

Progress Report: Assessment of Existing Information

Atlantic Coastal Fish Habitat Partnership (ACFHP) Steering Committee

Rehoboth Beach, Delaware, October 22, 2008

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Assessment of Existing Information on Atlantic Coastal Fish Habitat : What It Is

- ***Database:*** Comprehensive bibliographic database in Microsoft Access, key characteristics and spatial footprint of each entry.
- ***GIS:*** Basic ArcGIS project using NOAA's *Coastal Assessment Framework* as starting point for spatial organization of information.
- ***Document:*** Project summary report, with summary of spatial analyses and policy-relevant information.

Assessment of Existing Information on Atlantic Coastal Fish Habitat : Tasks I-VI

Task I. Develop Database

Task II. Develop Assessment Criteria

Task III. Develop GIS

Task IV. Apply Spatial Analysis to Criteria

Task V. Identify Data Gaps

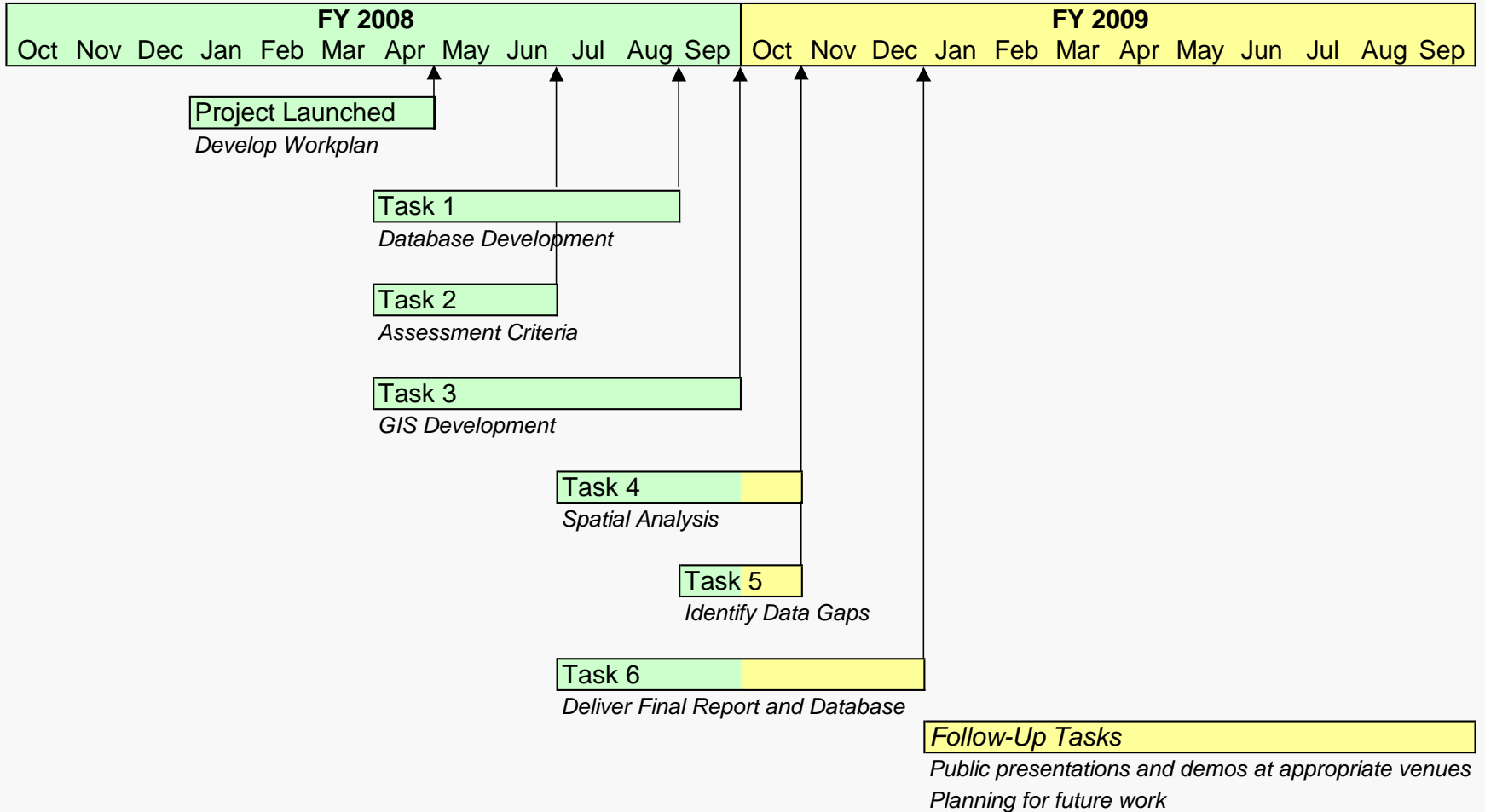
Task VI. Deliver Final Report and Useable Database

Current Status:

- Still compiling bibliographic table from acquired source documents (pdfs, urls, and hardcopies), and recording assessment criteria.
- Developing GIS framework for estuaries and coastal zone.
- "Mid-term" presentation at ACFHP Steering Committee meeting, Rehoboth DE, October 2008, and other future meetings.
- Exploring Web feasibility

Proposed Timeline for Completion of Tasks

Proposed Timeline - ACFHP Habitat Assessment Database - Fiscal Years 2008 - 2009



Target completion in January 2009, plus follow-up

Task III. Develop GIS

Develop a spatial framework for the bibliographic database, to identify the "spatial footprint" of each entry where feasible.

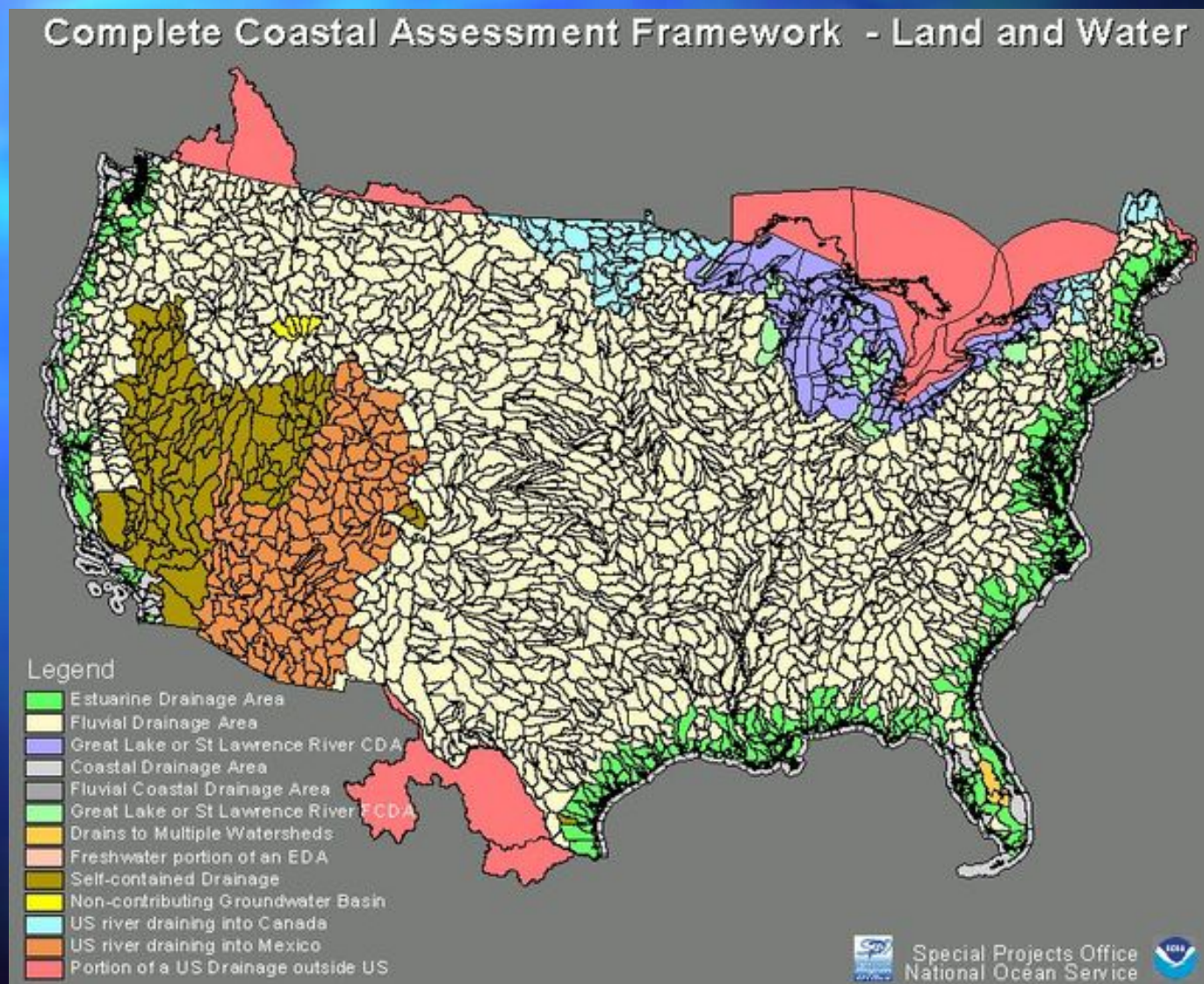
- Draft workplan: *"Develop a map of priority habitats across the range of ACFHP, and a map of ACFHP project sites."* But – this is beyond the current scope of work.
- NOAA's Coastal Assessment Framework (CAF) provides a polygon (vector) base layer, to the level of individual estuary and USGS watershed.
- States and regions (e.g. Gulf of Maine, Mid-Atlantic, South Atlantic, South Florida) can also be used as spatial units.
- Other region-wide compatible base layers (e.g. shoreline, bathymetry, salinity zones) can be taken directly from CAF or other sources (eutrophication, contaminants).
- Project will NOT attempt to incorporate sub-regional GIS data.

