

## **Essential Fish Habitat Description**

### **Windowpane flounder (*Scophthalmus aquosus*)**

In its *Report to Congress: Status of the Fisheries of the United States* (September 1997), NMFS determined windowpane flounder is currently overfished. This determination is based on an assessment of stock level. Essential Fish Habitat for windowpane flounder 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 14.1 - 14.4 and in the accompanying table and meet the following conditions:

**Eggs:** Surface waters around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras as depicted in Figure 14.1. Generally, the following conditions exist where windowpane flounder eggs are found: sea surface temperatures less than 20° C and water depths less than 70 meters. Windowpane flounder eggs are often observed from February to November with peaks in May and October in the middle Atlantic and July - August on Georges Bank.

**Larvae:** Pelagic waters around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras as depicted in Figure 14.2. Generally, the following conditions exist where windowpane flounder larvae are found: sea surface temperatures less than 20° C and water depths less than 70 meters. Windowpane flounder larvae are often observed from February to November with peaks in May and October in the middle Atlantic and July through August on Georges Bank.

**Juveniles:** Bottom habitats with a substrate of mud or fine-grained sand around the perimeter of the Gulf of Maine, on Georges Bank, southern New England and the middle Atlantic south to Cape Hatteras as depicted in Figure 14.3. Generally, the following conditions exist where windowpane flounder juveniles are found: water temperatures below 25° C, depths from 1 - 100 meters, and salinities between 5.5 - 36‰.

**Adults:** Bottom habitats with a substrate of mud or fine-grained sand around the perimeter of the Gulf of Maine, on Georges Bank, southern New England and the middle Atlantic south to the Virginia-North Carolina border as depicted in Figure 14.4. Generally, the following conditions exist where windowpane flounder adults are found: water temperatures below 26.8° C, depths from 1 - 75 meters, and salinities between 5.5 - 36‰.

**Spawning Adults:** Bottom habitats with a substrate of mud or fine-grained sand in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia-North Carolina border as depicted in Figure 14.4. Generally, the following conditions exist where windowpane flounder adults are found: water temperatures below 21° C, depths from 1 - 75 meters, and salinities between 5.5 - 36‰. Windowpane flounder are most often observed spawning during the months February - December with a peak in May in the middle Atlantic.

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**  
**Windowpane flounder (*Scophthalmus aquosus*)**

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

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**  
**Windowpane flounder (*Scophthalmus aquosus*) Eggs**

