Northeast Regional Marine Fish Habitat Assessment

NRHA for Fish

Jessica Coakley (MAFMC)

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jcoakley@mafmc.org

Northeast Regional Habitat Assessment

- Quantity and quality of inshore and offshore habitats from Maine to NC/SC border
- Led by MAFMC, NEFMC, NOAA and others including ACFHP
- Workplans are developed, data collection and analysis expected July 2019-2022
- Habitat Areas of Particular Concern, fisheries management, EAFM

Chesapeake Bay Regional Fish Habitat Assessment

- Data-driven approach using biological, stressor and habitat information at best available spatial resolution
- Led by Sustainable Fisheries GIT
- GIT Supported Contractor Began May 2019
- Guide conservation and restoration including land use planning and BMPs

Atlantic Coast Fish Habitat Partnership Northeast Assessment

- Prioritization of diadromous and estuarine dependent fish from Maine to Virginia
- Led by ACFHP through ASMFC
- Kick off meeting May 2019, final product expected by December 2019
- Identify project priority areas

Habitat Climate Vulnerability Assessment

- Scoring of vulnerability (exposure and sensitivity) of key habitats (rock cobble, salt marsh, riverine water column) to climate stressors from Maine to North Carolina
- Expert opinion process and scoring rubric
- Led by NOAA Fisheries
- Pilot scoring began April 2019

Why work towards a habitat assessment?

National and Atlantic Fish Habitat Partnership Assessments

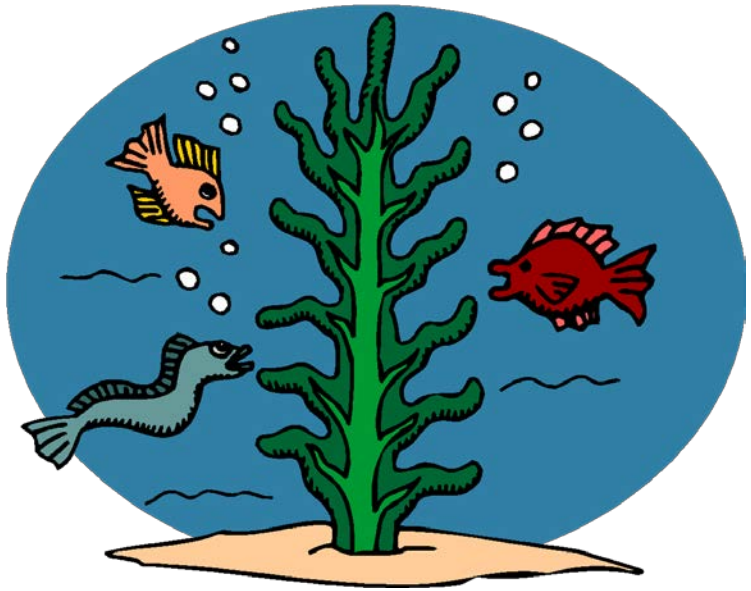
NOAA Fisheries, Council, and State/Commission Habitat and Ecosystem Approaches

Regional Ocean Planning

Protection/ Restoration Initiatives

Steering Committee

- Mid-Atlantic Fishery Management Council (Chair)
- Atlantic States Marine Fisheries Commission
- Atlantic Coast Fish Habitat Partnership
- Duke University
- Monmouth University
- National Fish Habitat Partnership
- New England Fishery Management Council
- NOAA Fisheries Offices of Habitat Conservation
- NOAA Fisheries Offices of Science and Technology
- NOAA Northeast Fisheries Science Center
- NOAA NCCOS Marine Spatial Ecology Division
- The Nature Conservancy



Northeast Regional Marine Fish Habitat Assessment

To describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast using a partnership driven approach.

Geographic Scope: Northeast U.S.

Extends from the North Carolina/South Carolina boundary to the western end of the Scotian Shelf and includes the Mid-Atlantic Bight, Southern New England, Georges Bank, and the Gulf of Maine.

From inshore/estuaries (brackish/marine) to offshore.

