APNEP Conservation Atlas:

Status & Next Steps

APNEP STAC Meeting
Evaluating Ecological Responses
April 07, 2014

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Albemarle-Pamlico National Estuary Partnership (APNEP)

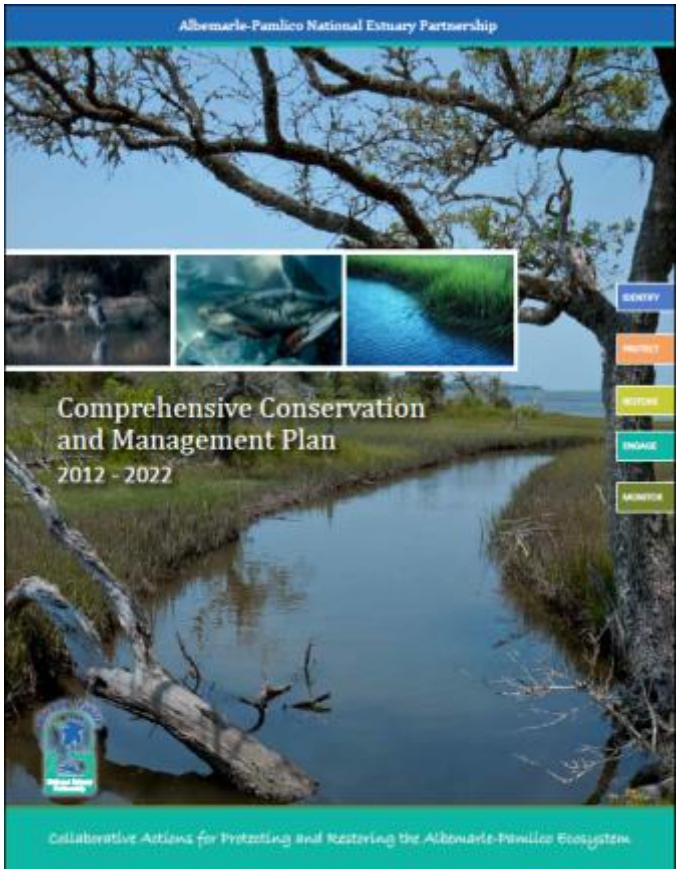
CCMP Implementation

COMPONENT A: IDENTIFY

Objective A1:
Develop and refine a conservation atlas.

Action A1.1:
Facilitate the mapping of significant ecological, bathymetric, geologic, demographic, and cultural features.

Action A1.2:
Facilitate the refinement and use of online conservation planning tools.



CCMP Implementation

BUT…

Outputs from many other management actions can be displayed/used in some capacity in an Atlas.

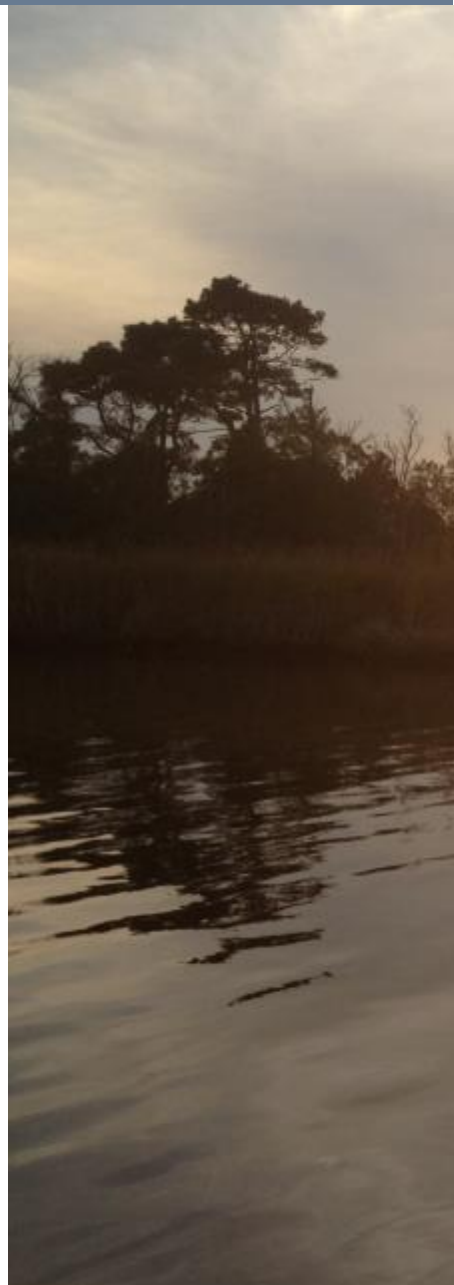
Decision Support/Planning Tools

Figure 2 **Functionality of tool types**

Type/Function	Data Management	Analysis	Mapping/ Graphics	Scenario Development	Stakeholder Engagement
Visualization			√		√
Modeling		√	√	√	
Decision Support	√	√	√	√	√

Planning Tools

- Stakeholder engagement
- Scoping/inventory
- Assessment/analysis
- Planning
- Implementation/monitoring



Conservation Atlases

There are many web map applications out there. So…

- Who is our target audience?
- What is our main objective?
- What is spatial scale/resolution?
- Where are the gaps?

Conservation Atlases

What is currently out there?

A lot…

List of Web Links for Atlases, Online Dashboards, and Conservation Planning Tools

Atlases:
http://longislandsoundstudy.net/issues-actions/stewardship/stewardship-areas-atlas/
http://www.csc.noaa.gov/ccapatlas/
http://maps.tnc.org/gis_data.html
http://www.chesapeakebay.net/track/tools
http://stateofthecoast.noaa.gov/
http://adapt.oxfamamerica.org/
http://www.csc.noaa.gov/slr/viewer/#
http://mediasite.online.ncsu.edu/online/Play/855ea0331c034aff8bb400d5a3dabbbd1d
http://www.coastalgems.org/
http://portal.midatlanticocean.org/portal/
http://www.southatlanticalliance.org/resources/data-portal.htm
http://secoora.org/data
http://gis1.usgs.gov/csas/gap/viewer/land_cover/Map.aspx
http://salcc.databasin.org/
http://www.landscope.org/map/
http://gispub2.epa.gov/NEPMap/
http://dnr.maryland.gov/map_template/coastalmaps/coastal_atlas_shorelines.html
https://fortress.wa.gov/ecy/coastalatlas/tools/Map.aspx
http://storymaps.esri.com/home/
http://mddnr.chesapeakebay.net/eyesonthebay/index.cfm
http://portal.gis.ca.gov/geoportal/catalog/main/home.page

Data Download:
http://lidar.cr.usgs.gov/
http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd
http://www.mrlc.gov/viewerjs/
http://data.nconemap.com/geoportal/catalog/main/home.page
(http://204.211.160.20:8080/geoportal/dataexplorer/index.jsp)

ArcGIS Online:
http://www.arcgis.com/home/item.html?id=0a85781f7890497185d6cde6760a20c5

