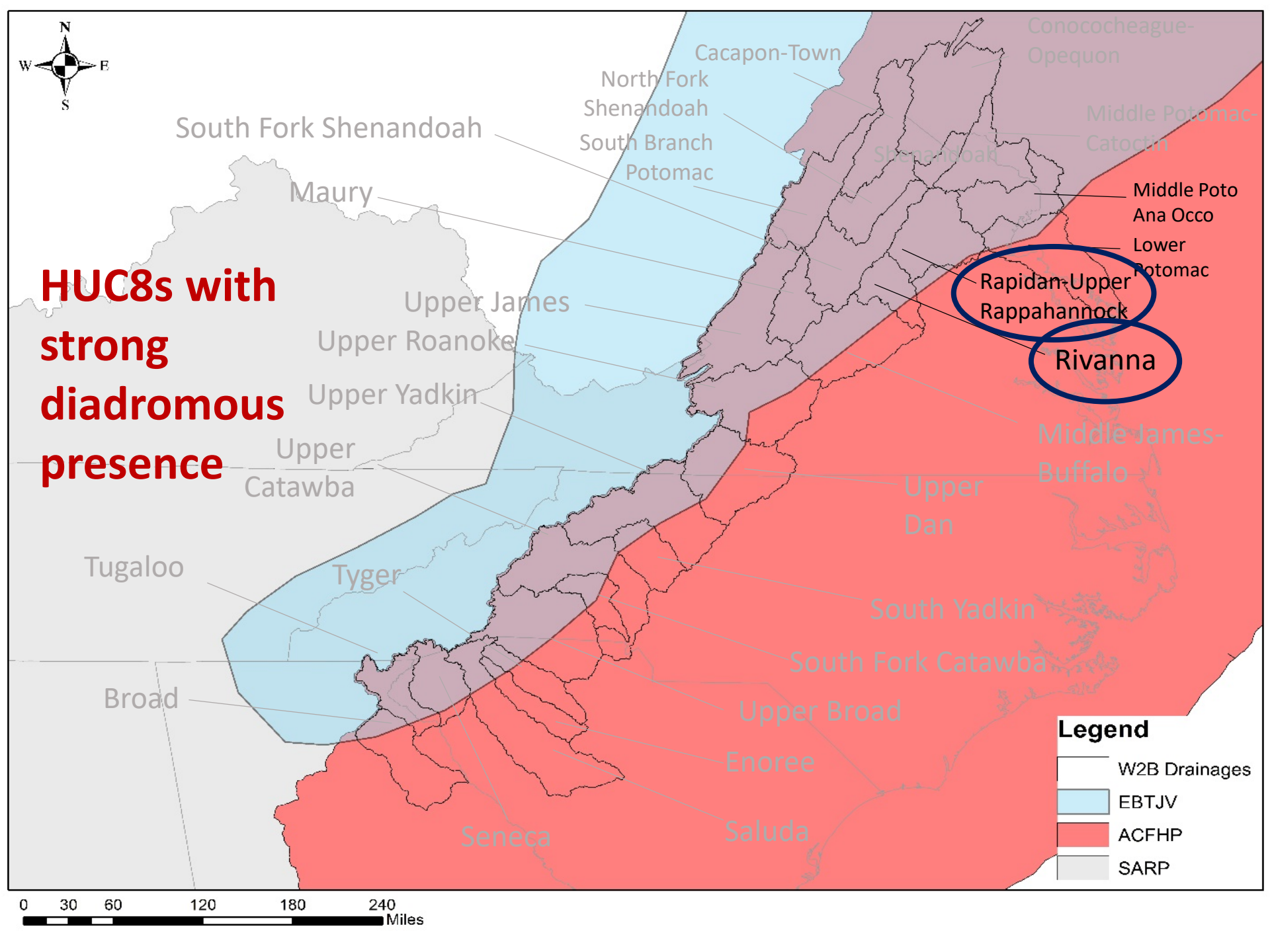

HUC8s with strong diadromous presence
Cacapon-Town
North Fork Shenandoah
South Branch Potomac
South Fork Shenandoah
Maury
Upper James
Upper Roanoke
Upper Yadkin
Upper Catawba
Tugaloo
Tyger
Broad
Conococheague-Opequon
Middle Potomac-Catoctin
Middle Poto Ana Occo
Lower Potomac
Rapidan-Upper Rappahannock
Rivanna
Middle James-Buffalo
Upper Dan
South Yadkin
South Fork Catawba
Upper Broad
Enoree
Saluda
Seneca
Legend
W2B Drainages
EBTJV
ACFHP
SARP
0 30 60 120 180 240
Miles

