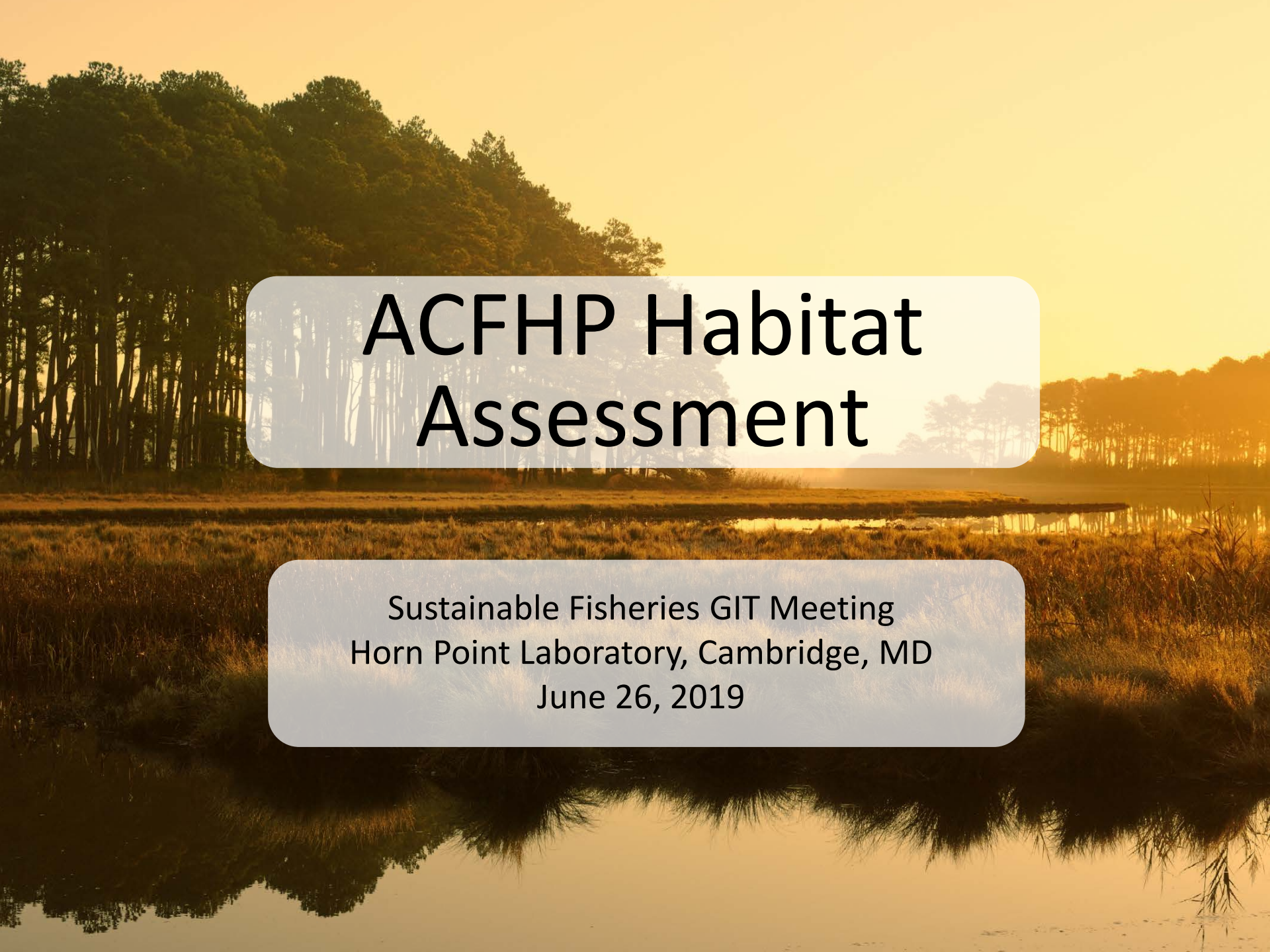


ACFHP Habitat Assessment

Sustainable Fisheries GIT Meeting
Horn Point Laboratory, Cambridge, MD
June 26, 2019

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

Atlantic Coast Fish Habitat Partnership Northeast Assessment

- Prioritization of diadromous and estuarine dependent fish habitat from Maine to Virginia
- Based on the scoring of existing data layers
- 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

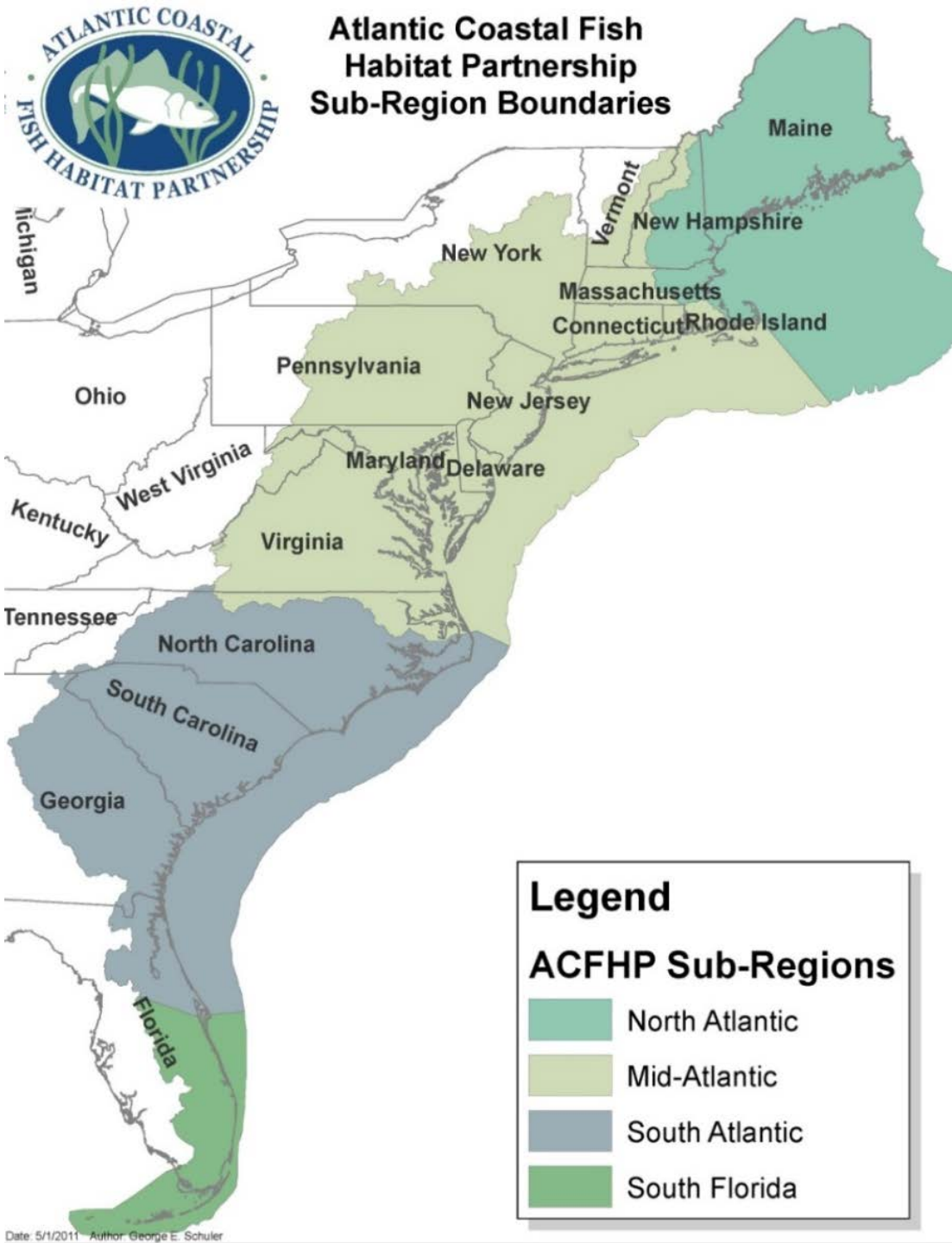
Habitat Climate Vulnerability Assessment

- 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

Atlantic Coastal Fish Habitat Partnership

Mission

To accelerate the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes through partnerships between federal, tribal, state, local, and other entities



