0.11
29JUL	SE	0.00	0.00	0.39	0.00	0.00	0.00	0.20	0.29						0.53
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	NS	NS	NS	NS	NS	0.01
13AUG	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00						0.05
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	0.00	0.00	0.00	0.00	0.04	0.00	0.10	0.00	NS	NS	NS	NS	NS	0.02
27AUG	SE	0.00	0.00	0.00	0.00	0.04	0.00	0.06	0.00						0.07
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	NS	NS	NS	NS	NS	0.01
10SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00						0.06
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	NS	NS	NS	NS	NS	0.04
23SEP	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00						0.31
	NO. TOWS	6	11	13	14	13	8	10	6						81
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
07OCT	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-206 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	32	0	0	0	0	0	0	0	0	32
09APR	SE	0	0	0	0	32	0	0	0	0	0	0	0	0	32
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
13APR-	ST. CROP	0	0	0	31	96	0	0	0	0	0	0	0	0	127
16APR	SE	0	0	0	31	96	0	0	0	0	0	0	0	0	101
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
20APR-	ST. CROP	0	0	0	0	30	42	0	91	37	0	0	0	0	200
23APR	SE	0	0	0	0	30	26	0	91	37	0	0	0	0	106
	NO. TOWS	7	13	15	15	12	10	11	6	7	7	7	7	9	126
27APR-	ST. CROP	0	0	0	29	90	0	0	0	0	0	0	0	0	119
30APR	SE	0	0	0	29	90	0	0	0	0	0	0	0	0	94
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
04MAY-	ST. CROP	0	0	61	0	12	0	0	51	26	0	0	0	0	149
07MAY	SE	0	0	61	0	12	0	0	51	26	0	0	0	0	84
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
11MAY-	ST. CROP	0	49	57	66	0	0	0	0	0	0	0	0	0	172
13MAY	SE	0	49	57	66	0	0	0	0	0	0	0	0	0	100
	NO. TOWS	6	13	15	15	12	6	14	10	11	7	8	8	10	135
18MAY-	ST. CROP	0	0	0	34	0	164	0	0	32	46	0	0	0	276
21MAY	SE	0	0	0	34	0	164	0	0	32	46	0	0	0	177
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	72	32	0	0	36	0	0	0	0	0	0	141
04JUN	SE	0	0	72	32	0	0	36	0	0	0	0	0	0	87
	NO. TOWS	8	10	14	14	13	7	14	10	9	7	8	6	6	126