Dams blocking passage of diadromous fish and wild brook trout in the Rapidan-Upper Rappahannock and Rivanna drainages

CFPPP Unique ID	Dam Name	Latitude	Longitude
CFPPP_336	Unknown	38.31997384	-78.39243375
VA_301	Sugar Hollow Dam	38.26646025	-78.52934412
VA_362	Blue Ridge School Dam	38.26533718	-78.55651566
VA_367	Twin Lakes Dam #2	38.27902001	-78.53786798
VA_368	Twin Lakes Dam #1	38.26338101	-78.52306324
VA_369	Twin Lakes Dam #3	38.19689883	-78.49868729
VA_370	Greene Mountain Lake Dam	38.20562794	-78.51548984
VA_371	Wildwood Valley Lake Dam	38.21386475	-78.5347661
VA_888	Wilsdorf Dam	38.20205487	-78.50661872
VA_908	Allens Dam	38.27462321	-78.51810484
VA_913	Chisholm Dam Upper Farm	38.13645596	-78.73824695
VA_VA07918	Poplar Lake Dam	38.25615913	-78.43389949
CFPPP_735	Unknown	38.24986349	-78.441234
CFPPP_881	Unknown	38.24304605	-78.44203489
CFPPP_882	Unknown	38.26106376	-78.43346776
CFPPP_883	Unknown	38.27020957	-78.4369656

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Large photo

Enhancing, preserving, and protecting Atlantic diadromous, estuarine, and coastal fish habitats

Making the Connection

Photo with text over it 'Connecting the headwaters to the continental shelf' If you hover your mouse on the photo to options should show up: 'On the ground projects' and 'Science and data'	Photo with text over it 'Connecting people with fish habitat' If you hover your mouse on the photo to options should show up: 'Outreach and communication' and 'Get involved'	Photo with text over it 'Connecting partners' If you hover your mouse on the photo to options should show up: 'Our Team' and 'The National Partnership'

Priority Habitats

Photo with 'Submerged Aquatic Vegetation' text

Photo with 'Riverine Bottom' text

Photo with 'Tidal Vegetation' text

Photo with 'Marine and Estuarine Shellfish Beds' text

Photo with 'Coral and Live/Hard Bottom' text

Latest News

Most recent news item

Second most recent news item

Third most recent news item

Our Funding Support
(can click logos to go to each home page)

Contact
1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links
Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media
(can click logos to go to each account)

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Large photo

About Us

ACFHP is a coastwide partnership of fish habitat resource managers, scientists, and communications professionals from 33 different state, federal, tribal and non-governmental agencies who have established a commitment to work together for the benefit of aquatic resources.

Mission and Vision	The ACFHP Region	Our Team	Guidance Documents	The National Partnership

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

About Us

Our Team

Staff

Photo of Lisa

Dr. Lisa Havel, Coordinator

Lisa began working with the Partnership in 2014 after graduating with her PhD in marine science from the University of Texas at Austin. Originally from Connecticut, Lisa attended the University of Miami as an undergraduate majoring in marine biology. She has conducted research on the Great Barrier Reef, South Texas coast, Florida Keys, and in the Gulf of Maine. In her spare time, she enjoys flying planes, SCUBA diving, traveling, and hanging out with her French bulldog, Bruiser.

ACFHP Logo

Home About Us Priority Habitats Our Work Get Involved **Search**

Partners

ACFHP is a coastwide partnership of fish habitat resource managers, scientists, and communications professionals from 33 different state, federal, tribal and non-governmental agencies who have established a commitment to work together for the benefit of aquatic resources.

View our current Memorandum of Understanding.

Add logos for all partners and the links to their websites

ACFHP Logo

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Committees

Steering Committee

The ACFHP Steering Committee is a self-directed group of individuals interested in achieving the Partnership's vision. It is the decision-making body of ACFHP and provides oversight responsibility for all ACFHP activities.

Members

List current members and contact info

Meetings

List upcoming and past meetings with links to agendas, materials, presentations

Science & Data Committee

The Science and Data Committee guides and carries out ACFHP's Science and Data initiatives.

Members

List current members and contact info

Meetings

List upcoming and past meetings with links to agendas, materials, presentations

Outreach & Communication Committee

The Outreach and Communications Committee guides and carries out ACFHP's Outreach and Communications initiatives.

