

# Omnibus EFH Amendment 2: EFH Designations

Review of methods

Modifications to maps approved in 2007

Proposed new alternatives

March 10 2011 NEFMC Habitat Committee

# Habitat-Related Contents of FMPs (Phase 1 in bold)

- **Describe and identify EFH and HAPCs**
- Evaluate the effects of fishing on EFH
- Minimize to the extent practicable adverse effects from fishing
- **Identify non-fishing activities that impact EFH**
- Assess cumulative impacts on EFH
- Identify actions to encourage the conservation and enhancement of EFH
- **List the major prey species for the species in the FMU and discuss the location of prey species' habitat**
- Identify research and information needs

# EFH Designation Components

There are **two components** to an EFH designation

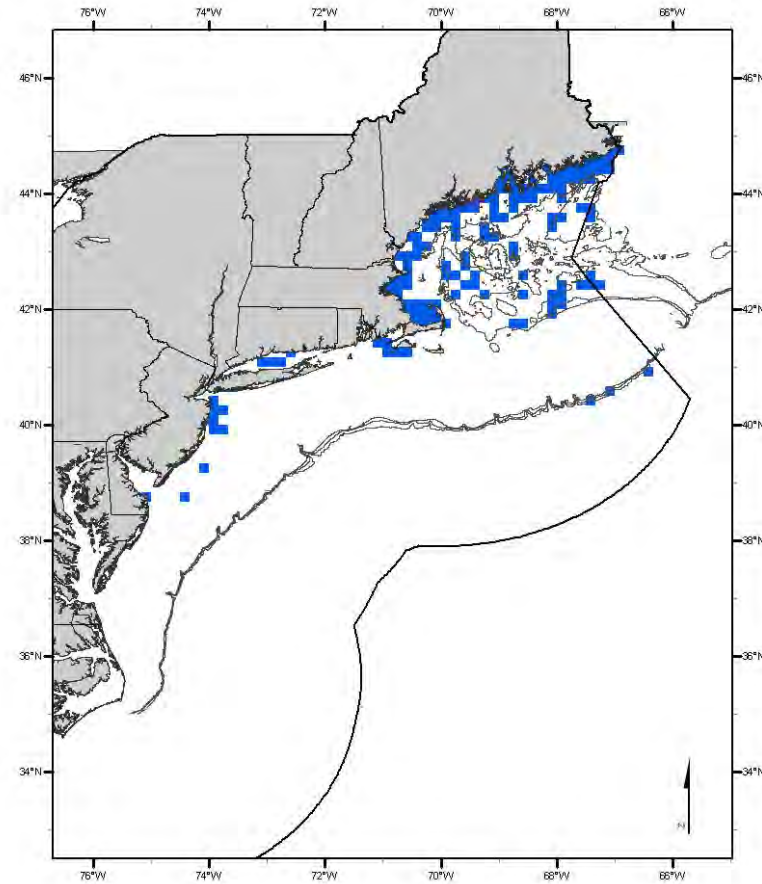
1. EFH Text Description – describes the *types* of habitat and physical characteristics (sediment, depth, temperature, salinity, etc.) that comprise EFH for a given life stage and species.
2. EFH Map – identifies “*within the constraints of available information* the geographical locations of EFH or the geographic boundaries within which EFH...is found.”

“If there are differences between the descriptions of EFH in text, map, and tables, the text is ultimately determinative of EFH.” Thus, the actual area considered EFH may be much smaller than what appears on the maps.

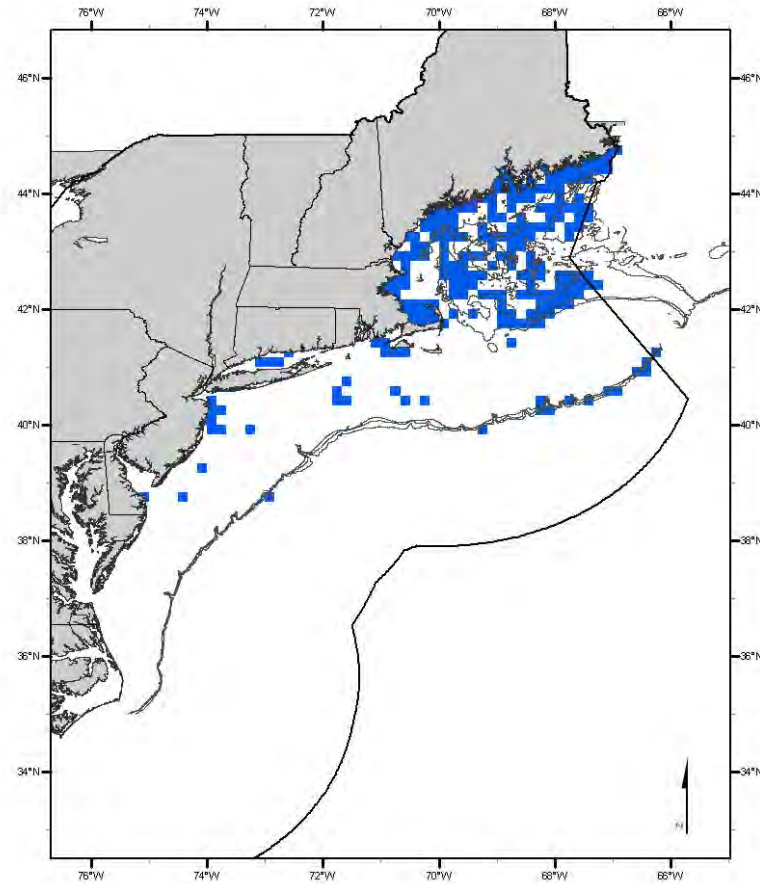
# EFH Designation Alternatives

- Alt 1: No Action = status quo 1998 maps and text descriptions
- Alt 2: Up-dated NMFS trawl survey data (1968-2005) mapped as ten minute squares (tms) at 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup>, and 90<sup>th</sup> pcts + inshore trawl survey data + ELMR areas
- Alt 3: Same as alt 2 + substrate and seasonal depth and bottom temperature habitat layers + off-shelf range and maximum depth, with NMFS tms trimmed by max depth
- Alt 4: Alt 2 extended to include 100% of survey tms