TABLE E-206 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	56	0	125	0	0	0	0	0	181
11JUN	SE	0	0	0	0	0	56	0	72	0	0	0	0	0	91
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
15JUN-	ST. CROP	0	0	0	41	50	0	0	0	0	407	812	0	0	1309
19JUN	SE	0	0	0	41	30	0	0	0	0	198	424	0	0	471
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	0	0	0	26	0	7	270	0	0	0	0	0	303
27JUN	SE	0	0	0	0	26	0	7	270	0	0	0	0	0	271
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	ST. CROP	0	0	0	0	0	0	20	0	0	0	0	0	0	20
03JUL	SE	0	0	0	0	0	0	20	0	0	0	0	0	0	20
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	127	0	0	0	28	85	NS	NS	NS	NS	NS	240
29JUL	SE	0	0	127	0	0	0	28	85						155
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	7	0	NS	NS	NS	NS	NS	7
13AUG	SE	0	0	0	0	0	0	7	0						7
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	0	0	0	9	0	14	0	NS	NS	NS	NS	NS	23
27AUG	SE	0	0	0	0	9	0	8	0						12
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	8	0	NS	NS	NS	NS	NS	8
10SEP	SE	0	0	0	0	0	0	8	0						8
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	43	0	NS	NS	NS	NS	NS	43
23SEP	SE	0	0	0	0	0	0	43	0						43
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-207 REGIONAL DENSITY (NO./1,000m3) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.03	0.00	0.02	0.00	0.04	0.05	0.00	0.00	0.08	0.00	0.00	0.02
10JUL	SE	0.00	0.00	0.03	0.00	0.01	0.00	0.03	0.03	0.00	0.00	0.08	0.00	0.00	0.09
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.10	0.06	0.01	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.02
24JUL	SE	0.00	0.00	0.05	0.04	0.01	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.00	0.03	0.05	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
07AUG	SE	0.00	0.03	0.03	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
20AUG	SE	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.00	0.03	0.07	0.01	0.00	0.02	0.00	0.00	0.06	0.00	0.11	0.00	0.02
03SEP	SE	0.00	0.00	0.03	0.05	0.01	0.00	0.02	0.00	0.00	0.06	0.00	0.11	0.00	0.14
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	0.00	0.00	0.03	0.08	0.06	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.22	0.04
17SEP	SE	0.00	0.00	0.03	0.05	0.03	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.22	0.24
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.00	0.00	0.00	0.03	0.07	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01
01OCT	SE	0.00	0.00	0.00	0.03	0.05	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.06
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.00	0.00	0.00	0.04	0.05	0.00	0.03	0.00	0.00	0.07	0.00	0.00	0.00	0.02
16OCT	SE	0.00	0.00	0.00	0.04	0.04	0.00	0.03	0.00	0.00	0.07	0.00	0.00	0.00	0.09
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	DENSITY	0.00	0.00	0.02	0.00	0.01	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.01
29OCT	SE	0.00	0.00	0.02	0.00	0.01	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	DENSITY	0.00	0.00	0.08	0.07	0.07	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.08	0.03
13NOV	SE	0.00	0.00	0.07	0.07	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.08	0.14
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.01
04DEC	SE	0.00	0.00	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.05
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-208 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	9	0	3	0	5	16	0	0	14	0	0	48
10JUL	SE	0	0	9	0	2	0	5	9	0	0	14	0	0	19
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	32	9	3	2	10	0	0	0	0	0	0	56
24JUL	SE	0	0	15	6	3	2	6	0	0	0	0	0	0	18
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	7	16	4	0	0	1	0	0	0	0	0	0	27
07AUG	SE	0	7	11	4	0	0	1	0	0	0	0	0	0	13
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	10	0	0	0	0	0	0	0	0	0	0	10
20AUG	SE	0	0	10	0	0	0	0	0	0	0	0	0	0	10
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	0	9	10	1	0	3	0	0	9	0	18	0	50
03SEP	SE	0	0	9	7	1	0	2	0	0	9	0	18	0	23
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	0	0	9	11	13	0	9	4	0	0	0	0	16	62
17SEP	SE	0	0	9	8	6	0	9	4	0	0	0	0	16	23
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	4	15	0	0	5	0	0	0	0	0	24
01OCT	SE	0	0	0	4	10	0	0	5	0	0	0	0	0	12
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	6	11	0	5	0	0	10	0	0	0	32
16OCT	SE	0	0	0	6	8	0	5	0	0	10	0	0	0	15
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	6	0	2	2	15	0	0	0	0	0	0	25
29OCT	SE	0	0	6	0	2	2	7	0	0	0	0	0	0	9
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	27	10	14	0	0	0	0	5	0	8	6	69
13NOV	SE	0	0	22	10	6	0	0	0	0	5	0	8	6	27
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	7	4	0	5	0	0	0	0	0	7	0	22
04DEC	SE	0	0	7	4	0	3	0	0	0	0	0	7	0	10
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-209 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	CPUE	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
30JUL	SE	0.20	0.00	0.00	0.00	0.00	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	CPUE	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
11SEP	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	0.13
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	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
24SEP	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-210 REGIONAL STANDING CROP (IN THOUSANDS) OF WHITE CATFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	2	0	0	0	0	0	0	0	0	0	0	0	2
30JUL	SE	2	0	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	6	0	0	0	0	0	0	0	0	0	0	6
11SEP	SE	0	6	0	0	0	0	0	0	0	0	0	0	6
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	2	0	0	2
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-211 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-211 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
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
03JUL	SE	0.00	0.00	0.00	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
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.08
15JUL	SE	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00						0.36
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.05
29JUL	SE	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00						0.41
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	18.74	26.02	21.40	1.79	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	8.49
13AUG	SE	18.74	14.76	12.93	1.23	0.00	0.00	0.00	0.00						27.16
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	DENSITY	16.98	9.43	0.66	0.95	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	3.50
27AUG	SE	14.47	6.84	0.66	0.57	0.00	0.00	0.00	0.00						16.03
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	2.64	1.37	2.54	0.30	0.58	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.93
10SEP	SE	2.64	1.37	1.76	0.30	0.58	0.00	0.00	0.00						3.52
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	DENSITY	0.00	2.87	1.27	0.65	0.12	0.37	0.00	0.00	NS	NS	NS	NS	NS	0.66
23SEP	SE	0.00	1.44	0.79	0.65	0.12	0.37	0.00	0.00						1.81
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	DENSITY	0.00	0.00	0.00	0.00	1.42	2.74	0.00	0.00	NS	NS	NS	NS	NS	0.52
07OCT	SE	0.00	0.00	0.00	0.00	0.75	2.74	0.00	0.00						2.85
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-212 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-212 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03JUL	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
13JUL-	ST. CROP	0	0	0	0	127	0	0	0	NS	NS	NS	NS	NS	127
15JUL	SE	0	0	0	0	76	0	0	0						76
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	60	0	0	0	0	NS	NS	NS	NS	NS	60
29JUL	SE	0	0	0	60	0	0	0	0						60
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	3917	5970	6887	264	0	0	0	0	NS	NS	NS	NS	NS	17038
13AUG	SE	3917	3386	4160	182	0	0	0	0						6644
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	3549	2162	213	140	0	0	0	0	NS	NS	NS	NS	NS	6065
27AUG	SE	3025	1570	213	85	0	0	0	0						3415
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	552	313	819	44	121	0	0	0	NS	NS	NS	NS	NS	1848
10SEP	SE	552	313	567	44	121	0	0	0						861
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	658	408	96	25	77	0	0	NS	NS	NS	NS	NS	1263
23SEP	SE	0	330	254	96	25	77	0	0						434
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	295	569	0	0	NS	NS	NS	NS	NS	864
07OCT	SE	0	0	0	0	157	569	0	0						591
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-213 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10JUL	SE	0.00	0.00	0.00	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
20JUL-	DENSITY	0.03	0.02	0.00	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
24JUL	SE	0.03	0.02	0.00	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.42	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
07AUG	SE	0.09	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.41	0.27	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
20AUG	SE	0.00	0.22	0.21	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	2.74	0.38	0.07	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
03SEP	SE	0.37	0.13	0.05	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	DENSITY	1.49	0.72	0.30	0.21	0.38	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
17SEP	SE	0.55	0.32	0.12	0.11	0.36	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	DENSITY	0.39	0.40	0.40	0.03	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
01OCT	SE	0.19	0.15	0.14	0.03	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	DENSITY	0.61	0.13	0.08	0.18	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
16OCT	SE	0.33	0.06	0.06	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.07	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
13NOV	SE	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	0.05
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	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
04DEC	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-214 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10JUL	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
20JUL-	ST. CROP	7	6	0	12	4	0	0	0	0	0	0	0	0	28
24JUL	SE	7	6	0	12	4	0	0	0	0	0	0	0	0	15
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	88	323	0	0	0	0	0	0	0	0	0	0	0	410
07AUG	SE	19	162	0	0	0	0	0	0	0	0	0	0	0	163
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	93	87	4	1	0	0	0	0	0	0	0	0	186
20AUG	SE	0	51	69	4	1	0	0	0	0	0	0	0	0	86
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	574	88	24	10	3	0	0	0	0	0	0	0	0	699
03SEP	SE	77	31	17	6	3	0	0	0	0	0	0	0	0	85
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
14SEP-	ST. CROP	311	166	97	31	79	65	0	0	0	0	0	0	0	749
17SEP	SE	115	74	38	16	75	58	0	0	0	0	0	0	0	172
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	83	91	130	5	3	44	0	0	0	0	0	0	0	355
01OCT	SE	39	33	45	5	3	39	0	0	0	0	0	0	0	79
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	127	31	26	27	8	0	0	0	0	0	0	0	0	218
16OCT	SE	69	14	19	14	5	0	0	0	0	0	0	0	0	74
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	15	5	0	0	0	0	0	0	0	0	0	0	0	20
13NOV	SE	10	5	0	0	0	0	0	0	0	0	0	0	0	11
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	5	0	0	0	0	0	0	0	0	0	0	0	0	5
04DEC	SE	5	0	0	0	0	0	0	0	0	0	0	0	0	5
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-215 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	CPUE	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
11SEP	SE	0.40	0.00	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-216 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	3	0	0	0	0	0	0	0	0	0	0	0	3
11SEP	SE	3	0	0	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-217 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-217 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
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
19JUN	SE	0.00	0.00	0.00	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
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
27JUN	SE	0.00	0.00	0.00	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
29JUN-	DENSITY	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
03JUL	SE	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
15JUL	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
27JUL-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
29JUL	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
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.31
27AUG	SE	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00						2.45
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
23SEP	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
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
07OCT	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-218 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-218 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19JUN	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
22JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUN	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
29JUN-	ST. CROP	243	0	0	0	0	0	0	0	0	0	0	0	0	243
03JUL	SE	243	0	0	0	0	0	0	0	0	0	0	0	0	243
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
15JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
29JUL	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	511	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	511
27AUG	SE	511	0	0	0	0	0	0	0						511
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
23SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-219 REGIONAL DENSITY (NO./1,000m3) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	0.10	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
10JUL	SE	0.07	0.04	0.03	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	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.04	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
24JUL	SE	0.00	0.00	0.03	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
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
07AUG	SE	0.00	0.00	0.00	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	19	24	22	21	22	22	22	14	10	6	6	8	210
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
20AUG	SE	0.00	0.00	0.00	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
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
03SEP	SE	0.00	0.00	0.00	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
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
17SEP	SE	0.00	0.00	0.00	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
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
01OCT	SE	0.00	0.00	0.00	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	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
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
29OCT	SE	0.00	0.00	0.00	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-220 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	20	14	8	0	0	0	0	0	0	0	0	0	0	43
10JUL	SE	14	9	8	0	0	0	0	0	0	0	0	0	0	19
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	13	0	65	0	0	0	0	0	0	0	0	78
24JUL	SE	0	0	8	0	65	0	0	0	0	0	0	0	0	66
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07AUG	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20AUG	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
31AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03SEP	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
14SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17SEP	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
28SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29OCT	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
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-221 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	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
18JUN	SE	0.00	0.00	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
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	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
15JUL	SE	0.00	0.00	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
27JUL-	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
30JUL	SE	0.00	0.00	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
10AUG-	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
13AUG	SE	0.00	0.00	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
24AUG-	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
27AUG	SE	0.00	0.00	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
08SEP-	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
11SEP	SE	0.00	0.00	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
21SEP-	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
24SEP	SE	0.00	0.00	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
05OCT-	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
08OCT	SE	0.00	0.00	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
19OCT-	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
22OCT	SE	0.00	0.00	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-222 REGIONAL STANDING CROP (IN THOUSANDS) OF WEAKFISH YEARLING AND OLDER IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
18JUN	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
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
15JUL	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
27JUL-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
30JUL	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
10AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
13AUG	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
24AUG-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
27AUG	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
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
11SEP	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
21SEP-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
24SEP	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
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
08OCT	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
19OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
22OCT	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-223 REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
18MAR	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
23MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
25MAR	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
30MAR-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	NS	0.00
01APR	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
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
09APR	SE	0.00	0.00	0.00	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
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
16APR	SE	0.00	0.00	0.00	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
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
23APR	SE	0.00	0.00	0.00	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
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
30APR	SE	0.00	0.00	0.00	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
04MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07MAY	SE	0.00	0.00	0.00	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
11MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13MAY	SE	0.00	0.00	0.00	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
18MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21MAY	SE	0.00	0.00	0.00	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
26MAY-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29MAY	SE	0.00	0.00	0.00	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
01JUN-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04JUN	SE	0.00	0.00	0.00	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-223 (CONT.) REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
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
11JUN	SE	0.00	0.00	0.00	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
15JUN-	DENSITY	0.00	0.00	0.66	0.49	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
19JUN	SE	0.00	0.00	0.38	0.30	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	DENSITY	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
27JUN	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	0.00	0.09
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
29JUN-	DENSITY	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
03JUL	SE	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	DENSITY	1.11	1.31	0.00	0.55	0.24	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.40
15JUL	SE	1.11	1.31	0.00	0.41	0.24	0.00	0.00	0.00						1.78
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	DENSITY	0.00	0.00	0.39	0.00	0.00	0.00	0.77	0.00	NS	NS	NS	NS	NS	0.15
29JUL	SE	0.00	0.00	0.39	0.00	0.00	0.00	0.77	0.00						0.87
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
13AUG	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
25AUG-	DENSITY	0.00	0.22	0.38	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.07
27AUG	SE	0.00	0.22	0.38	0.00	0.00	0.00	0.00	0.00						0.44
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.00
10SEP	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
21SEP-	DENSITY	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	NS	NS	NS	NS	NS	0.06
23SEP	SE	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00						0.48
	NO. TOWS	6	11	13	14	13	8	10	6						81
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
07OCT	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-224 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
16MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
18MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
23MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
25MAR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
30MAR-	ST. CROP	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0
01APR	SE	0	0	0	0	0	0	0							0
	NO. TOWS	10	10	11	11	10	10	12							74
06APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09APR	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
13APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16APR	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
20APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23APR	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
27APR-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30APR	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
04MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07MAY	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
11MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13MAY	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
18MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21MAY	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
26MAY-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29MAY	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
01JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04JUN	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-224 (CONT.) REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM LONG RIVER SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
08JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11JUN	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
15JUN-	ST. CROP	0	0	212	72	9	0	0	0	0	0	0	0	0	294
19JUN	SE	0	0	123	44	9	0	0	0	0	0	0	0	0	131
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
22JUN-	ST. CROP	0	21	0	0	0	0	0	0	0	0	0	0	0	21
27JUN	SE	0	21	0	0	0	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
29JUN-	ST. CROP	0	0	121	0	0	0	0	0	0	0	0	0	0	121
03JUL	SE	0	0	121	0	0	0	0	0	0	0	0	0	0	121
	NO. TOWS	7	11	14	11	13	9	16	7	10	7	6	6	6	123
13JUL-	ST. CROP	231	301	0	82	50	0	0	0	NS	NS	NS	NS	NS	664
15JUL	SE	231	301	0	60	50	0	0	0						388
	NO. TOWS	6	11	13	14	13	8	10	6						81
27JUL-	ST. CROP	0	0	127	0	0	0	108	0	NS	NS	NS	NS	NS	234
29JUL	SE	0	0	127	0	0	0	108	0						166
	NO. TOWS	6	11	13	14	13	8	10	6						81
11AUG-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
13AUG	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
25AUG-	ST. CROP	0	51	121	0	0	0	0	0	NS	NS	NS	NS	NS	171
27AUG	SE	0	51	121	0	0	0	0	0						131
	NO. TOWS	6	11	13	14	13	8	10	6						81
08SEP-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
10SEP	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81
21SEP-	ST. CROP	0	111	0	0	0	0	0	0	NS	NS	NS	NS	NS	111
23SEP	SE	0	111	0	0	0	0	0	0						111
	NO. TOWS	6	11	13	14	13	8	10	6						81
05OCT-	ST. CROP	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	0
07OCT	SE	0	0	0	0	0	0	0	0						0
	NO. TOWS	6	11	13	14	13	8	10	6						81

TABLE E-225 REGIONAL DENSITY (NO./1,000m3) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	DENSITY	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	0.02
10JUL	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	0.20
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	DENSITY	0.00	0.00	0.22	0.12	0.33	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
24JUL	SE	0.00	0.00	0.22	0.12	0.33	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	DENSITY	0.06	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
07AUG	SE	0.04	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	DENSITY	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
20AUG	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	0.00	0.24
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	DENSITY	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005
03SEP	SE	0.00	0.02	0.00	0.03	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
14SEP-	DENSITY	0.00	0.00	0.00	0.00	0.01	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
17SEP	SE	0.00	0.00	0.00	0.00	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	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
01OCT	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	14	18	24	21	23	22	22	22	14	10	6	6	8	210
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
16OCT	SE	0.00	0.00	0.00	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	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	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
29OCT	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
09NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13NOV	SE	0.00	0.00	0.00	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	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	DENSITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04DEC	SE	0.00	0.00	0.00	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	12	15	12	15	10	9	8	10	10	8	150