Focus Species

- 65+ focus fish species
- All species are highly important to fisheries management organizations within the region

MAFMC	NEFMC	ASMFC (not noted in column 1 or 2)	Highly Migratory (with HAPC designations)
Atlantic mackerel	Acadian redfish	American eel	Sandbar shark
Atlantic surfclam	American plaice	American lobster	Dusky shark
Black sea bass*	Atlantic halibut	Atlantic croaker	
Bluefish*	Atlantic herring*	Atlantic menhaden	
Blueline tilefish	Atlantic salmon	Atlantic striped bass	
Butterfish	Atlantic wolffish	Atlantic sturgeon	
Chub mackeral (potentially added)	Barndoor skate	Black drum	
Golden tilefish	Clearnose skate	Coastal sharks	
Longfin squid	Atlantic cod	Cobia	
Monkfish**	Cusk	Horseshoe crab	
Ocean quahog	Haddock	Jonah crab	
Scup*	Little Skate	Northern shrimp	
Shortfin (Illex) squid	Windowpane flounder	Red drum	
Spiny dogfish**, *	Ocean pout	Shad and river herring	
Summer flounder*	Offshore hake	Spanish mackerel	
	Pollock	Spot	
	Red crab	Spotted seatrout	
	Red hake	Tautog	
	Rosette skate	Weakfish	
	Sea scallop		
	Silver hake		
	Smooth skate		
	Thorny skate		
	White hake		
	Winter flounder*		
	Winter skate		
	Witch flounder		
	Yellowtail flounder		

* Also managed by ASMFC.
**Jointly managed with NEFMC.

4 Actions Being Considered

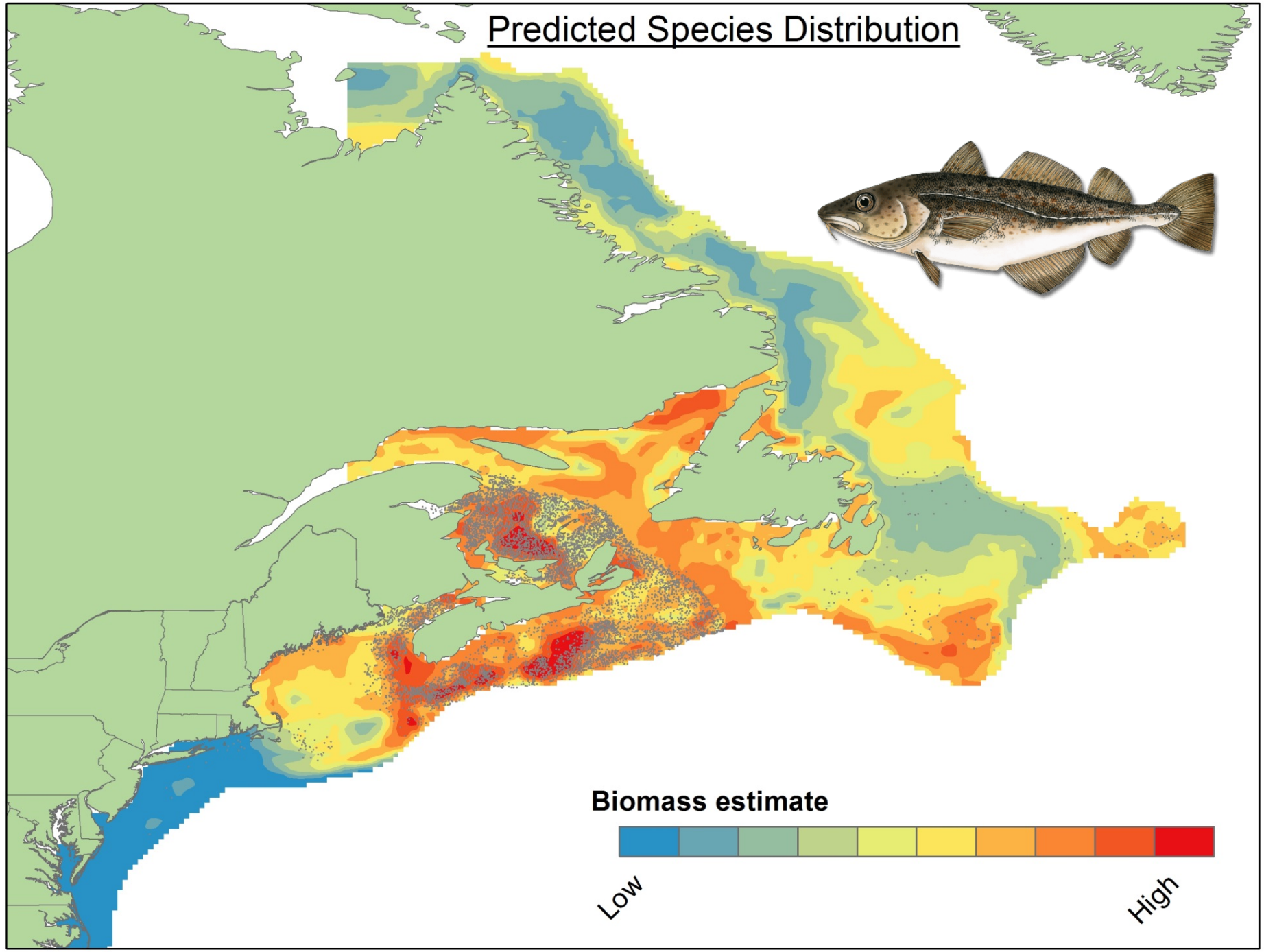
- Abundance and trends in habitat types in the inshore area
- Habitat vulnerability
- Spatial descriptions of species habitat use in the offshore area
- Habitat data visualization and decision support