Priority Habitats

North Atlantic

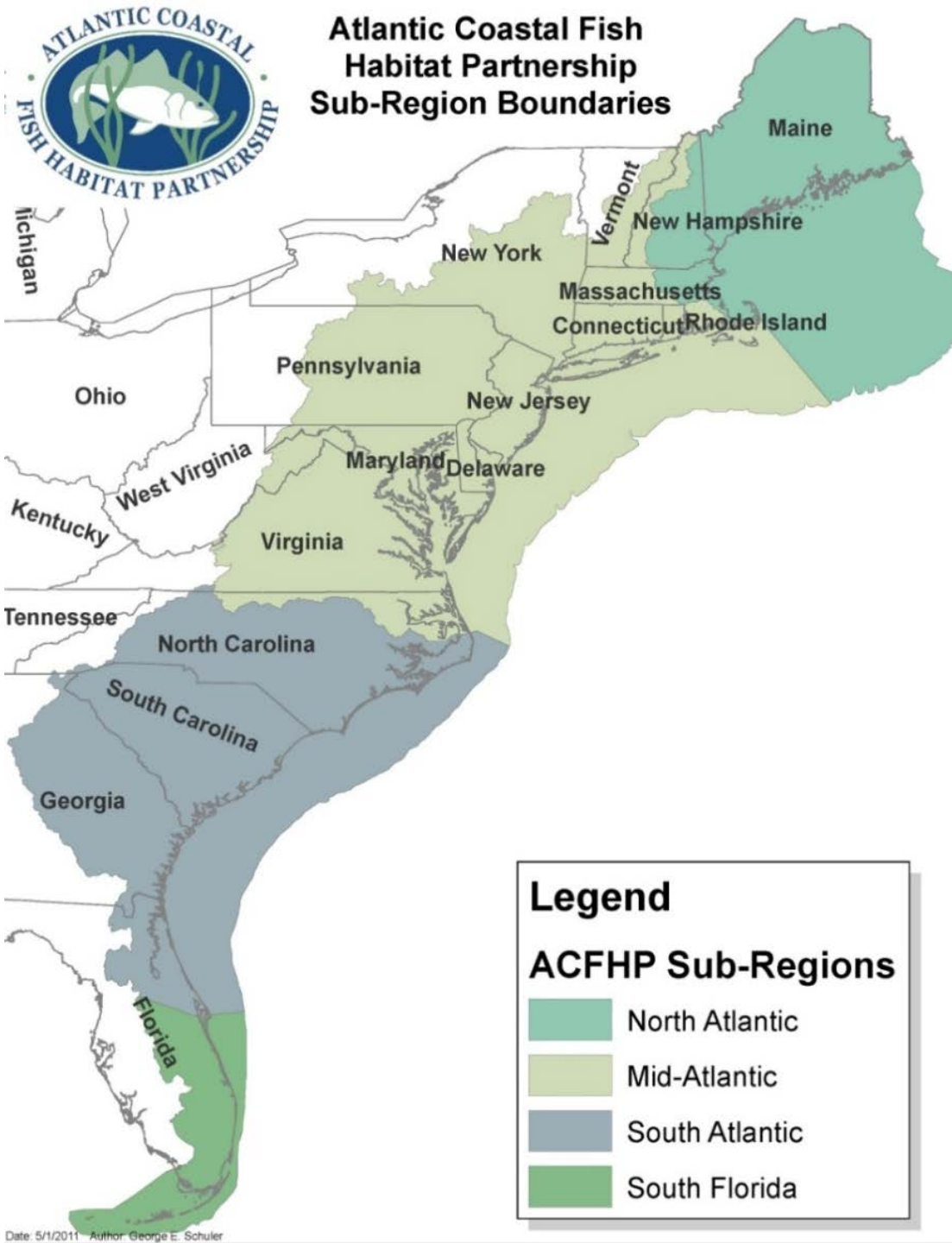
- Riverine bottom
- Shellfish beds
- SAV

Mid- & South Atlantic

- Riverine bottom
- Shellfish beds
- SAV
- Tidal vegetation

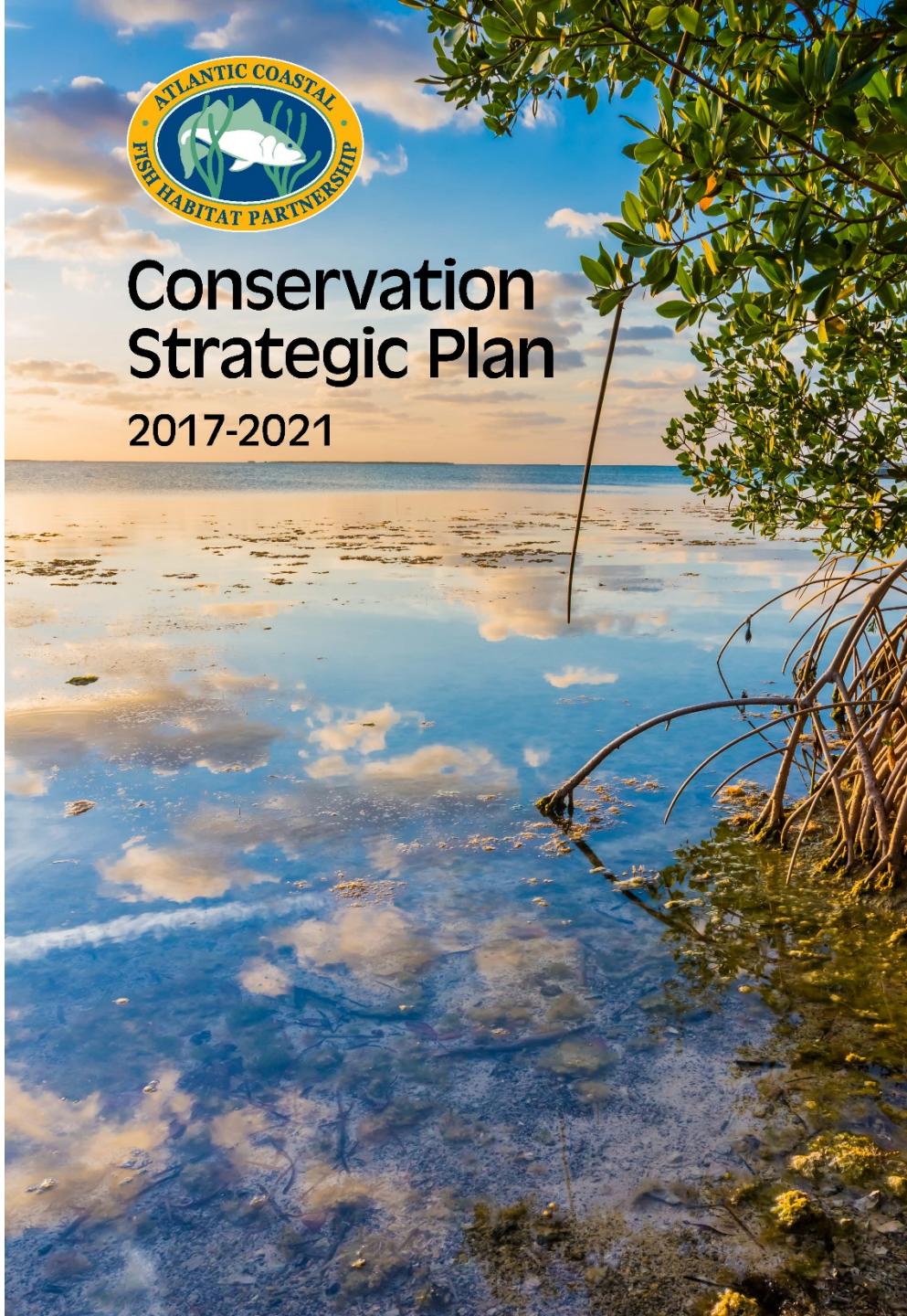
South Florida

- SAV
- Tidal vegetation
- Coral and live/hard bottom



Science & Data Strategy 1.2

Produce a fine scale ACFHP region-wide GIS map, using existing data, that shows areas for priority habitat protection and restoration which can be used to better target our actions.