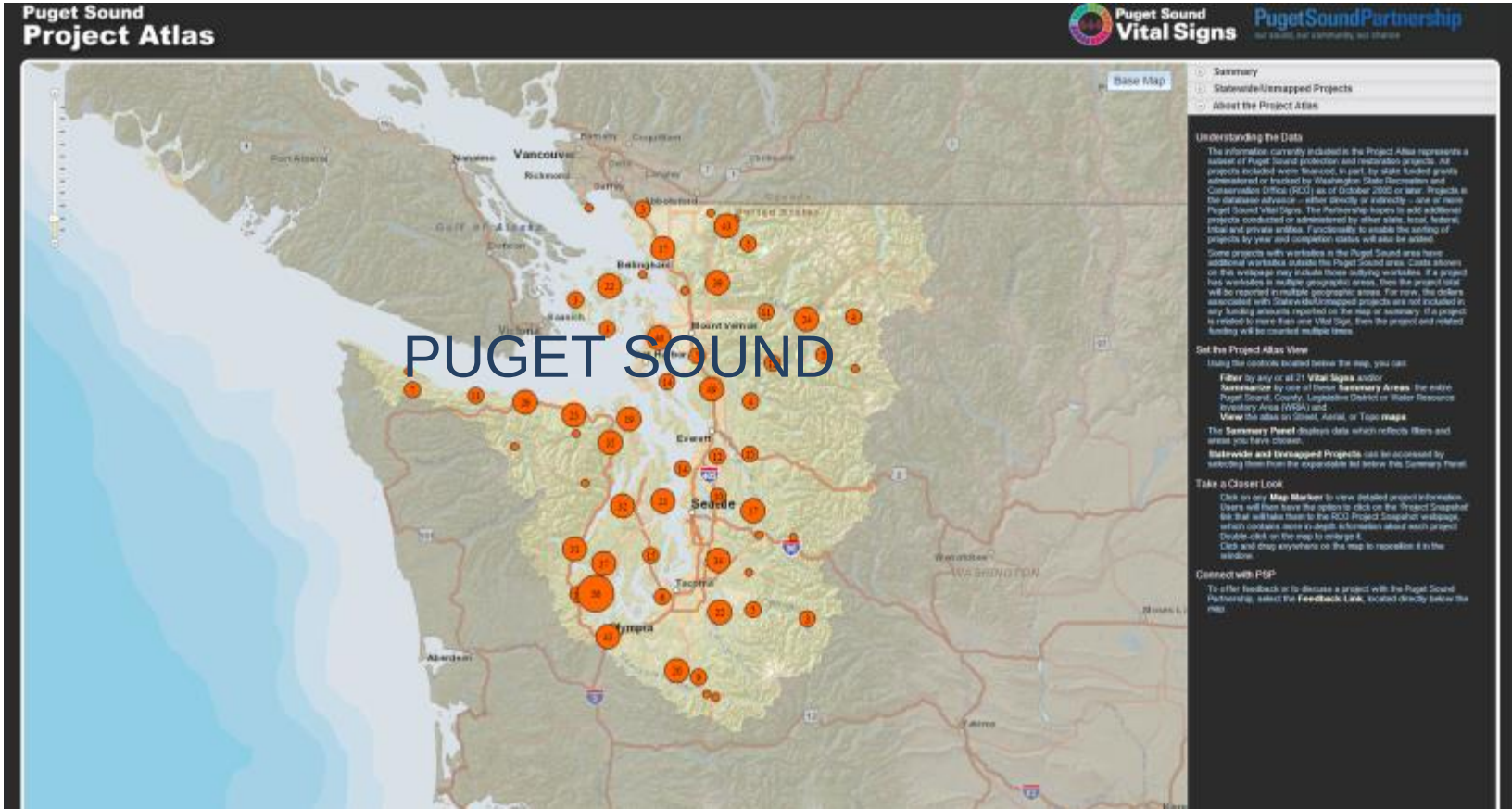
Conservation Planning Tools:
NatureServe Vista (NatureServe)
http://www.natureserve.org/prodServices/vista/trial.jsp
Florida Keys Coastal Resilience Future Scenarios
http://coastalresilience.org/geographies/florida-keys/future-scenarios-map
Marxan
http://www.uq.edu.au/marxan/
Fragstats
http://www.umass.edu/landeco/research/fragstats/fragstats.html
Maxent (Maximum Entropy Modeling)
http://www.cs.princeton.edu/~schapire/maxent/
BIOMOD
http://www.will.chez-alice.fr/Software.html
Visualization of Sea Level Rise Impacts – Photo Simulation Tool (NOAA/USDA)
http://www.csc.noaa.gov/digitalcoast/tools/canvis
Sea Level Rise & Coastal Flooding Impacts Viewer (NOAA)
www.csc.noaa.gov/digitalcoast/tools/slrviewer
Social Vulnerability Index (USC)
http://webra.cas.sc.edu/hvri/products/sovi.aspx#
Hazards-United States-Multi-Hazard (FEMA)
http://www.fema.gov/hazus

Open Source Nonpoint Source Pollution & Erosion Comparison Tool (NOAA Coastal Services)
http://nspect.codeplex.com/
http://www.csc.noaa.gov/digitalcoast/tools/opennspect
Sea Level Affecting Marshes Model (Warren Pinnacle Consulting, Inc.)
http://www.slammview.org/
Integrated Valuation of Environmental Services and Tradeoffs (Natural Capital Project)
http://www.naturalcapitalproject.org/InVEST.html
Climate Change Vulnerability Index (NatureServe)
https://connect.natureserve.org/science/climate-change/ccvi
CommunityViz (Placeways LCC and the Orton Family Foundation)
http://placeways.com/communityviz/
EPA Energy Effects from Climate Change
http://energy.gov/articles/climate-change-effects-our-energy
Natural Capital Project – Coastal Hazards
http://www.naturalcapitalproject.org/decisions/CoastalHazard_WebPortal.html
USGS - Sparrow
http://cida.usgs.gov/sparrow/