Abundance and trends in habitat types in the inshore area

- **Location and extent of habitat types** as maps (Geographic Information System (GIS) framework; to finest scale practical).
- **Quantity of habitat types** in entire region, sub or ecoregions, estuaries, mainstems/tributaries, to finest scale practical (1 km sq polygons or smaller).
- **Status and trend of habitat types** with 1) relative proportion of habitat types, 2) a baseline to track each habitat type, 3) trends in habitat quantity relative to baseline (if possible), and 4) development of habitat quality metrics (if possible).
- **Written inventory and database** of habitats and habitat use for inshore focus species.

Spatial descriptions of species habitat use in the offshore area

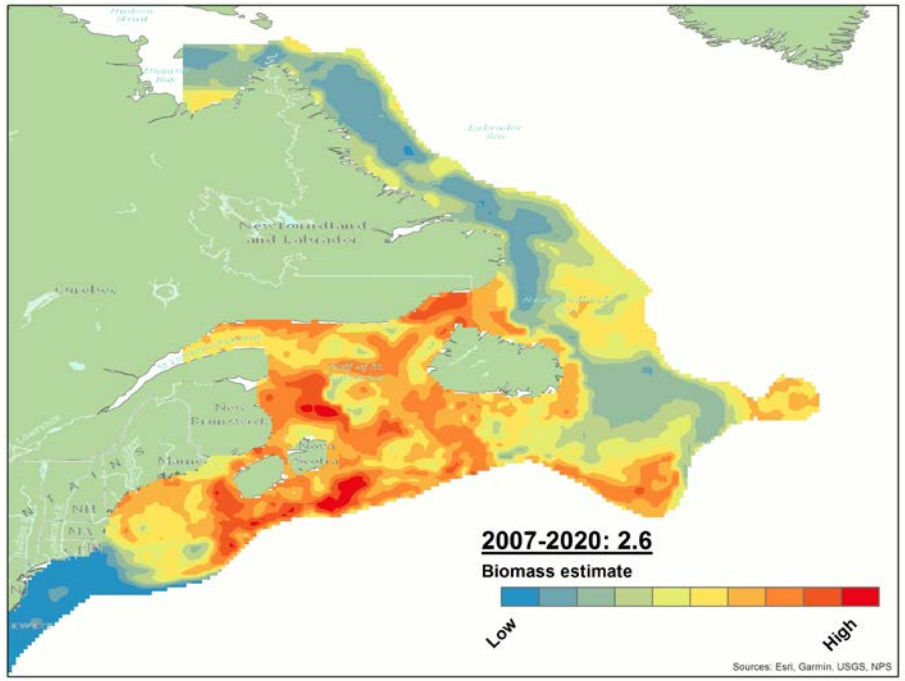
- **Determine location and extent of habitat use** by individual focus species (and if possible species groups). Annual, seasonal, and predicted future use.
- **Quantify and track changes in habitat use** for focus species throughout the region, and for each Ecological Production Unit (EPU): Mid-Atlantic Bight, Georges Bank, Gulf of Maine.
- **Identify the most important factors** (covariates) driving focus species distribution.


