Essential Fish Habitat Description
White hake (*Urophycis tenuis*)

In its *Report to Congress: Status of the Fisheries of the United States* (September 1997), NMFS determined white hake is not currently overfished, but it is approaching an overfished condition. This determination is based on an assessment of stock level. Essential Fish Habitat for white hake is described as those areas of the coastal and offshore waters (out to the offshore U.S. boundary of the exclusive economic zone) that are designated on Figures 12.1 - 12.4 and in the accompanying table and meet the following conditions:

Eggs: Surface waters of the Gulf of Maine, Georges Bank, and southern New England as depicted in Figure 12.1. White hake eggs are most often observed in August and September.

Larvae: Pelagic waters of the Gulf of Maine, the southern edge of Georges Bank, and southern New England to the middle Atlantic as depicted in Figure 12.2. White hake larvae are most often observed in May in the mid-Atlantic area and August and September in the Gulf of Maine and Georges Bank.

Juveniles: *Pelagic stage* -- Pelagic waters of the Gulf of Maine, the southern edge of Georges Bank, and southern New England to the middle Atlantic as depicted in Figure 12.3. White hake juveniles in the pelagic stage are most often observed from May through September. *Demersal stage* -- Bottom habitats with seagrass beds or a substrate of mud or fine-grained sand in the Gulf of Maine, the southern edge of Georges Bank, and southern New England to the middle Atlantic as depicted in Figure 12.3. Generally, the following conditions exist where white hake juveniles are found: water temperatures below 19° C and depths from 5 - 225 meters.

Adults: Bottom habitats with a substrate of mud or fine-grained sand in the Gulf of Maine, the southern edge of Georges Bank, and southern New England to the middle Atlantic as depicted in Figure 12.4. Generally, the following conditions exist where white hake adults are found: water temperatures below 14° C and depths from 5 - 325 meters.

Spawning Adults: Bottom habitats with a substrate of mud or fine-grained sand in deep water in the Gulf of Maine, the southern edge of Georges Bank, and southern New England to the middle Atlantic as depicted in Figure 12.4. Generally, the following conditions exist where white hake adults are found: water temperatures below 14° C and depths from 5 - 325 meters. White hake are most often observed spawning during the months April - May in the southern portion of their range and August - September in the northern portion of their range.

All of the above EFH descriptions include those bays and estuaries listed on the following table, according to life history stage. The Council acknowledges potential seasonal and spatial variability of the conditions generally associated with this species.

EFH Designation of Estuaries and Embayments
White hake (*Urophycis tenuis*)

Estuaries and Embayments	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Passamaquoddy Bay			m,s	m,s	
Englishman/Machias Bay			m,s	s	
Narraguagus Bay			m,s	s	
Blue Hill Bay			m,s	s	
Penobscot Bay			m,s	s	
Muscongus Bay			m,s	m,s	
Damariscotta River			m,s	m,s	
Sheepscot River			m,s	m,s	
Kennebec / Androscoggin Rivers			m,s	m,s	
Casco Bay			m,s	m,s	
Saco Bay			m,s	m,s	
Wells Harbor			m,s	m,s	
Great Bay	s		s	s	
Merrimack River	m				
Massachusetts Bay	s	s	s	s	
Boston Harbor	s	s	s	s	
Cape Cod Bay	s	s	m,s	m,s	
Waquoit Bay					
Buzzards Bay					
Narragansett Bay					
Long Island Sound					
Connecticut River					
Gardiners Bay					
Great South Bay					
Hudson River / Raritan Bay					
Barnegat Bay					
Delaware Bay					
Chincoteague Bay					
Chesapeake Bay					

S ≡ The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > 25.0‰).

M ≡ The EFH designation for this species includes the mixing water / brackish salinity zone of this bay or estuary (0.5 < salinity < 25.0‰).

F ≡ The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0 < salinity < 0.5‰).

These EFH designations of estuaries and embayments are based on the NOAA Estuarine Living Marine Resources (ELMR) program (Jury *et al.* 1994; Stone *et al.* 1994). For a detailed view of the salinity zone boundaries, as described in the ELMR reports, please see Appendix B. The Council recognizes the spatial and temporal variability of estuarine and embayment environmental conditions generally associated with this species.