And more…

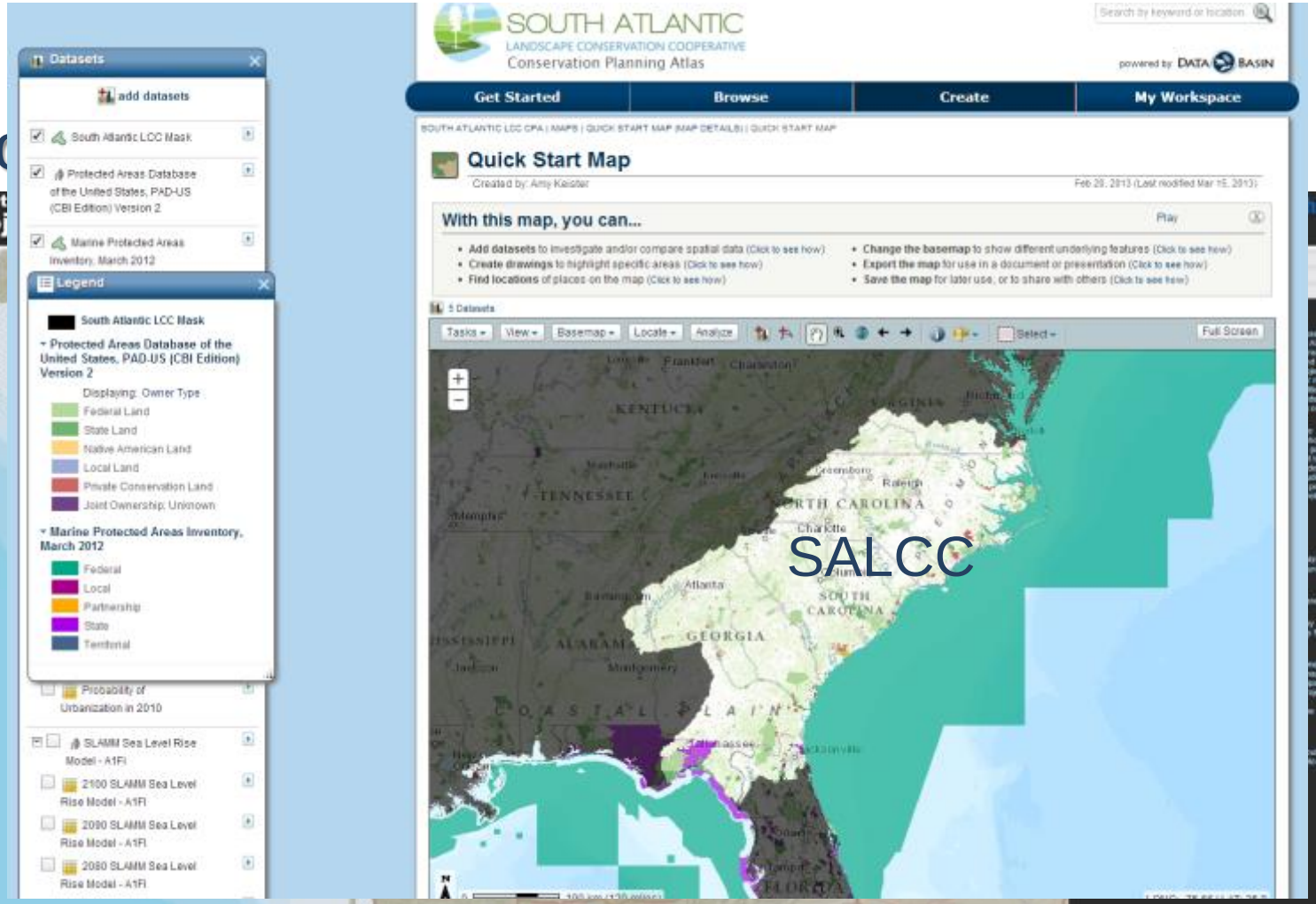
Conservation Atlases

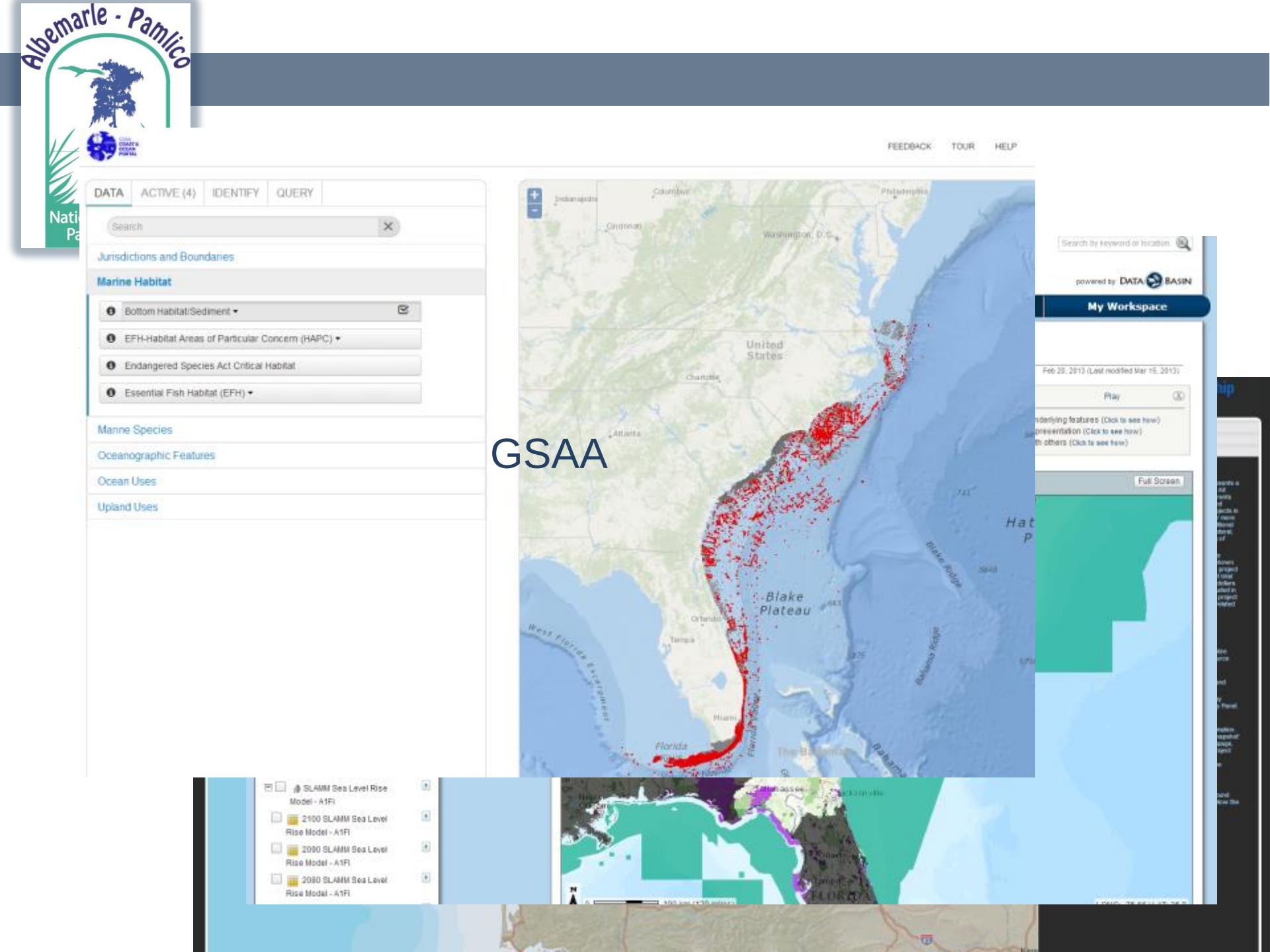
What is out there?