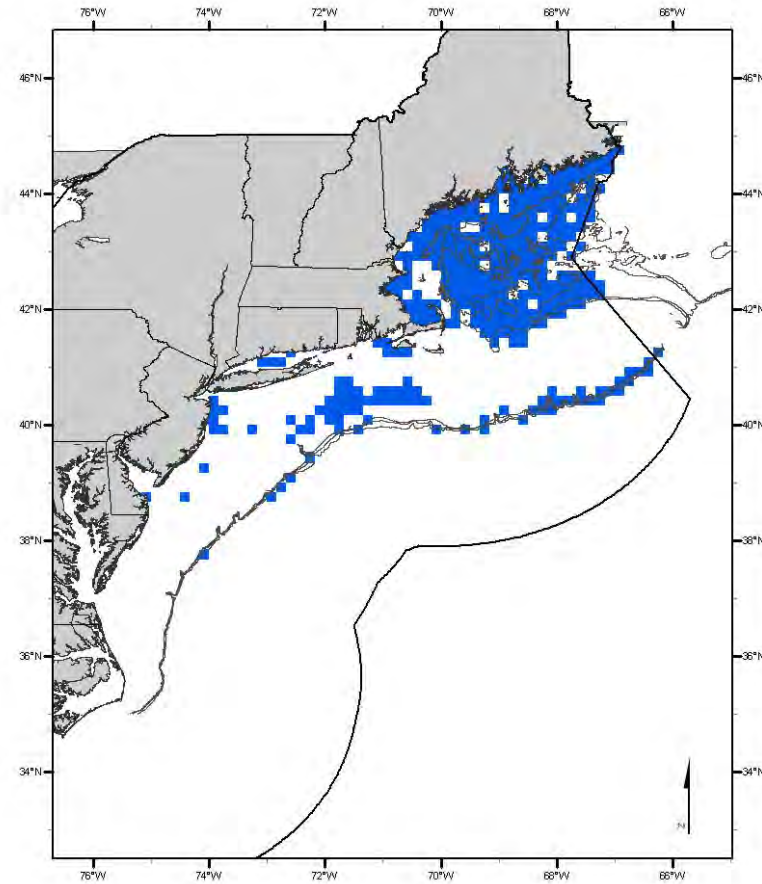
# Adult silver hake 25%



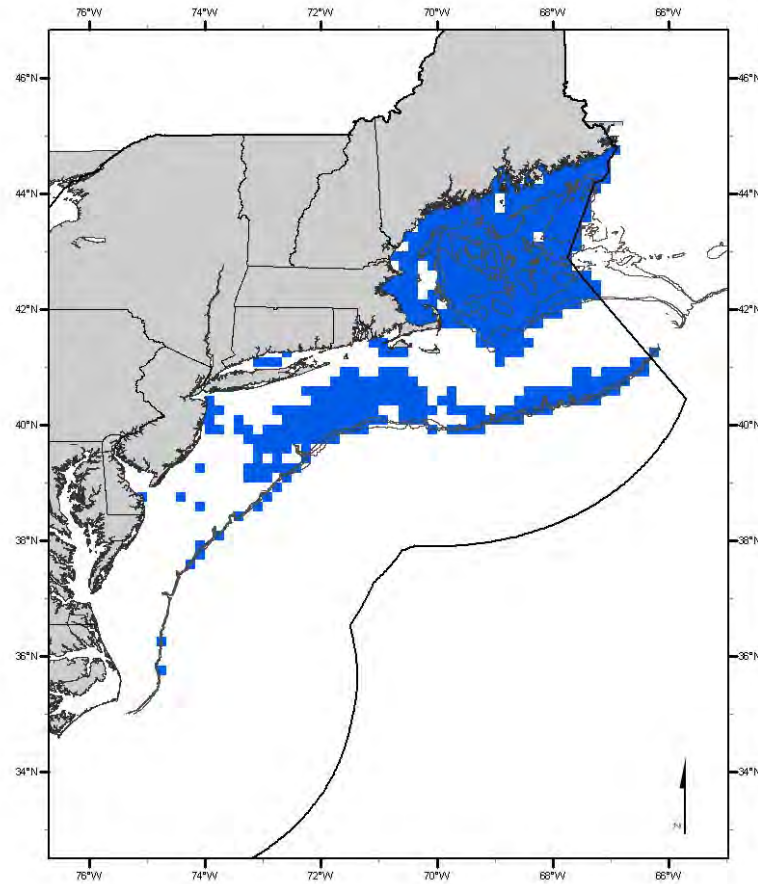
# Adult silver hake 50%



# Adult silver hake 75%

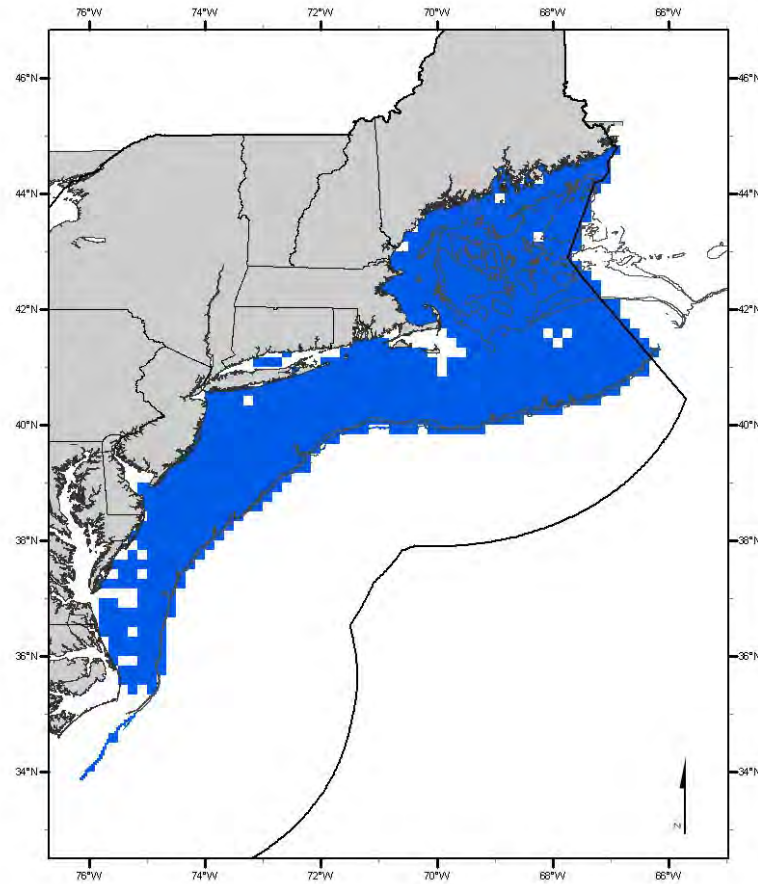


# Adult silver hake 90%





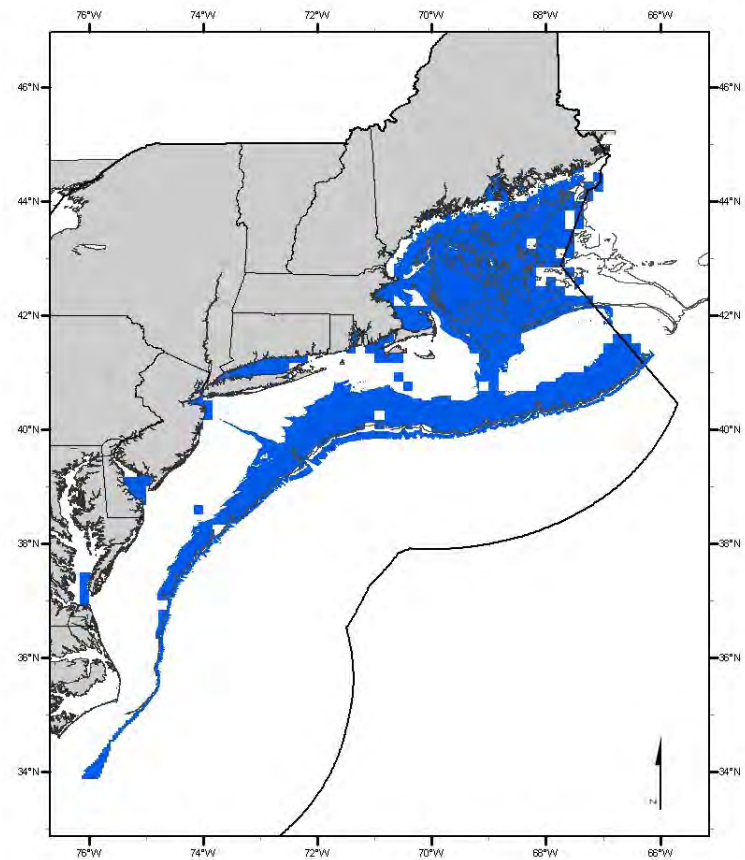
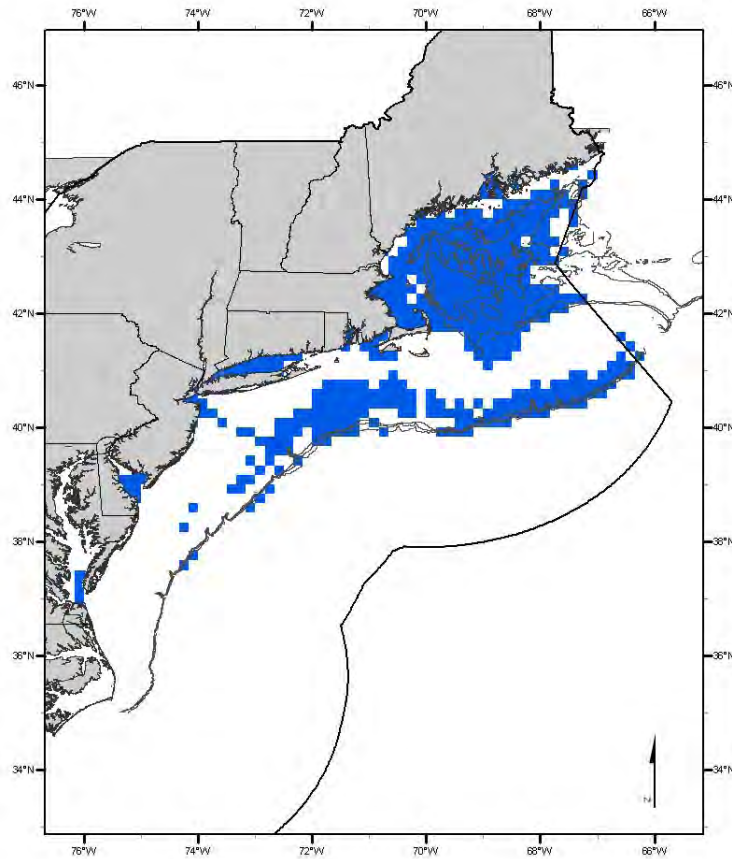
# Adult silver hake 100%



# Alternative 2 vs 3

**Alt 2: Adult red hake  
Survey data only**

**Alt 3: Adult red hake  
With depth and temperature preferences**



# EFH Alternatives Approved in 2007

Species	Eggs	Larvae	Juveniles	Adults
American plaice	NAD	NAD	3C	3C
Atlantic cod	2E	2E	3D	3E
Atlantic halibut	3	3	3	3
Atlantic herring	2	NAD	2E	2E
Atlantic salmon	2A(2)	2A(2)	2A(2)	2A(2)
Atlantic sea scallop	5	5	5	5
Atlantic wolffish	5	5	5	5
Barndoor skate	NAD	N/A	3D	3D
Clearnose skate	NAD	N/A	3C	3C
Deep-sea red crab	NAD	3A	3A	3A
Haddock	NAD	NAD	3D	3E
Little skate	NAD	N/A	3E	3C
Monkfish	4	4	3C	3C
Ocean pout	2C	N/A	3C	3C

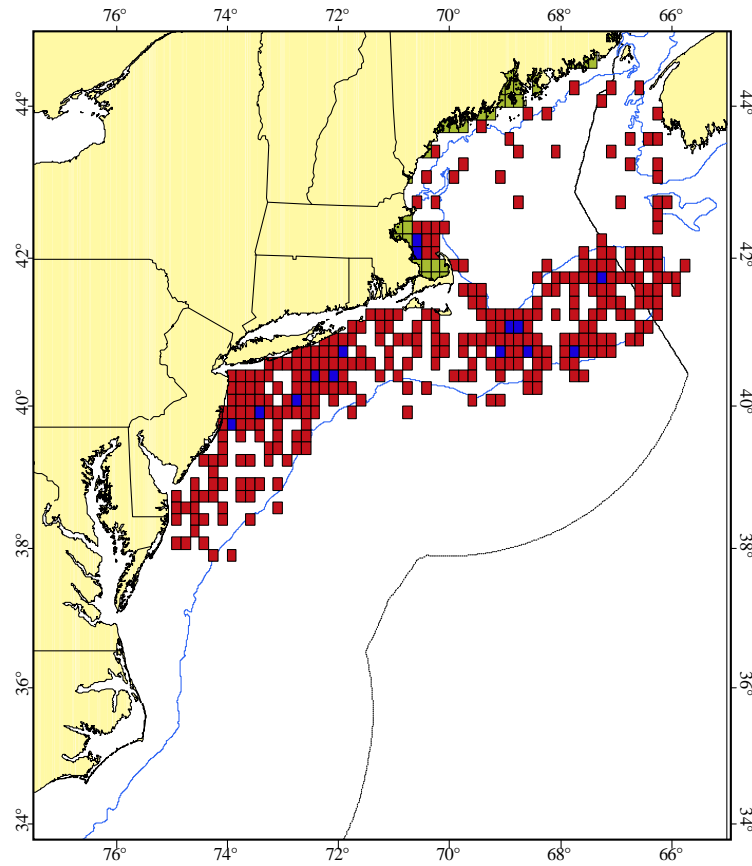
Species	Eggs	Larvae	Juveniles	Adults
Offshore hake	NAD	NAD	5	5
Pollock	2D	2D	3D	3D
Red hake	3E*	3E*	3C	3D
Redfish	N/A	3D	3D	3D
Rosette skate	NAD	N/A	3C	3C
Silver hake	2E	2E	3C	3C
Smooth skate	NAD	N/A	3D	3D
Thorny skate	NAD	N/A	3C	3D
White hake	2D	2D	3D	3D
Windowpane flounder	NAD	NAD	3E	3D
Winter flounder	5A	5A	3D	3D
Winter Skate	NAD	N/A	3D	3D
Witch flounder	NAD	NAD	3D	3E
Yellowtail flounder	NAD	NAD	3D	3D

# Modifications to Approved Maps

- Remove “fill” from egg and larval maps
- Use original (correct) ELMR areas
- Re-define depth/temp ranges to be consistent with text descriptions
- Use annual instead of seasonal depth ranges
- Remove all tms that are outside depth range
- Eliminate substrate as a habitat variable
- Show tms that do not qualify as catch or habitat
- Show total survey area