TABLE E-226 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM FALL JUVENILE SURVEY, 2009

DATE		BT	YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
06JUL-	ST. CROP	0	0	0	30	0	0	0	0	0	0	0	0	0	30
10JUL	SE	0	0	0	30	0	0	0	0	0	0	0	0	0	30
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
20JUL-	ST. CROP	0	0	71	18	69	40	0	0	0	0	0	0	0	198
24JUL	SE	0	0	71	18	69	40	0	0	0	0	0	0	0	108
	NO. TOWS	14	18	25	22	21	23	22	21	14	10	6	6	8	210
03AUG-	ST. CROP	13	0	9	0	0	0	0	0	0	0	0	0	0	22
07AUG	SE	8	0	9	0	0	0	0	0	0	0	0	0	0	12
	NO. TOWS	14	19	24	22	21	22	22	22	14	10	6	6	8	210
17AUG-	ST. CROP	0	0	0	49	0	0	0	0	0	0	0	0	0	49
20AUG	SE	0	0	0	36	0	0	0	0	0	0	0	0	0	36
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
31AUG-	ST. CROP	0	6	0	4	0	0	0	0	0	0	0	0	0	10
03SEP	SE	0	6	0	4	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	210
14SEP-	ST. CROP	0	0	0	0	1	56	0	0	0	0	0	0	0	58
17SEP	SE	0	0	0	0	1	54	0	0	0	0	0	0	0	54
	NO. TOWS	14	18	24	22	22	22	22	22	14	10	6	6	8	210
28SEP-	ST. CROP	0	0	0	0	3	0	0	0	0	0	0	0	0	3
01OCT	SE	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	NO. TOWS	14	18	24	21	23	22	22	22	14	10	6	6	8	210
12OCT-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16OCT	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	14	18	25	22	22	21	22	22	14	10	6	6	8	210
26OCT-	ST. CROP	0	0	0	0	2	0	0	0	0	0	0	0	0	2
29OCT	SE	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	NO. TOWS	12	16	13	11	15	12	15	10	10	8	10	10	8	150
09NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13NOV	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	17	14	11	15	12	15	10	10	8	10	8	8	150
30NOV-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04DEC	SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NO. TOWS	12	16	13	12	15	12	15	10	9	8	10	10	8	150

TABLE E-227 REGIONAL CATCH-PER-UNIT-EFFORT (CPUE) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	CPUE	0.33	0.27	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
18JUN	SE	0.33	0.14	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	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
02JUL	SE	0.00	0.00	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
13JUL-	CPUE	1.67	0.55	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
15JUL	SE	1.20	0.31	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	CPUE	0.20	0.58	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
30JUL	SE	0.20	0.19	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	CPUE	1.00	1.21	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
13AUG	SE	0.63	0.60	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	CPUE	0.00	0.88	0.93	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
27AUG	SE	0.00	0.40	0.58	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	CPUE	0.80	1.08	1.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
11SEP	SE	0.80	0.44	0.38	0.00	0.40	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
21SEP-	CPUE	0.40	0.08	0.50	1.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
24SEP	SE	0.24	0.06	0.20	0.63	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	CPUE	0.20	0.58	0.36	1.60	0.80	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.34
08OCT	SE	0.20	0.25	0.17	0.98	0.58	0.50	0.00	0.00	0.00	0.00	0.00	0.00	1.30
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	CPUE	0.20	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
22OCT	SE	0.20	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100

TABLE E-228 REGIONAL STANDING CROP (IN THOUSANDS) OF BLUEFISH YOUNG-OF-YEAR IN HUDSON RIVER ESTUARY DETERMINED FROM BEACH SEINE SURVEY, 2009

DATE		YK	TZ	CH	IP	WP	CW	PK	HP	KG	SG	CS	AL	ALL REGIONS COMBINED
15JUN-	ST. CROP	3	12	12	0	0	0	0	0	0	0	0	0	26
18JUN	SE	3	6	12	0	0	0	0	0	0	0	0	0	13
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
29JUN-	ST. CROP	0	0	0	0	0	0	0	0	0	0	0	0	0
02JUL	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
13JUL-	ST. CROP	13	25	23	0	0	0	0	0	0	0	0	0	60
15JUL	SE	9	14	15	0	0	0	0	0	0	0	0	0	22
	NO. TOWS	3	11	7	3	3	3	8	8	8	15	19	12	100
27JUL-	ST. CROP	2	27	54	0	0	0	0	0	0	0	0	0	82
30JUL	SE	2	9	19	0	0	0	0	0	0	0	0	0	21
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
10AUG-	ST. CROP	8	55	8	0	0	0	0	0	0	0	0	0	70
13AUG	SE	5	27	8	0	0	0	0	0	0	0	0	0	29
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
24AUG-	ST. CROP	0	40	25	4	0	0	0	0	0	0	0	0	68
27AUG	SE	0	18	16	4	0	0	0	0	0	0	0	0	24
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
08SEP-	ST. CROP	6	49	27	0	1	0	0	0	0	0	0	0	83
11SEP	SE	6	20	10	0	1	0	0	0	0	0	0	0	23
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
21SEP-	ST. CROP	3	4	13	9	2	0	0	0	0	0	0	0	31
24SEP	SE	2	3	5	6	1	0	0	0	0	0	0	0	9
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
05OCT-	ST. CROP	2	27	10	15	2	5	0	0	0	0	0	0	60
08OCT	SE	2	11	5	9	2	5	0	0	0	0	0	0	16
	NO. TOWS	5	24	14	5	5	6	5	5	5	9	10	7	100
19OCT-	ST. CROP	2	4	0	0	0	0	0	0	0	0	0	0	5
22OCT	SE	2	3	0	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

APPENDIX F

LIST OF TABLES (CONTINUED)

Table F-1 Length Frequency Distribution of Larval and Young-of-Year Striped Bass in Hudson River Estuary Determined from Long River Survey, 2009

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
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04MAY-07MAY	0	11	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11MAY-13MAY	0	139	788	152	0	0	0	0	0	0	0	0	0	0	0	0	0
18MAY-21MAY	0	91	449	586	3	0	0	0	0	0	0	0	0	0	0	0	0
26MAY-29MAY	0	190	1182	1289	147	1	0	0	0	0	0	0	0	0	0	0	0
01JUN-04JUN	0	171	1027	1516	230	30	0	0	0	0	0	0	0	0	0	0	0
08JUN-11JUN	0	113	898	1119	426	81	24	2	0	0	0	0	0	0	0	0	0
15JUN-19JUN	0	61	844	797	230	166	123	64	35	24	2	0	0	0	0	0	0
22JUN-27JUN	0	22	784	559	266	266	180	141	100	40	23	1	0	0	0	0	0
29JUN-03JUL	0	16	871	404	142	166	141	101	83	75	63	13	0	0	0	0	0
13JUL-15JUL	0	0	36	90	105	75	46	10	9	20	62	28	19	6	1	0	0
27JUL-29JUL	0	0	1	1	9	15	27	19	17	19	16	6	5	5	8	7	5
11AUG-13AUG	0	0	0	0	0	0	0	0	0	2	3	1	6	1	4	3	2
25AUG-27AUG	0	0	0	0	0	0	0	0	0	0	1	0	3	7	9	5	8
08SEP-10SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
21SEP-23SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-07OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	814	6963	6513	1558	800	541	337	244	180	170	49	33	19	23	15	15

DATES	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+	N	MEAN	MIN	MED	MAX	SD
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
04MAY-07MAY	0	0	0	0	0	0	0	0	0	0	94	4.7	3.0	4.8	5.7	0.6
11MAY-13MAY	0	0	0	0	0	0	0	0	0	0	1079	5.0	2.7	5.0	7.2	0.9
18MAY-21MAY	0	0	0	0	0	0	0	0	0	0	1129	5.8	3.1	6.0	9.0	1.0
26MAY-29MAY	0	0	0	0	0	0	0	0	0	0	2809	5.8	2.5	6.0	10.3	1.2
01JUN-04JUN	0	0	0	0	0	0	0	0	0	0	2974	6.2	2.6	6.3	11.9	1.4
08JUN-11JUN	0	0	0	0	0	0	0	0	0	0	2663	6.6	2.3	6.3	15.6	1.7
15JUN-19JUN	0	0	0	0	0	0	0	0	0	0	2346	7.4	2.6	6.3	22.4	3.1
22JUN-27JUN	0	0	0	0	0	0	0	0	0	0	2382	8.6	3.2	6.9	27.0	3.9
29JUN-03JUL	0	0	0	0	0	0	0	0	0	0	2075	8.8	3.0	6.2	28.0	4.8
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	507	13.4	4.6	10.4	40.0	7.6
27JUL-29JUL	4	0	2	0	0	0	0	0	0	0	166	22.0	5.7	17.3	68.0	13.5
11AUG-13AUG	3	1	0	0	0	1	0	0	0	0	27	40.7	19.2	40.0	82.0	15.0
25AUG-27AUG	4	3	2	3	0	2	0	0	0	0	47	49.7	22.0	47.0	83.0	13.4
08SEP-10SEP	0	0	0	0	0	0	1	0	0	0	2	63.5	42.0	63.5	85.0	30.4
21SEP-23SEP	0	0	2	0	1	0	2	2	0	1	8	83.4	66.0	85.0	100.0	12.4
05OCT-07OCT	0	1	0	0	1	2	0	1	0	0	6	76.2	60.0	80.0	91.0	12.5
	11	5	6	3	2	5	3	3	0	1	18314					

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, 2009

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
06JUL-10JUL	7	17	29	29	14	4	0	0	0	0	0	0	0	0	0	0
20JUL-24JUL	3	12	8	12	9	10	10	3	5	5	1	1	0	0	0	0
03AUG-07AUG	1	1	1	2	0	4	5	9	7	8	8	3	5	1	1	0
17AUG-20AUG	0	0	0	2	2	4	6	9	17	9	7	2	3	2	0	0
31AUG-03SEP	0	0	0	0	0	0	1	0	0	0	2	3	1	0	0	1
14SEP-17SEP	0	0	0	0	0	0	1	3	5	7	11	13	6	2	1	2
28SEP-01OCT	0	0	0	0	0	0	0	2	8	2	3	7	5	6	5	6
12OCT-16OCT	0	0	0	0	0	0	0	0	0	1	1	3	6	13	7	7
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	1	4	2	1	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	2	2	2	5	1
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	2
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	11	30	38	45	25	22	23	26	42	32	33	35	35	31	20	19