Conservation Atlases

What is

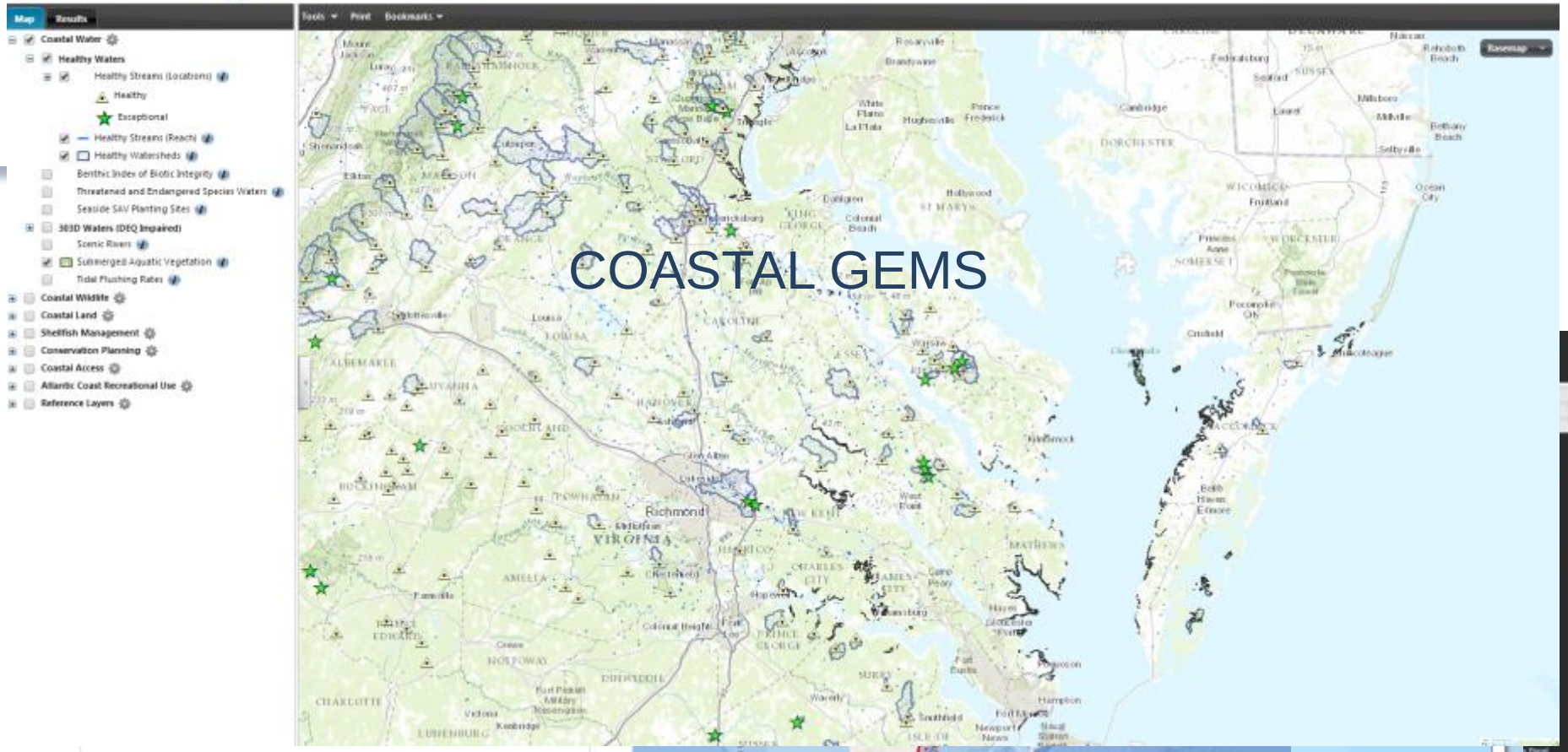



Albemarle - Pamlico
FEEDBACK
TOUR
HELP
DATA
ACTIVE (4)
IDENTIFY
QUERY
Search
Jurisdictions and Boundaries
Marine Habitat
Bottom Habitat/Sediment
EFH-Habitat Areas of Particular Concern (HAPC)
Endangered Species Act Critical Habitat
Essential Fish Habitat (EFH)
Marine Species
Oceanographic Features
Ocean Uses
Upland Uses
GSAA
Blake Plateau
Florida
Miami
Tampa
Orlando
Atlanta
Charlotte
Washington, D.C.
United States
powered by DATA BASIN
My Workspace
Full Screen
SLAMM Sea Level Rise Model - A1FI
2100 SLAMM Sea Level Rise Model - A1FI
2090 SLAMM Sea Level Rise Model - A1FI
2080 SLAMM Sea Level Rise Model - A1FI

Albemarle - Pamlico

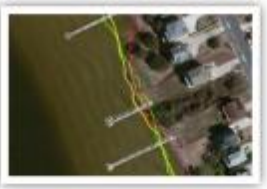
Virginia Coastal Zone MANAGEMENT PROGRAM VCU

COASTAL GEMS



NC COASTAL ATLAS

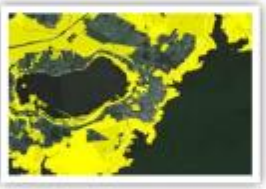
Ocean & Estuarine Shorelines



North Carolina has an extensive shoreline with about 325 miles of ocean shoreline and over 12,000 miles of shore along the estuary, the transitional zone where salt water and fresh water meet. Estuarine shorelines include those along the state's many sounds, intertidal marshes, rivers and creeks. The salt marshes and other estuarine wetlands along the shoreline provide a variety of ecosystem services in storm protection, seafood nurseries and improved water quality. Shoreline types include swamp forest, intertidal marsh, sediment bank, and modified shorelines.

Explore this Map | Map Layers

Wetlands, Habitat and Threats



Wetlands are ecological systems located in the transition between land and water. Some wetlands are inundated with water all the time, others only part of the time or have saturated hydric soils. Because eastern North Carolina has low elevation lands with poor drainage and a warm temperate climate, many different types of wetlands have formed depending on salinity of the water, hydrology and the plants that thrive in those conditions. Intertidal marshes are found in estuarine areas with low energy tides. Swamps and bottomland forests are found along freshwater rivers.

Explore this Map | Map Layers

Flood Inundation Vulnerability

Much of the low-lying land in coastal North Carolina is vulnerable to flooding and inundation due to precipitation from storms, storm surges, wind tides, and the long-term process of sea-level rise, which exacerbates storm flooding and causes permanent inundation of some areas. Areas at risk of inundation and flooding include natural resource areas, agricultural areas, residential areas and public infrastructure, particularly water infrastructure.

Explore this Map | Map Layers

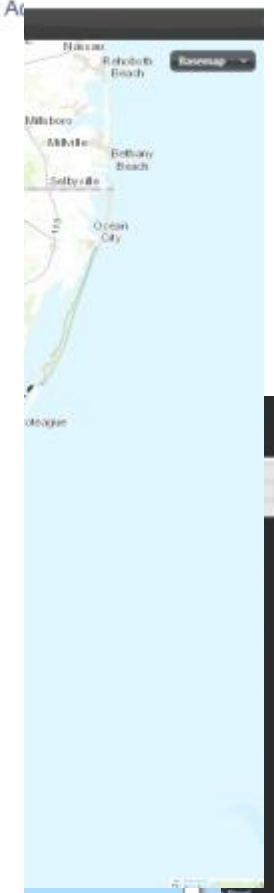
ECU Coastal Research Projects

East Carolina University has an outstanding group of coastal researchers doing interdisciplinary

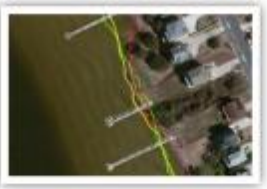
Wetlands (1)

Geographic Tags

Coastal Area Management Act (CAMA) Counties (1)