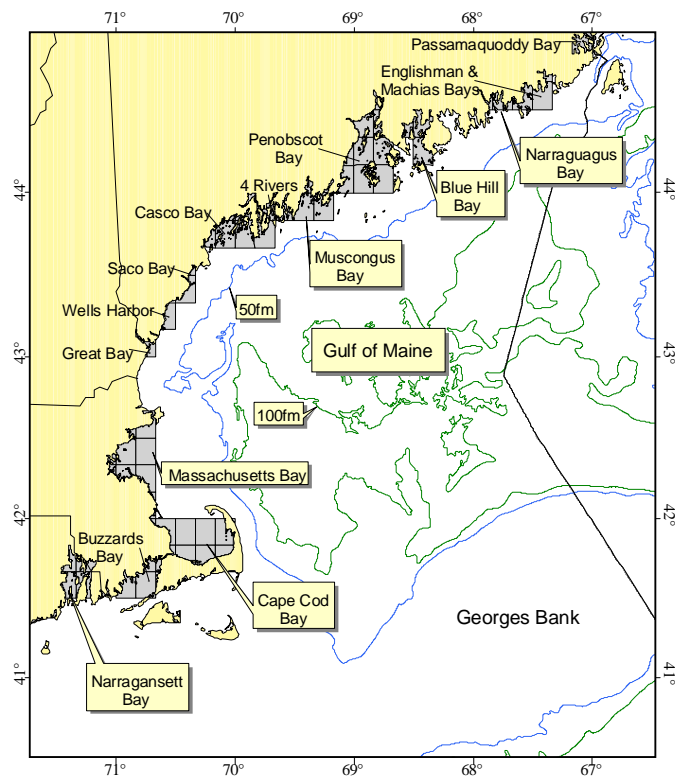
# Remove fill from egg and larval maps

Yellowtail Eggs - SQ Map

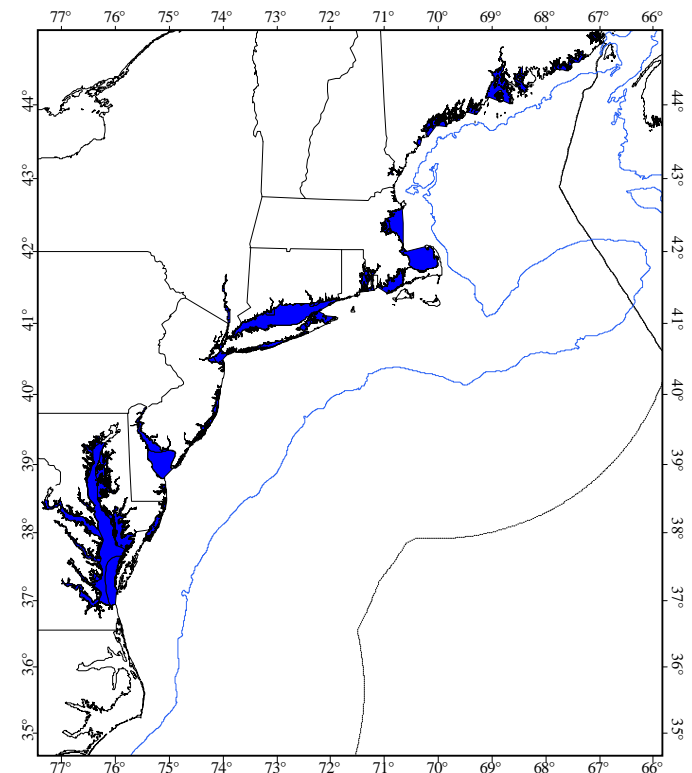


# Use correct ELMR areas

Approximate ELMR areas (tms)