Proposed Spatial Framework for Assessment of Existing Information

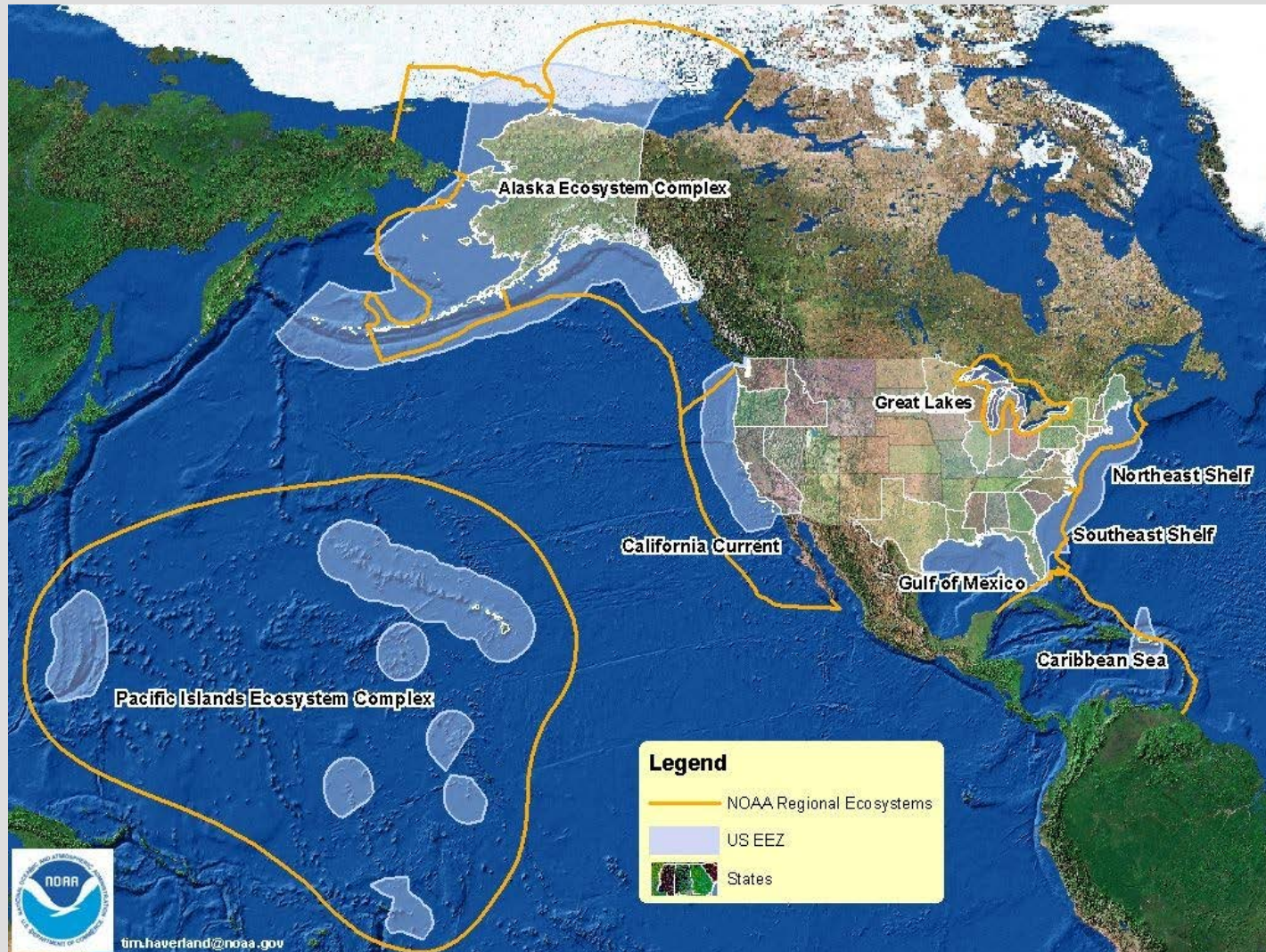
- NOAA's Coastal Assessment Framework (CAF) provides a good starting point for estuarine waters.
- Based on USGS' HUC-8s - plus associated data sets such as salinity, hydrology, bathymetry.
- CAF will function well with NFHAP's proposed inland framework based on HUCs.
- But CAF does *not* extend into marine waters, so we are proposing to extend spatial framework in marine waters using polygons based on biogeographic zones and jurisdictional boundaries.