Ocean & Estuarine Shorelines



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Wetlands, Habitat and Threats

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Wetlands (1)

Geographic Tags

Coastal Area Management Ac
(CAMA) Counties (1)

EnviroAtlas

Ecosystem Services and Biodiversity | People and Built Spaces | Supplemental Maps | Analysis Tools | Mapping Tools

Supplemental Maps
Boundaries
Boundaries
Land Protection Status
Land Stewardship
USEPA Ecoregions (Omernik)
Biophysical Data - Vector
Biophysical Data - Raster
EPA WATERS Data

EPA ENVIRO ATLAS

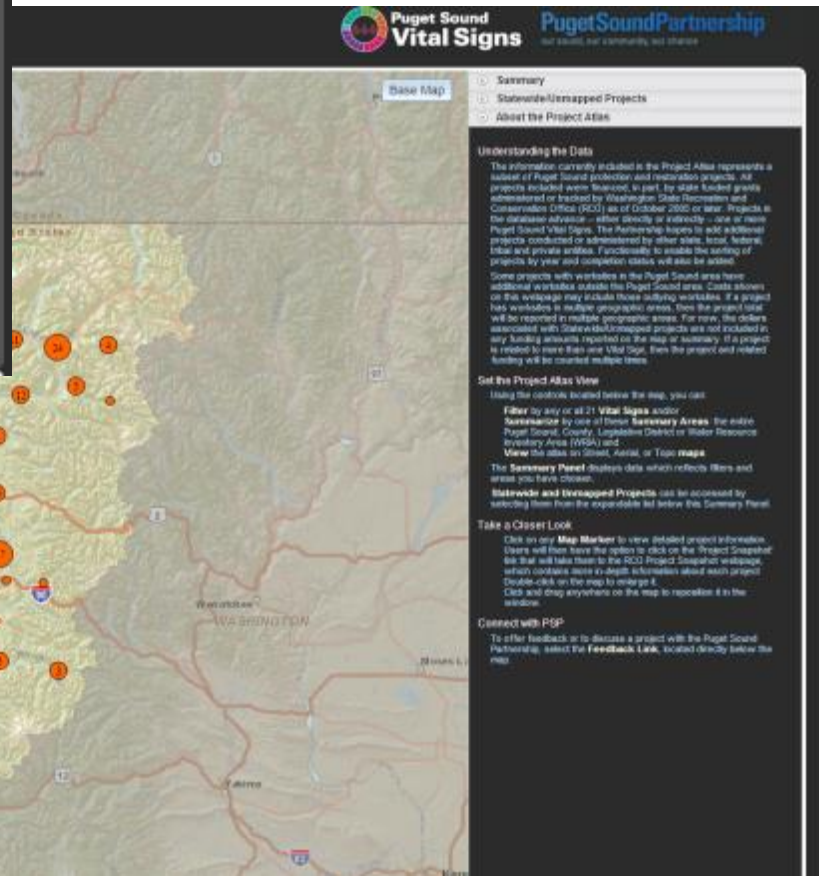
Map Legend
Boundaries
States
Counties
GAP Status
GAP Status
1 - Permanent Protection -- ecolo
2 - Permanent Protection -- ecolo
3 - Permanent Protection -- subje
4 - no known mandate for protect
GAP Ownership
Protected Area Owner Name

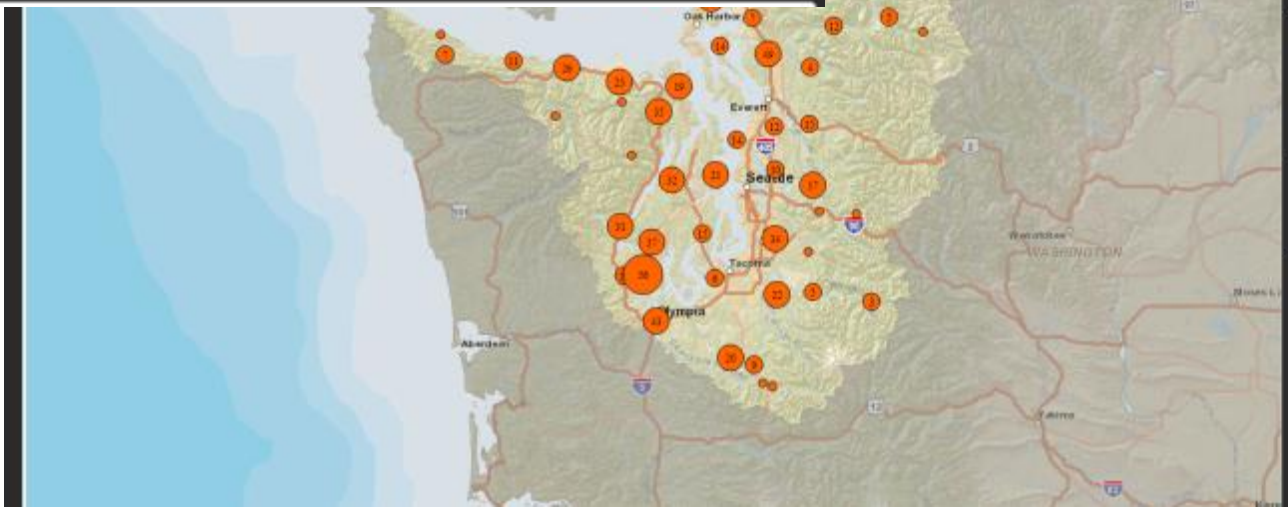
Conservation Atlases

Is there a model framework?

Atlases


Puget Sound Vital Signs
Puget Sound Vital Signs Wheel
Puget Sound Project Atlas
Puget Sound Report Card
PugetSoundPartnership
Choose a Vital Sign
HEALTHY HUMAN POPULATION
HUMAN QUALITY OF LIFE
SPECIES AND FOOD WEB
PROTECT AND RESTORE HABITAT
WATER QUANTITY
WATER QUALITY
Toxics in Fish
On-site Sewage
Swimming Beaches
Shellfish Beds
Quality of Life
Sound Behavior
Recreational Fishing
Commercial Fisheries Harvest
Chinook Salmon
Orcas
Pacific Herring
Birds
Shoreline Armoring
Eelgrass
Land Development and Cover
Floodplains
Estuaries
Summer Stream Flows
Marine Water Quality
Freshwater Quality
Marine Sediment Quality
Puget Sound Vital Signs
a dashboard of indicators on Puget Sound's health and vitality


Puget Sound Vital Signs
PugetSoundPartnership
Base Map
Summary
Statewide/Unmapped Projects
About the Project Atlas
Understanding the Data
Set the Project Atlas View
Take a Closer Look
Connect with PSP


Everett
Seattle
Tacoma
Olympia
Aberdeen
WASHINGTON

Conservation Atlases

Is there an Atlas out there that satisfies APNEP's needs?

- Do we really need our own initiative?
- Or can we provide support to a partner's initiative?
- Each partner has their own program mission and goals.

Conservation Atlases

Questions we need to ask ourselves…

- Do any Atlases fully fit APNEP needs?
- Do they answer the right questions?
- Is there anything missing?
- Are there some items that we wouldn't want?