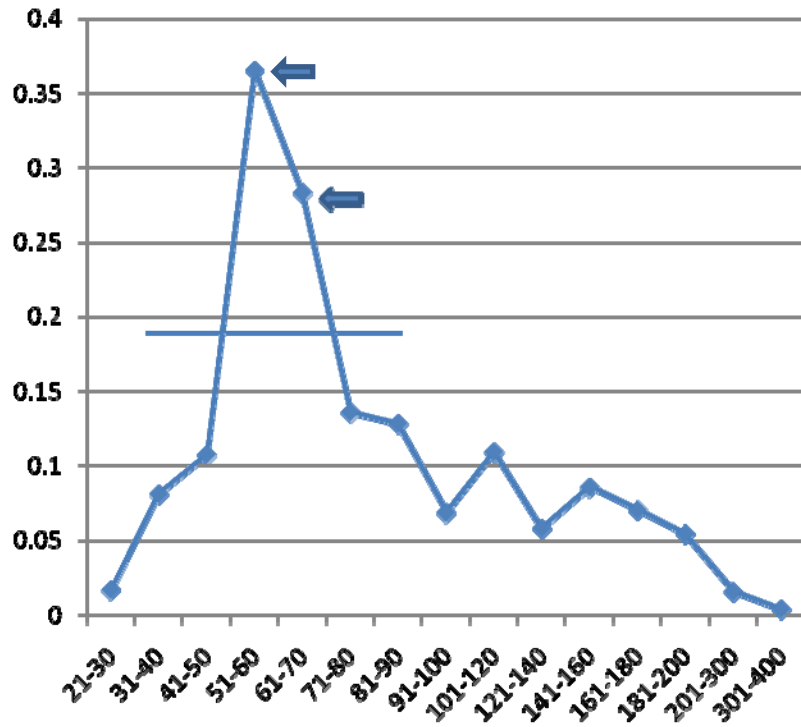
Original ELMR areas



# Re-define depth and temperature ranges

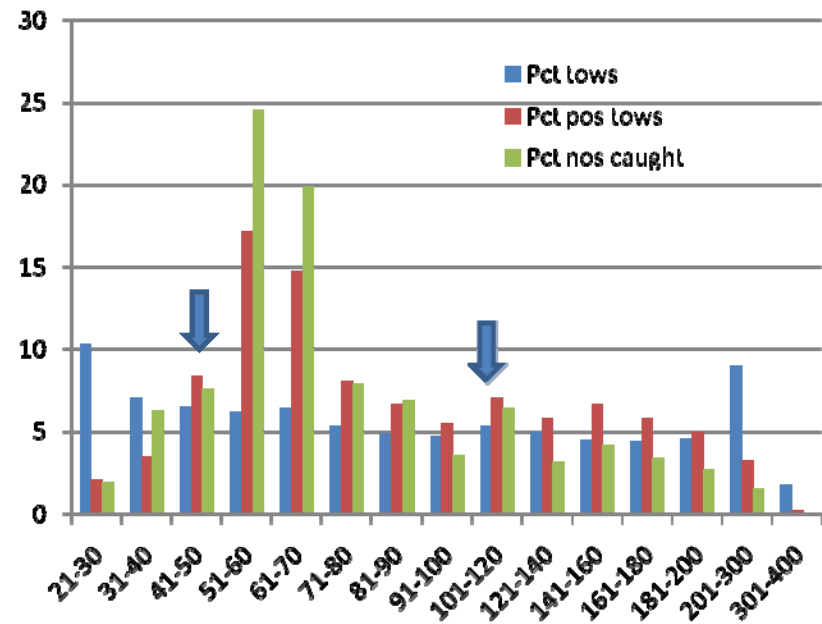
## Old method

Juv ocean pout, fall 1963-2003



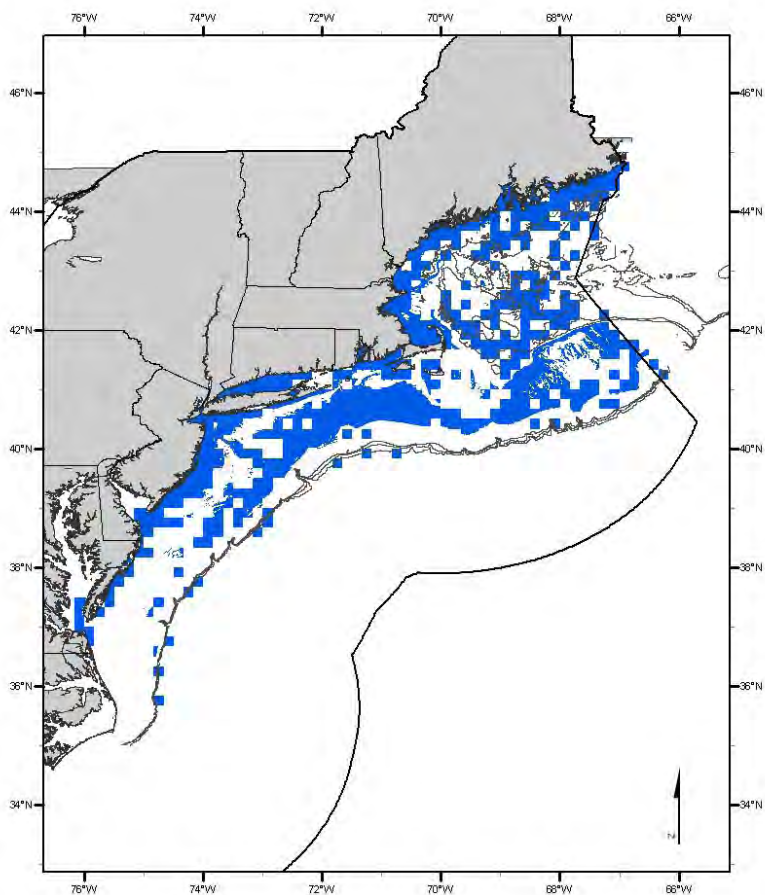
## New method

Juv ocean pout, fall 1963-2003

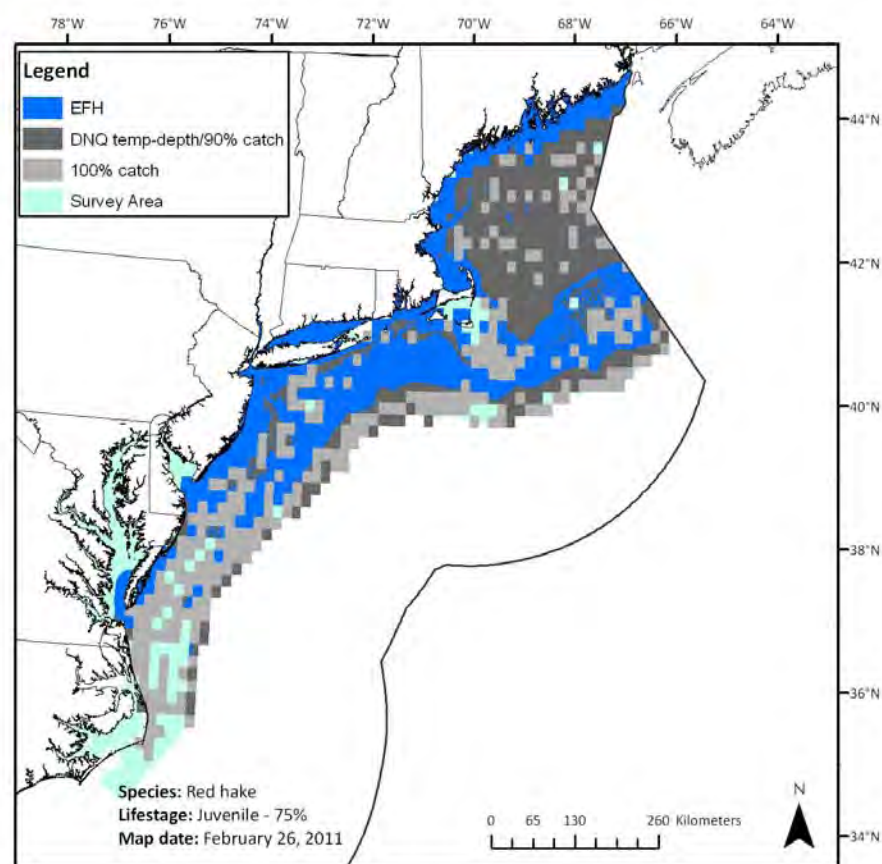


# Modified maps

## Approved red hake juveniles



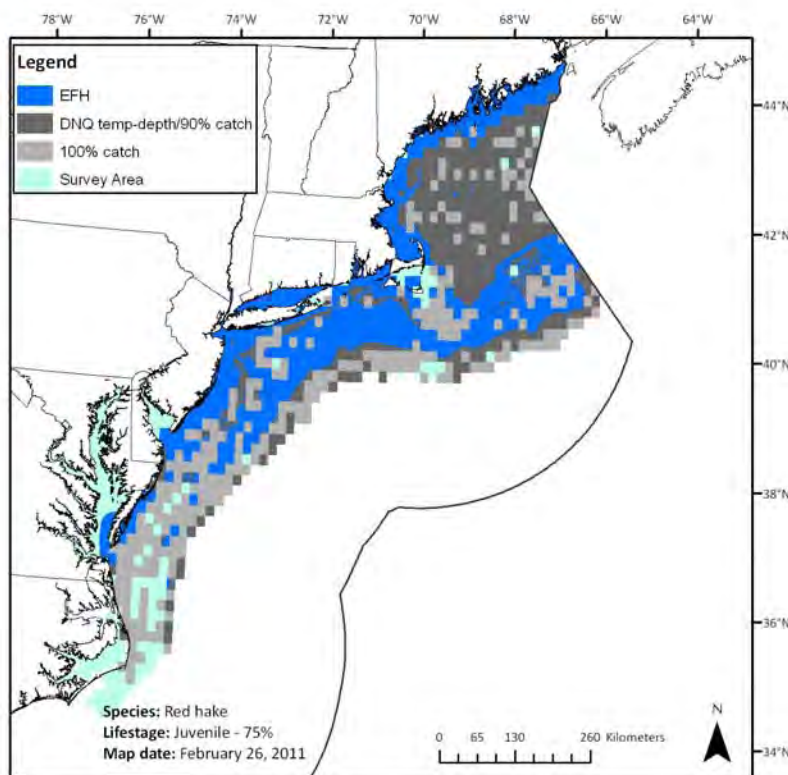
## Modified red hake juveniles



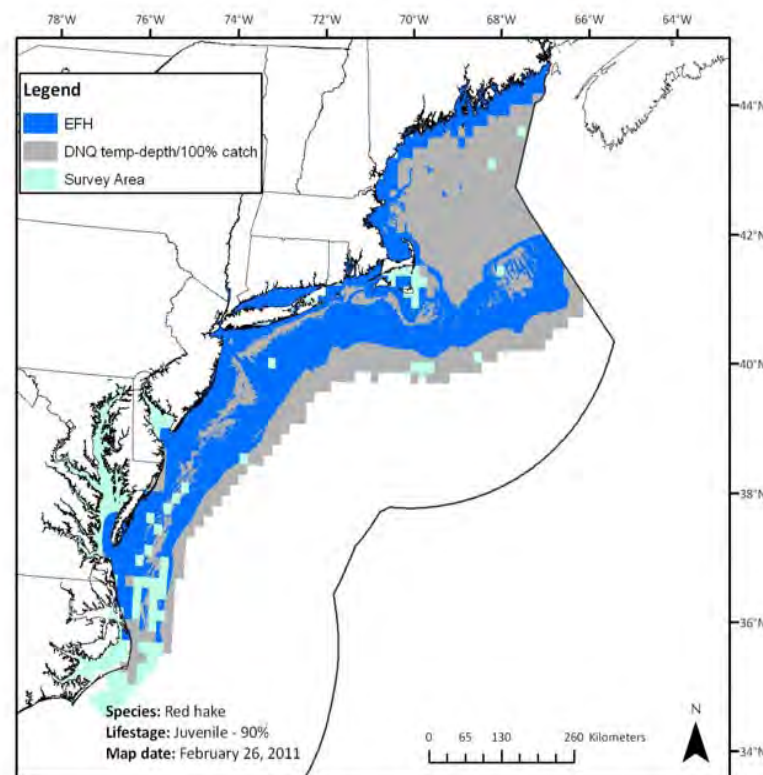


# Modified maps

**Juvenile red hake 75%**  
**4 colors**



**Juvenile red hake 90%**  
**3 colors**



# Text modifications: move supplementary habitat information to appendix

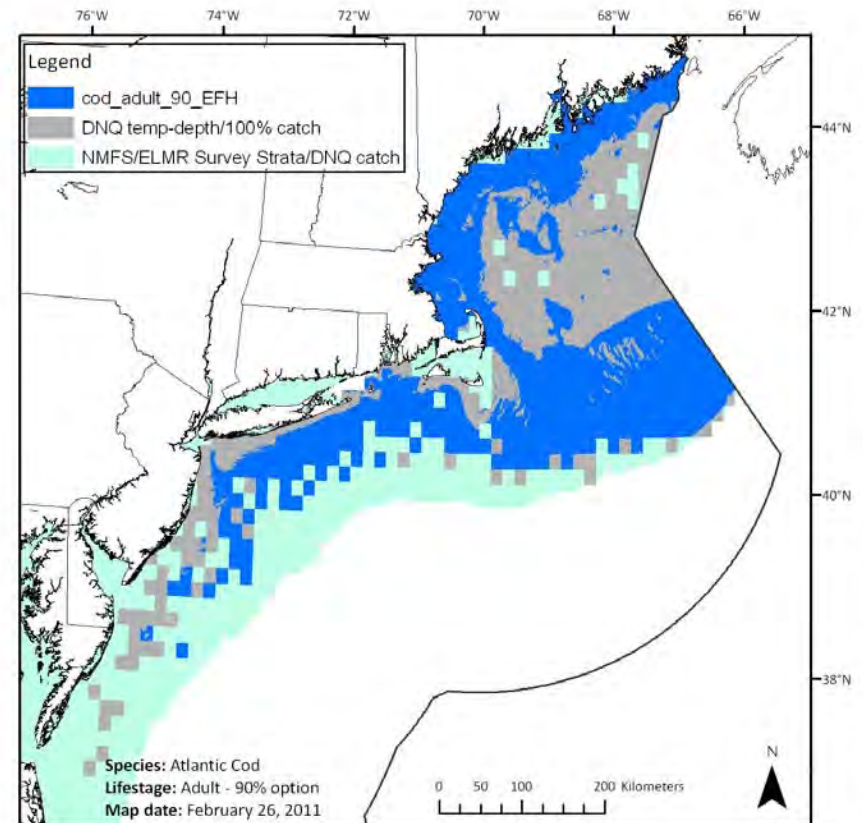
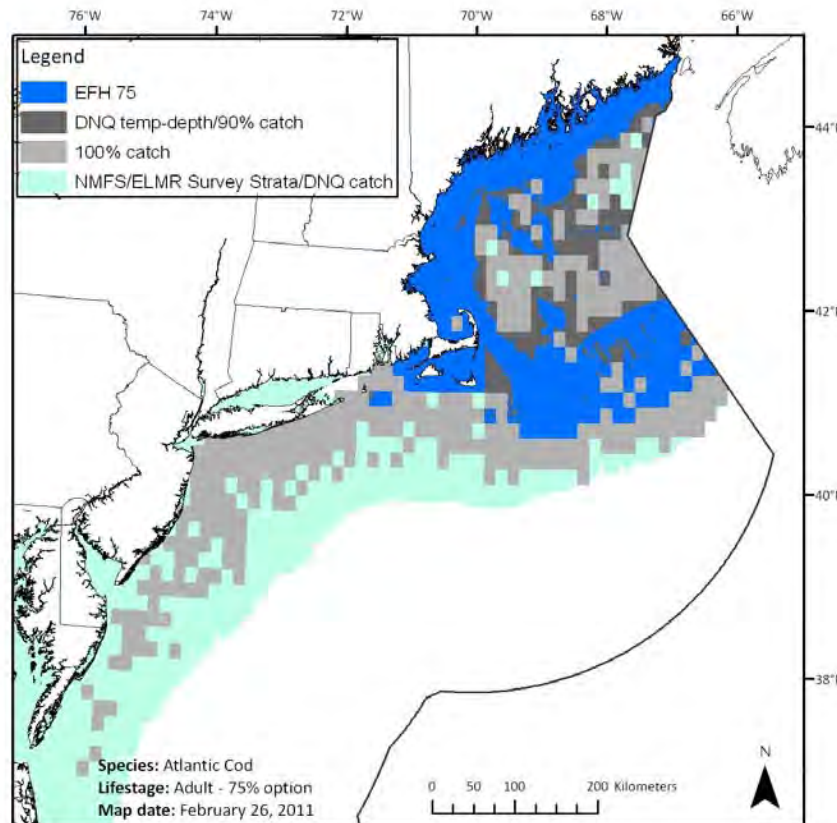
## Example = monkfish

Life Stage	Habitat	Depth (m)	Temperature (°C)	Salinity (ppt)
Eggs	Pelagic, in upper water column, in large mucoidal eggs "veils"	18-40 (NJ) Collected within 1 meter of shore  See larvae	Most at 10-20  Upper limit for normal development 17-18	No information
Larvae	Pelagic, in water column	Found in surf zone and near-shore habitats (NJ)  Present to 1500 on and off shelf, common to 160 on shelf	Present 6.5-20.5 on shelf, common 8.5-17.5 on shelf	No information
Juveniles	Pelagic habitats during settlement  Also see adults	Present 8-100 inshore, common 30-85 (MA) and 20-150 (ME)  Present to 1000 on and off shelf (YOY at 900), common 50-400 on shelf  Common 91-182 (GOM)	Present 1.5-13 inshore, common 3.5-10.5 (MA) and 2.1-10 (ME)  Present 1.5-24.5 on shelf, common 4.5-13.5	Present 31-33.6 inshore  Present 29.5-36.5 on shelf, common 30.5-36.5
Adults	Found on hard sand, pebbly bottoms, gravel and broken shells, and soft mud  Prefer clay and mud over sand and gravel (SS)	Present 8-84 inshore, common 20-65 (MA)  Present to 1000 on and off shelf, common 50-400 on shelf	Present 1.9-16.5 inshore, common 5.5-11.5 (MA)  Present 0.5-21.5 on shelf, common 4.5-14.5	Present 30-34 inshore  Present 29.5-36.5, common 33.5-35.5 on shelf

# Atlantic cod adults

Approved (3E = 75% + fill)

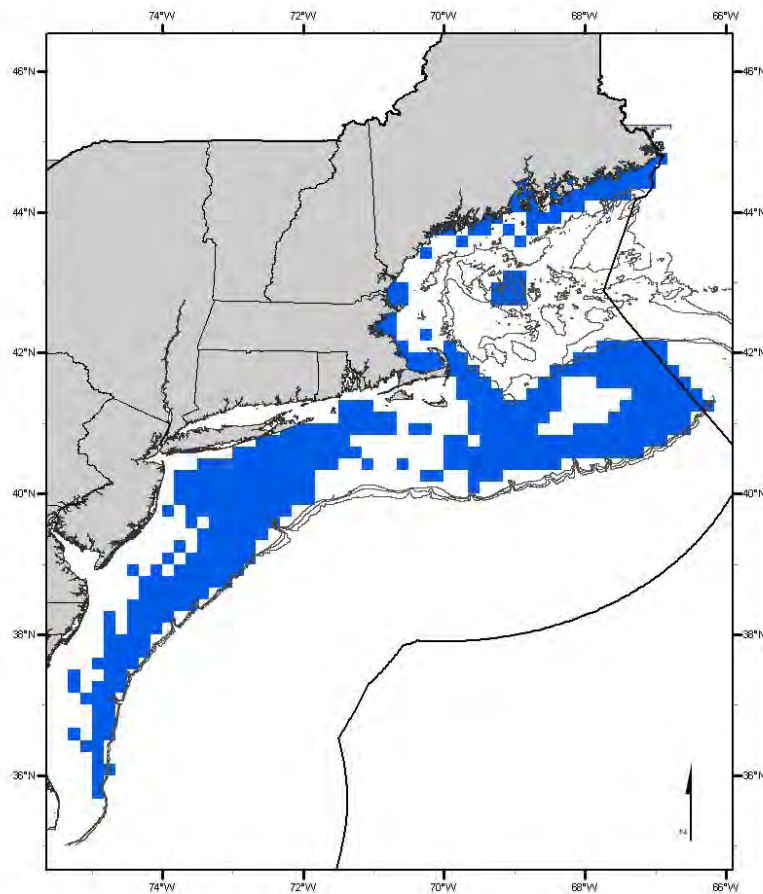
Proposed (3D = 90% + Ames, no fill)