Essential Fish Habitat
White hake (*Urophycis tenuis)* Eggs

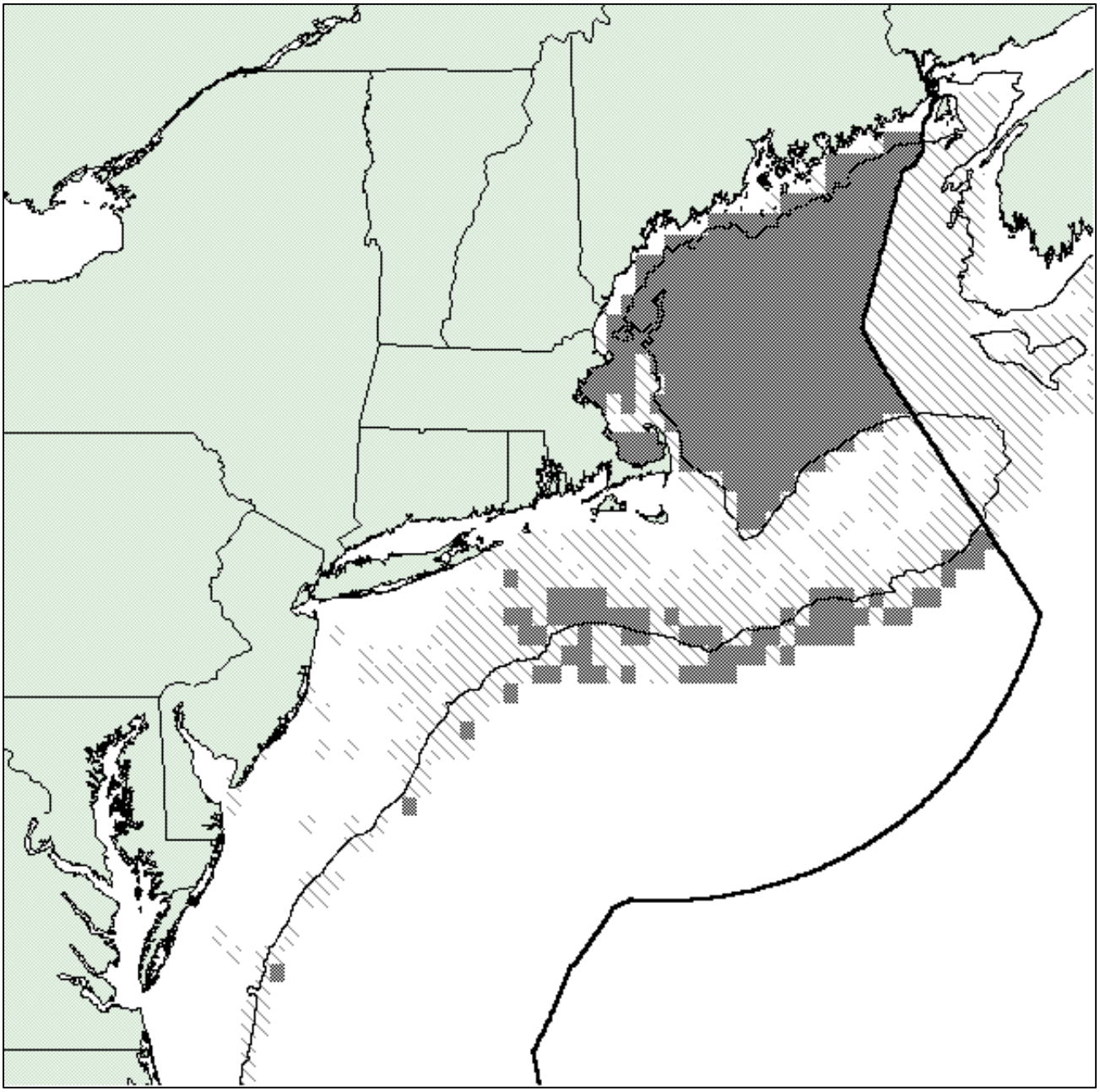

Figure 12.1: The EFH designation for white hake eggs is based upon alternative 3 for white hake adults. There are no data on white hake eggs, so the use of the adult distribution serves as a proxy to identify those areas where white hake eggs are most likely to be. Alternative 3 for adults includes all areas thought to be most important for eggs, including southern Georges Bank. The EFH designation includes those bays and estuaries identified by the NOAA ELMR program as supporting white hake eggs at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (not incorporating southern Georges Bank), or include areas where white hake occur in relatively low concentrations (throughout southern New England and the middle Atlantic). The light shading represents the entire observed range of adult white hake.