Task III. Develop GIS

Use Coastal Assessment Framework as starting point

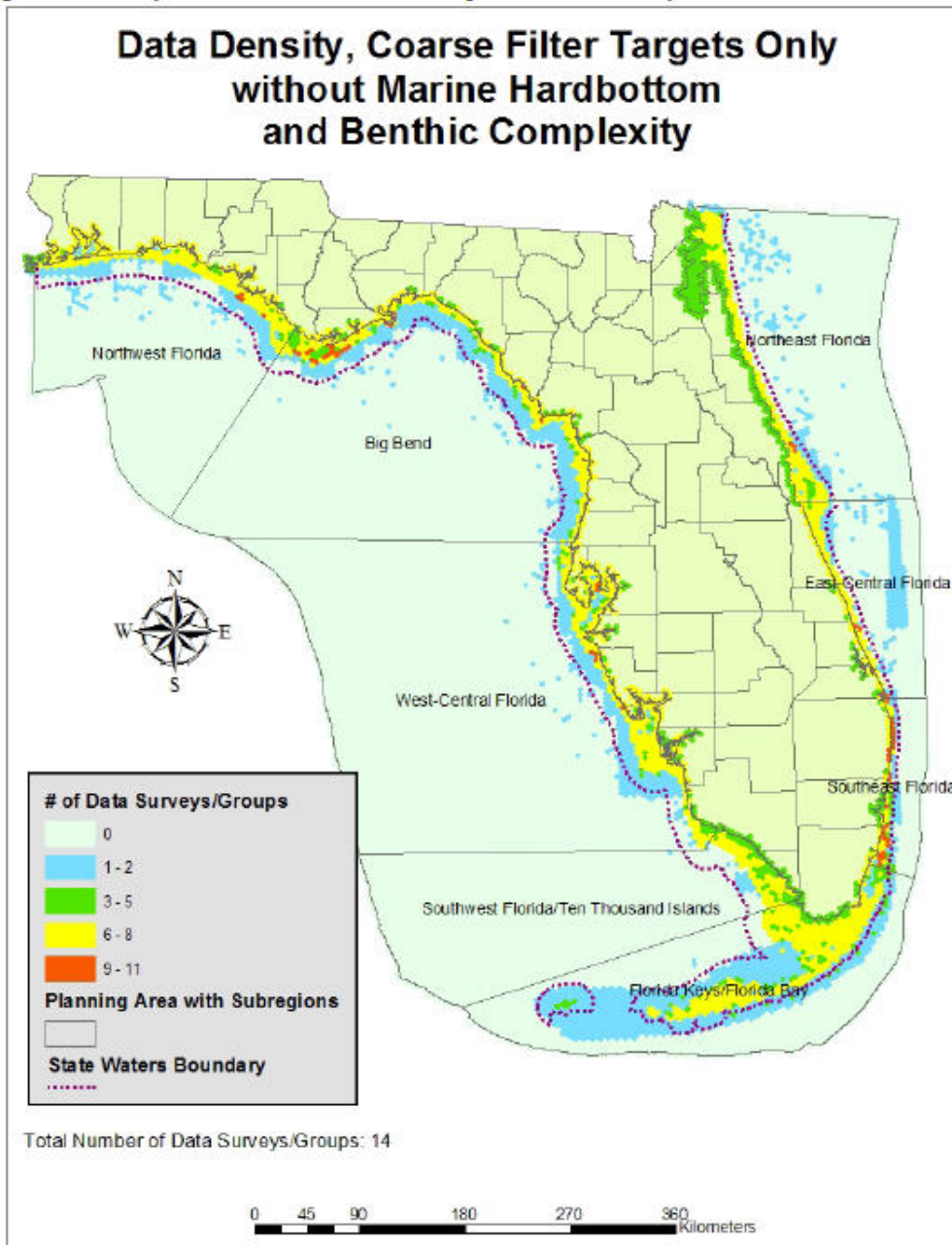


NOAA's Regional Ecosystems – *is this too coarse?*



****Regional Ecosystem inland boundaries include the coastal watershed and the inland extent of the diadromous fish habitat. http://ecosystems.noaa.gov/workshops_&_meetings.htm**

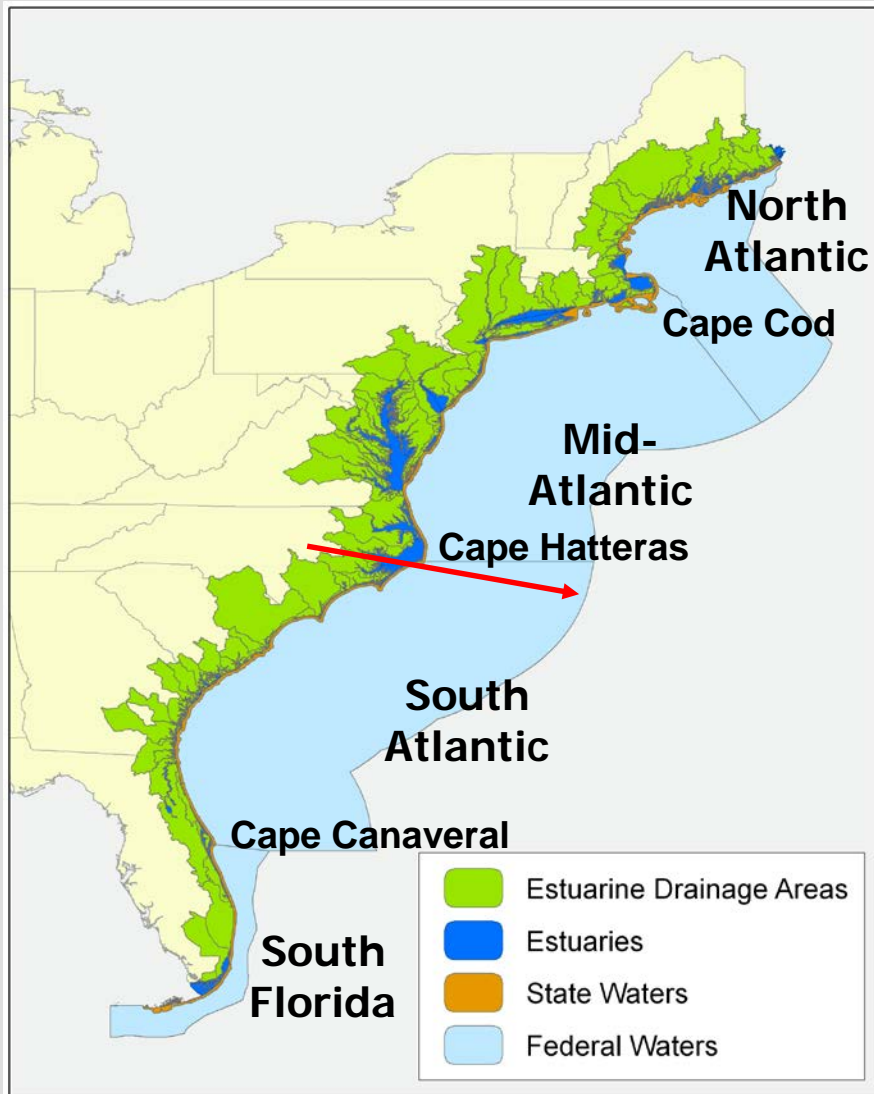
Figure 2. Density of the data used in the site prioritization analysis.



**TNC's Florida
Marine Planning
Areas with
Subregions
(Geselbracht et al.
2004)**

is this too fine?

Proposed Spatial Framework Overview



**Coastal watersheds –
Estuarine Drainage Areas,
based on USGS HUC-8s**

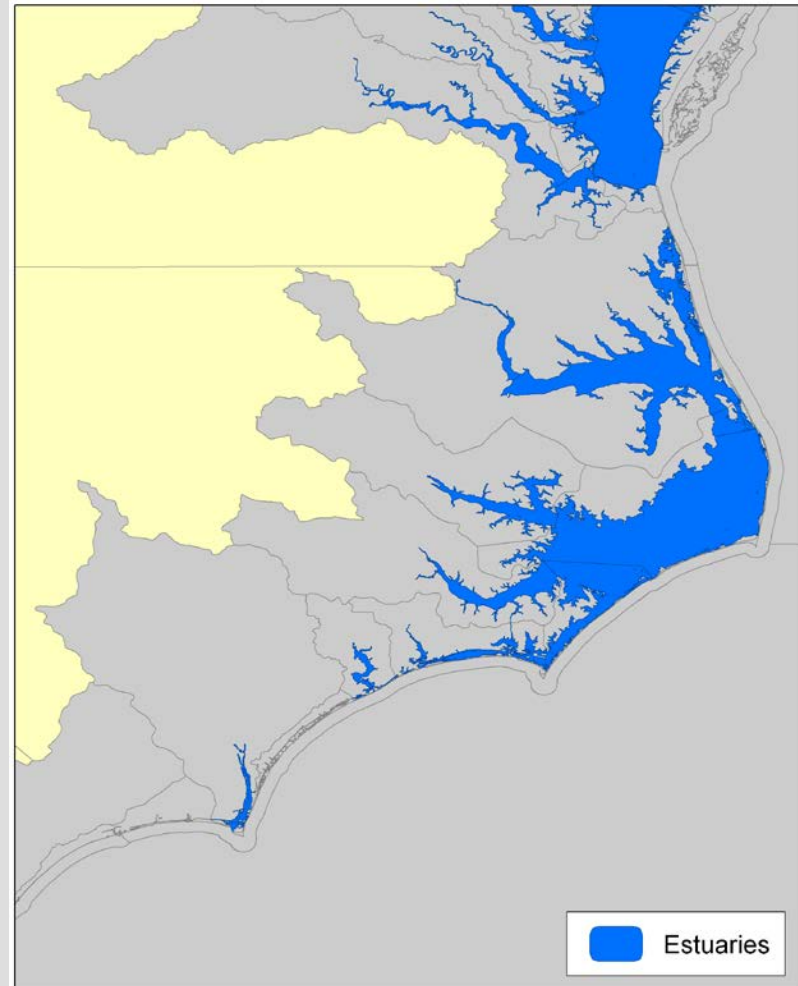
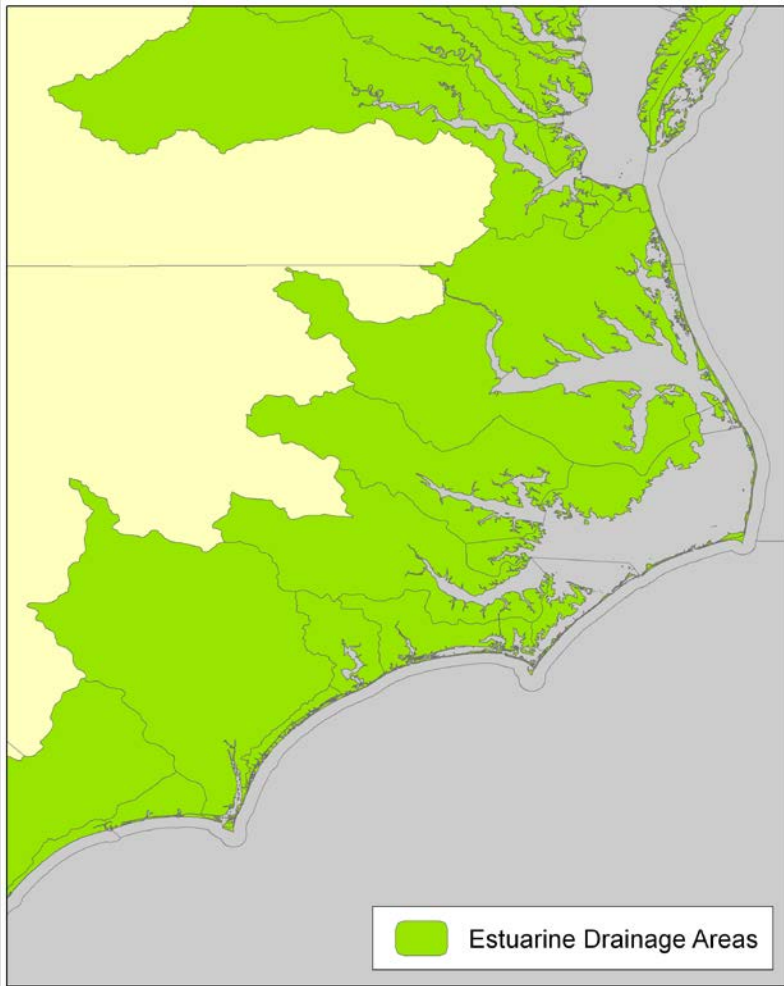
**Estuarine Waterbodies –
based on NOAA's Coastal
Assessment Framework**