SE Fish Habitat Conservation Mapping

Objective

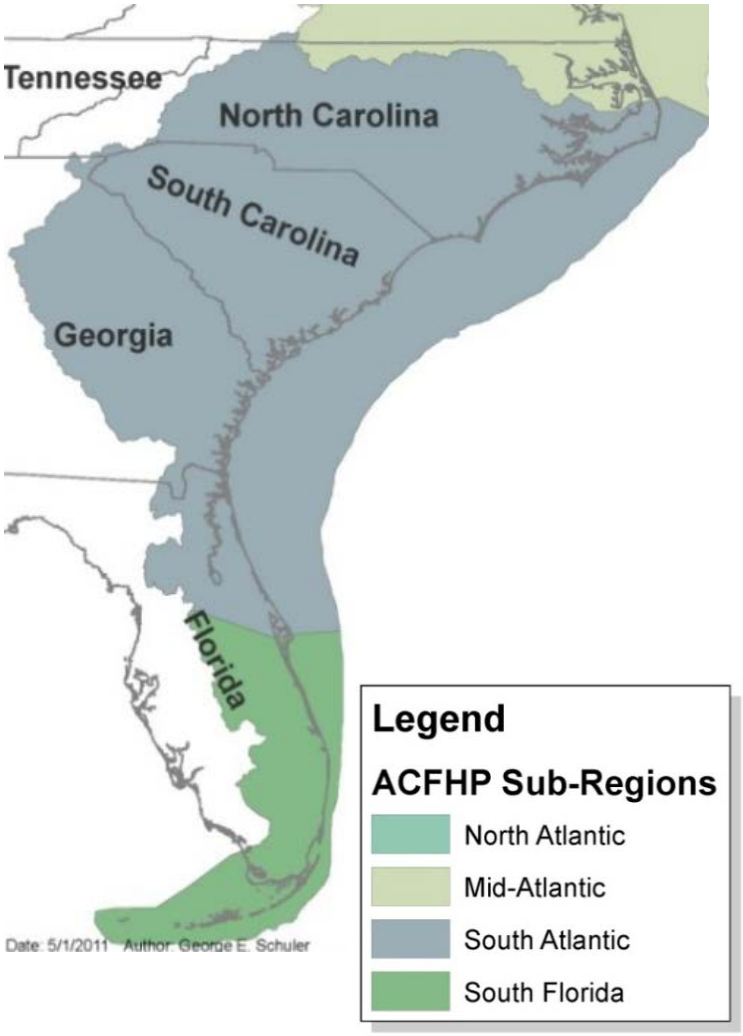
To spatially prioritize fish habitat protection and restoration sites through GIS mapping and analyses for the southeast region of the U.S. from NC to FL

Expected Outcome

To help ACFHP and partners identify where best to invest efforts and future project funds.

SE Fish Habitat Conservation Mapping

Scope



Mid- & South Atlantic

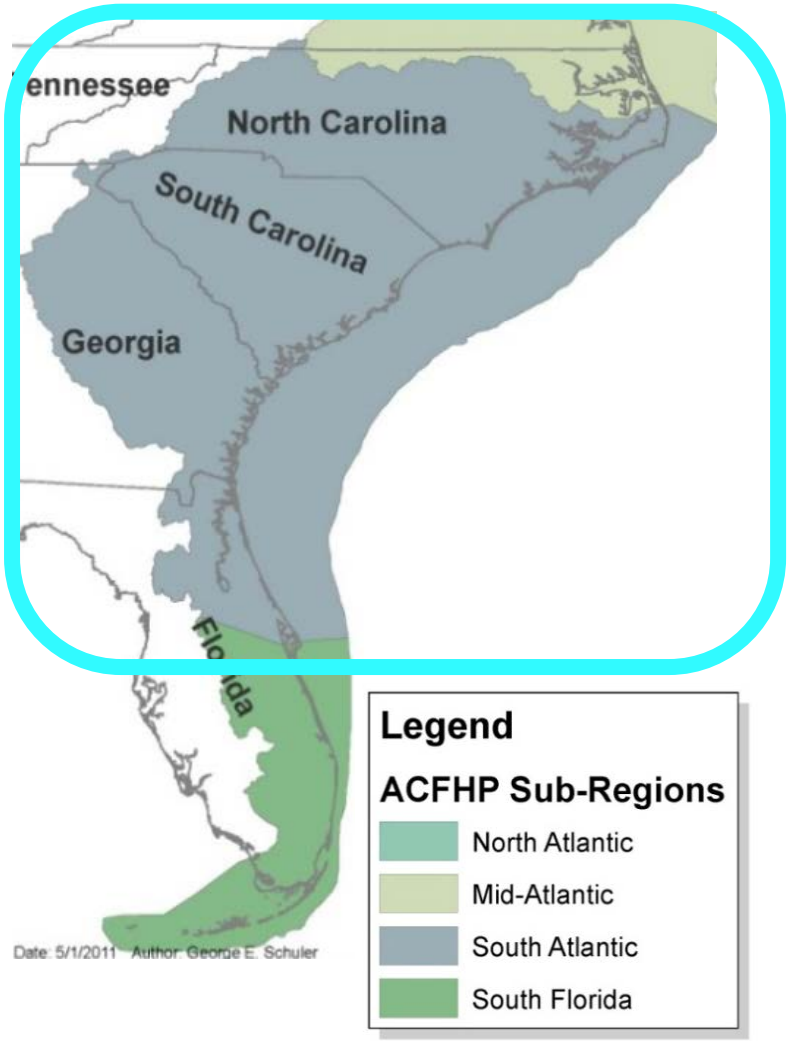
- Riverine bottom
- Shellfish beds
- SAV
- Tidal vegetation