Predicted Species Distribution
Biomass estimate
Low
High

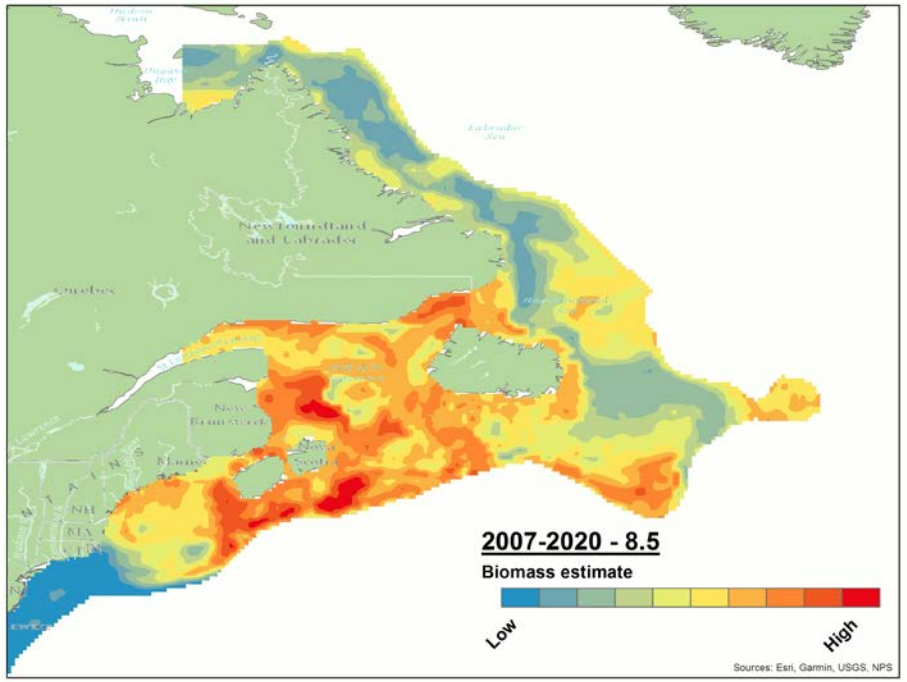
Predicted Species Distribution for Atlantic Cod

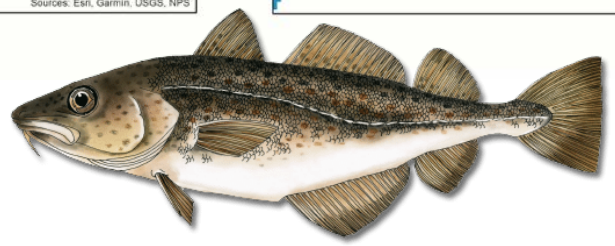
Predictions are based on temperatures in July – September
Source: Victoria Kentner (NOAA)

RCP 2.6 (strong mitigation)



RCP 8.5 (no mitigation)