**Nearshore – State waters
within 3 nmi, using Marine
Cadastre (MMS, NOAA CSC)**

**Offshore – Federal waters
of EEZ, separated into four
marine biogeographic
regions (NOAA, TNC-WWF)**

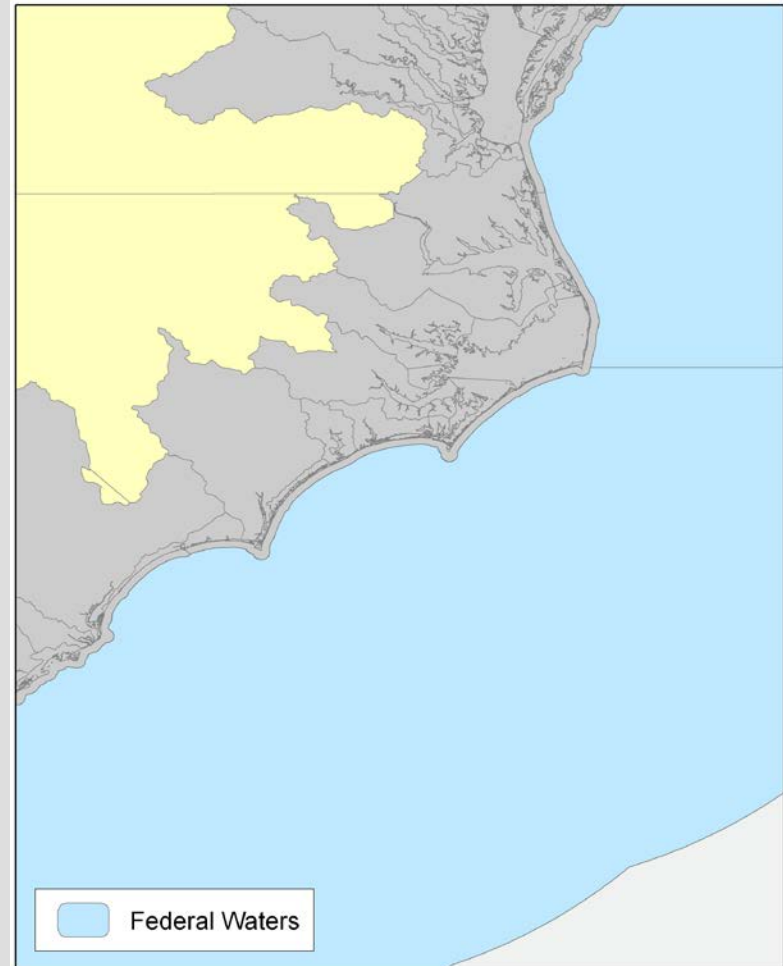
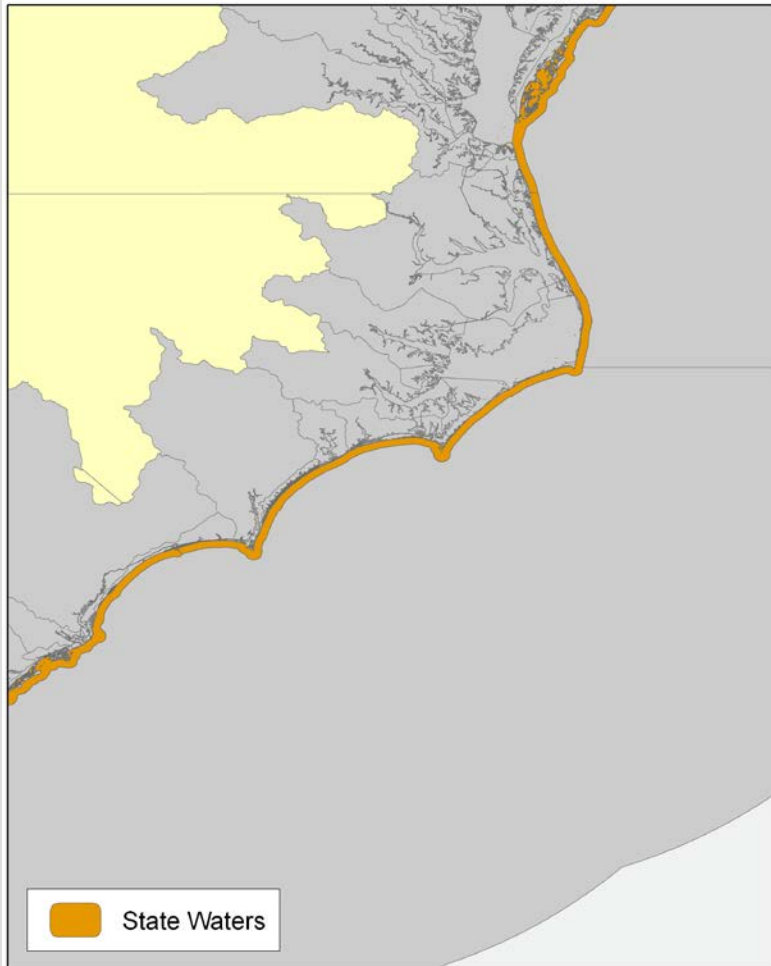
Coastal Assessment Framework Boundaries