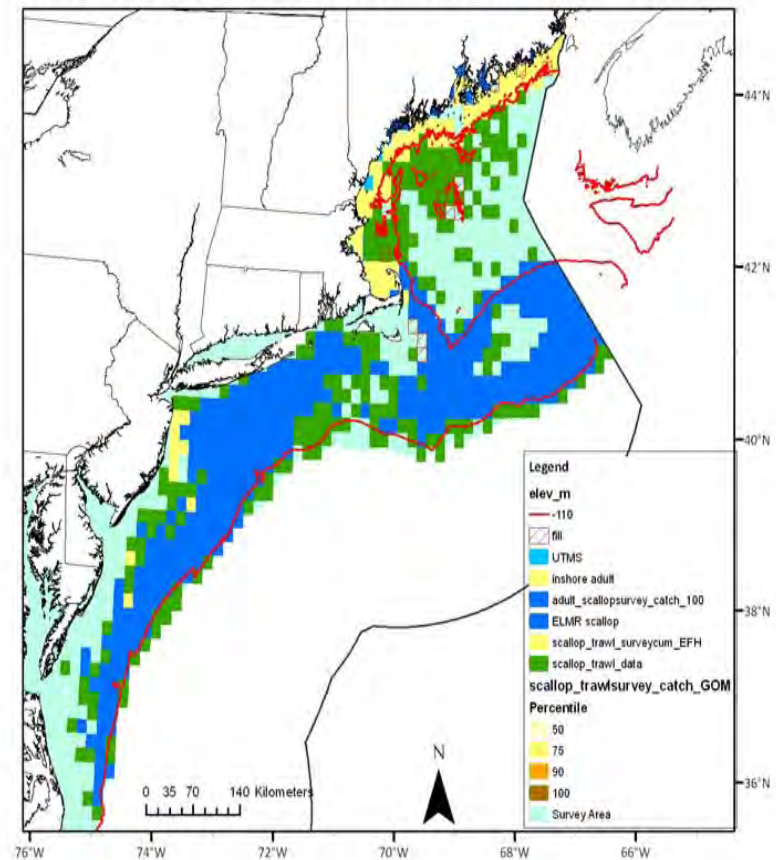
# Atlantic sea scallops

**Approved = 100% NMFS dredge survey + ME trawl survey + fill in GOM**

**Proposed = add NMFS and NJ trawl data (with or w/o depth limit)**



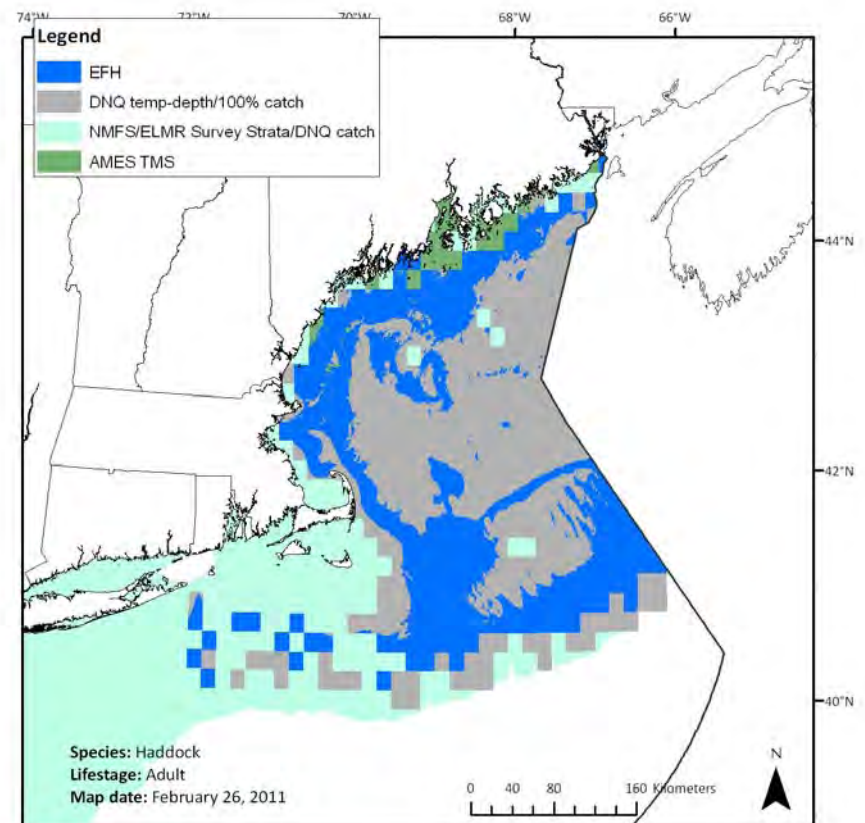
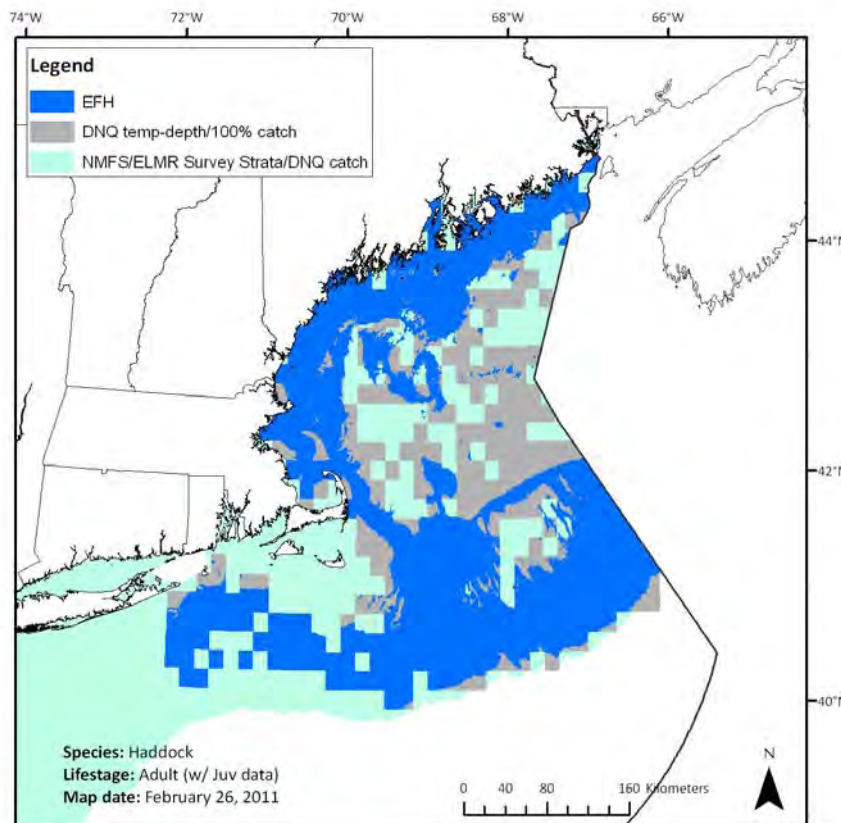
SCALLOP EFH MAP - CUMULATIVE PERCENTILES METHOD (THROUGH 90TH PERCENTILE PLOTTED).  
NOTE THAT ADULT/JUV SCALLOP SURVEY CATCH LAYERS WERE THE SAME, SO ONLY ADULT IS SHOWN.