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+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	0	0	0	0	0	100	23.7	13.0	23.0	38.0	5.8
20JUL-24JUL	0	0	0	0	0	0	0	0	0	79	33.1	12.0	32.0	65.0	13.5
03AUG-07AUG	0	0	1	0	0	0	0	0	0	58	53.0	14.0	53.5	102.0	16.0
17AUG-20AUG	1	0	0	0	0	0	0	0	0	70	53.5	26.0	53.0	91.0	11.5
31AUG-03SEP	0	0	0	0	0	0	0	0	0	8	66.1	40.0	68.0	86.0	12.8
14SEP-17SEP	3	1	2	2	0	0	0	0	0	60	67.9	42.0	65.0	108.0	15.1
28SEP-01OCT	5	6	1	1	0	0	0	0	0	59	74.4	46.0	75.0	105.0	15.7
12OCT-16OCT	8	9	6	1	1	1	2	0	0	66	86.9	58.0	87.0	121.0	13.8
26OCT-29OCT	0	1	0	0	0	0	0	0	0	9	76.1	65.0	74.0	95.0	8.3
09NOV-13NOV	5	1	5	5	1	3	1	0	0	33	94.4	67.0	94.0	122.0	15.7
30NOV-04DEC	2	0	1	3	5	2	0	1	0	22	97.3	70.0	103.0	127.0	17.8
	======	======	======	======	======	======	======	======	======	======					
	24	18	16	12	7	6	3	1	0	564					

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, 2009

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
15JUN-18JUN	12	48	9	0	0	0	0	0	0	0	0	0	0	0	0
29JUN-02JUL	2	22	34	25	10	5	3	0	0	0	0	0	0	0	0
13JUL-15JUL	0	1	13	20	23	23	26	14	4	1	0	0	0	0	0
27JUL-30JUL	0	0	0	2	6	14	20	23	9	12	8	7	0	0	0
10AUG-13AUG	0	1	2	5	4	8	7	13	24	17	15	16	10	9	5
24AUG-27AUG	0	0	1	0	0	3	2	4	7	9	11	7	7	4	8
08SEP-11SEP	0	0	0	0	0	0	2	1	3	2	2	10	16	15	6
21SEP-24SEP	0	0	0	0	0	0	0	0	4	4	8	17	15	18	14
05OCT-08OCT	0	0	0	0	0	0	1	2	3	3	2	8	16	18	18
19OCT-22OCT	0	0	0	0	0	0	0	1	1	0	4	8	9	13	4
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	14	72	59	52	43	53	61	58	55	48	50	73	73	77	55

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
15JUN-18JUN	0	0	0	0	0	0	0	0	69	16.5	11.0	16.0	23.0	2.6
29JUN-02JUL	0	0	0	0	0	0	0	0	101	23.9	11.0	23.0	43.0	6.5
13JUL-15JUL	0	0	0	0	0	0	0	0	125	35.4	16.0	35.0	56.0	8.4
27JUL-30JUL	0	0	0	0	0	0	0	0	104	47.9	27.0	47.0	69.0	10.2
10AUG-13AUG	1	0	0	0	0	0	0	0	142	56.0	19.0	57.0	85.0	14.3
24AUG-27AUG	5	1	0	0	0	0	0	0	72	63.9	24.0	62.0	91.0	14.5
08SEP-11SEP	11	3	1	2	0	0	0	0	74	74.8	40.0	75.5	102.0	12.2
21SEP-24SEP	7	5	6	3	0	0	0	0	101	75.6	51.0	76.0	101.0	11.7
05OCT-08OCT	11	12	8	3	1	1	0	0	107	79.2	42.0	80.0	114.0	13.3
19OCT-22OCT	0	9	3	4	2	2	2	0	63	81.5	47.0	78.0	119.0	15.9
	======	======	======	======	======	======	======	======	======					
	35	30	18	12	3	3	2	0	958					

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, 2009

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
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR-30APR	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04MAY-07MAY	0	674	22	0	0	0	0	0	0	0	0	0	0	0	0
11MAY-13MAY	0	659	788	0	0	0	0	0	0	0	0	0	0	0	0
18MAY-21MAY	0	430	986	130	1	0	0	0	0	0	0	0	0	0	0
26MAY-29MAY	0	499	1080	357	18	0	0	0	0	0	0	0	0	0	0
01JUN-04JUN	0	681	832	520	176	10	0	0	0	0	0	0	0	0	0
08JUN-11JUN	0	468	969	382	148	30	2	0	0	0	0	0	0	0	0
15JUN-19JUN	0	302	773	588	159	46	6	2	0	0	0	0	0	0	0
22JUN-27JUN	0	321	768	429	223	46	8	12	11	6	3	0	0	0	0
29JUN-03JUL	0	195	387	263	97	38	14	35	21	18	15	3	1	0	0
13JUL-15JUL	0	5	25	81	60	14	0	1	2	5	8	8	4	1	0
27JUL-29JUL	0	0	0	3	6	3	10	16	17	6	6	17	5	3	1
11AUG-13AUG	0	0	0	0	0	0	0	0	0	1	10	8	5	3	4
25AUG-27AUG	0	0	0	0	0	0	0	0	0	0	0	2	7	15	4
08SEP-10SEP	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
21SEP-23SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-07OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	4235	6630	2753	888	187	40	66	51	36	43	38	22	22	11

DATES	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+	N	MEAN	MIN	MED	MAX	SD
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
06APR-09APR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13APR-16APR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
20APR-23APR	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27APR-30APR	0	0	0	0	0	0	0	0	0	1	3.5	3.5	3.5	3.5	.
04MAY-07MAY	0	0	0	0	0	0	0	0	0	696	3.2	2.0	3.2	4.5	0.4
11MAY-13MAY	0	0	0	0	0	0	0	0	0	1447	3.9	2.3	4.0	5.8	0.5
18MAY-21MAY	0	0	0	0	0	0	0	0	0	1547	4.5	2.5	4.3	8.8	0.9
26MAY-29MAY	0	0	0	0	0	0	0	0	0	1954	4.8	2.2	4.6	8.8	1.2
01JUN-04JUN	0	0	0	0	0	0	0	0	0	2219	5.2	2.2	4.9	10.5	1.7
08JUN-11JUN	0	0	0	0	0	0	0	0	0	1999	5.3	2.6	4.9	12.0	1.7
15JUN-19JUN	0	0	0	0	0	0	0	0	0	1876	5.8	2.2	5.6	15.5	1.8
22JUN-27JUN	0	0	0	0	0	0	0	0	0	1827	6.0	2.5	5.5	23.0	2.4
29JUN-03JUL	0	0	0	0	0	0	0	0	0	1087	6.9	2.7	5.7	30.0	4.0
13JUL-15JUL	1	0	0	0	0	0	0	0	0	215	9.9	3.3	7.9	45.0	6.7
27JUL-29JUL	0	1	0	0	0	0	0	0	0	94	19.4	7.3	16.8	52.0	8.1
11AUG-13AUG	4	4	3	0	0	0	0	0	0	42	34.7	18.2	32.0	56.0	11.6
25AUG-27AUG	1	1	3	1	0	2	0	0	0	36	41.4	25.0	38.0	74.0	11.8
08SEP-10SEP	0	0	0	0	0	0	1	0	0	4	46.3	24.0	42.0	77.0	22.2
21SEP-23SEP	0	1	0	2	2	3	3	2	0	14	69.7	50.0	71.5	82.0	8.8
05OCT-07OCT	0	3	2	2	1	2	0	5	0	15	67.6	50.0	69.0	83.0	12.1
	======	======	======	======	======	======	======	======	======	======					
	6	10	8	5	3	7	4	7	0	15073					

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, 2009

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
06JUL-10JUL	1	5	10	11	0	0	0	0	0	0	0	0	0
20JUL-24JUL	8	2	17	8	1	2	2	0	0	0	0	0	0
03AUG-07AUG	0	7	1	2	1	3	2	1	1	0	0	0	0
17AUG-20AUG	0	0	1	0	7	1	5	1	4	0	2	2	1
31AUG-03SEP	0	0	0	0	0	2	0	0	0	1	0	2	0
14SEP-17SEP	0	0	0	0	0	1	10	6	6	4	5	2	3
28SEP-01OCT	0	0	0	0	0	0	4	4	7	6	6	8	6
12OCT-16OCT	0	0	0	0	0	0	0	1	6	12	7	10	8
26OCT-29OCT	0	0	0	0	0	0	0	1	5	4	8	8	10
09NOV-13NOV	0	0	0	0	0	0	0	0	1	6	8	11	11
30NOV-04DEC	0	0	0	0	0	0	0	1	1	2	7	10	14
	======	======	======	======	======	======	======	======	======	======	======	======	======
	9	14	29	21	9	9	23	15	31	35	43	53	53

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
06JUL-10JUL	0	0	0	0	0	0	0	27	22.7	13.0	23.0	28.0	3.9
20JUL-24JUL	0	0	0	0	0	0	0	42	21.9	7.0	22.0	42.0	8.0
03AUG-07AUG	0	0	0	0	0	0	0	18	28.9	15.0	27.0	51.0	12.2
17AUG-20AUG	1	0	0	0	0	0	0	25	46.4	24.0	43.0	76.0	14.5
31AUG-03SEP	0	0	0	0	0	0	0	5	53.0	36.0	55.0	68.0	15.6
14SEP-17SEP	4	1	0	0	0	0	0	43	55.8	36.0	52.0	83.0	12.7
28SEP-01OCT	9	3	0	0	0	0	0	54	62.9	40.0	63.5	83.0	11.9
12OCT-16OCT	19	12	7	0	0	0	0	83	70.2	47.0	72.0	89.0	11.0
26OCT-29OCT	8	12	7	2	0	0	0	68	71.4	47.0	71.5	92.0	11.1
09NOV-13NOV	23	16	13	9	1	1	1	103	76.6	54.0	78.0	107.0	11.0
30NOV-04DEC	21	22	8	3	0	0	0	89	75.5	48.0	77.0	93.0	8.9
	======	======	======	======	======	======	======	======					
	85	66	35	14	1	1	1	557					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN-02JUL	1	5	14	0	0	0	0	0	0	0	0	0	0
13JUL-15JUL	0	3	2	6	33	13	0	0	0	0	0	0	0
27JUL-30JUL	0	0	0	2	8	11	12	12	2	0	0	0	0
10AUG-13AUG	0	0	1	10	5	5	9	10	19	12	9	5	2
24AUG-27AUG	0	0	0	1	0	4	7	9	7	10	7	18	7
08SEP-11SEP	0	0	0	0	0	1	3	9	15	10	14	12	14
21SEP-24SEP	0	0	0	0	0	2	3	2	5	12	10	17	16
05OCT-08OCT	0	0	0	0	0	0	2	5	8	8	9	11	23
19OCT-22OCT	0	0	0	0	0	0	1	0	5	4	13	16	11
	======	======	======	======	======	======	======	======	======	======	======	======	======
	1	8	17	19	46	36	37	47	61	56	62	79	73