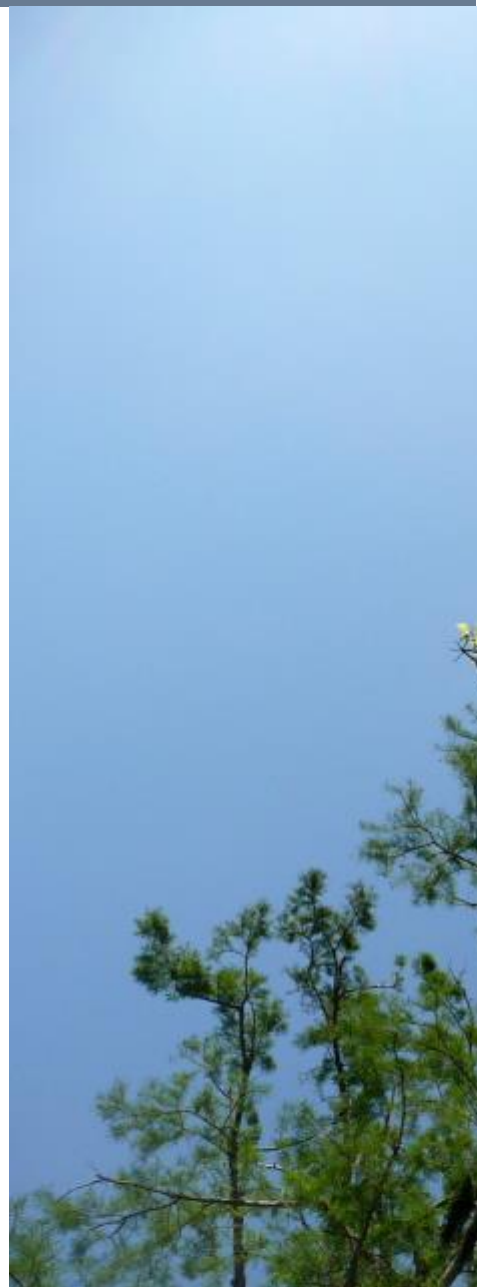
Options

If none fully fit our needs, what are our options?

To help us navigate these questions, we have our

↓

IMPLEMENTATION WORKGROUPS



Options

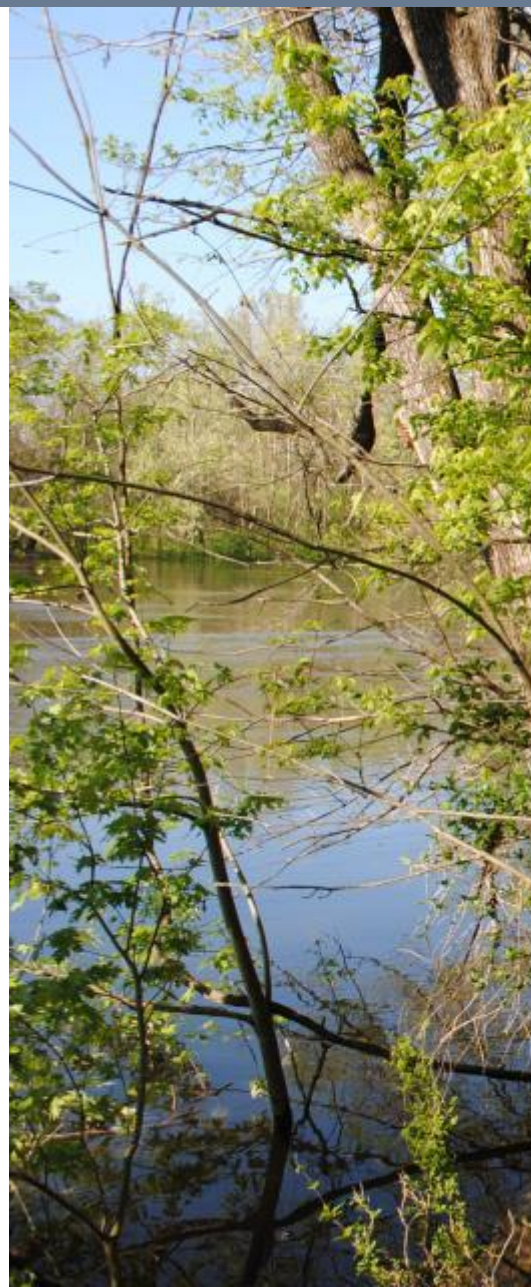
- Develop our own web map application.
  - NCDENR Host – ArcGIS Server
  - ArcGIS Online
  - ECU Server
  - DEM Server
- Support another program's initiative.

Options- NCDENR ArcGIS Server

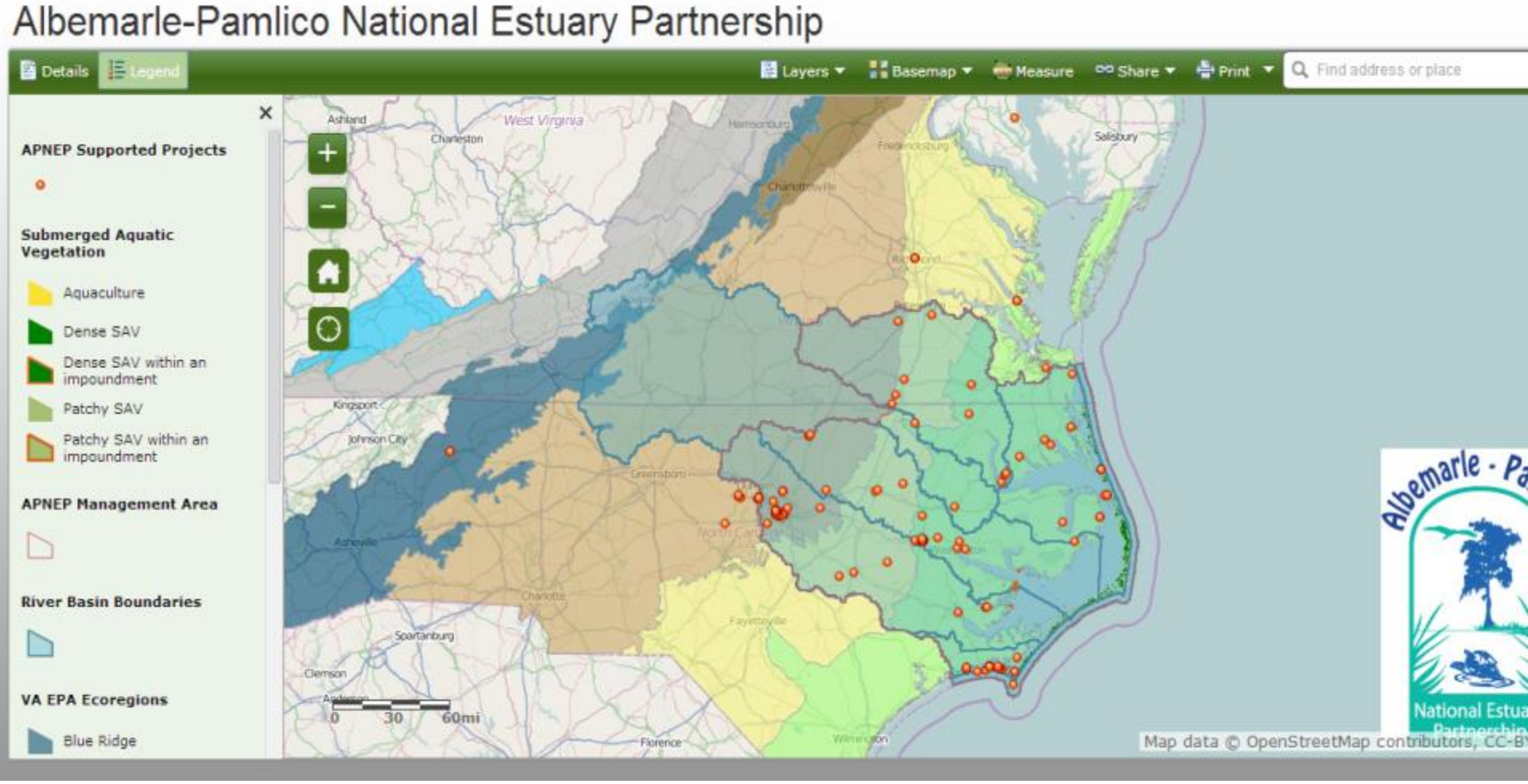
- NCDENR has ArcGIS Server – but it's in testing phase.
- NCDENR IT infrastructure is not in place to support deploying web map applications at the scale APNEP is requesting.
- No estimated date for completion of ArcGIS Server testing.
- No dedicated ArcGIS IT staff to assist.