South Florida

- SAV
- Tidal vegetation
- Coral and live/hard bottom

SE Fish Habitat Conservation Mapping

Scope



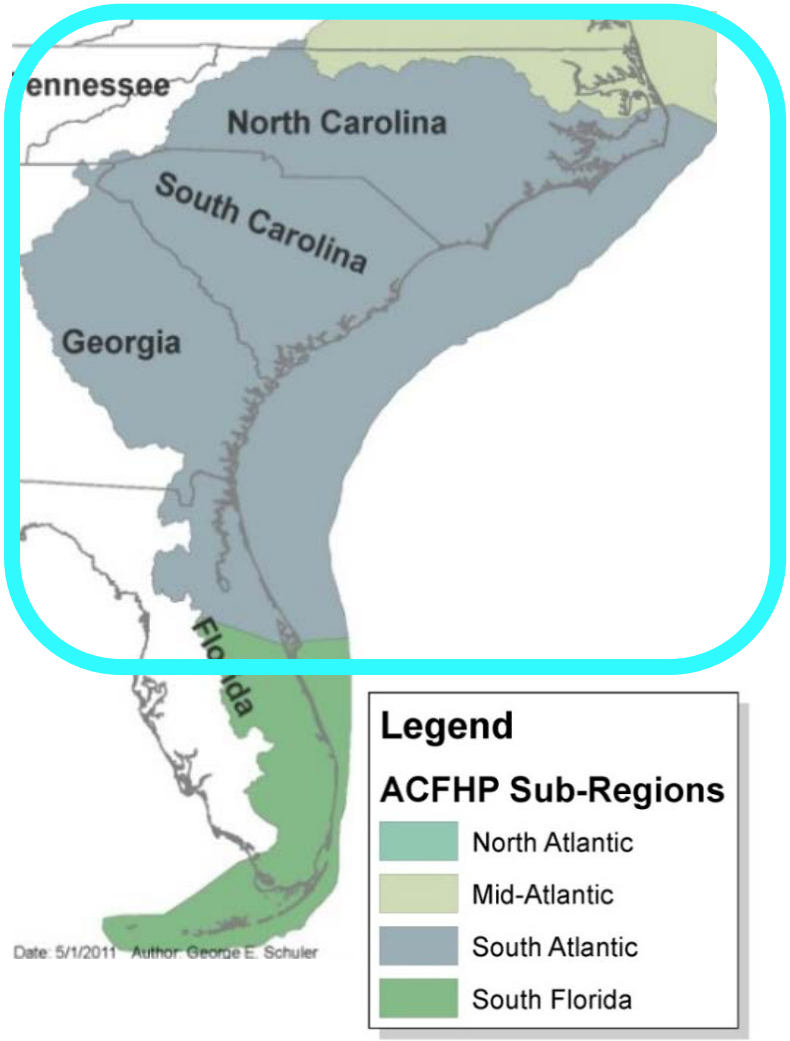
Northern Scenario

- **Riverine bottom**
- Shellfish beds
- SAV
- Tidal vegetation

Diadromous assessment

SE Fish Habitat Conservation Mapping

Scope



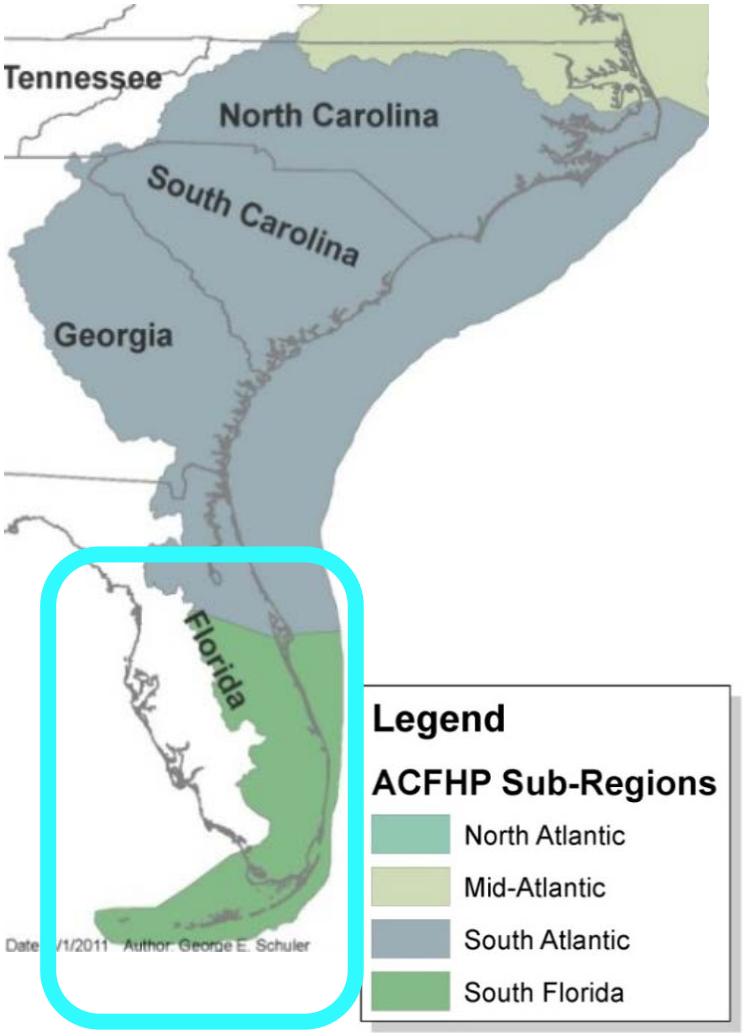
Northern Scenario

- Riverine bottom
- **Shellfish beds**
- **SAV**
- **Tidal vegetation**

Estuarine assessment

SE Fish Habitat Conservation Mapping

Scope



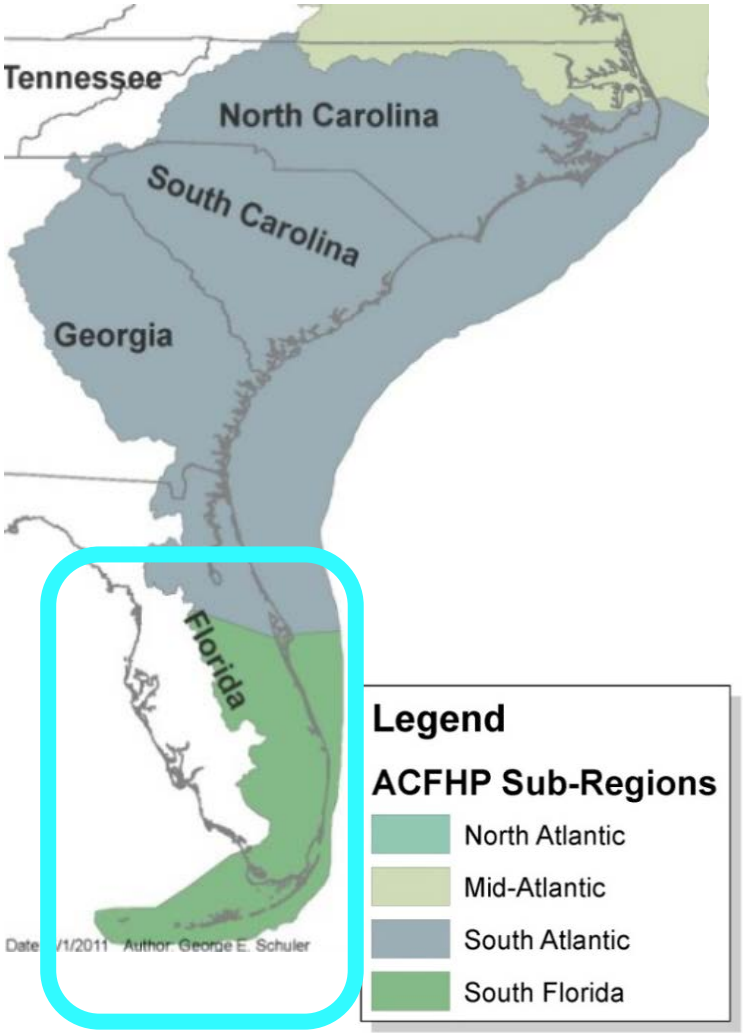
Southern Scenario

- **SAV**
- **Tidal vegetation**
- Coral and live/hard bottom

Estuarine assessment

SE Fish Habitat Conservation Mapping

Scope



South Florida

- SAV
- Tidal vegetation
- **Coral and live/hard bottom**

Coastal assessment

SE Fish Habitat Conservation Mapping

Scope

- Northern diadromous scenario
  - NHD catchment in watersheds with alosine fish historically or currently present
- Northern and southern estuarine scenario
  - 1-km^2 hexagon (NOAA medium resolution shoreline out to ‘North American Waters’ in ESRI)
- Southern coastal scenario
  - FL FWC Unified Reef Map