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
15JUN-18JUN	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	20	20.0	14.0	21.0	23.0	2.2
13JUL-15JUL	0	0	0	0	0	0	57	31.6	16.0	32.0	39.0	4.8
27JUL-30JUL	0	0	0	0	0	0	47	39.6	28.0	40.0	50.0	6.0
10AUG-13AUG	0	0	0	0	0	0	92	48.7	21.0	51.0	71.0	12.4
24AUG-27AUG	5	1	3	1	0	0	82	59.7	25.0	61.0	90.0	13.4
08SEP-11SEP	2	4	0	0	0	0	89	60.7	38.0	61.0	84.0	9.9
21SEP-24SEP	15	14	7	1	0	0	108	68.3	38.0	69.0	90.0	11.9
05OCT-08OCT	14	16	3	3	0	0	105	69.1	41.0	71.0	93.0	11.4
19OCT-22OCT	10	11	10	4	1	2	89	72.5	44.0	71.0	102.0	12.2
	======	======	======	======	======	======	======					
	46	46	23	9	1	2	689					

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, 2009

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	65.0-69.9	70.0-74.9	75.0-79.9
16MAR-18MAR	0	0	8	594	165	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23MAR-25MAR	0	0	1	438	425	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAR-01APR	0	0	1	210	465	149	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR-09APR	0	0	0	14	154	194	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR-16APR	0	0	0	0	5	32	71	113	78	24	6	0	0	0	0	0	0	0	0	0	0	0
20APR-23APR	0	0	0	0	4	29	122	227	232	161	98	0	0	0	0	0	0	0	0	0	0	0
27APR-30APR	0	0	0	0	0	2	7	50	121	186	407	107	6	0	0	0	0	0	0	0	0	0
04MAY-07MAY	0	0	0	0	0	0	0	1	7	21	194	184	193	60	3	0	0	0	0	0	0	0
11MAY-13MAY	0	0	0	0	0	0	0	0	1	4	21	71	141	162	73	15	3	0	0	0	0	0
18MAY-21MAY	0	0	0	0	0	0	0	0	0	0	1	4	21	44	86	51	17	3	0	0	0	0
26MAY-29MAY	0	0	0	0	0	0	0	0	0	0	0	0	1	26	86	146	187	149	51	26	9	2
01JUN-04JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	69	147	158	116	113	66	25
08JUN-11JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	59	76	100	105	90	35
15JUN-19JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	17	46	95	109	89
22JUN-27JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	10	47	97	106	76
29JUN-03JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	25	42	50
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7	14
27JUL-29JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	21
11AUG-13AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	14	20
25AUG-27AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
08SEP-10SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
21SEP-23SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
05OCT-07OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	10	1256	1218	453	260	391	439	396	727	366	362	293	257	294	420	413	366	466	447	338

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	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+	N	MEAN	MIN	MED	MAX	SD
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	768	7.5	5.1	7.4	10.2	0.7
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	910	8.2	5.9	8.0	11.2	0.9
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	832	8.8	5.4	8.7	12.6	1.2
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	415	10.3	7.0	10.4	13.7	1.4
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329	15.0	8.0	15.0	22.1	2.3
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	873	16.5	9.0	16.4	24.9	2.7
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	886	20.9	10.8	20.9	34.0	3.5
04MAY-07MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	663	27.8	14.7	27.2	41.0	4.9
11MAY-13MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491	34.3	16.8	35.0	51.0	5.8
18MAY-21MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227	41.7	24.5	42.0	56.0	5.8
26MAY-29MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	706	52.1	34.0	52.0	77.0	7.4
01JUN-04JUN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	747	59.5	39.0	59.0	84.0	8.2
08JUN-11JUN	18	8	3	2	1	0	0	0	0	0	0	0	0	0	0	0	535	64.8	46.0	64.0	102.0	8.9
15JUN-19JUN	57	31	9	1	1	0	1	1	0	0	0	0	0	0	0	0	472	72.7	49.0	72.0	115.0	8.8
22JUN-27JUN	56	35	13	4	5	2	0	0	0	0	0	0	0	0	0	0	464	73.5	47.0	72.0	109.0	9.2
29JUN-03JUL	52	30	32	12	7	7	2	0	0	0	0	0	0	0	0	0	266	81.3	60.0	80.0	114.0	10.4
13JUL-15JUL	13	20	11	7	0	0	2	0	0	0	0	0	0	0	0	0	76	84.1	62.0	85.0	110.0	9.0
27JUL-29JUL	20	31	26	28	14	11	5	1	1	1	0	0	0	0	0	0	163	91.1	69.0	90.0	125.0	10.5
11AUG-13AUG	32	30	20	11	5	2	4	2	0	0	0	0	0	0	0	0	142	85.9	64.0	85.0	118.0	10.1
25AUG-27AUG	4	2	4	2	0	0	3	1	0	0	0	0	0	0	0	0	23	88.1	65.0	85.0	115.0	13.4
08SEP-10SEP	0	2	3	1	0	0	0	0	0	0	0	0	1	0	0	0	8	95.5	73.0	93.0	140.0	19.5
21SEP-23SEP	1	1	1	1	2	0	0	1	0	0	0	0	0	0	0	1	9	100.8	73.0	98.0	155.0	23.9
05OCT-07OCT	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	105.0	105.0	105.0	105.0	0.0
	258	190	122	69	35	24	17	6	1	1	0	0	1	0	0	1	10007					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	0	0	5
20JUL-24JUL	0	0	0	0	0	0	0	0	0	1	1	2
03AUG-07AUG	0	0	0	0	0	0	0	0	0	0	0	1
17AUG-20AUG	0	0	0	0	0	0	0	0	0	0	1	1
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	0	0
14SEP-17SEP	0	0	0	0	0	0	0	0	0	0	0	0
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0	0
12OCT-16OCT	0	0	0	0	0	0	0	0	0	0	0	0
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	0	0	0	0	0	0	1	2	9

DATES	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	125.0-129.9
06JUL-10JUL	18	13	27	20	23	21	7	2	2	0	0	0
20JUL-24JUL	9	18	19	17	16	14	13	8	2	1	0	0
03AUG-07AUG	11	19	16	29	21	24	6	10	5	1	0	1
17AUG-20AUG	6	9	14	10	8	9	8	7	5	7	0	0
31AUG-03SEP	0	1	4	3	5	7	2	4	4	1	1	2
14SEP-17SEP	0	1	3	2	3	2	2	2	2	1	1	1
28SEP-01OCT	1	2	2	0	6	4	4	1	4	3	4	3
12OCT-16OCT	0	0	0	1	2	2	3	8	5	2	4	3
26OCT-29OCT	0	0	0	0	0	0	2	2	3	2	4	4
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	2	1
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	1	0
	======	======	======	======	======	======	======	======	======	======	======	======
	45	63	85	82	84	83	47	44	32	18	17	15

DATES	130.0-134.9	135.0-139.9	140.0-144.9	145.0-149.9	150.0-154.9+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	0	138	86.1	65.0	86.0	111.0	9.8
20JUL-24JUL	0	0	0	0	0	121	88.0	57.0	88.0	117.0	11.6
03AUG-07AUG	0	0	0	0	0	144	89.5	68.0	88.0	125.0	11.2
17AUG-20AUG	0	0	0	0	0	85	91.9	63.0	91.0	118.0	14.2
31AUG-03SEP	0	0	0	0	0	34	99.2	77.0	97.5	128.0	13.4
14SEP-17SEP	1	0	0	0	0	21	100.2	76.0	97.0	134.0	15.6
28SEP-01OCT	2	1	0	0	1	38	106.8	74.0	105.0	150.0	18.3
12OCT-16OCT	3	2	0	0	1	36	114.0	87.0	111.5	150.0	14.4
26OCT-29OCT	3	0	2	1	0	23	121.9	101.0	122.0	149.0	12.3
09NOV-13NOV	3	3	5	2	1	17	137.2	121.0	138.0	153.0	8.3
30NOV-04DEC	2	3	3	2	1	12	138.6	122.0	138.0	150.0	8.0
	======	======	======	======	======	======					
	14	9	10	5	4	669					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2
29JUN-02JUL	0	0	0	0	0	0	0	0	0	0	1	3	1	5	1	3
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
27JUL-30JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG-13AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG-27AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP-11SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT-22OCT	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	4	3	8	4	6

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+	N	MEAN	MIN	MED	MAX	SD
15JUN-18JUN	0	0	0	0	0	0	0	0	0	11	78.6	68.0	79.0	86.0	5.9
29JUN-02JUL	1	0	0	0	0	0	0	0	0	15	76.9	64.0	76.0	92.0	8.3
13JUL-15JUL	0	1	1	0	0	0	0	0	0	3	94.0	86.0	95.0	101.0	7.5
27JUL-30JUL	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
10AUG-13AUG	1	1	0	0	0	0	0	0	0	2	94.5	91.0	94.5	98.0	4.9
24AUG-27AUG	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
08SEP-11SEP	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
05OCT-08OCT	0	0	0	0	0	0	0	1	1	2	130.5	129.0	130.5	132.0	2.1
19OCT-22OCT	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======	======	======	======					
	2	2	1	0	0	0	0	1	1	33					