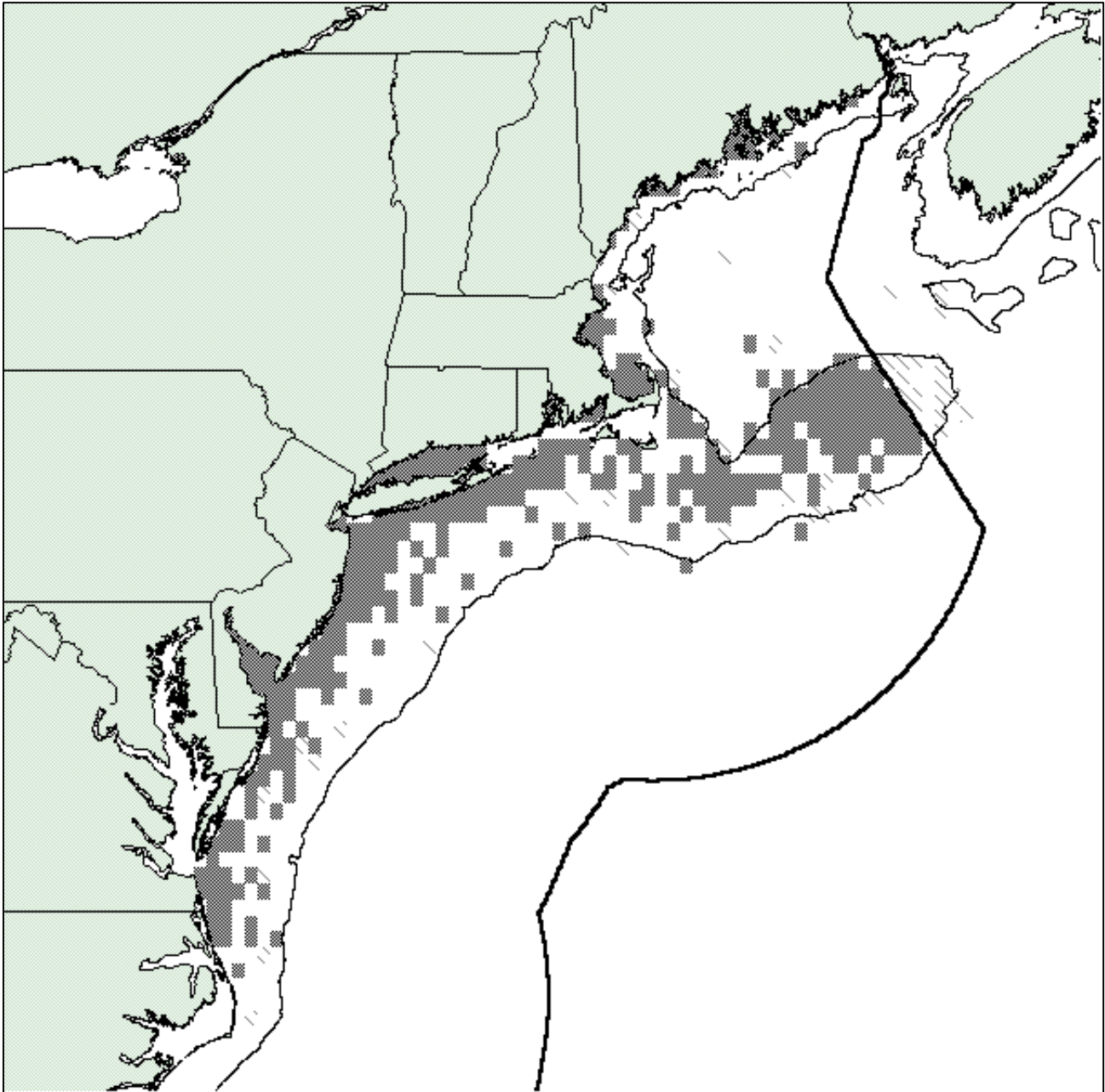


Figure 14.1: The EFH designation for windowpane flounder eggs is based upon alternative 3 for windowpane flounder eggs. The EFH designation also includes those bays and estuaries identified by the NOAA ELMR program as supporting windowpane flounder eggs at the "common" or "abundant" level. This alternative was selected to be as inclusive as possible, given the generally patchy nature of egg distribution, while not including areas with relatively very low concentrations of windowpane flounder eggs. The light shading represents the entire observed range of windowpane flounder eggs.