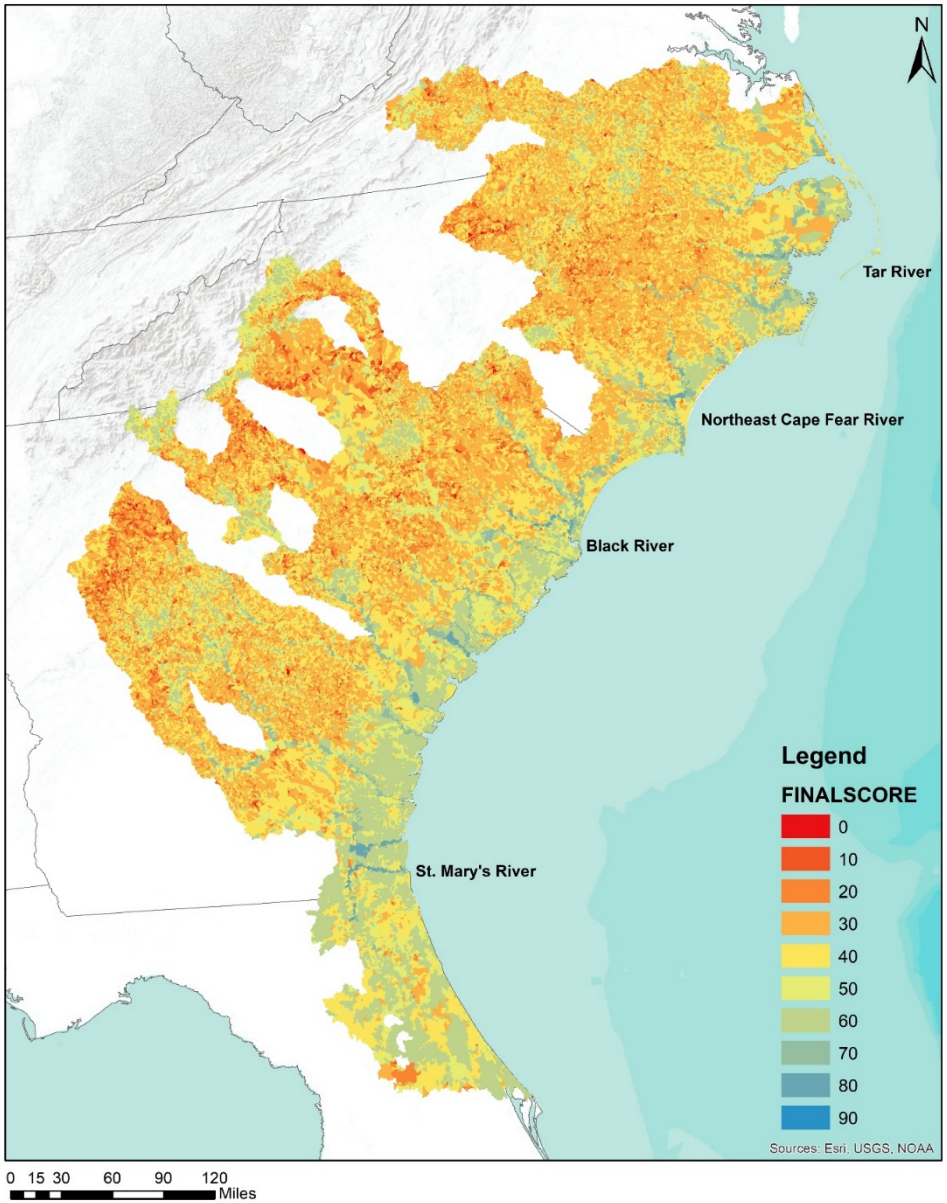
SE Fish Habitat Conservation Mapping

Diadromous Assessment

Variable	Measurement	Metric
Impervious surface	area above the catchment that is impervious surface	10 points if <5% cumulative impervious surface
Point source pollution	Density of sites in catchment	10 points if catchment is ranked in the lowest 25% for pollution (least polluted)
Non-point source pollution	% of catchment covered by agriculture	10 points if the catchment is ranked in the lowest 25% for pollution (least polluted)
Riparian buffers	% of floodplain area with natural land cover	10 points if the catchment is ranked in the top 25% for natural coverage
Potential for species access	Anadromous species presence + ocean access	10 points if catchment had an anadromous species present AND was on a network with zero dams downstream to the ocean.
Flow alteration	Volume of all reservoirs per unit area of watershed	10 points if the catchment is ranks in the lowest 25% for volume
Fragmentation	Density of road crossings + dams in catchment	Ten points for those catchments that ranked lowest 25% for fragmentation (least amount of dams and crossings)
Sturgeon Critical Habitat	Sturgeon Critical Habitat designation	10 points if the catchment is designated Atlantic sturgeon Critical Habitat

SE Fish Habitat Conservation Mapping

Diadromous Assessment



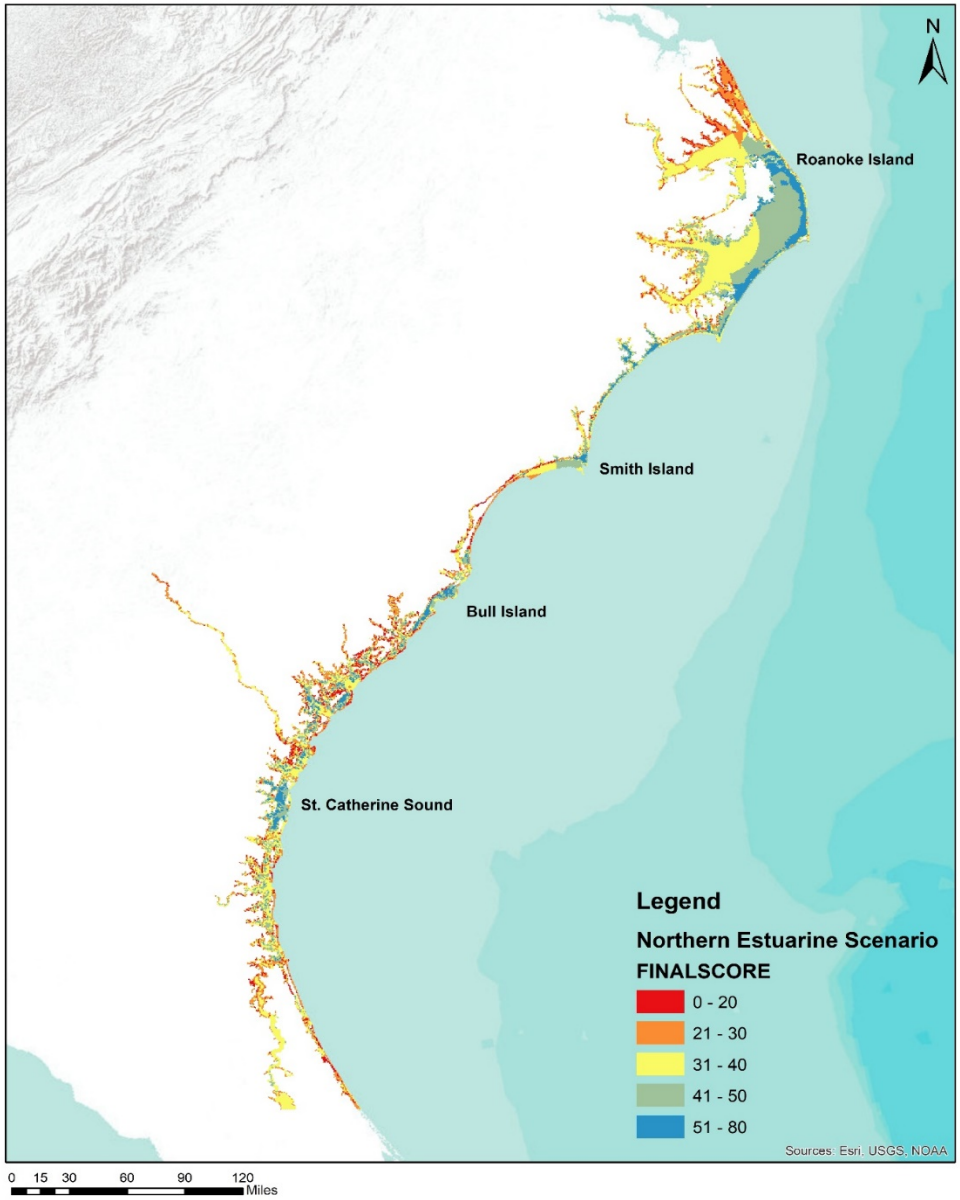
SE Fish Habitat Conservation Mapping

Estuarine Assessment

Variable	Measurement	Metric
Seagrass and oyster reef habitat	% of polygon covered by seagrass or oyster reef	10 points if the polygon ranks in the top 25% for coverage
Wetland habitat	% of polygon covered by wetlands	10 points if the polygon ranks in the top 25% for coverage
Water-vegetation edge*	Length of estuarine-marsh-water edge in the polygon	10 points if the polygon ranks in the top 25% for length
Proximity to protected habitat	Distance to an HAPC	10 points if the polygon is within ½ km of an HAPC
Proximity to development	Distance from marinas and ports	10 points for the 25% of polygons farthest from marinas and ports
Water quality	Total area of 303D sites	10 points for the 25% of polygons with the smallest area of 303D sites
Hardened shoreline	Length of hardened shoreline within the polygon	10 points for the 25% of polygons with the least amount of hardened shoreline
Habitat fragmentation	Linear ft. of causeway within a polygon	10 points if the polygon has 0 ft. of causeways