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, 2009

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
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04MAY-07MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11MAY-13MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18MAY-21MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26MAY-29MAY	0	6	0	0	0	0	0	0	0	0	0	0	0	0
01JUN-04JUN	0	46	5	1	0	0	0	0	0	0	0	0	0	0
08JUN-11JUN	1	67	62	24	0	0	0	0	0	0	0	0	0	0
15JUN-19JUN	1	233	281	149	36	5	0	0	0	0	0	0	0	0
22JUN-27JUN	0	15	113	144	81	31	2	1	0	0	0	0	0	0
29JUN-03JUL	0	70	200	212	120	54	26	3	4	0	0	0	0	0
13JUL-15JUL	0	13	178	339	365	343	213	125	44	26	29	0	0	0
27JUL-29JUL	0	2	40	138	228	411	369	236	155	127	145	30	12	1
11AUG-13AUG	0	1	23	127	183	222	189	186	216	174	453	217	150	54
25AUG-27AUG	0	0	4	60	160	199	162	147	116	91	280	243	244	170
08SEP-10SEP	0	0	0	4	29	198	139	126	114	117	354	230	221	164
21SEP-23SEP	0	0	0	3	16	29	49	101	138	140	324	166	250	301
05OCT-07OCT	0	0	0	0	0	2	16	25	54	73	435	208	123	287
	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	2	453	906	1201	1218	1494	1165	950	841	748	2020	1094	1000	977

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	75.0-79.9+	N	MEAN	MIN	MED	MAX	SD
16MAR-18MAR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
23MAR-25MAR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
30MAR-01APR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
06APR-09APR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13APR-16APR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
20APR-23APR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27APR-30APR	0	0	0	0	0	0	0	0	0	.	.	.	.	.
04MAY-07MAY	0	0	0	0	0	0	0	0	0	.	.	.	.	.
11MAY-13MAY	0	0	0	0	0	0	0	0	0	.	.	.	.	.
18MAY-21MAY	0	0	0	0	0	0	0	0	0	.	.	.	.	.
26MAY-29MAY	0	0	0	0	0	0	0	0	6	3.2	2.5	3.3	3.5	0.4
01JUN-04JUN	0	0	0	0	0	0	0	0	52	3.1	2.2	2.8	6.0	0.7
08JUN-11JUN	0	0	0	0	0	0	0	0	154	4.3	1.9	4.3	7.4	1.4
15JUN-19JUN	0	0	0	0	0	0	0	0	705	5.0	1.9	4.6	10.8	1.6
22JUN-27JUN	0	0	0	0	0	0	0	0	387	7.0	3.0	6.6	14.7	2.0
29JUN-03JUL	0	0	0	0	0	0	0	0	689	6.9	2.7	6.6	17.3	2.5
13JUL-15JUL	0	0	0	0	0	0	0	0	1675	10.0	3.2	9.6	24.4	3.6
27JUL-29JUL	0	0	0	0	0	0	0	0	1894	13.5	3.8	12.6	35.0	4.8
11AUG-13AUG	22	5	0	0	0	0	0	0	2222	18.5	3.6	17.6	49.0	8.0
25AUG-27AUG	105	22	7	0	0	0	0	0	2010	22.3	5.6	21.6	53.0	10.5
08SEP-10SEP	118	36	11	2	1	0	0	0	1864	24.1	6.4	23.1	62.0	10.0
21SEP-23SEP	178	87	31	20	0	0	0	0	1837	28.8	6.4	27.9	60.0	10.7
05OCT-07OCT	323	133	62	27	9	1	0	2	1783	32.6	11.1	33.0	78.0	10.7
	======	======	======	======	======	======	======	======	======					
	746	283	111	49	10	1	0	2	15278					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	0
20JUL-24JUL	12	26	9	1	1	0	0	0	0	0
03AUG-07AUG	0	23	51	46	26	3	0	0	0	0
17AUG-20AUG	0	1	25	39	37	20	8	2	0	0
31AUG-03SEP	0	4	26	52	48	18	2	0	0	0
14SEP-17SEP	0	2	15	48	42	47	19	10	1	1
28SEP-01OCT	0	0	17	26	33	41	40	18	3	2
12OCT-16OCT	0	0	4	8	24	42	49	27	13	8
26OCT-29OCT	0	0	0	1	6	9	10	3	3	5
09NOV-13NOV	0	0	0	1	0	2	3	1	4	0
30NOV-04DEC	0	0	0	0	0	1	1	0	0	0
	======	======	======	======	======	======	======	======	======	======
	12	56	147	222	217	183	132	61	24	16

DATES	60.0-64.9	65.0-69.9	70.0-74.9+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	.	.	.	.	.
20JUL-24JUL	0	0	0	49	17.3	10.0	17.0	33.0	4.4
03AUG-07AUG	0	0	0	149	24.7	15.0	25.0	35.0	4.9
17AUG-20AUG	0	0	0	132	30.2	19.0	30.0	48.0	6.1
31AUG-03SEP	0	0	0	150	29.0	19.0	29.0	43.0	5.0
14SEP-17SEP	3	1	0	189	33.6	18.0	33.0	65.0	8.3
28SEP-01OCT	1	1	0	182	36.2	20.0	36.0	65.0	8.6
12OCT-16OCT	1	1	0	177	40.6	21.0	40.0	66.0	7.9
26OCT-29OCT	1	0	0	38	42.5	28.0	41.0	61.0	8.9
09NOV-13NOV	2	0	0	13	46.8	29.0	48.0	63.0	10.2
30NOV-04DEC	0	0	0	2	39.5	35.0	39.5	44.0	6.4
	======	======	======	======					
	8	3	0	1081					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27JUL-30JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
10AUG-13AUG	0	8	19	7	3	1	0	0	0	0	0	38	22.6	16.0	21.0	35.0	4.5
24AUG-27AUG	0	2	16	20	5	5	11	10	2	0	0	71	32.4	18.0	29.0	52.0	10.1
08SEP-11SEP	0	7	37	15	4	6	1	2	3	3	0	78	27.2	17.0	23.0	56.0	10.0
21SEP-24SEP	0	0	34	7	9	18	22	23	14	5	0	132	37.0	20.0	39.0	57.0	11.2
05OCT-08OCT	0	0	10	26	11	22	29	22	11	3	0	134	37.6	22.0	39.0	56.0	9.3
19OCT-22OCT	0	0	2	11	14	17	17	26	11	7	0	105	41.1	22.0	43.0	59.0	8.6
	======	======	======	======	======	======	======	======	======	======	======	======					
	0	17	118	86	46	69	80	83	41	18	0	558					

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, 2009

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
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04MAY-07MAY	0	0	0	0	4	6	0	0	0	0	0	0	0	0	0	0	0	0
11MAY-13MAY	0	0	0	2	8	15	3	0	0	0	0	0	0	0	0	0	0	0
18MAY-21MAY	0	0	0	0	4	42	18	8	2	0	0	0	0	0	0	0	0	0
26MAY-29MAY	0	0	0	0	4	10	6	4	2	2	1	0	0	0	0	0	0	0
01JUN-04JUN	0	0	0	0	9	5	2	3	5	1	1	0	0	0	0	0	0	0
08JUN-11JUN	0	0	0	0	1	0	0	3	2	0	2	0	0	0	0	0	0	0
15JUN-19JUN	0	0	0	0	0	0	3	2	4	8	6	2	0	0	0	0	0	0
22JUN-27JUN	0	0	0	0	0	0	0	0	0	1	10	10	5	2	0	0	0	0
29JUN-03JUL	0	0	0	0	3	1	0	1	0	1	2	5	10	13	5	4	1	0
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL-29JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11AUG-13AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25AUG-27AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP-10SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP-23SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-07OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	2	33	79	32	21	15	13	22	17	15	15	5	4	1	1

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+	N	MEAN	MIN	MED	MAX	SD
16MAR-18MAR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
23MAR-25MAR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
30MAR-01APR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
06APR-09APR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13APR-16APR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
20APR-23APR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27APR-30APR	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
04MAY-07MAY	0	0	0	0	0	0	0	0	0	0	0	10	9.9	8.5	10.1	10.6	0.7
11MAY-13MAY	0	0	0	0	0	0	0	0	0	0	0	28	10.4	7.5	10.6	12.5	1.3
18MAY-21MAY	0	0	0	0	0	0	0	0	0	0	0	74	11.9	9.1	11.4	17.5	1.7
26MAY-29MAY	0	0	0	0	0	0	0	0	0	0	0	29	13.0	8.4	12.0	20.0	3.0
01JUN-04JUN	0	0	0	0	0	0	0	0	0	0	0	26	12.7	8.3	11.2	20.2	3.8
08JUN-11JUN	0	0	0	0	0	0	0	0	0	0	0	8	16.1	9.7	15.8	21.4	3.7
15JUN-19JUN	0	0	0	0	0	0	0	0	0	0	0	25	19.0	12.8	18.5	29.0	3.9
22JUN-27JUN	0	0	0	0	0	0	0	0	0	0	0	28	27.0	18.5	25.8	36.0	4.6
29JUN-03JUL	0	0	0	0	0	0	0	0	0	0	0	46	32.7	8.9	34.5	53.0	10.4
13JUL-15JUL	0	1	0	0	0	0	0	0	0	0	0	1	68.0	68.0	68.0	68.0	.
27JUL-29JUL	0	0	0	0	1	1	0	0	0	0	0	3	74.0	55.0	82.0	85.0	16.5
11AUG-13AUG	0	0	0	0	2	0	1	0	0	0	0	3	84.7	80.0	84.0	90.0	5.0
25AUG-27AUG	0	0	0	0	0	2	0	0	0	0	0	2	88.5	88.0	88.5	89.0	0.7
08SEP-10SEP	0	0	0	0	0	0	0	0	0	0	1	1	111.0	111.0	111.0	111.0	.
21SEP-23SEP	0	0	0	0	0	0	1	0	0	0	0	1	93.0	93.0	93.0	93.0	.
05OCT-07OCT	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======	======	======	======	======	======					
	0	1	0	0	3	3	2	0	0	0	1	285					

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, 2009

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
06JUL-10JUL	0	0	0	2	2	3	5	6	2	1	0	0	0	0	0
20JUL-24JUL	0	0	0	1	0	0	0	3	2	0	0	2	4	3	0
03AUG-07AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17AUG-20AUG	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP-17SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12OCT-16OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	3	2	3	5	10	4	1	0	2	5	6	1