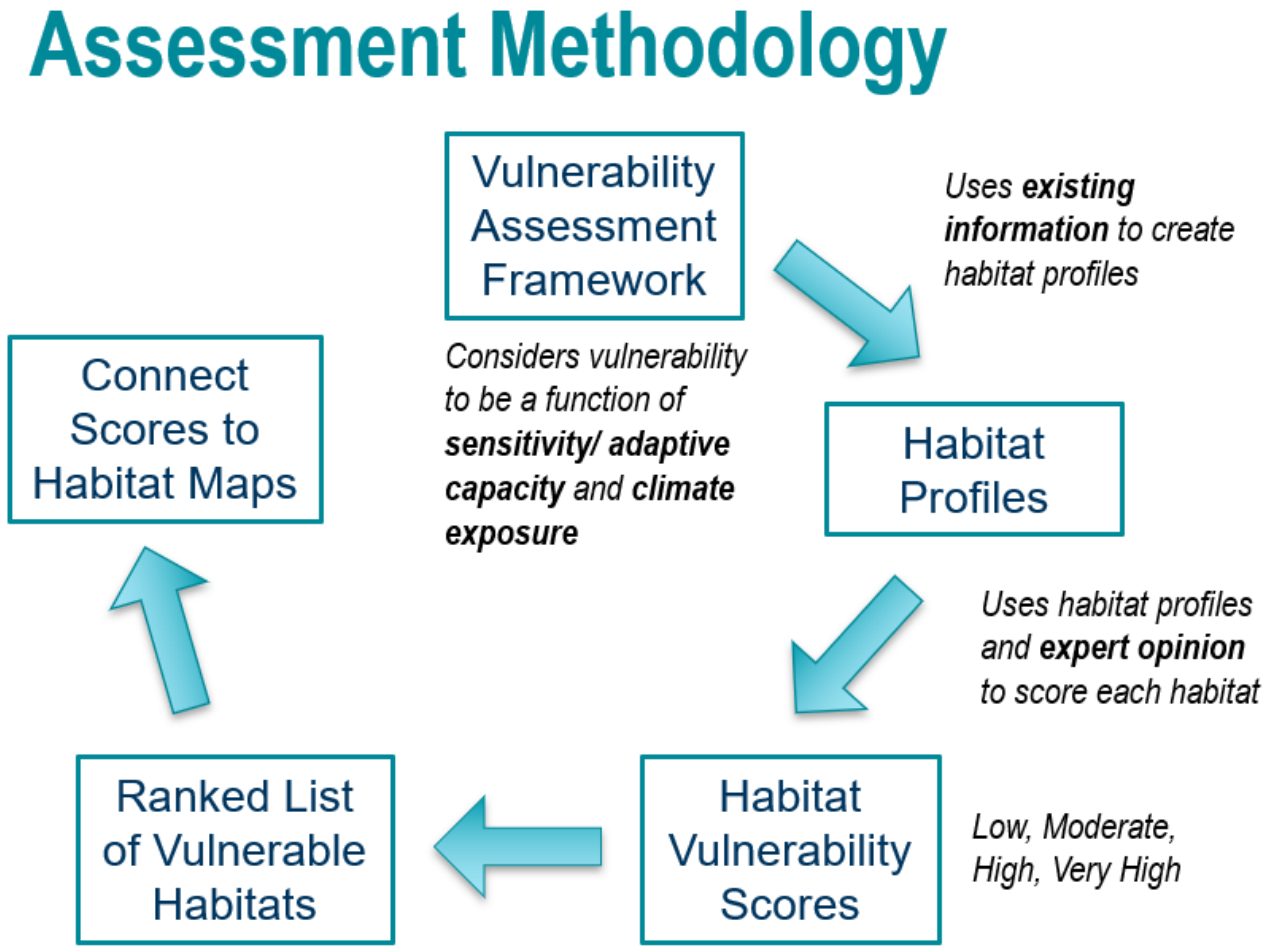
Habitat vulnerability

- **Qualitative evaluation of the vulnerability of specific habitat types** to non-climate and climate-related stressors based on expert judgement.
- **Recommendations** from HCVA and staff leads if additional areas for future work are identified through this process.

Habitat data visualization and decision support tool

- **Maintain, house, and refresh products** that are developed
- **Updates every 5 years**

Habitat vulnerability (Source: Emily Farr/NOAA)



Sensitivity/Adaptive Capacity Attributes [Preliminary]:

1. Habitat condition
2. Habitat fragmentation
3. Distribution/Range
4. Mobility/Ability to spread or disperse
5. Resistance
6. Resilience
7. Sensitivity to abiotic stressors
8. Intensity of non-climate stressors
9. Dependency on critical ecological linkages

Action 1 - Abundance and trends in habitat types in the inshore a
(updated as of 19 June 2019)

Leads: Michelle Bachman (NEFMC) and Jessica Coakley (MAFMC)

Team:
Tori Kentner, NMFS NEFSC (GIS Lead, Contractor)
Alison Verkade, NMFS GARFO HCD
Dave Packer, NMFS NEFSC
Bryan DeAngelis, TNC
Eric Schneider, RI DEM
Mark Rousseau, MA DMF
AK Leight, NOAA NCCOS
Julie Devers, USFWS
Stephen Faulkner, USGS

Action 2 – Habitat Vulnerability

Leads: Jon Hare (NMFS NEFSC), Mike Johnson and Mark Nelson (NMFS)

Team:
Uses a steering committee, team, and consultant structure.

Action 3 - Spatial descriptions of species habitat use in the offshore area

Leads: Laurel Smith (NEFSC) with staff support (Jessica Coakley, MAFMC)

Team:
Tori Kentner, NMFS NEFSC (GIS Lead, Contractor)
Vince Guida, NMFS NEFSC
David Stevenson, NMFS GARFO
Marta Ribera, TNC
Donna Johnson, NMFS NEFSC
Rich Bell, TNC
Marek Topolski, MD DNR
Kathy Mills, GMRI
Dave Packer, NMFS NEFSC
Vince Saba, NMFS NEFSC
Kevin Friedland, NMFS NEFSC

Action 4 – Habitat Visualization and Decision Support

Leads: Laurel Smith (NEFSC), Jessica Coakley (MAFMC), Michelle Bachman (NEFMC), Lisa Havel (ASMFC/ACFHP)

Next steps

- Work officially starts July 1
- 3 years
- Will be coordinating with other assessments
  - Data requests
  - Sharing ideas, commiserating, etc.