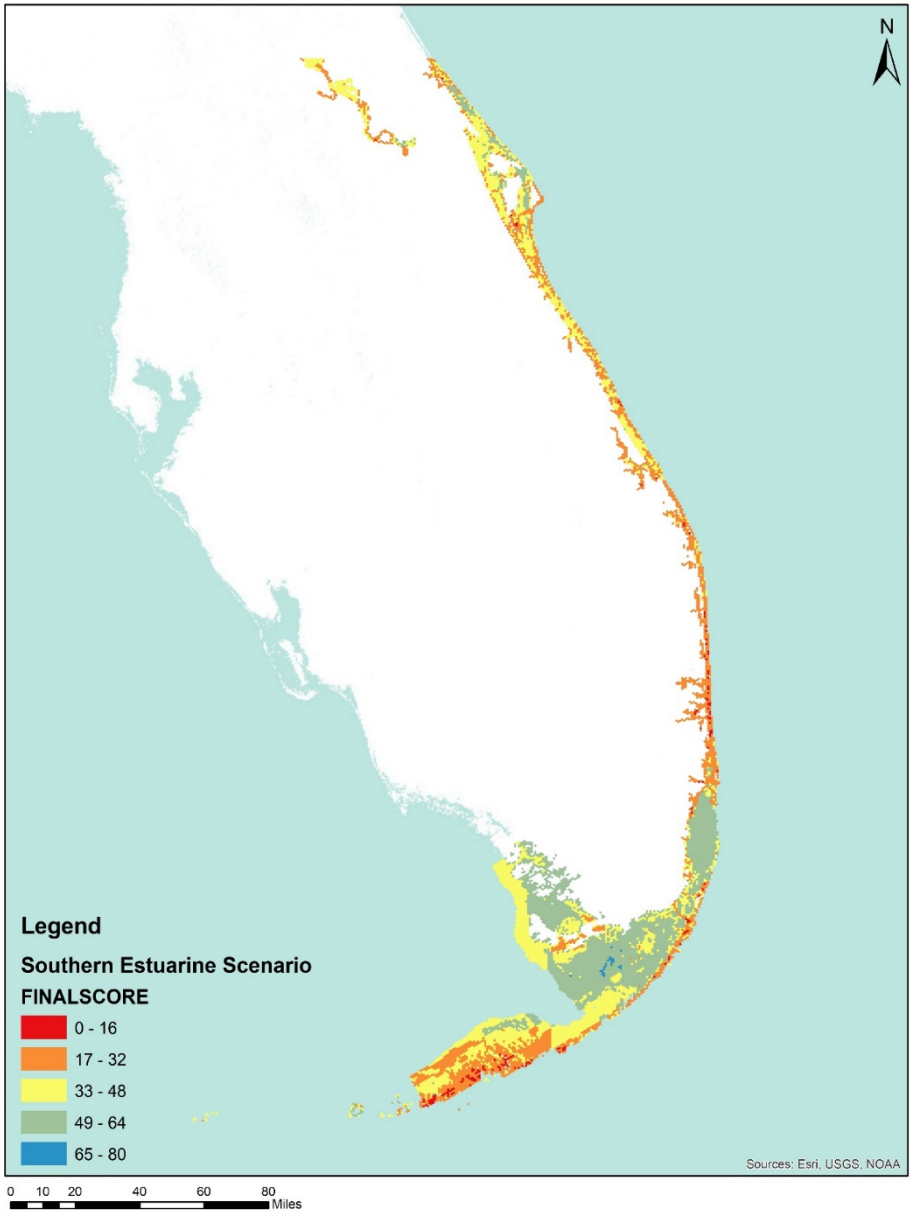
SE Fish Habitat Conservation Mapping

Northern Estuarine Assessment



SE Fish Habitat Conservation Mapping

Southern Estuarine Assessment



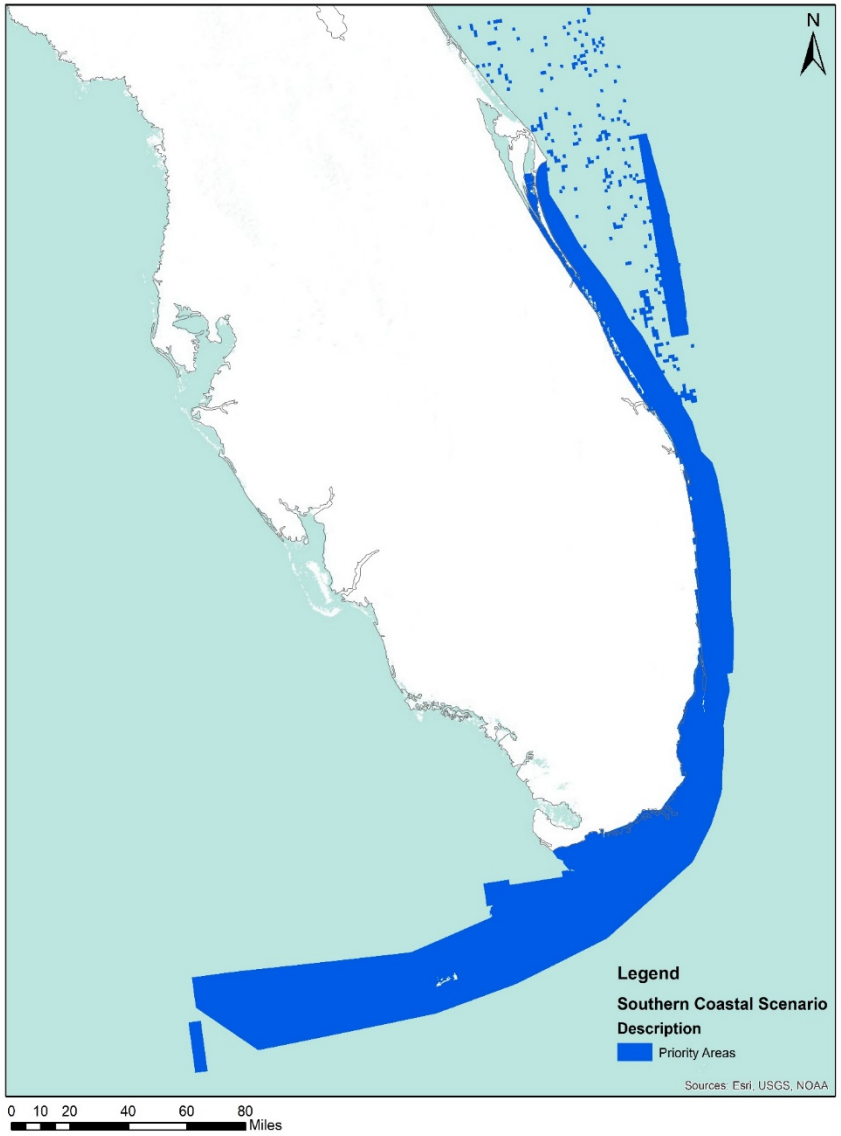
SE Fish Habitat Conservation Mapping

Coastal Assessment

- Decided all coral habitat was in need of conservation, regardless of quality
- Due to slow growth and immediate threats to S. FL reefs (bleaching, pollution, disease, burial)
- FWC Unified Reef Map
- Coral reefs and hard bottom HAPCs

SE Fish Habitat Conservation Mapping

Coastal Assessment



SE Fish Habitat Conservation Mapping

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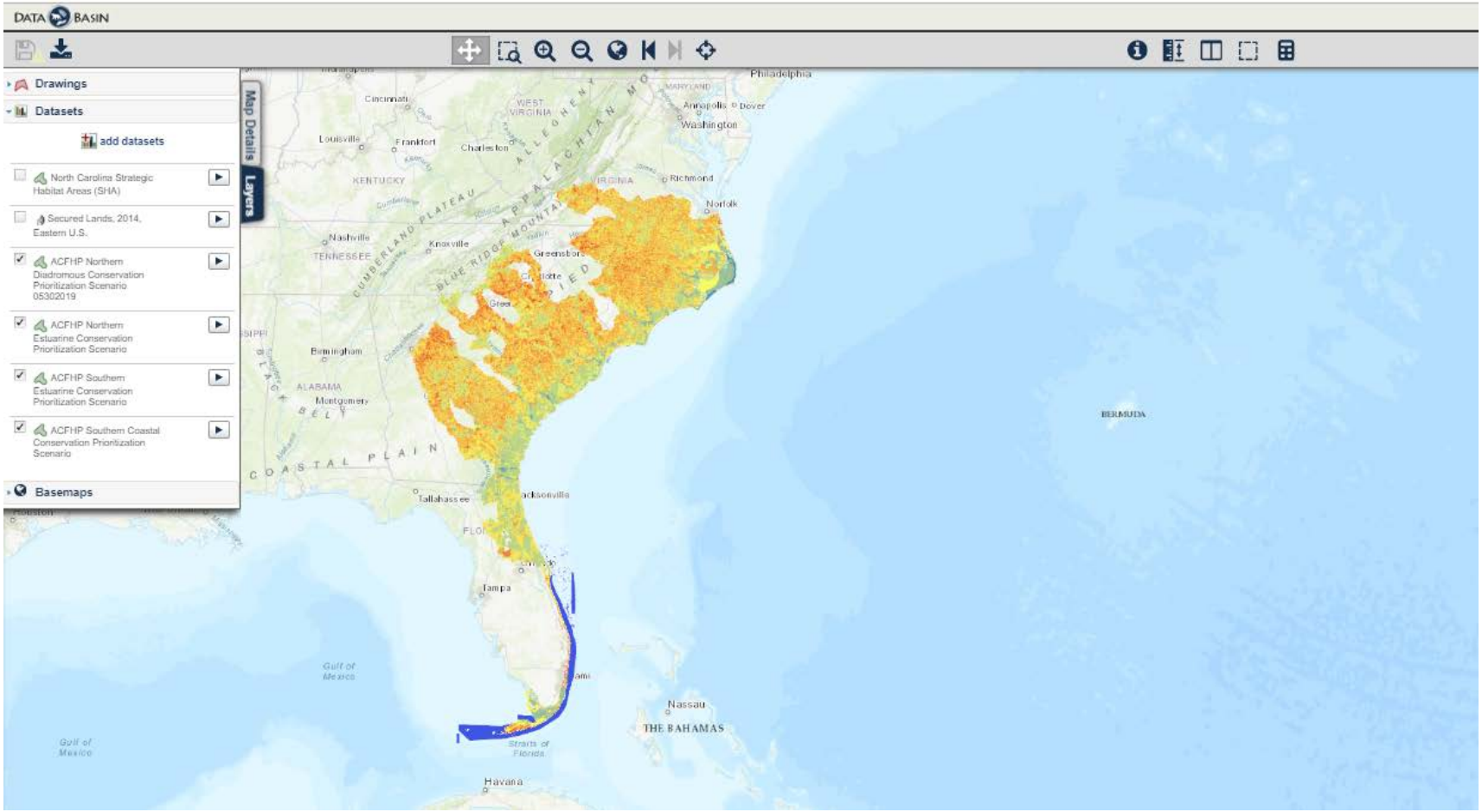