Essential Fish Habitat
White hake (*Urophycis tenuis)* Larvae

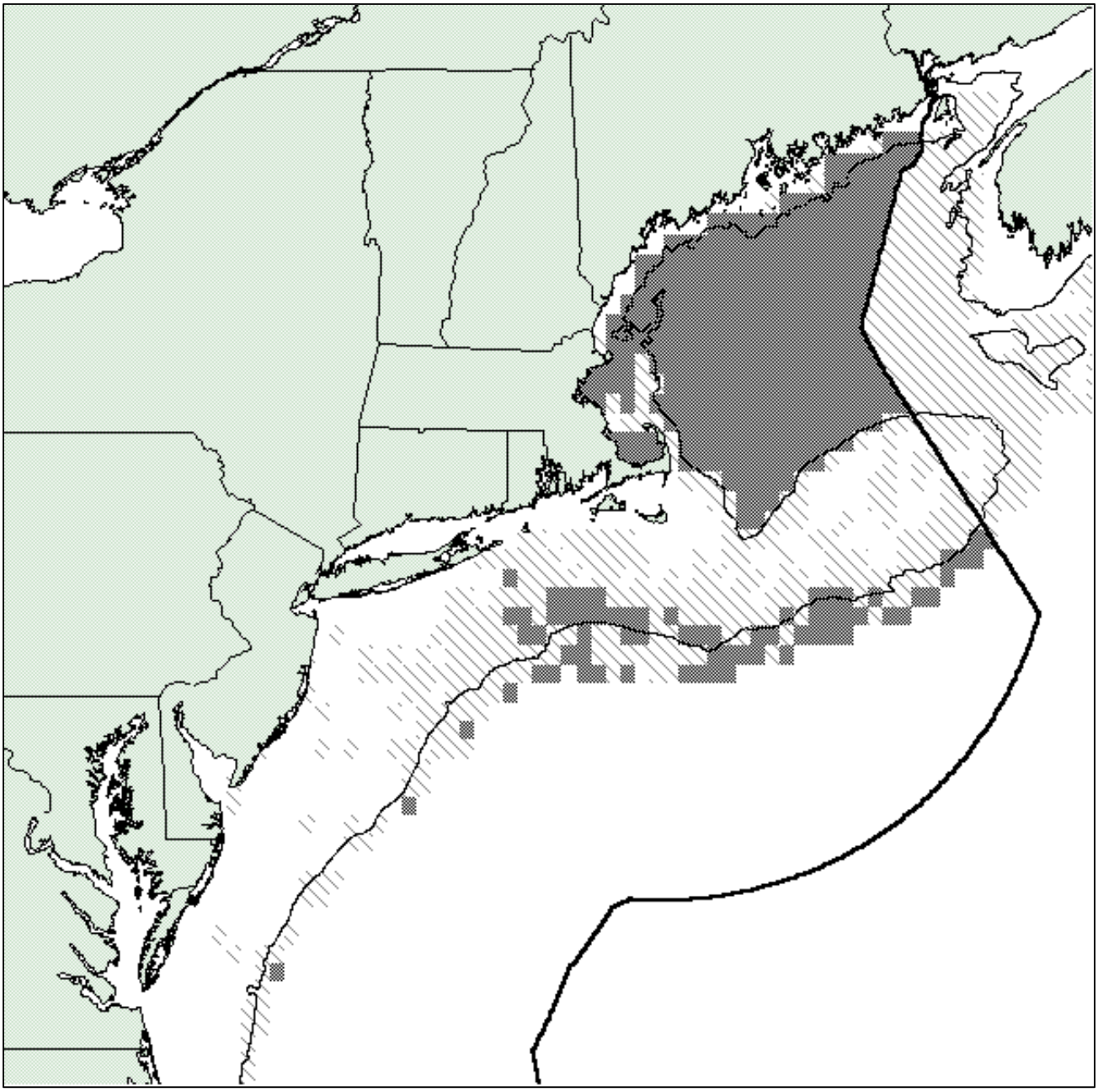

Figure 12.2: The EFH designation for white hake larvae is based upon alternative 3 for white hake adults. There are no data on white hake larvae, so the use of the adult distribution serves as a proxy to identify those areas where white hake larvae are most likely to be. Alternative 3 for adults includes all areas thought to be most important for larvae, including southern Georges Bank. The EFH designation includes those bays and estuaries identified by the NOAA ELMR program as supporting white hake larvae at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (not incorporating southern Georges Bank), or include areas where white hake occur in relatively low concentrations (throughout southern New England and the middle Atlantic). The light shading represents the entire observed range of adult white hake.