HUC-based EDAs + estuarine waterbodies

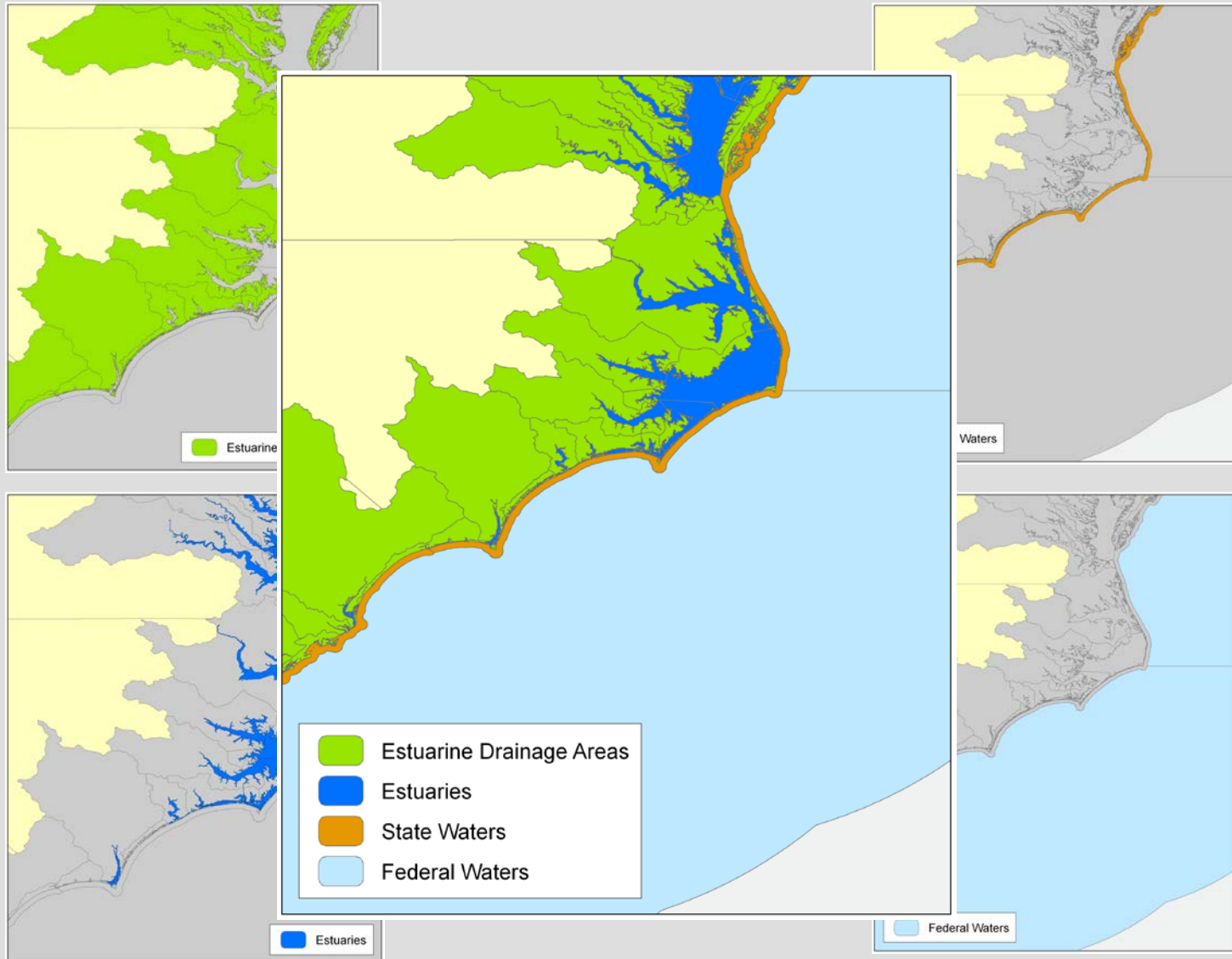


Marine Cadastre Boundaries

State waters to 3 nmi, Federal waters to 200 nmi



Merge boundaries into single layer of distinct polygons

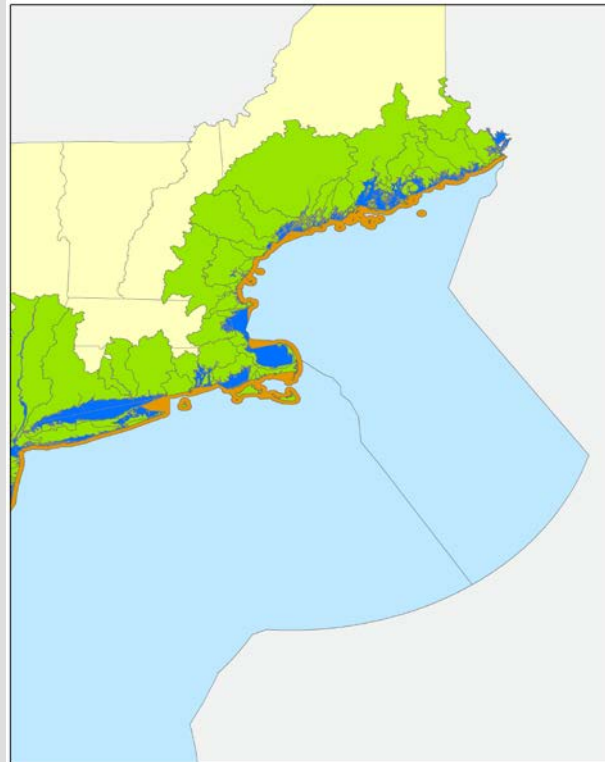


Outstanding Issues in development of spatial framework



Estuarine Zones

Aggregate internal salinity zones? Define seaward boundaries?



EEZ Partitioning

Where to draw regional boundaries and seaward extent?

Scaleable up to National, and down to local levels?

Points vs. polygons as spatial footprint?

Develop for desktop ArcGIS, or prep for web via GoogleMaps or other platform?



Task I. Develop Database

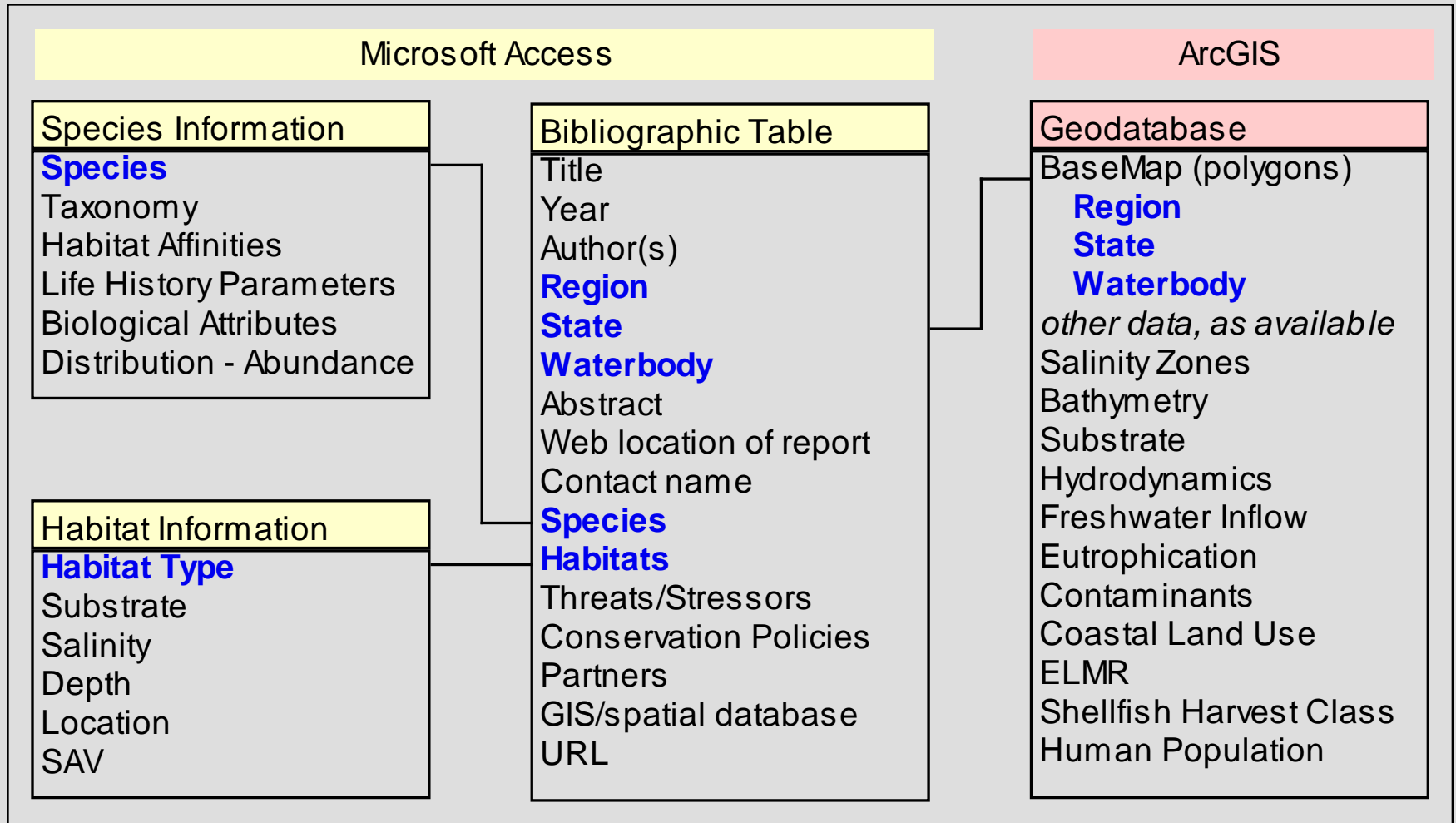
Challenge: many potential sources, but where to focus?