Options- ArcGIS Online

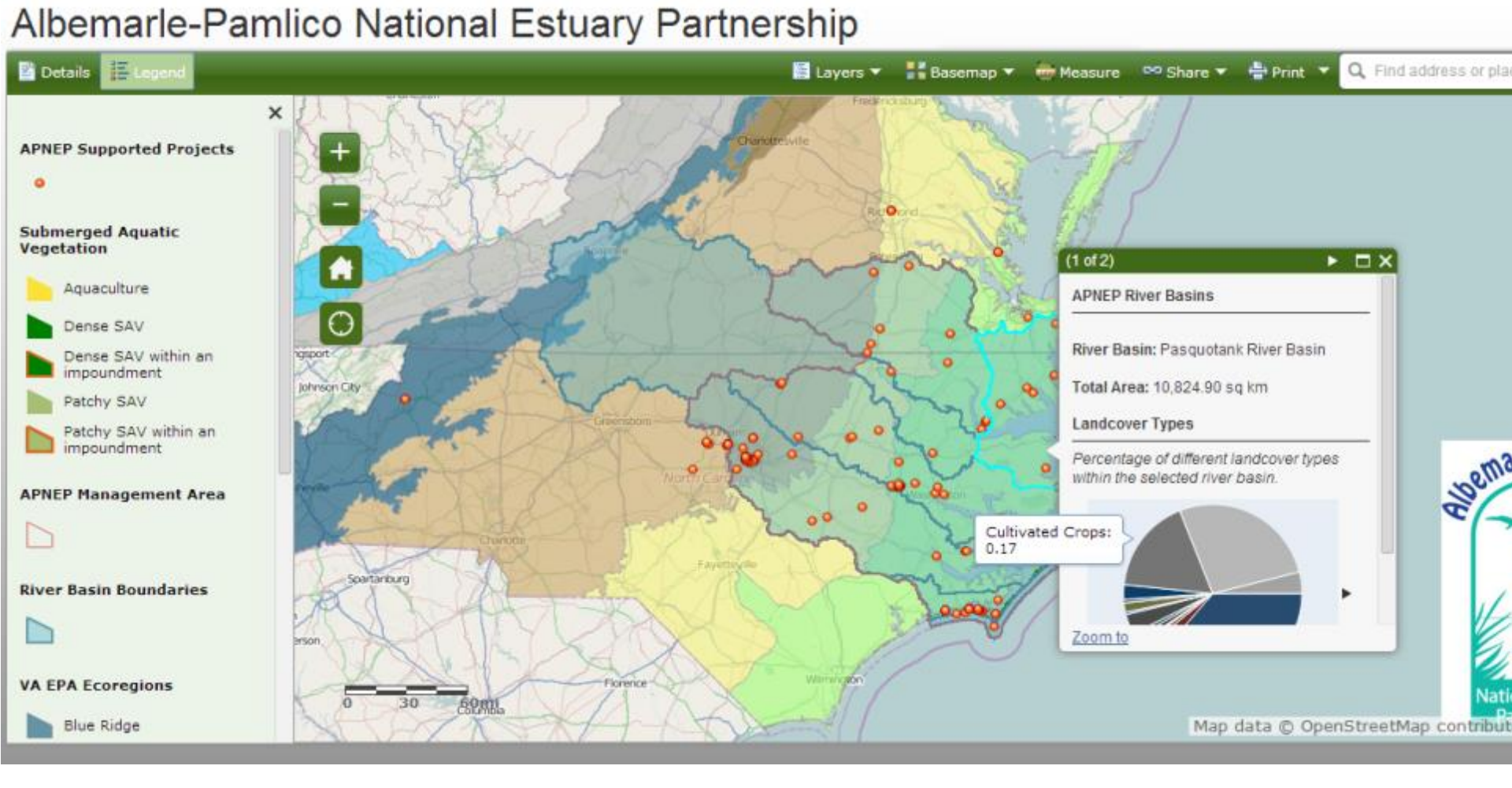
- APNEP has started developing an ArcGIS Online web map.
- We have an organizational account through the State.
- The flexibility just isn't there for some of APNEP's needs the way it is with ArcGIS Server.