**Essential Fish Habitat**  
**Windowpane flounder (*Scophthalmus aquosus*) Larvae**

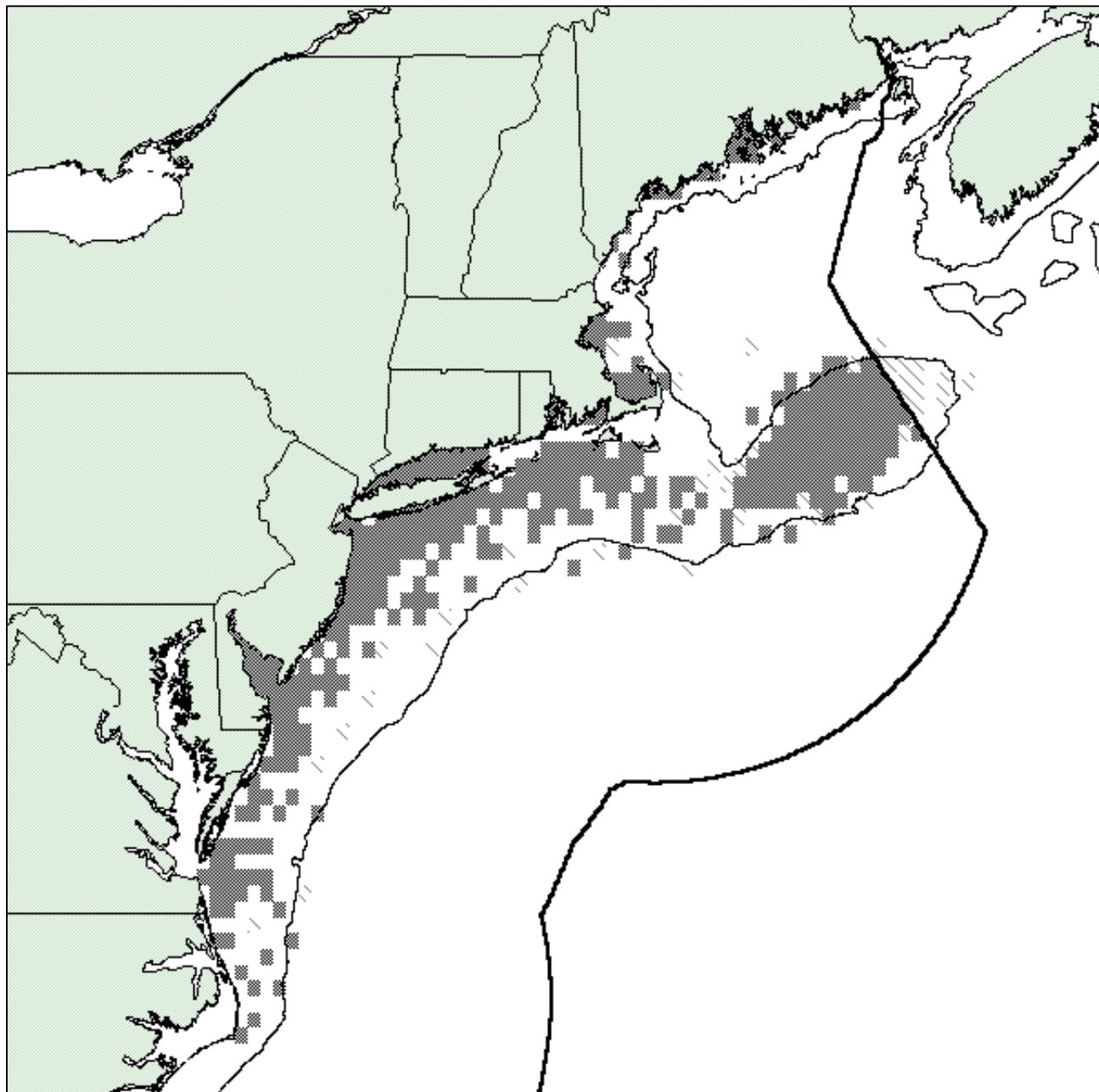


Figure 14.2: The EFH designation for windowpane flounder larvae is based upon alternative 3 for windowpane flounder larvae. The EFH designation also includes those bays and estuaries identified by the NOAA ELMR program as supporting windowpane flounder larvae at the "common" or "abundant" level. This alternative was selected to be as inclusive as possible, given the generally patchy nature of larval distribution, while not including areas with relatively very low concentrations of windowpane flounder larvae. The light shading represents the entire observed range of windowpane flounder larvae.