1. Incorporated documents from steering committee = 200
2. Highest priority – Programmatic documents with “policy-relevant” information, or “gray literature” which addresses assessment criteria: EPA’s NEPs and NCCR, EFH amendments + source docs, Sanctuaries and NERRs, State Marine Fisheries Habitat Plans, State CZM plans, National and regional assessments (TNC, Eutro, Contaminants, Wetlands), DOD area assessments, NOS OR&R, ASMFC Habitat docs, “wind power and oyster EIS”
3. Peer-reviewed literature – good search tools already exist (e.g. abstract services)
4. Data portals – documenting what’s available: GIS habitat data, conservation projects (TNC, Corps’ RAE, NOAA OR&R + NMFS, USFWS)

Task I. Develop Database - bibliographic table w/35 fields

Field	Notes
Title	
Author(s)	
Year	
Primary Agency or Organization	
Type of Document (eg. conservation plan, tech report)	
Publication Info	
Abstract	
Key Words	
Contact name	
Contact email	
Contact phone	
Contact address	
State partners	
Federal partners	
NGO partners	
Academic partners	
Web location of report	
Electronic data?	
Spatial data available? Rank: (0-1-2; no data-metadata-map)	
ACFHP Region(s) (eg. North Atlantic, Mid-Atlantic, etc.)	link to geodatabase
State(s)	link to geodatabase
Waterbody(s) (eg. watershed, bay, cont shelf, etc.)	link to geodatabase
Ecoregion(s) (from EPA, NOAA LME's, WWF, or other)	separate layers within geodatabase
ACFHP Species covered (checkbox?)	link to species table
ACFHP Habitats covered (checkbox?)	link to habitat table
Status / Health ranking as reported	
Habitat Status using TNC or NatureServe criteria (dropbox)	For example please see: http://www.natureserve.org/explorer/ranking.htm
Impacts / Threats / Stressors as reported	
Impacts / Threats / Stressors (dropbox)	For example please see: (1) <i>IUCN-CMP Unified Classification of Direct Threats</i> (2) <i>The Five-S Framework for Site Conservation</i>
Sources of Impacts / Threats / Stressors (drop box)	
Severity of Impacts / Threats / Stressors (drop box)	
Recommendations / Priorities / Policies as reported	
Actions using IUCN or other classification system (dropbox)	For example please see: (3) <i>IUCN-CMP Unified Classification of Conservation Act</i>
Notes	

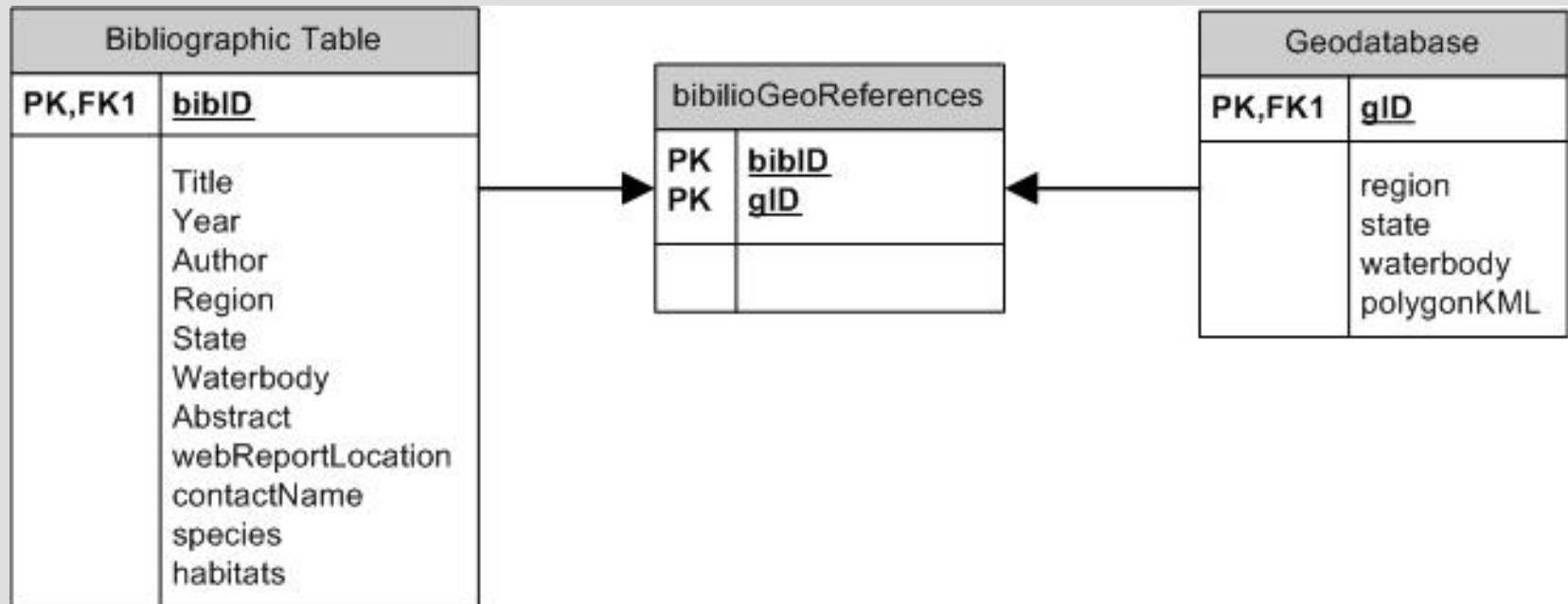
Linking the Bibliographic Table to the Geodatabase



Database design:

Establishing “many-to-many” relationships between tables:

1. Any given document may refer to multiple areas.
2. Any given area may have many relevant documents.
3. Incorporate species and habitat info from matrix and other sources.



Task II. Develop Assessment Criteria

- Status / Health ranking as reported
- Habitat Status using TNC or NatureServe criteria (dropdown)
- Impacts / Threats / Stressors as reported
- Impacts / Threats / Stressors (dropdown):
(1) IUCN-CMP Unified Classification of Direct Threats
- Sources of Impacts / Threats / Stressors (drop box)
(2) The Five-S Framework for Site Conservation
- Severity of Impacts / Threats / Stressors (drop box)
- Recommendations / Priorities / Policies as reported
- Actions using IUCN or other classification system (dropdown)
(3) IUCN-CMP Unified Classification of Conservation Actions
- *BUT – Difficult to apply as a singular entry for each document!
Merge approach with NFHAP assessment framework?*

Next Steps

- Complete bibliographic table.
- Complete spatial framework.
- Link bibliographic table with spatial framework in geodatabase.
- Analysis of source documents using assessment criteria.
- Publish final report and deliver to ACFHP, early 2009.
- Move digital products (database, maps) to ACFHP website – or NOAA host database within webpage?
- Present results at Coastal GeoTools in Myrtle Beach, March 2009 (abstract submitted) and other venues.
- Apply results to ACFHP Endorsement Criteria and Conservation Strategy?
- Merge approach with NFHAP National Assessment in 2009?

Discussion Questions for Subgroup:

1. Does the proposed spatial framework provide enough spatial resolution in the watersheds, estuaries, and coastal marine waters? Is it too fine to be feasible?
2. Does the proposed spatial framework adequately delineate both natural biogeographic regions, and jurisdictional boundaries?
3. Looking forward, what would be most useful:
Written report?
MsAccess database on CD?
Desktop GIS?
Web version of database with basic maps?
4. How to apply to Conservation Strategy?