Essential Fish Habitat
White hake (*Urophycis tenuis)* Juveniles

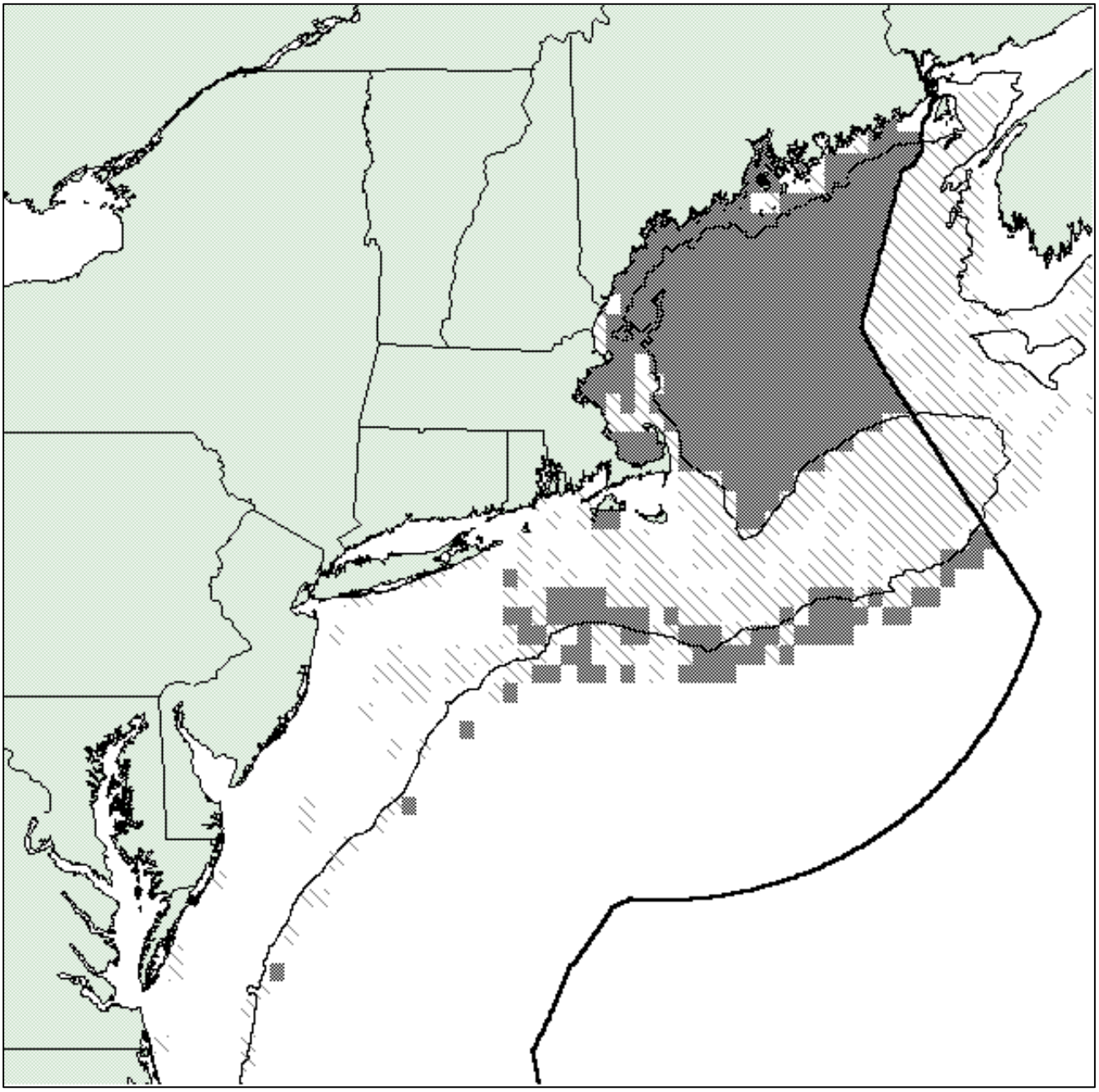

Figure 12.3: The EFH designation for juvenile white hake is based upon alternative 3 for white hake adults. Alternative 3 for adults includes all areas thought to be most important for juveniles, including southern Georges Bank. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for white hake, as well as those bays and estuaries identified by the NOAA ELMR program as supporting juvenile white hake at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (not incorporating southern Georges Bank), or include areas where white hake occur in relatively low concentrations (throughout southern New England and the middle Atlantic). The light shading represents the entire observed range of juvenile white hake.