# Haddock adults

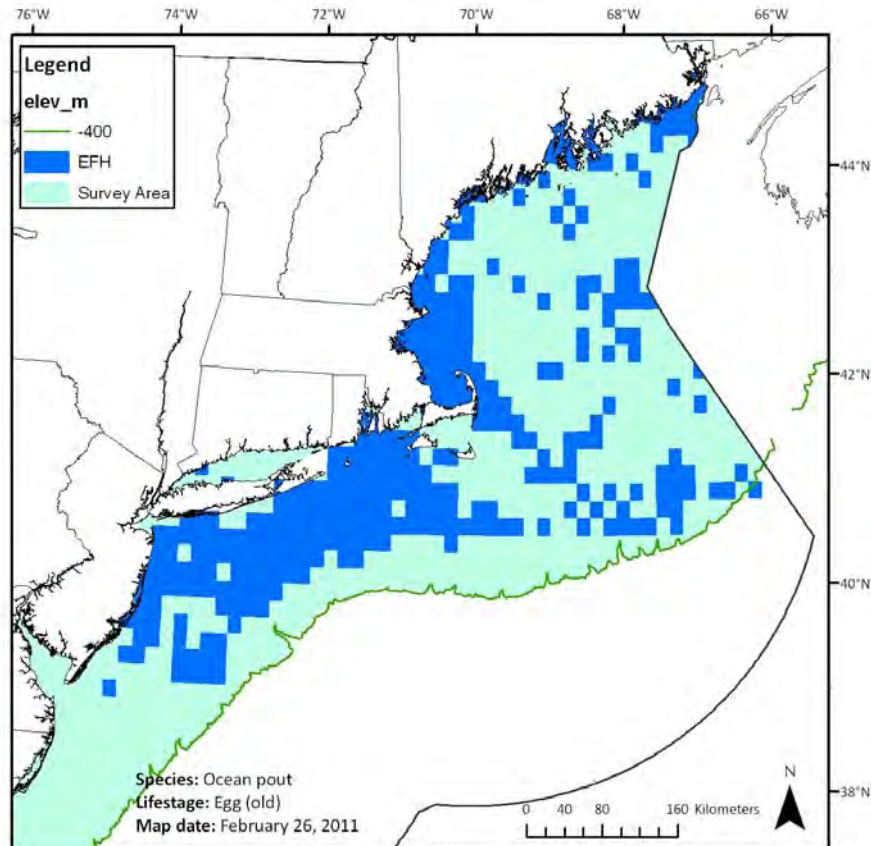
**Approved = juvs 3D + adults 3D**

**Proposed = adults 3D + Ames**



# Ocean pout eggs

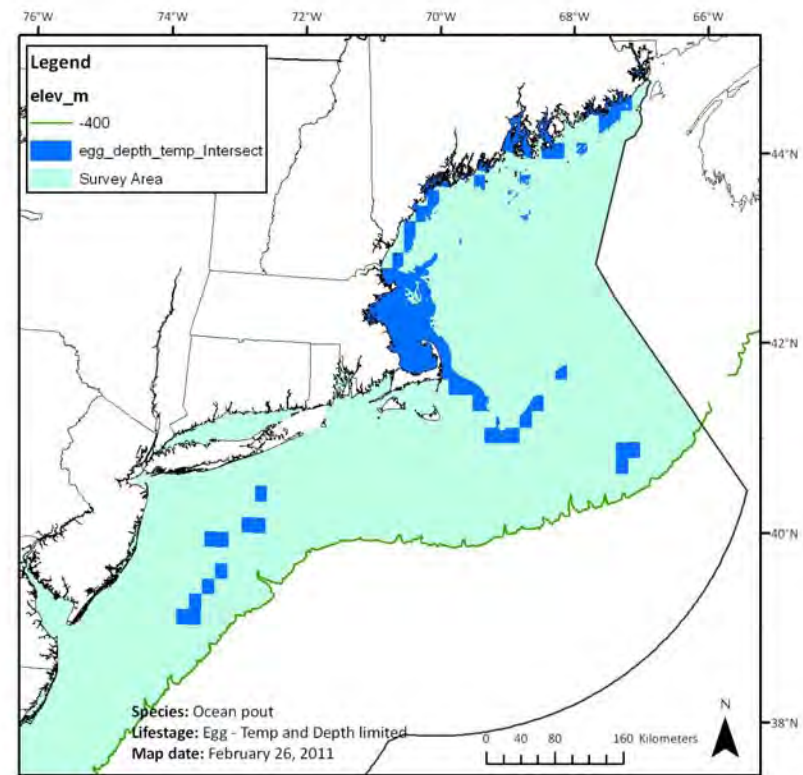
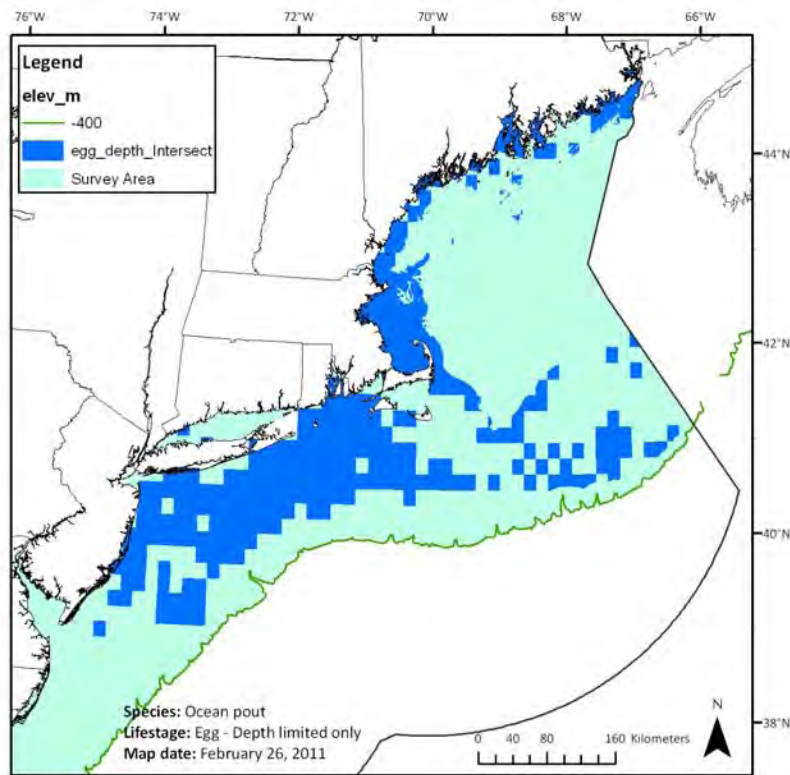
## Approved = Alt 2C juvs + adults



# Ocean pout eggs: two options

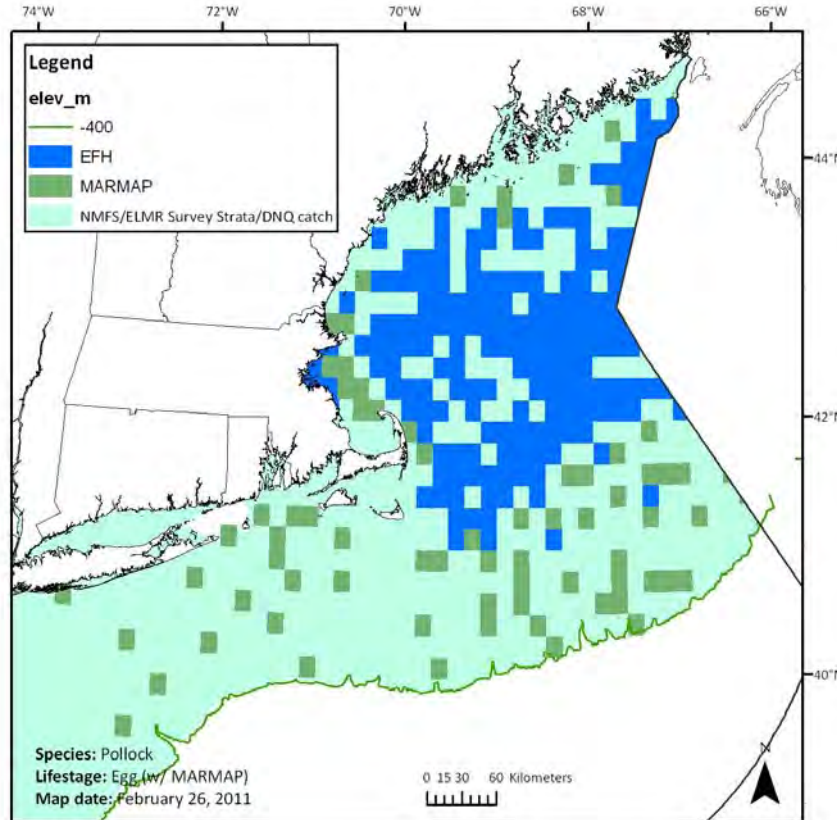
**Proposed = adult 3C <100 m**

**Proposed = adult 3C <100 m  
and <10°C in fall**

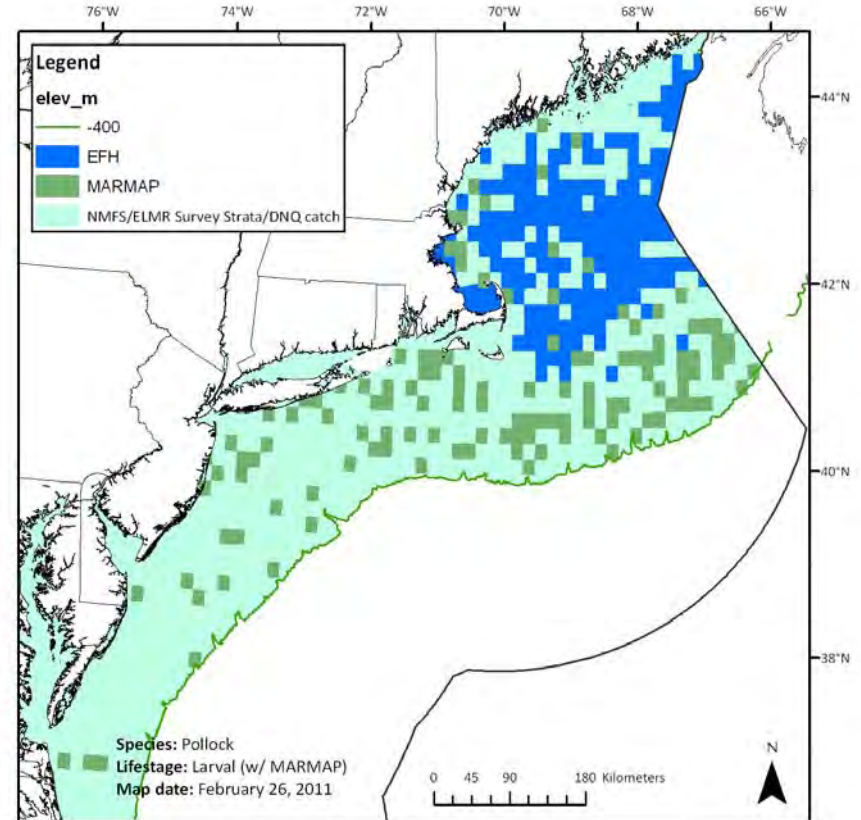


# Pollock eggs and larvae

Adult 2D + MARMAP egg data



Adult 2D + MARMAP larval data

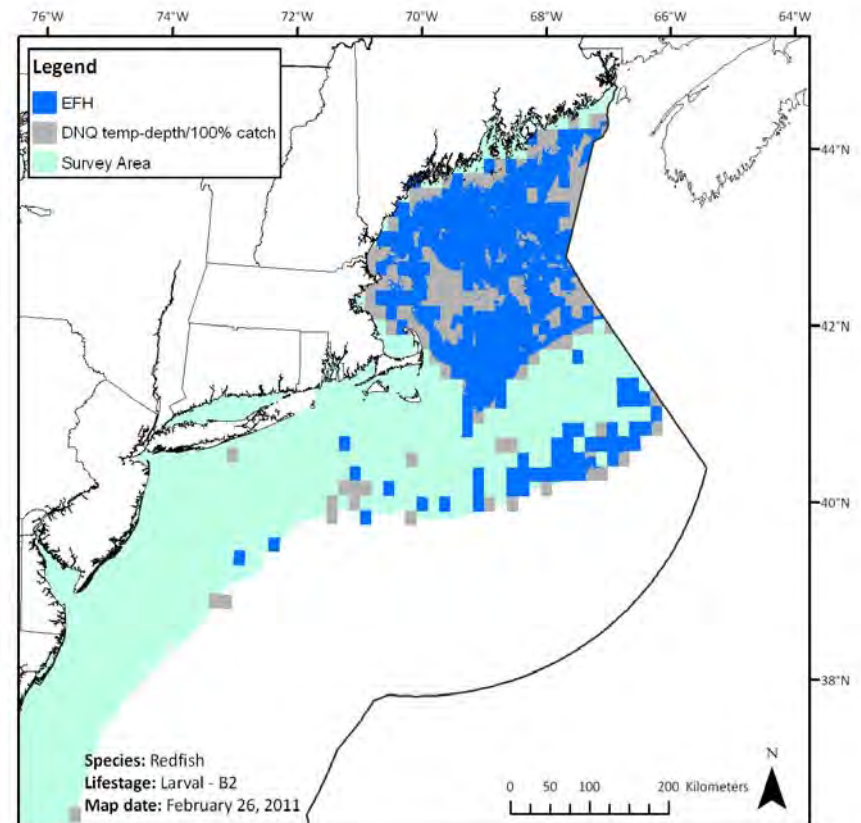
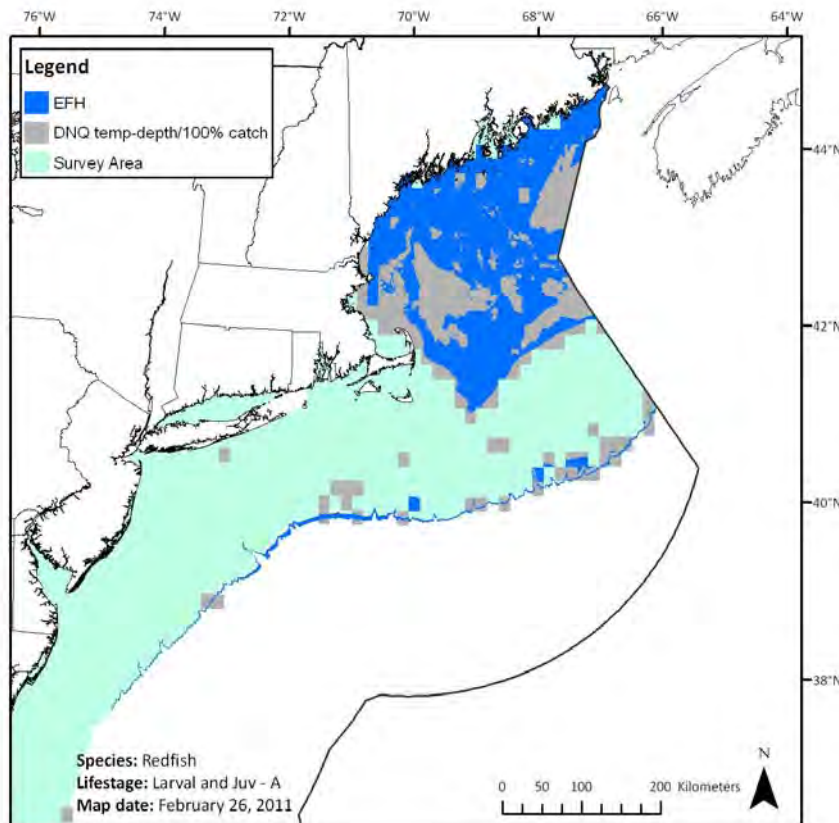