SE Fish Habitat Conservation Mapping

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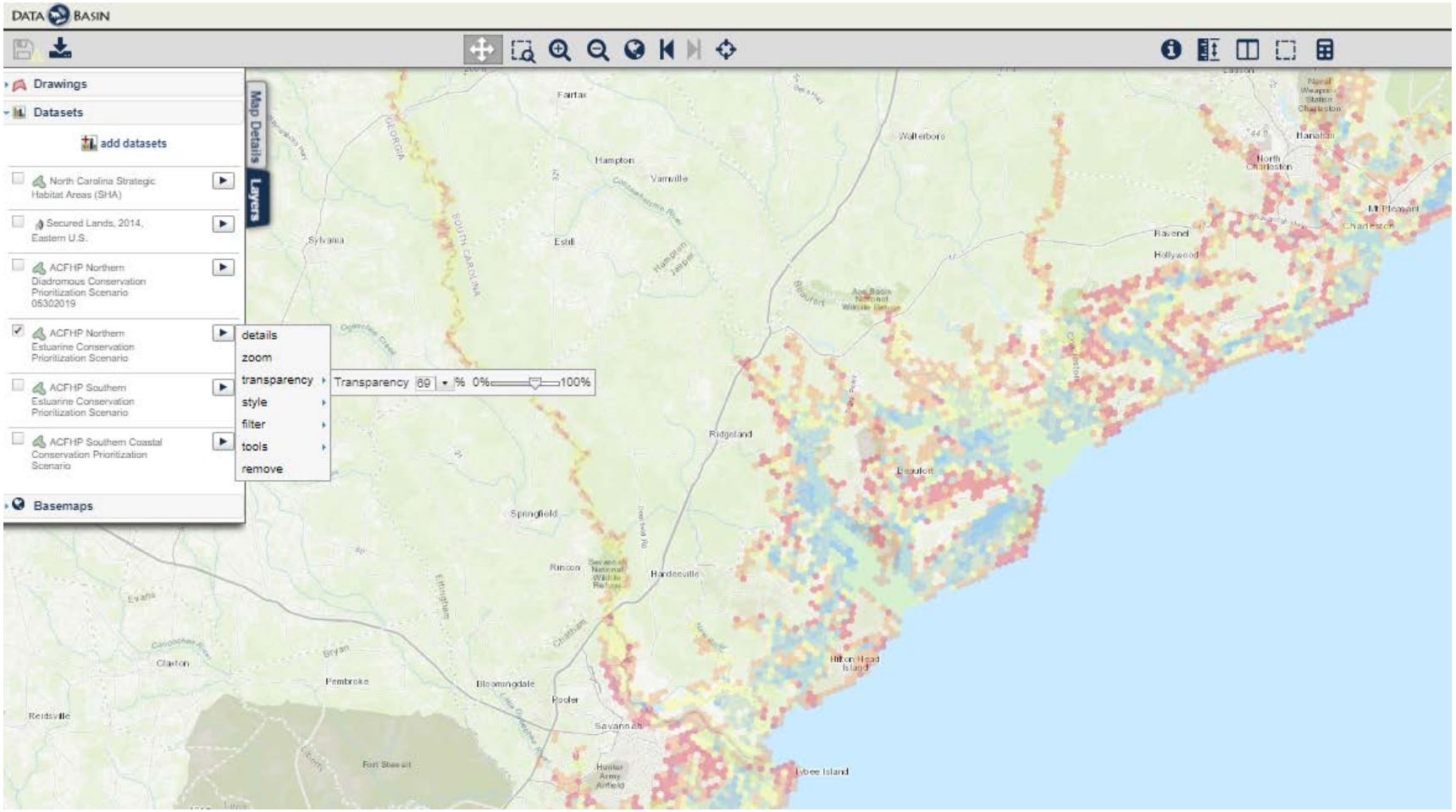

SE Fish Habitat Conservation Mapping

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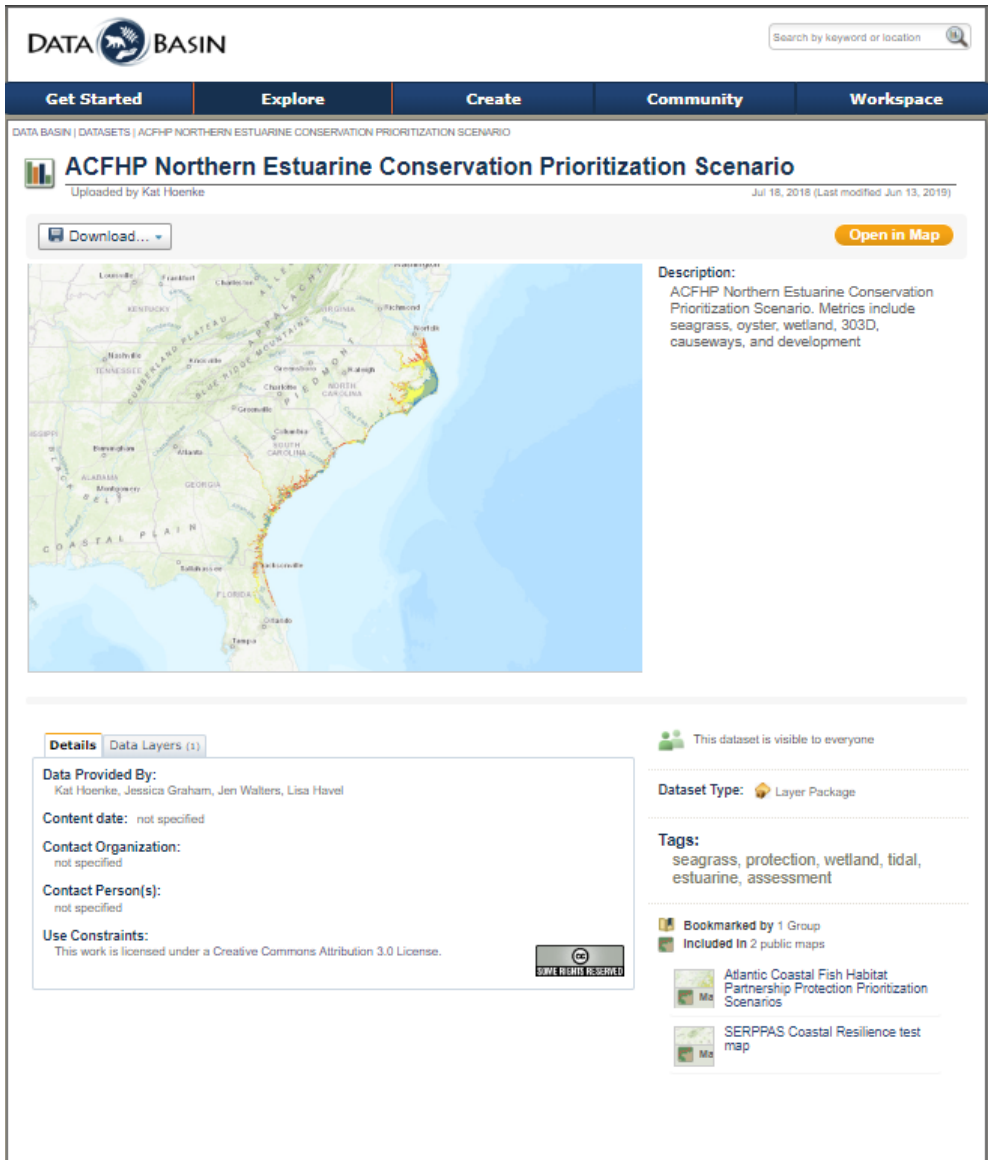


NE Fish Habitat Conservation Mapping

Objective

To spatially determine which riverine, estuarine, and coastal sites are optimal for fish habitat restoration and protection (conservation) from Maine through Virginia

Expected Outcome

To help ACFHP and partners identify where best to invest efforts and future project funds.