**Essential Fish Habitat**  
**Windowpane flounder (*Scophthalmus aquosus*) Juveniles**

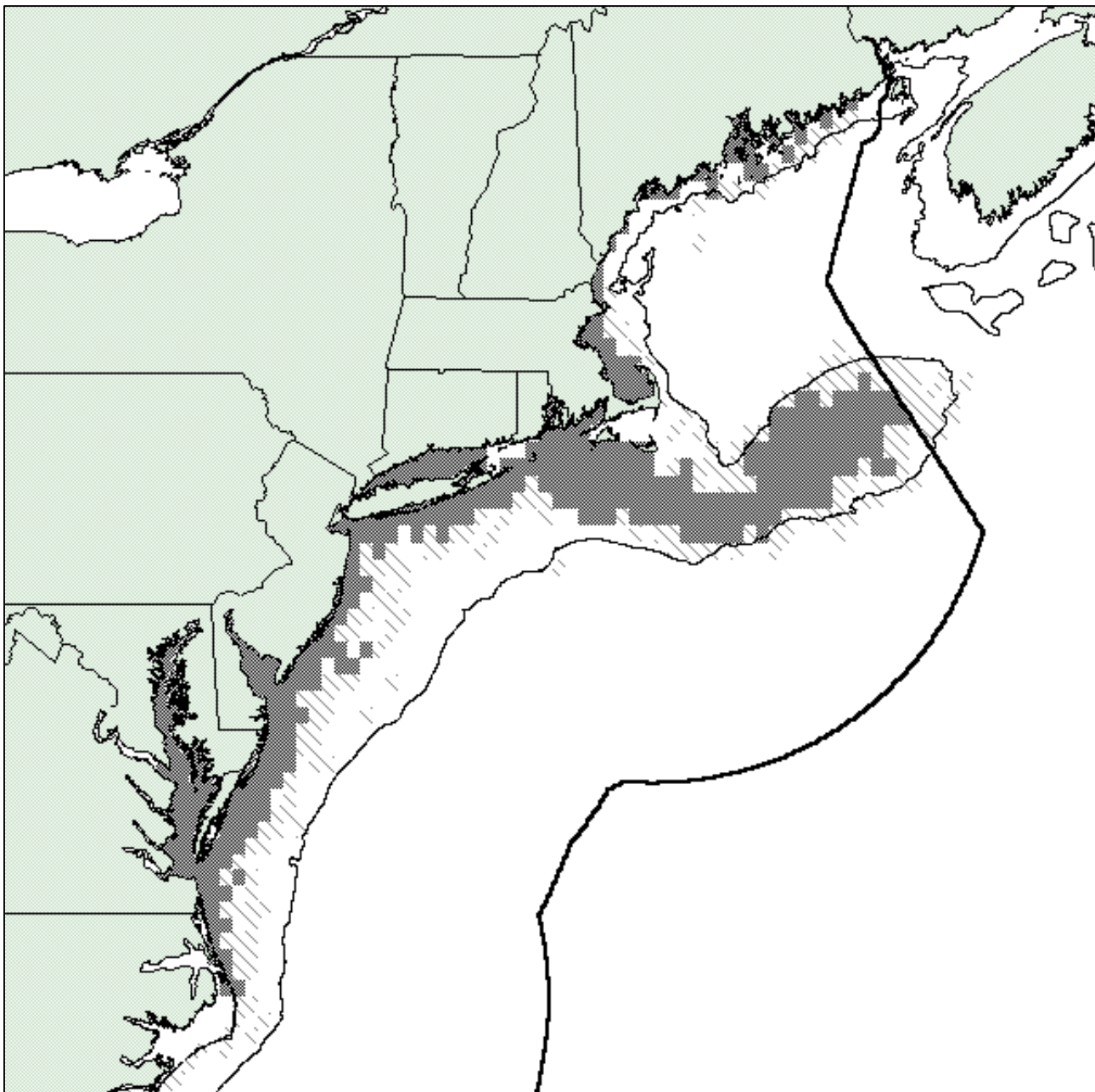


Figure 14.3: The EFH designation for juvenile windowpane flounder is based upon alternative 3 for windowpane flounder juveniles. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for windowpane flounder, as well as those bays and estuaries identified by the NOAA ELMR program as supporting juvenile windowpane flounder at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (less than half of the range of this overfished species), or include areas where windowpane flounder occur in relatively low concentrations. The light shading represents the entire observed range of juvenile windowpane flounder.