# Redfish larvae and juveniles

**Approved = juv 3D for both  
(would become juv map if...)**

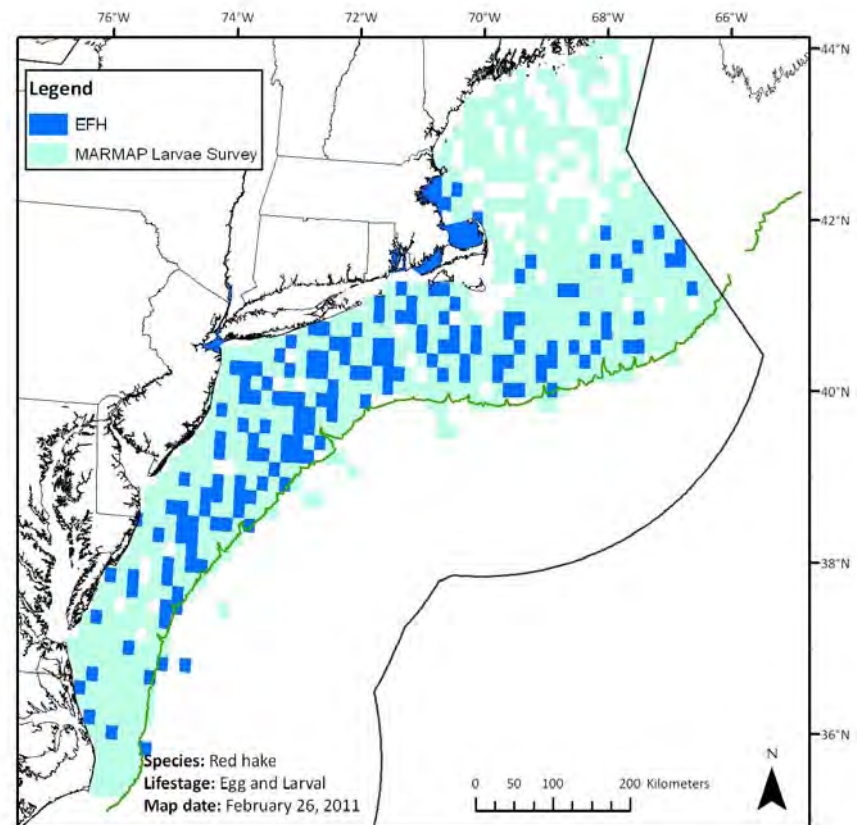
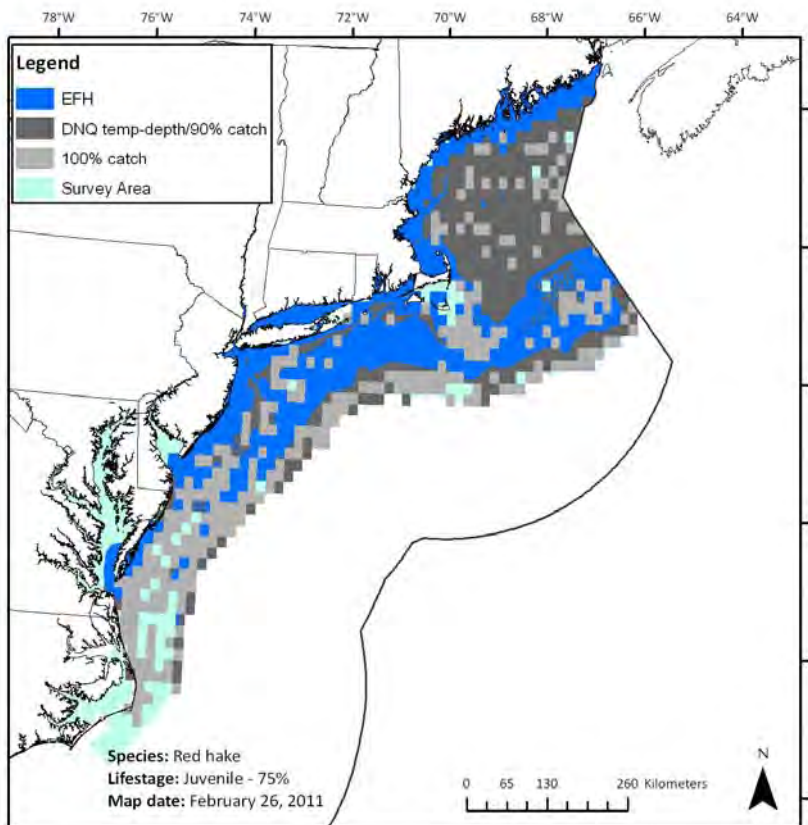
**Proposed = juv 3D + MARMAP**



# Red hake eggs and larvae

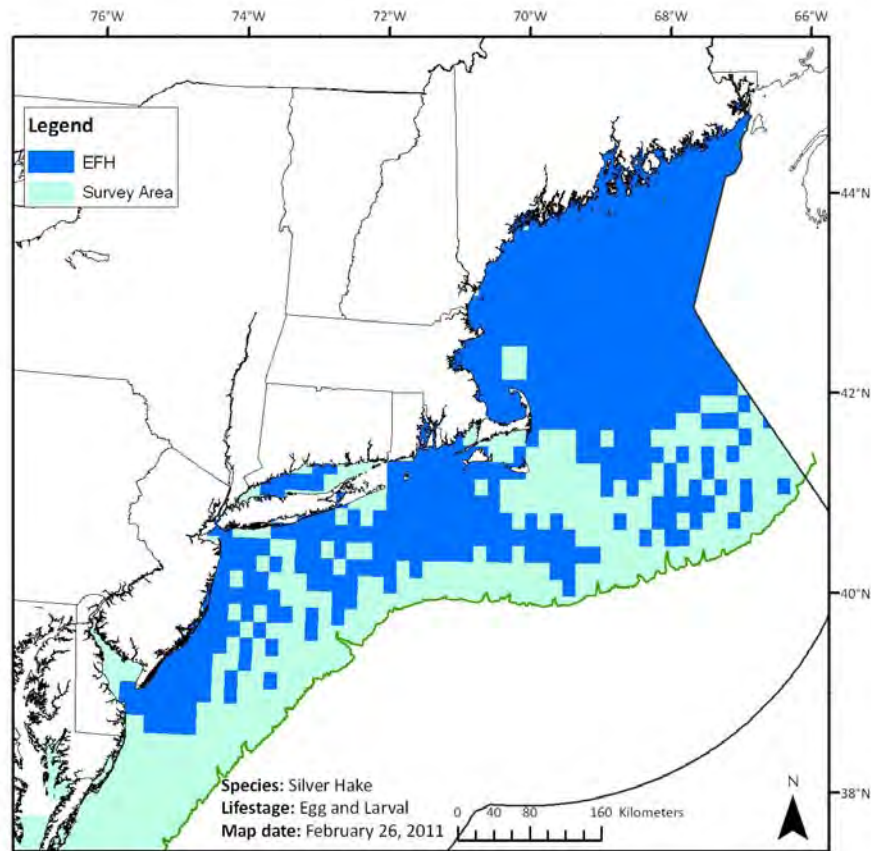
Approved = juv 3C (no MARMAP)

Proposed = 100% MARMAP (larvae)



# Silver hake eggs and larvae

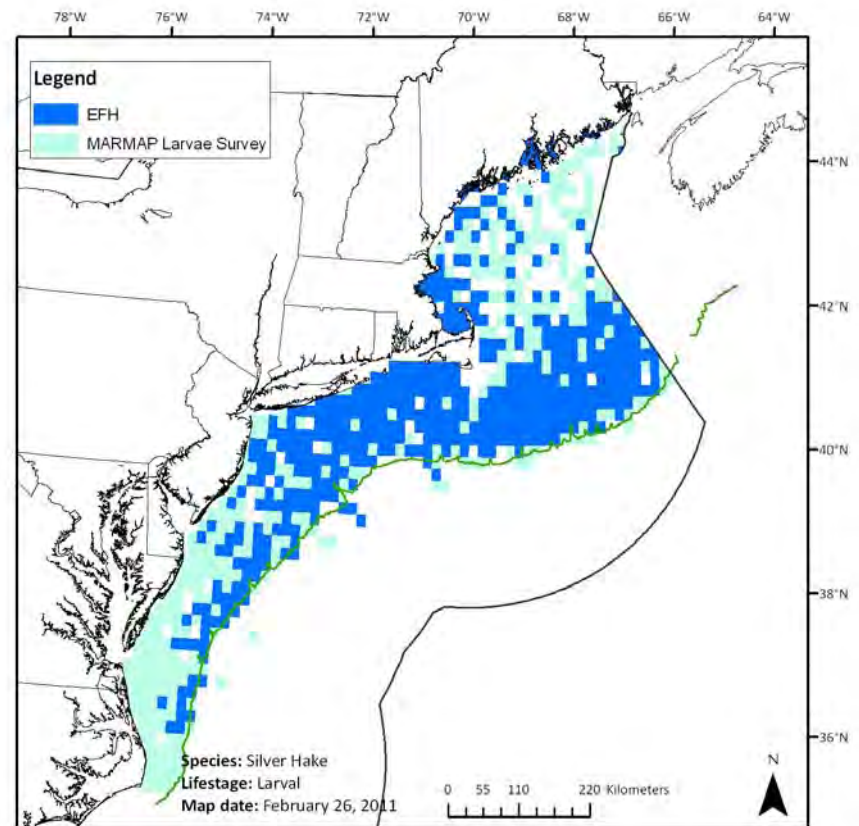
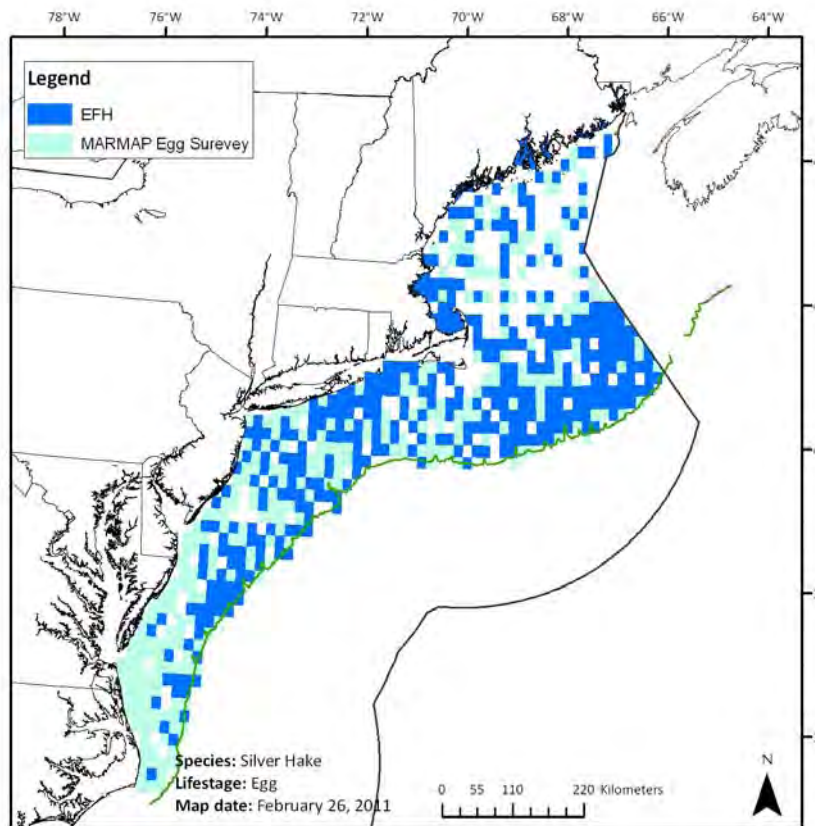
## Approved = 2C juveniles