Thanks!

Céad Mile Fáilte

Tusen Takk!

Mahalo Nui Loa!

NO Habitat, NO Fish

Marilyn Barrett-O'Leary

Project Manager

Southeast Aquatic Resources Partnership

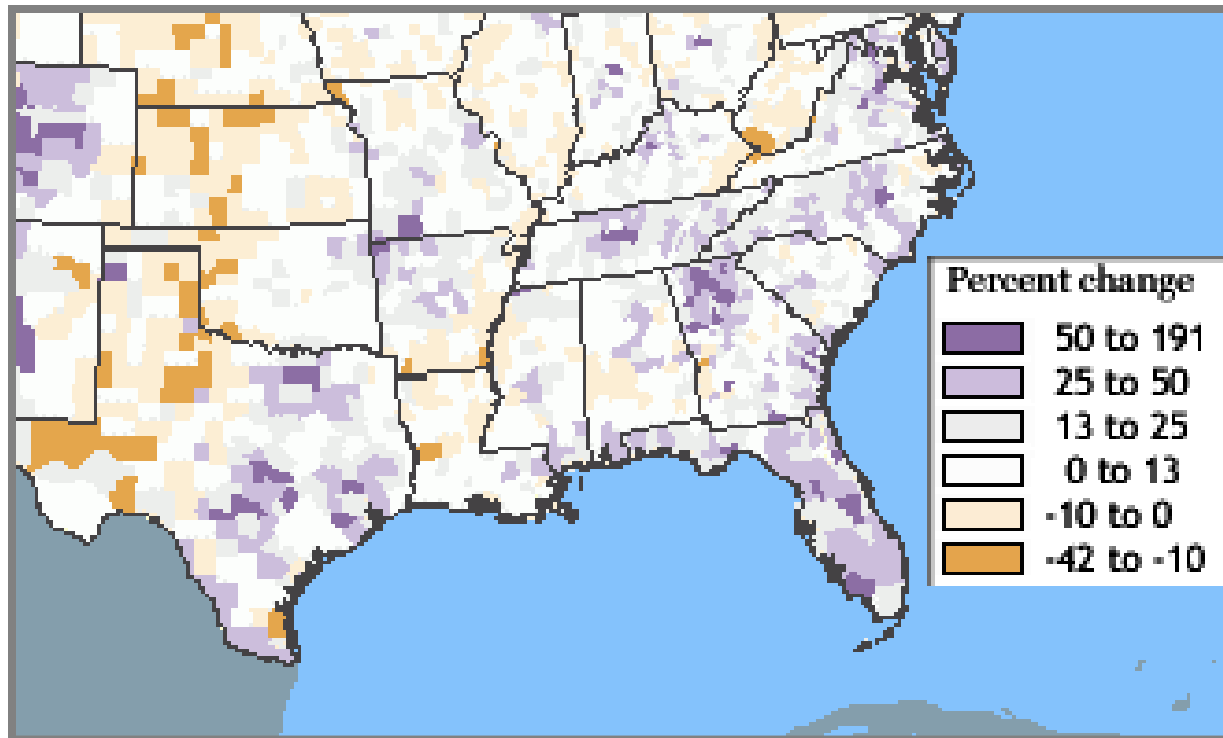


Southeast Region

- 1,800+ species of aquatic animals – food, recreation
- 50% of the nation's wetlands – filtration, animal reproduction
- 70 major river basins – abundant water



