

SeabrookNPEM Resource

From: Balsam, Briana
Sent: Monday, March 05, 2012 1:15 PM
To: Julie Crocker; Logan, Dennis
Cc: Imboden, Andy; Moser, Michelle; SeabrookNPEM Resource
Subject: RE: Seabrook

Julie,

For copepods, the [Seabrook supplemental environmental impact statement](#) (SEIS) states on page 2-41, lines 25-31:

Holoplankton near Seabrook is generally dominated by copepods, an important prey species for many fish, whales, and other aquatic life. The most abundant holoplankton species vacillated between *Calanus finmarchicus* and *Centropages typicus*, two species of copepods (NAI, 2010). When *C. typicus* dominated the holoplankton assemblage, *Metridia* sp. copepods and Appendicularia, free swimming tunicates, were more common in NAI (2010) monitoring collections. Pershing et al. (2005) reported similar fluctuations in the abundance of *Calanus finmarchicus* and *Centropages typicus* throughout the Gulf of Maine.

And on concludes on page 4-24, lines 23-28:

NextEra compared the density of holoplankton, meroplankton, hyperbenthos taxa prior to and during operation at nearfield and farfield sites using an ANOSIM. NAI (2010) did not find a significant difference in the density of holoplankton or meroplankton taxa prior to and during operations or between the nearfield and farfield sampling sites. These results suggest that Seabrook operations have not noticeably altered holoplankton or meroplankton density near Seabrook.

For jellyfish, I did not find anything that indicates that Seabrook is impinging jellyfish. The SEIS discusses meroplankton, which includes the larval stage of jellyfish among other benthic invertebrates, though the SEIS doesn't specifically call out any species of jellyfish as being common in meroplankton samples.

Page 2-41 of the SEIS, lines 32-40, says:

Meroplankton assemblages collected near Seabrook included the larvae or planktonic stages of invertebrates that inhabit the seafloor as adults. The most common species in this assemblage included the larvae of several common shallow and deep water coastal species, such as a shrimp (*Eualus pusiolus*), sand shrimp (*Crangon septemspinosa*), and cancer crabs (*Cancer* spp.), while larvae of estuarine shrimp species—such as *Hippolyte* sp. and *Palaemonetes* sp.—were relatively rare. Adult populations of such species are relatively wide-spread throughout the Gulf of Maine. The density of meroplankton assemblages were highest from 1983–2000. Other than relatively small shifts in the community assemblage and species dominance, NAI (2010) reported relatively stable abundances and community structure for meroplankton over time.

Page 4-24, lines 23-28, summarize the conclusions regarding impacts to meroplankton. See above for this quote.

The information in the SEIS is derived from a number of Normandeau Associates, Inc. studies. These studies are available in NRC's online document library, ADAMS. I hyperlinked the available studies below:

[1988 Environmental Monitoring Report](#) (pre-operational)
[1990 Environmental Monitoring Report](#) (operational)—starts on page 392 of the PDF
[1993 Environmental Monitoring Report](#)

[1996 Environmental Monitoring Report](#)
[2007 Environmental Monitoring Report](#)
[2009 Environmental Monitoring Report](#)

If you have any further questions, let me know. The biologist that prepared the Seabrook ecology sections, Michelle Moser, is out of the office this week, but I will try to answer anything that I can until she returns.

Briana

Briana A. Balsam
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From: Julie Crocker [<mailto:julie.crocker@noaa.gov>]
Sent: Friday, March 02, 2012 12:55 PM
To: Balsam, Briana; Logan, Dennis
Subject: Seabrook

Hi Briana and Dennis -

As I continue to work on the Seabrook consultation letter, a couple of questions have come up. If the answers to these are in the DEIS, could you please point me to the right page? I am specifically looking for information on the impingement and entrainment of jellyfish (leatherback sea turtle food) and copepods (*Calanus finmarchicus*, a type of plankton -- right whale food). If not in the DEIS do you have any information that could help with an understanding of any effects to these food sources?

Thanks,

Julie

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