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	21	42.0	27.0	43.0	55.0	8.1
20JUL-24JUL	1	0	0	0	0	0	0	0	0	16	63.3	26.0	69.5	86.0	16.5
03AUG-07AUG	1	0	0	0	0	0	0	0	0	2	81.0	77.0	81.0	85.0	5.7
17AUG-20AUG	1	1	0	0	0	0	0	0	0	6	75.8	48.0	78.5	90.0	15.3
31AUG-03SEP	1	1	0	0	0	0	0	0	0	2	91.0	89.0	91.0	93.0	2.8
14SEP-17SEP	0	1	1	1	0	0	0	0	0	3	96.3	94.0	95.0	100.0	3.2
28SEP-01OCT	0	0	1	1	0	0	0	0	0	2	101.5	99.0	101.5	104.0	3.5
12OCT-16OCT	0	0	0	1	2	3	0	1	0	8	105.9	76.0	109.0	122.0	13.3
26OCT-29OCT	0	0	0	0	1	0	0	0	0	1	108.0	108.0	108.0	108.0	.
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
30NOV-04DEC	0	0	0	0	0	0	1	0	0	1	117.0	117.0	117.0	117.0	.
	======	======	======	======	======	======	======	======	======	======					
	4	3	2	3	3	3	1	1	0	62					

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, 2009

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
15JUN-18JUN	0	0	6	16	3	0	0	0	0	0	0	0	0	0
29JUN-02JUL	0	0	0	0	4	10	6	2	0	0	0	0	0	0
13JUL-15JUL	0	0	0	0	3	4	8	4	2	1	6	6	1	0
27JUL-30JUL	0	0	0	0	0	0	0	0	2	3	3	4	19	17
10AUG-13AUG	0	0	0	0	0	0	0	0	0	2	10	12	15	30
24AUG-27AUG	0	0	0	0	0	0	0	0	0	1	1	2	9	6
08SEP-11SEP	0	0	0	0	0	0	0	0	1	0	3	4	3	4
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT-22OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	6	16	10	14	14	6	5	7	23	28	47	57

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
15JUN-18JUN	0	0	0	0	0	0	0	0	25	26.2	20.0	26.0	32.0	3.3
29JUN-02JUL	0	0	0	0	0	0	0	0	22	37.6	32.0	37.0	46.0	3.9
13JUL-15JUL	0	0	0	0	0	0	0	0	38	51.6	33.0	49.0	70.0	12.2
27JUL-30JUL	12	3	0	0	0	0	0	0	63	73.8	52.0	75.0	86.0	7.9
10AUG-13AUG	35	15	3	0	0	0	0	0	122	76.8	56.0	78.0	94.0	7.9
24AUG-27AUG	19	46	17	7	3	0	0	0	111	85.4	59.0	87.0	103.0	7.8
08SEP-11SEP	4	15	31	22	3	0	0	0	90	88.2	50.0	91.0	102.0	10.0
21SEP-24SEP	4	6	19	26	14	3	0	0	72	95.5	80.0	96.0	107.0	6.0
05OCT-08OCT	0	2	20	19	17	15	3	0	76	98.9	85.0	99.0	111.0	6.1
19OCT-22OCT	0	0	2	5	19	10	5	0	41	102.9	90.0	103.0	111.0	5.0
	======	======	======	======	======	======	======	======	======					
	74	87	92	79	56	28	8	0	660					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	3	1	0	1	0	0	0	0	0
20JUL-24JUL	0	0	0	0	0	0	1	1	2	2	4	2	0	0	0
03AUG-07AUG	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0
17AUG-20AUG	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14SEP-17SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
12OCT-16OCT	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	0	0	0	4	3	2	3	7	4	2	4	3

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	5	45.6	40.0	44.0	58.0	7.4
20JUL-24JUL	0	0	0	0	0	0	0	0	0	12	57.8	43.0	60.0	69.0	7.8
03AUG-07AUG	0	0	0	0	0	0	0	0	0	5	66.0	61.0	67.0	71.0	3.7
17AUG-20AUG	1	0	0	0	0	0	0	0	0	6	77.8	63.0	78.5	89.0	8.6
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
14SEP-17SEP	3	4	1	1	0	0	0	0	0	10	90.0	77.0	90.5	100.0	6.4
28SEP-01OCT	1	3	2	1	0	0	0	0	0	8	91.1	71.0	93.0	103.0	9.6
12OCT-16OCT	1	1	6	12	5	1	0	0	0	28	98.0	46.0	100.5	112.0	12.4
26OCT-29OCT	0	3	1	1	2	1	0	0	0	8	99.5	90.0	99.0	111.0	8.4
09NOV-13NOV	0	0	1	1	0	2	0	1	1	7	107.7	83.0	110.0	127.0	14.9
30NOV-04DEC	0	0	0	0	0	1	1	1	0	3	115.0	110.0	115.0	120.0	5.0
	======	======	======	======	======	======	======	======	======	======					
	6	11	11	16	7	5	1	2	1	92					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN-02JUL	0	0	0	0	0	0	1	3	1	3	1	0	0	0	0
13JUL-15JUL	0	0	0	0	0	0	13	4	8	3	0	0	2	3	1
27JUL-30JUL	0	0	0	0	0	0	1	7	3	3	4	4	3	2	0
10AUG-13AUG	0	0	0	0	0	0	0	4	2	5	5	9	12	5	3
24AUG-27AUG	0	0	0	0	0	0	0	0	1	1	2	5	7	11	6
08SEP-11SEP	0	0	0	0	0	0	0	0	0	1	2	2	3	5	5
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	0	1	2	2	6
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
19OCT-22OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	0	0	0	15	18	15	16	14	22	30	28	22

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	0	0	10	53.4	41.0	55.0	63.0	7.1
13JUL-15JUL	0	0	0	0	0	0	0	0	34	52.5	41.0	49.5	82.0	12.1
27JUL-30JUL	0	0	1	0	0	1	0	0	29	61.9	43.0	61.0	112.0	15.5
10AUG-13AUG	0	1	4	0	1	0	0	0	51	69.7	45.0	70.0	109.0	14.1
24AUG-27AUG	9	10	4	1	1	0	0	0	58	81.1	52.0	81.0	106.0	11.5
08SEP-11SEP	13	12	4	8	3	1	0	1	60	88.4	56.0	88.5	122.0	13.0
21SEP-24SEP	10	25	10	2	2	2	0	0	62	91.0	68.0	91.5	114.0	8.5
05OCT-08OCT	3	8	10	6	3	2	2	0	37	96.9	69.0	97.0	118.0	10.1
19OCT-22OCT	2	8	5	3	2	1	0	0	21	96.1	89.0	95.0	111.0	6.1
	======	======	======	======	======	======	======	======	======					
	37	64	38	20	12	7	2	1	362					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	3	0	0	0	0	0
20JUL-24JUL	0	0	0	0	0	0	12	14	3	0	0	1
03AUG-07AUG	0	0	0	0	0	0	1	4	9	9	7	2
17AUG-20AUG	0	0	0	0	0	0	0	1	4	11	6	7
31AUG-03SEP	0	0	0	0	0	0	0	0	0	1	0	7
14SEP-17SEP	0	0	0	0	0	0	0	0	0	0	0	1
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0	1
12OCT-16OCT	0	0	0	0	0	0	0	0	0	0	0	1
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	0	0	0	16	19	16	21	13	20

DATES	70.0-74.9	75.0-79.9	80.0-84.9	85.0-89.9	90.0-94.9	95.0-99.9+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	0	0	3	41.3	41.0	41.0	42.0	0.6
20JUL-24JUL	0	0	0	0	0	0	31	46.6	41.0	46.0	65.0	5.3
03AUG-07AUG	1	0	0	0	0	0	34	56.1	40.0	58.0	72.0	7.0
17AUG-20AUG	2	0	1	0	0	0	33	60.9	48.0	60.0	82.0	6.9
31AUG-03SEP	7	6	0	0	0	0	21	71.1	59.0	72.0	78.0	4.8
14SEP-17SEP	8	9	2	3	1	0	24	77.2	68.0	77.0	91.0	6.1
28SEP-01OCT	0	3	7	8	1	0	20	83.1	68.0	83.5	90.0	5.1
12OCT-16OCT	1	7	17	14	16	6	62	86.1	66.0	86.0	98.0	6.4
26OCT-29OCT	0	0	0	0	0	0	0	.	.	.	.	.
09NOV-13NOV	0	0	0	0	0	0	0	.	.	.	.	.
30NOV-04DEC	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======					
	19	25	27	25	18	6	228					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN-02JUL	0	0	0	0	0	0	4	1	0	0	0	0	0	0
13JUL-15JUL	0	0	0	0	0	0	13	7	0	0	0	0	0	0
27JUL-30JUL	0	0	0	0	0	0	11	8	9	12	4	1	0	0
10AUG-13AUG	0	0	0	0	0	0	6	13	11	9	9	16	4	2
24AUG-27AUG	0	0	0	0	0	0	0	3	3	7	13	30	14	4
08SEP-11SEP	0	0	0	0	0	0	0	1	1	5	12	23	14	13
21SEP-24SEP	0	0	0	0	0	0	0	1	0	2	2	9	12	24
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	1	2	9
19OCT-22OCT	0	0	0	0	0	0	0	0	0	0	0	1	8	8
	======	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	0	0	0	0	34	34	24	35	40	81	54	60

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+	N	MEAN	MIN	MED	MAX	SD
15JUN-18JUN	0	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	0	5	42.2	40.0	42.0	45.0	1.9
13JUL-15JUL	0	0	0	0	0	0	0	20	43.6	41.0	43.0	49.0	2.5
27JUL-30JUL	0	0	0	0	0	0	0	47	51.4	41.0	52.0	66.0	7.2
10AUG-13AUG	0	0	0	0	0	0	0	74	57.2	41.0	58.0	75.0	9.4
24AUG-27AUG	0	0	0	0	0	0	0	79	65.1	49.0	67.0	76.0	6.3
08SEP-11SEP	3	0	0	0	0	0	0	72	68.3	46.0	67.0	82.0	7.0
21SEP-24SEP	12	4	0	0	0	0	0	67	74.4	47.0	75.0	88.0	7.7
05OCT-08OCT	5	5	2	0	0	0	0	24	80.8	69.0	80.0	92.0	6.1
19OCT-22OCT	7	8	4	0	0	0	1	37	81.2	68.0	80.0	114.0	8.8
	======	======	======	======	======	======	======	======					
	27	17	6	0	0	0	1	425					