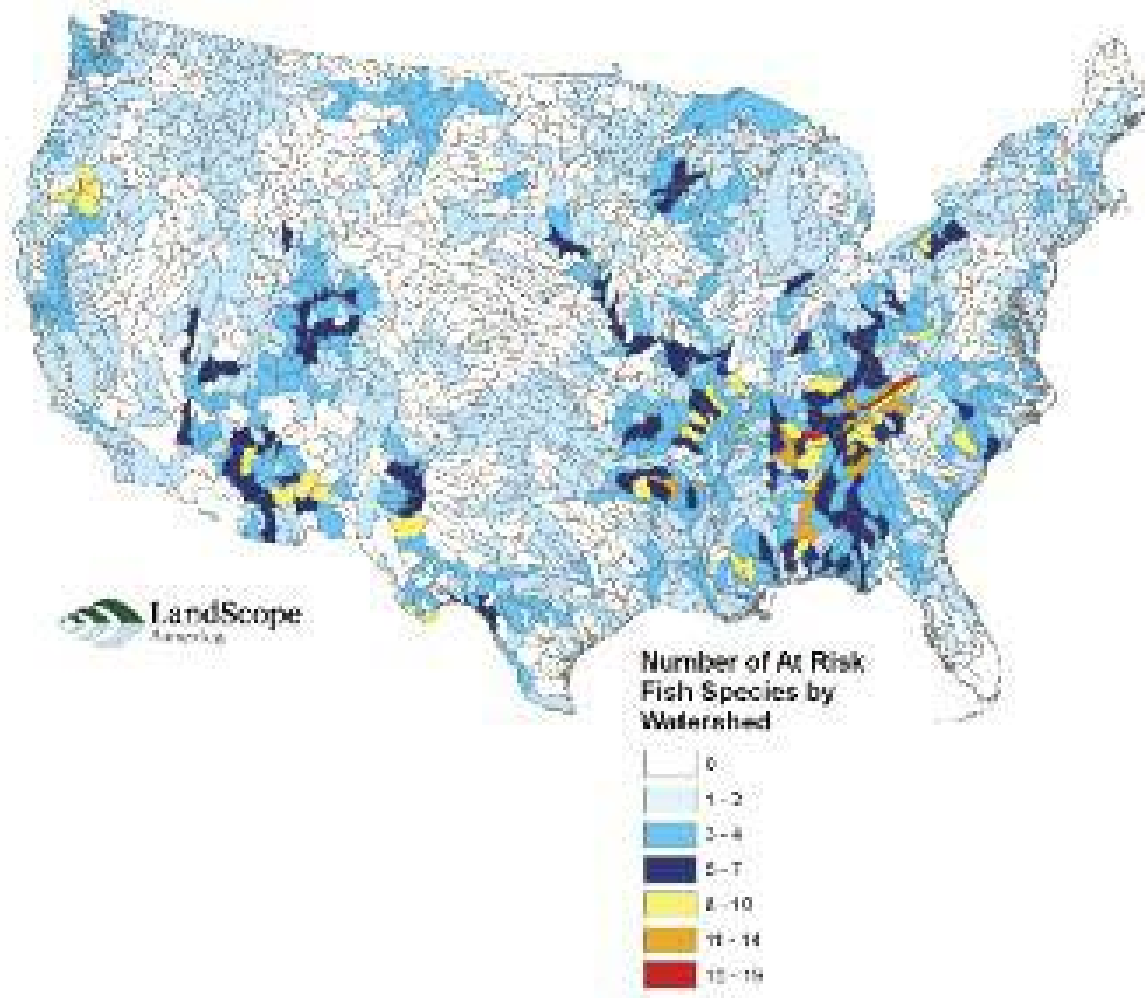
Southeast Region – 1980-2010



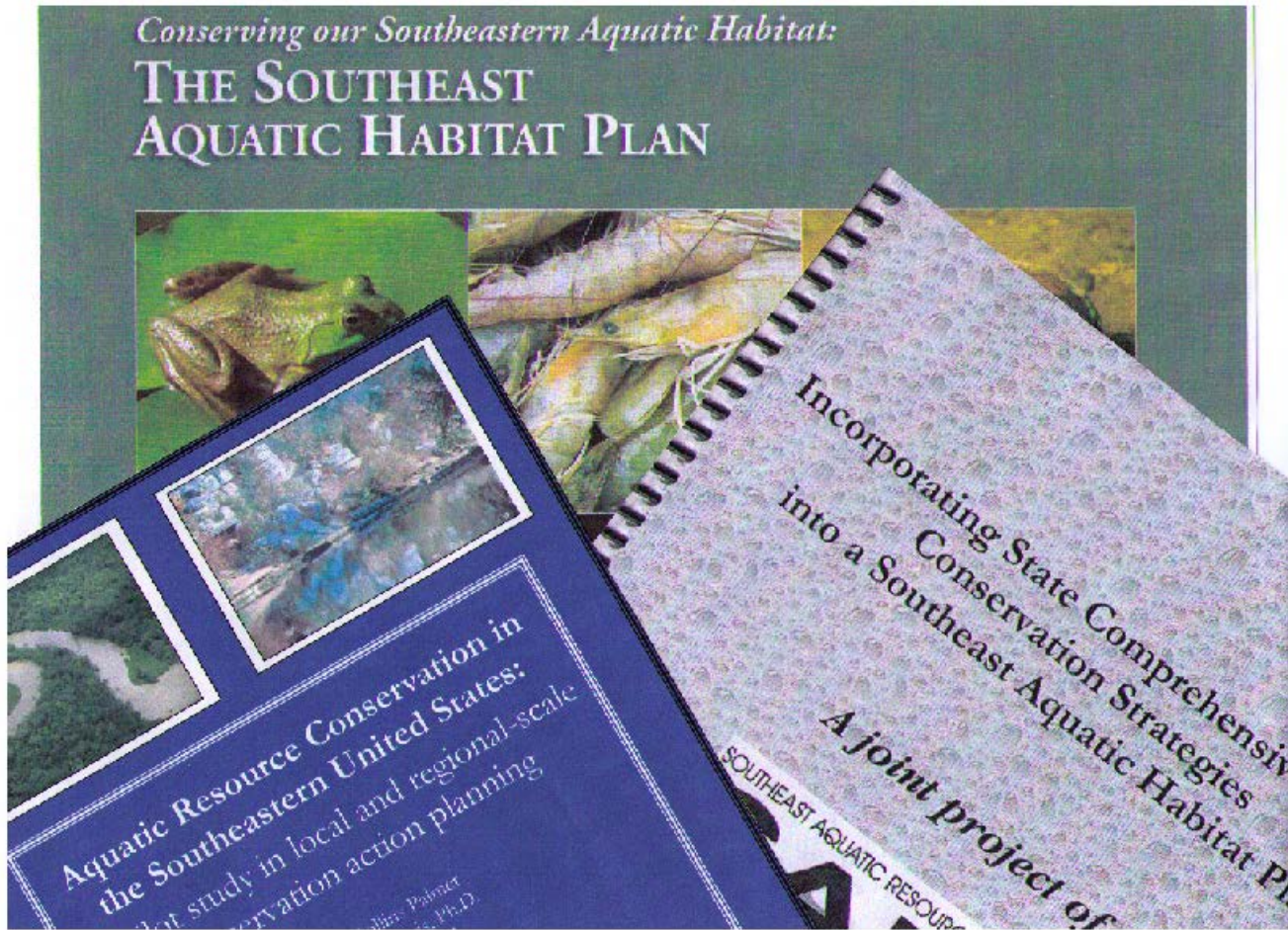
Human population in the south Atlantic states will grow by 73%

Human population in the Gulf of Mexico states will grow by 46%

Regional Habitat Hot Spots



Southeast Aquatic Habitat Plan



Projects to Restore & to Learn

- Formed partnership with NOAA Coastal Restoration Program (NOAA CRP)
- Established Southeastern Instream Flow Network (SIFN)

SARP-NOAA CRP

- Facilitate conservation and restoration on a local level
- 2009 - AL, FL, GA, LA, MS, NC, SC, TX, VA

Partners in Coastal Restoration

NOAA's Collaboration with the Southeast Aquatic Resources Partnership





SARP

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Southeast Aquatic Resources Partnership

The Southeast Aquatic Resources Partnership (SARP) was initiated in 2001 to create a unified approach to aquatic resource management in the southeastern United States. Significant threats to living aquatic resources in the region include habitat destruction, shoreline armoring, and contaminants.

According to SARP, 34 percent of North American fish species and 90 percent of the native mussel species designated as endangered, threatened, or of special concern are found in the Southeast.

NOAA-SARP Partnership

The NOAA Fisheries Southeast Habitat Conservation Division has been an integral part of SARP since its inception. Staff from the SE HCD provide leadership on the SARP Steering Committee as well as serve on the SARP Habitat Subcommittee to develop the Southeast Aquatic Habitat Plan.

In 2007, NOAA's Community-based Restoration Program established a new grassroots partnership with SARP. Together, they will work to fund, implement and monitor restoration projects in the nine Southeastern coastal states that border the Gulf of Mexico and Atlantic Coast.

National Fish Habitat Action Plan Partnership

NOAA's partnership with SARP supports the goals of the National Fish Habitat Action Plan, a bold new initiative to reverse persistent declines in our nation's aquatic habitat.

SARP's members and partners, including the NMFS Southeast Region Habitat Conservation Division, are working to identify regional priorities for aquatic habitat conservation and restoration. The NOAA-SARP partnership will facilitate action at the local level that addresses the regional and national priorities outlined by the National Fish Habitat Action Plan.



The University of Georgia Marine Service Extension is working to halt the spread of the invasive flathead catfish (below) through outreach, community-based research, and education.

Three Priority Watersheds

Conservation plans developed by SARP and The Nature Conservancy in three priority watersheds served as models for the regional Southeast Aquatic Habitat Plan. The Partnership will target projects in these priority watersheds in 2008:

- Altamaha River (GA)
- Pascagoula River (MS)
- Roanoke River (VA & NC)

SIFN

- Collaboration on water management for instream flow protection
- Science-based resources
- AL, AR, FL, GA, KY, LA, MS, MO, NC, OK, SC, TX, TN, VA, WV



SOUTHERN INSTREAM FLOW NETWORK: FACT SHEET

Rivers require adequate water flows – known as “instream flows” – to sustain all living things depending upon them. In this 21st century, natural flows have been altered on many rivers, sometimes several times for different reasons, affecting people and aquatic ecosystems. The Southeast Aquatic Resources Partnership (SARP) identified implementation of protective instream flow policies as a priority strategy in the Southeast Aquatic Habitat Plan. As a result, the Southern Instream Flow Network (SIFN) was developed to address the impacts of natural flow regimes in the region’s aquatic ecosystems.

Because instream flow policies are administered at the state level and lack national standards to protect natural systems, SARP envisioned a network to leverage experience and resources among state-based partnerships in the 15 Southeastern Association of Fish and Wildlife Agencies (SEAFWA) states – AL, AR, FL, GA, KY, LA, MO, MS, NC, OK, SC, TN, TX, VA, WV. The SIFN goal is to help the states institute protective instream flow policies by providing science-based resources and opening lines of communication. In support, work follows these objectives.



Photo: Mark Godfrey/TNC

- Bring state teams together to initiate and develop working relationships
- Educate participants on the scientific basis of instream flow policy
- Share instream flow policy-related tools & resources specific to state needs
- Communicate among states to support and build on past experiences
- Provide training for use of assessment tools to determine environmental impacts to hydrologic regimes and develop instream flow standards
- Produce guidance documents for development of effective instream flow protection policy and supporting programs.

Instream flow protection and the network both depend on a strong partnership foundation. Initially, SARP has joined with four organizations that have also identified protection of instream flows as a priority conservation strategy for southern aquatic habitats – the Instream Flow Council (www.instreamflowcouncil.org), The Nature Conservancy (www.nature.org), American Fisheries Society (www.fisheries.org), and Southern Company (www.southernco.com).

In its first year, SIFN has:

- Supported formal and informal study of state water management policies and ecological impacts of stream flow within individual state borders
- Sponsored a regional workshop, giving state partners an opportunity to learn from each other.
- Established email and telephone communication among and between the states
- Provided resources to individual state partnerships on the science of instream flow protection
- Began developing a website clearinghouse of instream flow resources.

For more information about SARP, SIFN and instream flow policy work in your state, visit www.sarpaquatic.org or contact Scott Robinson, the SARP Coordinator, at 770-361-5639 or scott_robinson@dnr.state.ga.us.

SARP's mission

“With partners, protect, conserve, and restore aquatic resources including habitats throughout the Southeast, for the continuing benefit, use, and enjoyment of the American people.”



Bottom Line

How can we work together?

How can these projects fit with ACHFP?

Marilyn Barrett-O'Leary

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