The Northeast Regional Fish Habitat Assessment

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Northeast Regional 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.

- North Carolina/South Carolina boundary to the western end of the Scotian Shelf
- Includes the Mid-Atlantic Bight, Southern New England, Georges Bank, and the Gulf of Maine
- Inshore team focus extends to mean high water or high marsh, to offshore extent of state surveys/state waters; offshore team focus is coastal marine waters to the edge of the continental shelf
- Different products from inshore/offshore teams so there may be spatial overlap between the two parts of the assessment in state waters

Focus Species (65+, important to managers)

- **Mid-Atlantic:** Atlantic and chub mackerel, butterfish, longfin and shortfin squid, surfclam, ocean quahog, summer flounder, scup, black sea bass, bluefish, golden and blueline tilefish, spiny dogfish
- **New England:** Cod, cusk, haddock, pollock, Acadian redfish, plaice, halibut, winter flounder, witch flounder, yellowtail flounder, wolffish, windowpane, ocean pout, offshore, red, and white hake, monkfish, Atlantic herring, salmon, skates (seven species), red crab, sea scallop
- **Additional ASMFC:** Eel, lobster, croaker, menhaden, striped bass, Atlantic sturgeon, black drum, cobia, horseshoe crab, Jonah crab, northern shrimp, red drum, shad and river herring, Spanish mackerel, spot, spotted seatrout, tautog, weakfish, coastal sharks
- **Highly migratory with HAPC designations:** Sandbar shark, dusky shark

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
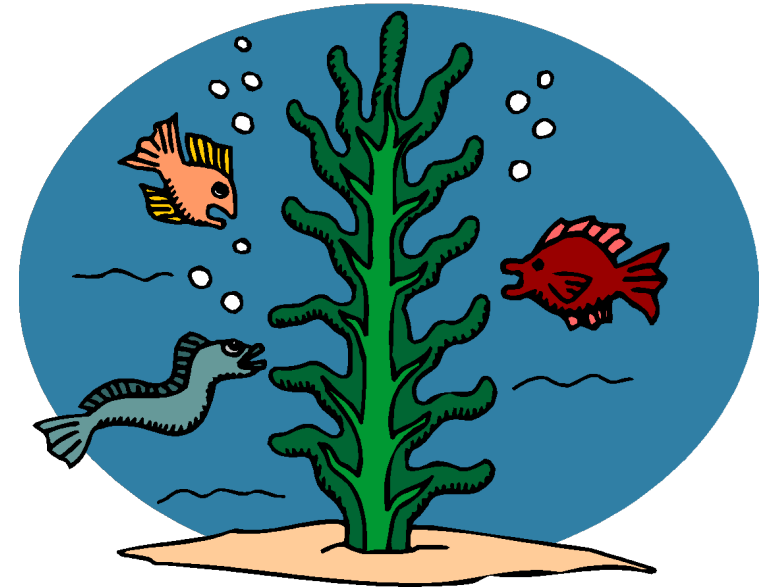
Project team

- **Project Coordinator:** Jessica Coakley
- **Team leads:** Jessica Coakley & Michelle Bachman (inshore); Laurel Smith (offshore)
- **Technical leads on GIS and modeling work:** Chris Haak, Tori Kentner
- **Inshore team members:** Bryan DeAngelis, Julie Devers, Stephen Faulkner, AK Leight, Dave Packer, Mark Rousseau, Eric Schneider, Alison Verkade
- **Offshore team members:** Rich Bell, Kevin Friedland, Vince Guida, Donna Johnson, Kathy Mills, Marta Ribera, Vince Saba, David Stevenson, Marek Topolski, Harvey Walsh
- **Habitat Climate Vulnerability Assessment:** Jon Hare, Mike Johnson, Mark Nelson, Emily Farr, others

Four actions

1. Abundance and trends in habitat types in the inshore area

2. Spatial descriptions of species habitat use in the offshore area

3. Habitat vulnerability

4. Habitat data visualization and decision support

Abundance and trends in habitat types in the inshore area

- **Quantity of habitat types** by area (entire region, sub- or ecoregions, estuaries, mainstems/tributaries), to finest scale practical

- **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).

- **Potentially use modeling** to understand drivers of species distribution, or fill in gaps in our understand of species distribution

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.

Joint inshore/offshore products

- **Data inventory:**
  - **Location and extent of habitat types** as maps (Geographic Information System (GIS) framework; to finest scale practical).
  - **Species distribution data** from fisheries-independent surveys
- **Written inventory** of habitats and habitat use for each focus species
- **Habitat data visualization and decision support tool**
  - Will begin this work in later stage of assessment
  - Maintain, house, and refresh products that are developed
  - Updates every 5 years

What types of data are we including?

- Sediment and Benthic
- Bathymetry
- Temperature
- Coastal Habitat Types (i.e., Submerged aquatic vegetation, oyster reef, tidal marsh, hard bottom)
- Hydrodynamic Data
- Climate Model Outputs
- Focus Species Distribution and Abundance

(See inventory spreadsheet for details)

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
- EFH, Habitat Areas of Particular Concern, fisheries management, EAFM

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

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

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

Other relevant projects and assessments

- **Great Lakes Basin Fish Habitat Partnership (GLBFHP)** funded a composite habitat assessment that includes linkage to the Great Lakes tributary assessment. The goal was to assess and map available fish habitat based on species-specific habitat conditions for all five Great Lakes.

- **Pacific Marine and Estuarine Fish Habitat Partnership (PMEP)** works with its partners to assess conditions of the estuarine and nearshore environment along the West Coast. In many cases, the group has gathered and synthesized existing data into a singular consensus scheme in order to allow for comparisons across a region or regions.

- **Estuarine Living Marine Resource Assessment (ELMR)**

- **NALCC Estuarine Fish Habitat Assessment:** A General Framework and Winter Flounder Pilot

- Are there others to consider? Gulf Habitat Assessment?

Next Steps

- Continue data inventory and data set assembly in collaboration with state and federal partners and teams working on other projects

- Continue to identify similar assessments to consider analytical techniques and reporting approaches we could apply here

- Continue to explore model-based approaches

- Develop focus species habitat use reports

Questions?