NE Fish Habitat Conservation Mapping

Work Plan

1. Prioritize spatial locations for the conservation of priority habitats in the North and Mid-Atlantic.
2. Compile/review/select existing GIS layers/maps of threats, indicators, presence/absence data (where possible), existing or historical habitat maps, and existing habitat prioritization maps, paying particular attention to the layers that were included in our Southeast Habitat Assessment (partially completed, finish after this meeting).

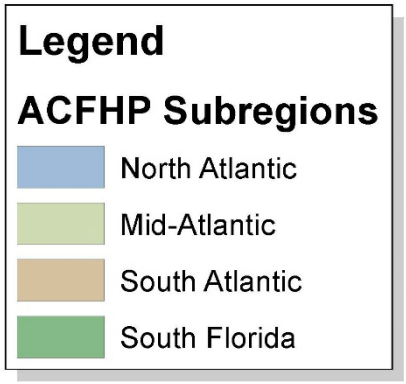
NE Fish Habitat Conservation Mapping

Work Plan

3. Participate in an ACFHP Science and Data Working Group meeting to review the results of the Southeast Assessment, develop the methods and layers to expand habitat assessment in the NE, and consider other habitat prioritization efforts.
4. Present findings to the ACFHP Steering Committee for review.
5. Integrate Steering Committee feedback into the analyses.
6. Prepare maps and final report.

NE Fish Habitat Conservation Mapping

1. Prioritize spatial locations



North Atlantic

- Riverine bottom
- Shellfish beds
- SAV

Mid-Atlantic

- Riverine bottom
- Shellfish beds
- SAV
- Tidal vegetation

NE Fish Habitat Conservation Mapping

1. Prioritize spatial locations

Legend

ACFHP Subregions

- North Atlantic
- Mid-Atlantic
- South Atlantic
- South Florida

Northern Scenario

- **Riverine bottom**
- Shellfish beds
- SAV

Diadromous assessment

NE Fish Habitat Conservation Mapping

1. Prioritize spatial locations

Legend

ACFHP Subregions

- North Atlantic
- Mid-Atlantic
- South Atlantic
- South Florida

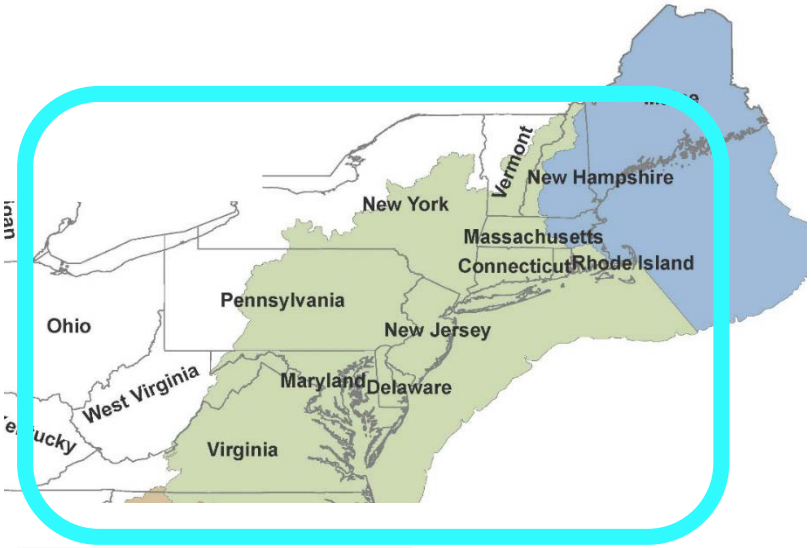
Northern Scenario

- Riverine bottom
- **Shellfish beds**
- **SAV**

Estuarine assessment

NE Fish Habitat Conservation Mapping

1. Prioritize spatial locations



Legend

ACFHP Subregions

- North Atlantic
- Mid-Atlantic
- South Atlantic
- South Florida

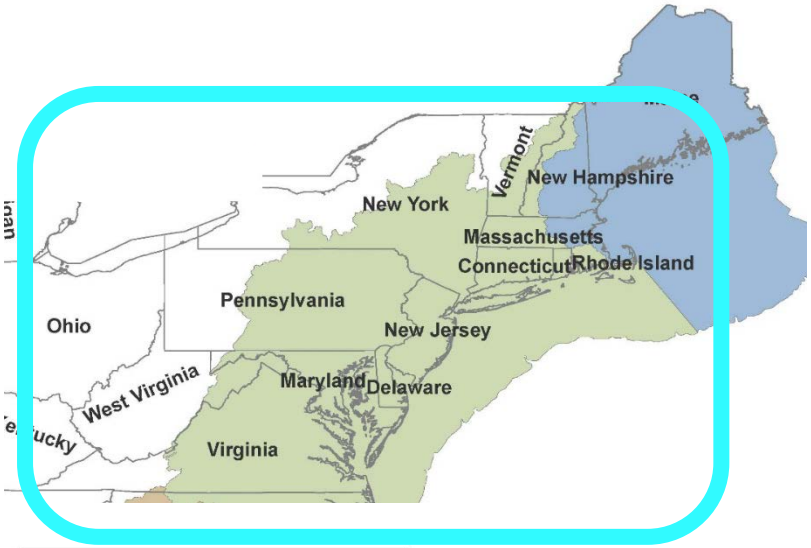
Southern Scenario

- **Riverine bottom**
- **Shellfish beds**
- **SAV**
- **Tidal vegetation**

Diadromous assessment

NE Fish Habitat Conservation Mapping

1. Prioritize spatial locations



Legend

ACFHP Subregions

- North Atlantic
- Mid-Atlantic
- South Atlantic
- South Florida

Southern Scenario

- **Riverine bottom**
- **Shellfish beds**
- **SAV**
- **Tidal vegetation**

Estuarine assessment

SE Fish Habitat Conservation Mapping

Scope

- Diadromous scenario
  - NHD catchment in watersheds with alosine, sea lamprey, and Atlantic salmon historically or currently present
- Estuarine scenario
  - 1-km^2 hexagon (NOAA medium resolution shoreline out to 60’ depth contour in North Atlantic and 35’ depth contour in Mid-Atlantic)

SE Fish Habitat Conservation Mapping

Diadromous Variables and Metrics

Variable	Measurement	Metric
Impervious surface	area above the catchment that is impervious surface	10 points if <5% cumulative impervious surface
Point source pollution	Density of sites in catchment	10 points if catchment is ranked in the lowest 25% for pollution (or better cutoff)
Non-point source pollution	% of catchment covered by non-natural habitat or impervious surface	10 points if the catchment is ranked in the lowest 25% for pollution (least polluted)
Riparian buffers	% of floodplain area with natural land cover	10 points if the catchment is ranked in the top 25% for natural coverage
Anadromous species access	Anadromous species present + ocean access	10 points if catchment had an anadromous species present AND zero barriers to the ocean
Flow alteration	Volume of all reservoirs per unit area of watershed	10 points if the catchment is ranks in the lowest 25% for volume
Fragmentation	Density of road crossings + dams in catchment	Ten points for those catchments that ranked lowest 25% for fragmentation (least amount of dams and crossings)
Diadromous Critical Habitat	Sturgeon and Atlantic Salmon Critical Habitat designation	10 points if the catchment is designated Atlantic sturgeon or Atlantic salmon Critical Habitat

SE Fish Habitat Conservation Mapping

Estuarine Variables and Metrics

Variable	Measurement	Metric
Seagrass and oyster reef habitat	% of polygon covered by seagrass or oyster reef	10 points if the polygon ranks in the top 25% for coverage
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Water-vegetation edge	Length of estuarine-marsh-water edge in the polygon	10 points if the polygon ranks in the top 25% for length
Proximity to protected habitat	Distance to secured lands	10 points if the polygon is within ½ km of secured lands
Proximity to development	Distance from marinas and ports	10 points for the 25% of polygons farthest from marinas and ports
Water quality	Total area of 303D sites	10 points for the 25% of polygons with the smallest area of 303D sites
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