# Silver hake eggs and larvae

**Proposed = 100% MARMAP**

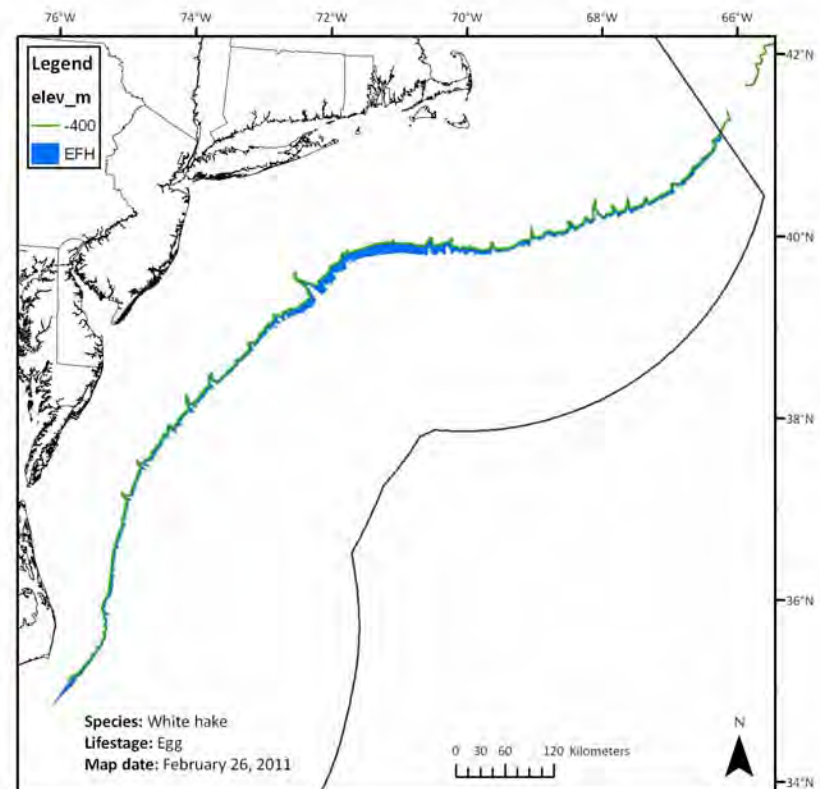
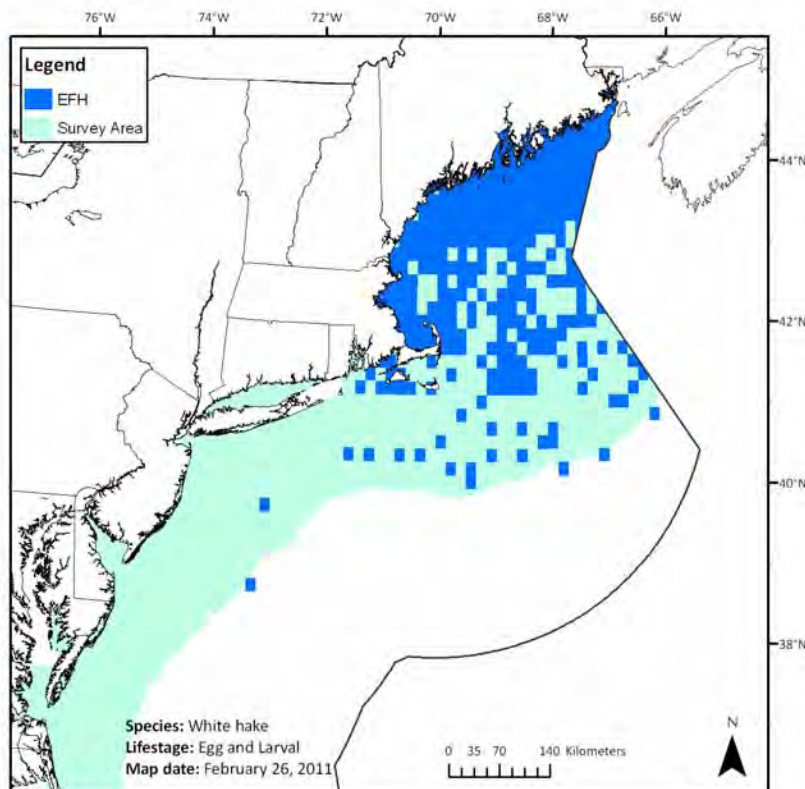
**Proposed = 100% MARMAP**



# White hake eggs

Approved = juv 2D

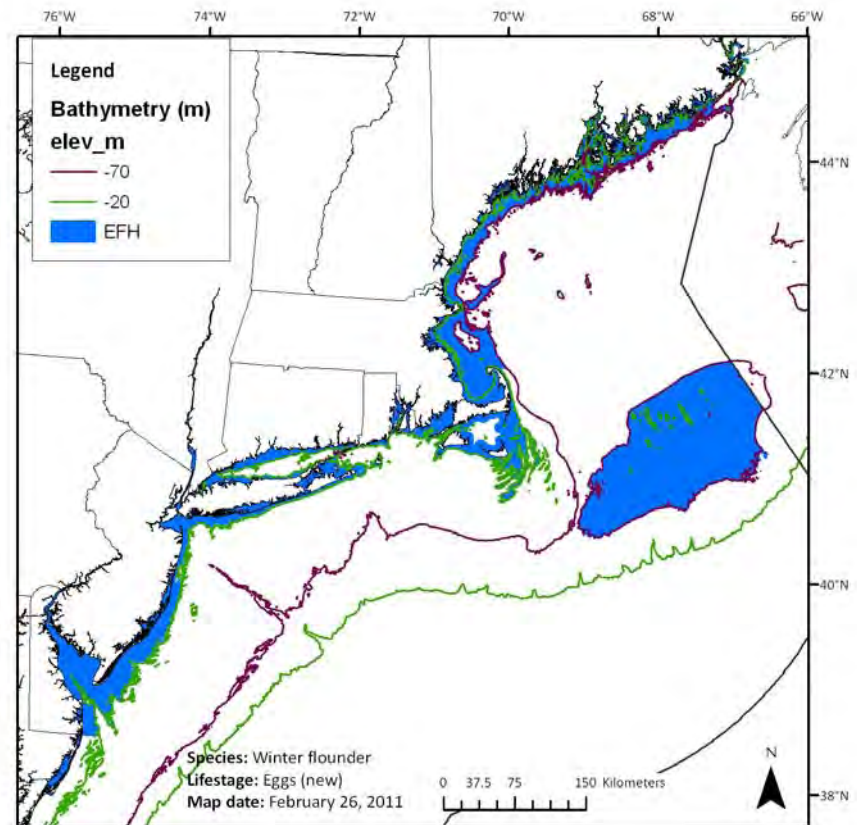
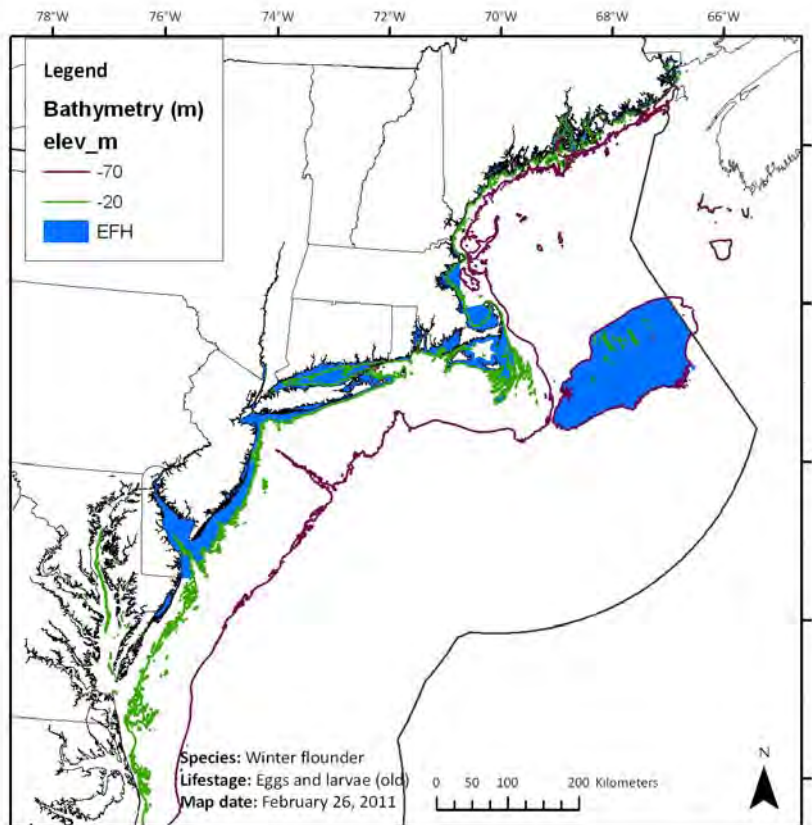
Proposed = adults on shelf edge



# Winter flounder eggs

Approved e+l = 70 m GB + 20 m all coast, SQ = 70 m GB + 5 m all coast

Proposed eggs = 70 m GB + 5 or 20 m south coast + 70 m GOM



# Witch flounder adults

Approved = juvenile 3D

Proposed = adult 3D