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, 2009

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
06JUL-10JUL	0	0	1	0	0	0	0	0	0	0	0
20JUL-24JUL	0	0	0	0	0	0	0	0	0	0	0
03AUG-07AUG	0	0	0	0	2	0	0	0	0	0	0
17AUG-20AUG	0	0	0	0	0	0	0	1	0	0	0
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	0
14SEP-17SEP	0	0	0	0	0	0	0	0	0	1	1
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0
12OCT-16OCT	0	0	0	0	0	0	0	0	0	1	1
26OCT-29OCT	0	0	0	0	0	0	0	0	0	2	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	1
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======
	0	0	1	0	2	0	0	1	0	4	3

DATES	65.0-69.9	70.0-74.9	75.0-79.9	80.0-84.9+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	1	22.0	22.0	22.0	22.0	.
20JUL-24JUL	0	0	0	0	0	.	.	.	.	.
03AUG-07AUG	0	0	0	0	2	32.5	32.0	32.5	33.0	0.7
17AUG-20AUG	0	0	0	0	1	45.0	45.0	45.0	45.0	.
31AUG-03SEP	0	0	0	0	0	.	.	.	.	.
14SEP-17SEP	0	0	0	0	2	60.5	58.0	60.5	63.0	3.5
28SEP-01OCT	0	0	0	0	0	.	.	.	.	.
12OCT-16OCT	0	0	0	0	2	60.0	58.0	60.0	62.0	2.8
26OCT-29OCT	1	0	0	0	3	60.0	56.0	58.0	66.0	5.3
09NOV-13NOV	0	1	1	0	3	70.0	62.0	70.0	78.0	8.0
30NOV-04DEC	1	1	0	0	2	70.5	67.0	70.5	74.0	4.9
	======	======	======	======	======					
	2	2	1	0	16					

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, 2009

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
15JUN-18JUN	11	40	1	0	0	0	0	0	0	0	0
29JUN-02JUL	4	13	31	10	1	0	0	0	0	0	0
13JUL-15JUL	0	4	5	20	23	3	1	0	0	0	0
27JUL-30JUL	0	0	0	1	8	24	31	15	0	0	0
10AUG-13AUG	0	0	0	0	1	3	16	21	23	8	1
24AUG-27AUG	0	0	0	0	0	2	3	16	20	21	2
08SEP-11SEP	0	0	0	0	0	0	1	4	7	16	20
21SEP-24SEP	0	0	0	0	0	0	0	0	5	15	14
05OCT-08OCT	0	0	0	1	0	1	1	0	3	6	5
19OCT-22OCT	0	0	0	0	0	0	0	0	2	3	9
	======	======	======	======	======	======	======	======	======	======	======
	15	57	37	32	33	33	53	56	60	69	51

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
15JUN-18JUN	0	0	0	0	0	52	15.5	11.0	16.0	20.0	1.6
29JUN-02JUL	0	0	0	0	0	59	21.0	13.0	21.0	31.0	4.0
13JUL-15JUL	0	0	0	0	0	56	28.6	15.0	29.0	41.0	5.2
27JUL-30JUL	0	0	0	0	0	79	40.3	29.0	40.0	49.0	4.4
10AUG-13AUG	0	0	0	0	0	74	48.4	34.0	48.0	64.0	5.7
24AUG-27AUG	0	1	0	0	0	68	52.3	39.0	52.0	73.0	5.8
08SEP-11SEP	8	2	0	0	0	62	59.3	44.0	60.0	71.0	5.9
21SEP-24SEP	12	6	3	0	0	58	62.7	52.0	62.0	76.0	6.4
05OCT-08OCT	14	6	5	2	0	48	63.8	26.0	65.0	81.0	10.7
19OCT-22OCT	15	10	3	0	0	43	66.0	51.0	66.0	79.0	6.2
	======	======	======	======	======	======					
	49	25	11	2	0	599					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL-24JUL	1	8	12	12	3	0	0	0	0	0	0	0	0
03AUG-07AUG	0	0	1	0	0	0	0	0	0	0	0	0	0
17AUG-20AUG	0	0	0	0	0	0	0	1	0	0	0	0	0
31AUG-03SEP	0	0	0	0	0	0	0	0	0	0	0	0	1
14SEP-17SEP	0	0	0	0	0	0	0	0	0	0	1	2	0
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	1	0	1
12OCT-16OCT	0	0	0	0	0	0	0	0	0	1	0	0	0
26OCT-29OCT	0	0	0	0	0	0	0	1	0	1	0	1	2
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0	0
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======
	1	8	13	12	3	0	0	2	0	2	2	3	4

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
06JUL-10JUL	0	0	0	0	0	0	0	.	.	.	.	.
20JUL-24JUL	0	0	0	0	0	0	36	23.3	14.0	22.5	34.0	4.8
03AUG-07AUG	0	0	0	0	0	0	1	23.0	23.0	23.0	23.0	.
17AUG-20AUG	0	0	0	0	0	0	1	47.0	47.0	47.0	47.0	.
31AUG-03SEP	0	1	0	0	0	0	2	77.5	74.0	77.5	81.0	4.9
14SEP-17SEP	0	1	1	0	0	0	5	73.6	64.0	68.0	87.0	10.6
28SEP-01OCT	0	1	2	0	0	0	5	78.0	61.0	84.0	86.0	10.9
12OCT-16OCT	0	0	0	1	2	0	4	86.0	57.0	94.0	99.0	19.7
26OCT-29OCT	1	1	4	1	0	1	13	77.7	49.0	83.0	100.0	14.8
09NOV-13NOV	1	0	0	0	1	0	2	87.0	79.0	87.0	95.0	11.3
30NOV-04DEC	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======					
	2	4	7	2	3	1	69					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
27JUL-30JUL	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
10AUG-13AUG	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
24AUG-27AUG	0	0	0	0	0	0	0	0	0	0	1	1	63.0	63.0	63.0	63.0	.
08SEP-11SEP	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
19OCT-22OCT	0	0	0	0	0	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======	======	======	======	======	======					
	0	0	0	0	0	0	0	0	0	0	1	1					

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, 2009

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL-24JUL	0	0	0	0	0	0	0	0	0	0	3	1	0
03AUG-07AUG	0	0	0	0	5	4	5	2	0	0	1	0	0
17AUG-20AUG	0	0	2	2	1	6	0	0	0	3	0	0	0
31AUG-03SEP	0	0	0	0	0	0	0	1	3	2	6	5	6
14SEP-17SEP	0	0	0	0	0	1	1	1	2	1	4	3	5
28SEP-01OCT	0	0	0	0	0	0	0	0	0	0	0	3	1
12OCT-16OCT	0	0	0	0	0	0	0	0	0	0	1	0	0
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	0	0	0	0	0	0	0	0
30NOV-04DEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======
	0	0	2	2	6	11	6	4	5	6	15	12	12

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
06JUL-10JUL	0	0	0	0	0	0	0	0	0	0	0	0	0
20JUL-24JUL	0	0	0	0	0	1	0	1	0	0	0	0	0
03AUG-07AUG	2	4	2	3	1	0	0	0	0	0	0	0	0
17AUG-20AUG	0	0	0	0	0	0	0	0	1	0	0	0	0
31AUG-03SEP	6	2	2	4	0	0	1	0	0	0	0	0	1
14SEP-17SEP	5	6	10	7	6	2	1	1	2	1	3	0	0
28SEP-01OCT	1	4	7	3	5	5	4	2	5	1	1	1	1
12OCT-16OCT	0	0	2	1	2	1	5	6	2	3	0	2	0
26OCT-29OCT	0	0	0	0	0	0	0	0	0	0	0	0	0
09NOV-13NOV	0	0	0	0	0	1	2	0	0	0	0	0	0
30NOV-04DEC	0	0	0	1	0	0	0	0	0	0	0	0	0
	======	======	======	======	======	======	======	======	======	======	======	======	======
	14	16	23	19	14	10	13	10	10	5	4	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+	N	MEAN	MIN	MED	MAX	SD
06JUL-10JUL	0	0	0	0	0	0	0	.	.	.	.	.
20JUL-24JUL	0	0	0	0	0	0	6	77.7	61.0	65.5	111.0	22.3
03AUG-07AUG	0	0	0	0	0	0	29	58.6	31.0	45.0	97.0	24.4
17AUG-20AUG	0	0	0	0	0	0	15	42.5	21.0	36.0	119.0	24.1
31AUG-03SEP	1	0	0	0	0	0	40	75.4	47.0	71.5	140.0	19.4
14SEP-17SEP	0	0	0	0	0	0	62	84.3	39.0	86.0	128.0	19.7
28SEP-01OCT	1	0	0	0	0	1	46	100.0	65.0	98.5	165.0	20.5
12OCT-16OCT	1	0	0	0	1	0	27	110.9	61.0	110.0	162.0	19.0
26OCT-29OCT	0	0	0	0	0	0	0	.	.	.	.	.
09NOV-13NOV	0	0	0	0	0	0	3	106.3	104.0	106.0	109.0	2.5
30NOV-04DEC	0	0	0	0	0	0	1	90.0	90.0	90.0	90.0	.
	======	======	======	======	======	======	======					
	3	0	0	0	1	1	229					

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, 2009

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
15JUN-18JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29JUN-02JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13JUL-15JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27JUL-30JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10AUG-13AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24AUG-27AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08SEP-11SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21SEP-24SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05OCT-08OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19OCT-22OCT	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

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+	N	MEAN	MIN	MED	MAX	SD
15JUN-18JUN	0	0	0	0	0	0	0	0	.	.	.	.	.
29JUN-02JUL	0	0	0	0	0	0	0	0	.	.	.	.	.
13JUL-15JUL	0	0	0	0	0	0	0	0	.	.	.	.	.
27JUL-30JUL	0	0	0	0	0	0	0	0	.	.	.	.	.
10AUG-13AUG	0	0	0	0	0	0	0	0	.	.	.	.	.
24AUG-27AUG	0	0	0	0	0	0	0	0	.	.	.	.	.
08SEP-11SEP	0	0	1	0	0	0	1	2	101.5	93.0	101.5	110.0	12.0
21SEP-24SEP	0	0	0	0	0	0	0	0	.	.	.	.	.
05OCT-08OCT	0	0	0	0	0	0	0	0	.	.	.	.	.
19OCT-22OCT	0	0	0	0	0	0	0	0	.	.	.	.	.
	======	======	======	======	======	======	======	======					
	0	0	1	0	0	0	1	2					

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