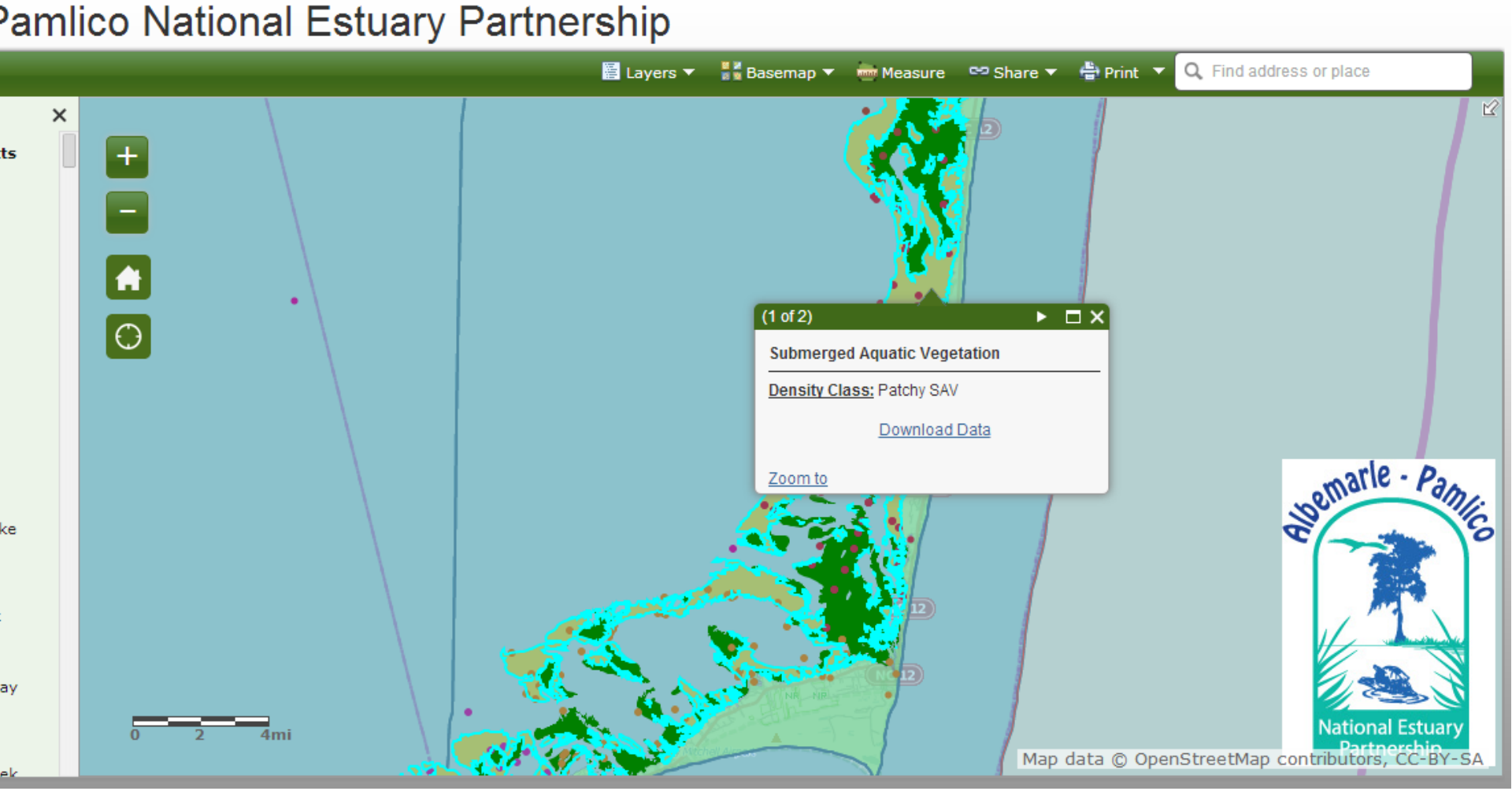
Options- ArcGIS Online



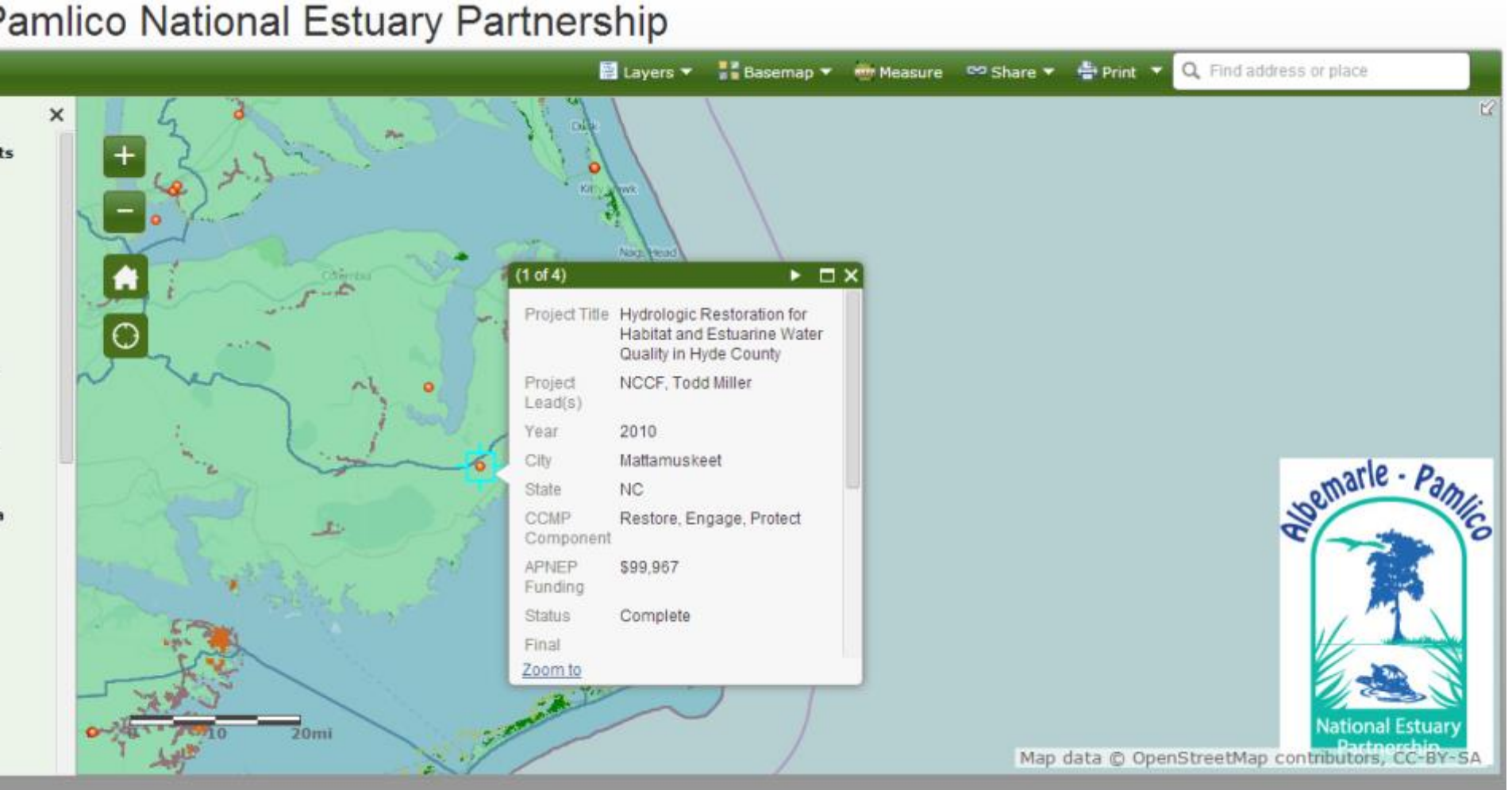
Options- ArcGIS Online



Options- ArcGIS Online



Options- ArcGIS Online



Other Options

- Trial arrangement using ECU Server.
- Infrastructure is already in place.
- Help provide support for NC Coastal Atlas.
- APNEP staff would be responsible for creating and maintaining the web map.
- Potentially a win/win scenario at least in near term?

Implementation Workgroups

The management actions are the responsibility of the **Decision Support Sub-group** within the broader **Policy & Economics Workgroup.**

- NC Coastal Atlas fulfills some aspects of the workgroup responsibilities. Maybe all?
- Steering committee for the Atlas.
- Atlas working group can provide support.
- Tom Allen will be convening the both the larger and sub-group.

Questions or Comments?