Essential Fish Habitat
White hake (*Urophycis tenuis)* Adults

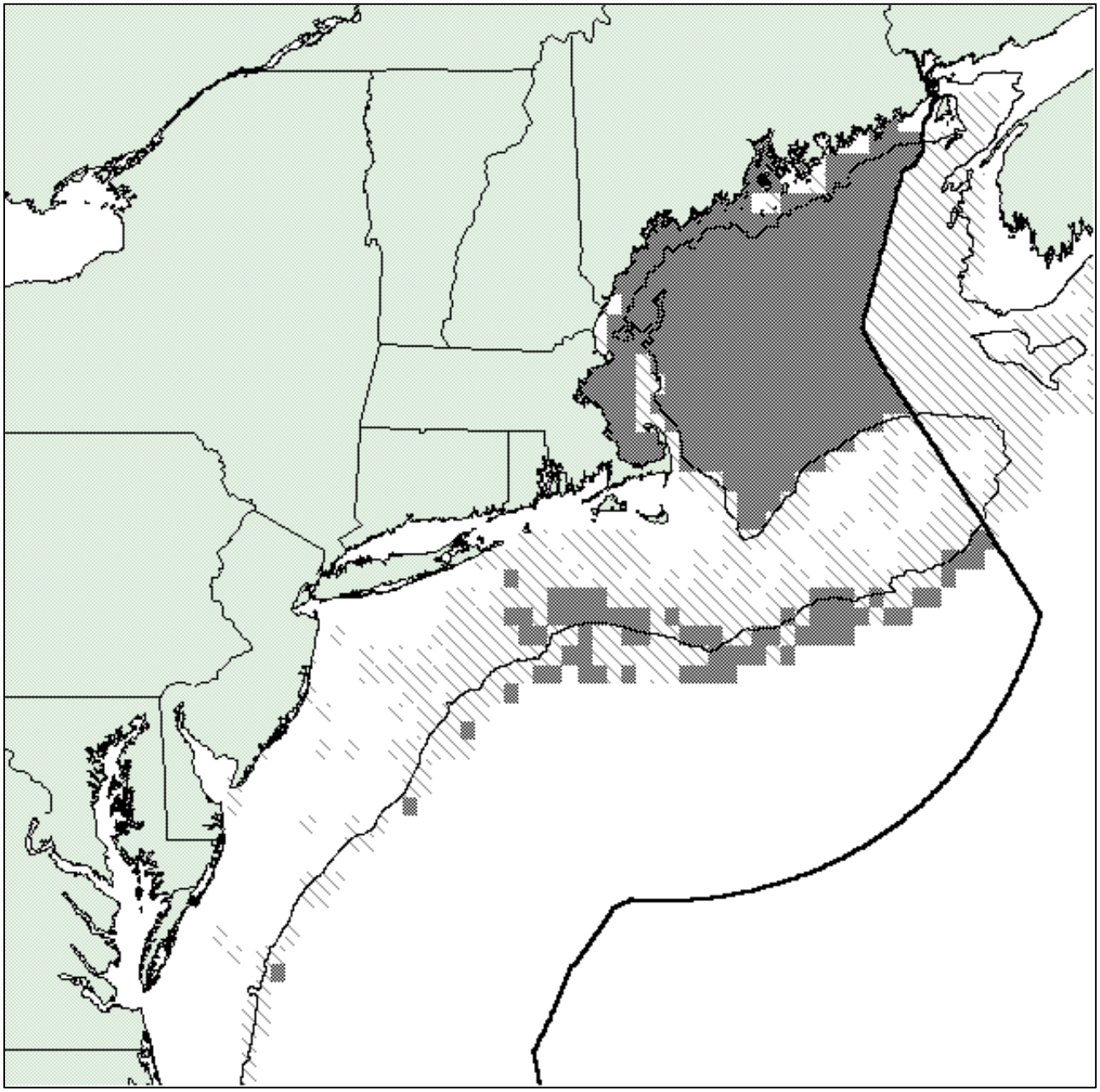

Figure 12.4: The EFH designation for adult white hake is based upon alternative 3 for white hake adults. Alternative 3 includes all areas thought to be most important to white hake, including southern Georges Bank. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for white hake, as well as those bays and estuaries identified by the NOAA ELMR program as supporting white hake at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (not incorporating southern Georges Bank), or include areas where white hake occur in relatively low concentrations (throughout southern New England and the middle Atlantic). The light shading represents the entire observed range of adult white hake.