**Essential Fish Habitat**  
**Windowpane flounder (*Scophthalmus aquosus*) Adults**

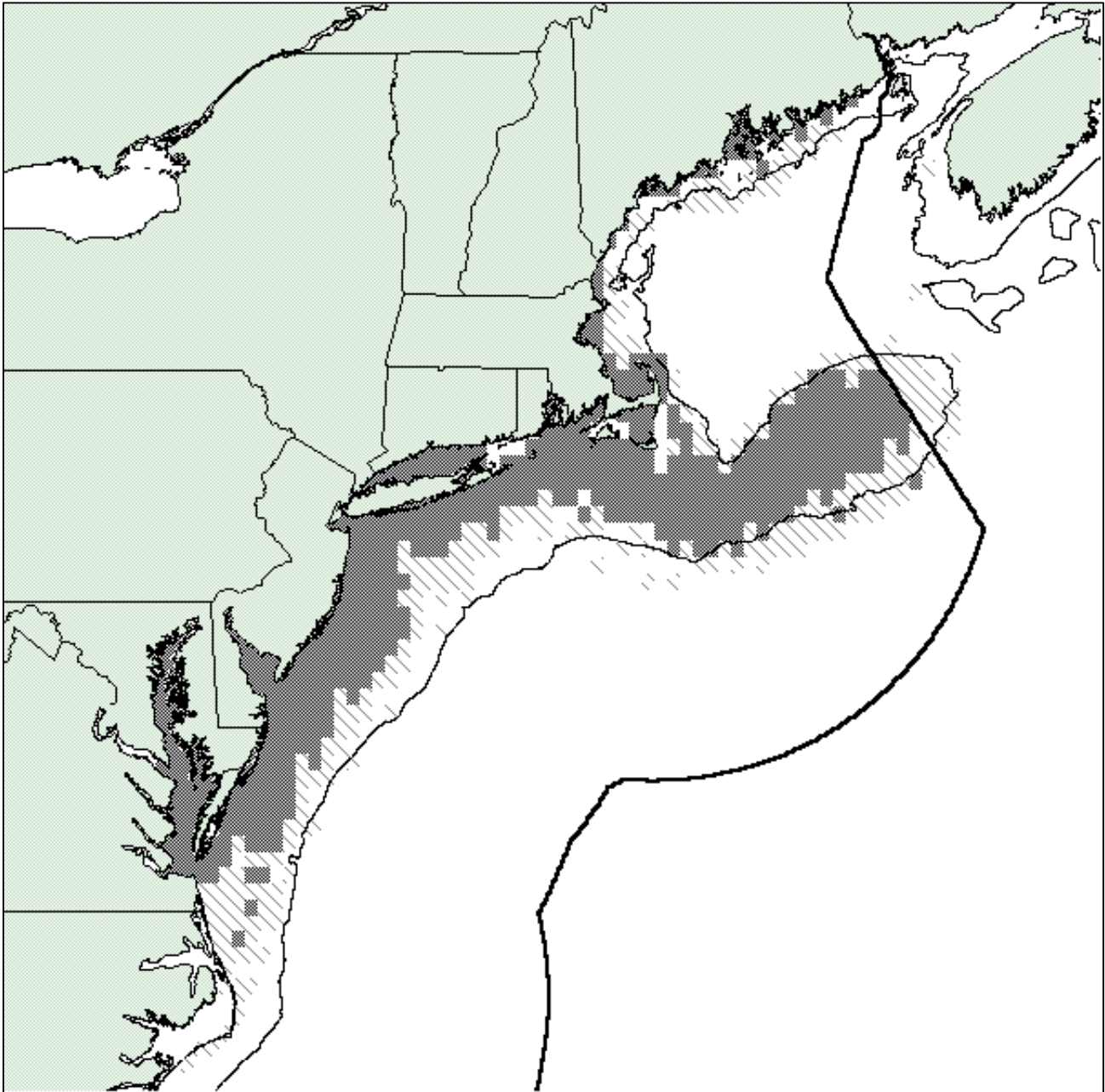


Figure 14.4: The EFH designation for adult windowpane flounder is based upon alternative 3 for windowpane flounder adults. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for windowpane flounder, as well as those bays and estuaries identified by the NOAA ELMR program as supporting adult windowpane flounder at the "common" or "abundant" level. The other alternatives were not selected because they either include too little area (less than half of the range of this overfished species), or include areas where windowpane flounder occur in relatively low concentrations. The light shading represents the entire observed range of adult windowpane flounder.