Members

List current members and contact info

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Priority Habitats

Thriving, healthy waterways and robust fish populations are vital to the well-being of our society. They provide clean water and sustainable fisheries. They also are essential for less tangible reasons, as anyone who has fished wild waters or canoed a tranquil stream can attest. Unfortunately, in many waters around the country, fish and the habitats on which they depend are in decline.

The ACFHP region has a range of fish habitats that are critical to coastal fisheries. These habitats represent areas where fishes forage, seek refuge, grow, or spawn. ACFHP has selected three to four priority fish habitats within each subregion to receive heightened attention and support.

Photo with 'Submerged Aquatic Vegetation' text	Photo with 'Riverine Bottom' text	Photo with 'Tidal Vegetation' text	Photo with 'Marine and Estuarine Shellfish Beds' text	Photo with 'Coral and Live/Hard Bottom' text

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

ACFHP Header

Home About Us Priority Habitats Our Work Get Involved **Search**

Priority Habitats **Submerged Aquatic Vegetation**

Large photo

Submerged aquatic vegetation (SAV) refers to rooted, vascular plants that live below the water's surface in large meadows or small patches in coastal and estuarine waters. SAV can be further classified by the range of salinity of the waters in which they are found. SAV is a **priority habitat** in **all four ACFHP subregions**.

SAV on the Atlantic Coast

Tidal fresh and oligohaline plant species are generally found in areas where salinity ranges from 0.5 to 5.0. Examples include: *Vallisneria americana*, wild celery and *Ceratophyllum demersum*, coontail.

Mesohaline and polyhaline plant species are generally found in areas where salinity ranges from 5 to 30. Examples include *Zostera marina*, eelgrass and *Ruppia maritima*, widgeon grass.

Why SAV is Important

Through photosynthesis, SAV removes excess CO_2 and adds oxygen to the water. According to the Blue Carbon Initiative, SAV covers 17.7 – 60 Mha worldwide. This is only 0.2% of the ocean floor, yet SAV sequesters approximately 10% of carbon (as sediments) each year[1]. In fact, they're twice more effective at storing carbon than terrestrial forests by acreage.

SAV roots also stabilize sediments and absorb excess nutrients. Their stabilizing properties also reduce shoreline erosion, benefitting not only estuarine communities, but coastal property owners. SAV improves water quality and provides food and habitat for many species, especially juveniles. Overall, SAV contributes to healthy fisheries and ecosystems.

Unfortunately, SAV is one of the most rapidly declining habitats around the world, with up to 7% loss in area annually due to human activities[2].

[1]Fourqurean et al. 2012. Seagrass ecosystems as a globally significant carbon stock. Nature Geoscience 5: 505 – 509.

[2]Waycott et al. 2009. Accelerating loss of seagrasses across the globe threatens coastal ecosystems. Proceedings of the National Academy of Sciences of the United States of America 106: 12377 – 12381.

Threats to SAV

ACFHP has determined the following are the greatest threats to SAV in at least one subregion:

- *Dredging and coastal maintenance*
- *Water quality degradation and eutrophication*
- *Vessel operation impacts*
- *Sedimentation*
- *Containment of water and sediments*
- *Invasive species and disease*
- *Climate change*

These bullet points could be displayed in a more interesting way: maybe little icons next to each threat that carries throughout the website?

Our Funded and Endorsed Work

On the Ground Projects

Thumbnail photos and titles of each project that you can click to take you to the project page (or factsheet)

Science & Data Projects

Titles of each project that you can click to take you to the project page (or document)

Outreach & Communication Projects

Titles of each project that you can click to take you to the project page (or document)

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Large photo

Our Work

The issues that ACFHP addresses are complex, and tackling them is important for the conservation of Atlantic fish habitats. We do so through on-the-ground conservation, science and data, and outreach and communications projects along the coast.

On the Ground Projects

Science and Data Projects

Outreach and Communication Projects

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

ACFHP Header

Home | About Us | Priority Habitats | Our Work | Get Involved | **Search**

Large photo

Get Involved

There are a variety of ways to help us achieve our mission. If you're interested in conserving fish habitat along the Atlantic coast, see below for ways you can make a difference!

Meetings	Donate	Stay in Touch	Funding Opportunities	Project Endorsement	Melissa Laser Fish Habitat Conservation Award	Join Us

Contact

1050 N. Highland St.
Suite 200 A – N
Arlington, VA 22201
Phone (703) 842 0740
Email Lhavel@asmfc.org

Quick Links

Latest News
Donate
Species Habitat Matrix Database
Meetings

Social Media

(can click logos to go to each account)

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

Oyster Reef Restoration: A Historical Perspective

By January Murray

Habitat Restoration & Enhancement Unit Leader

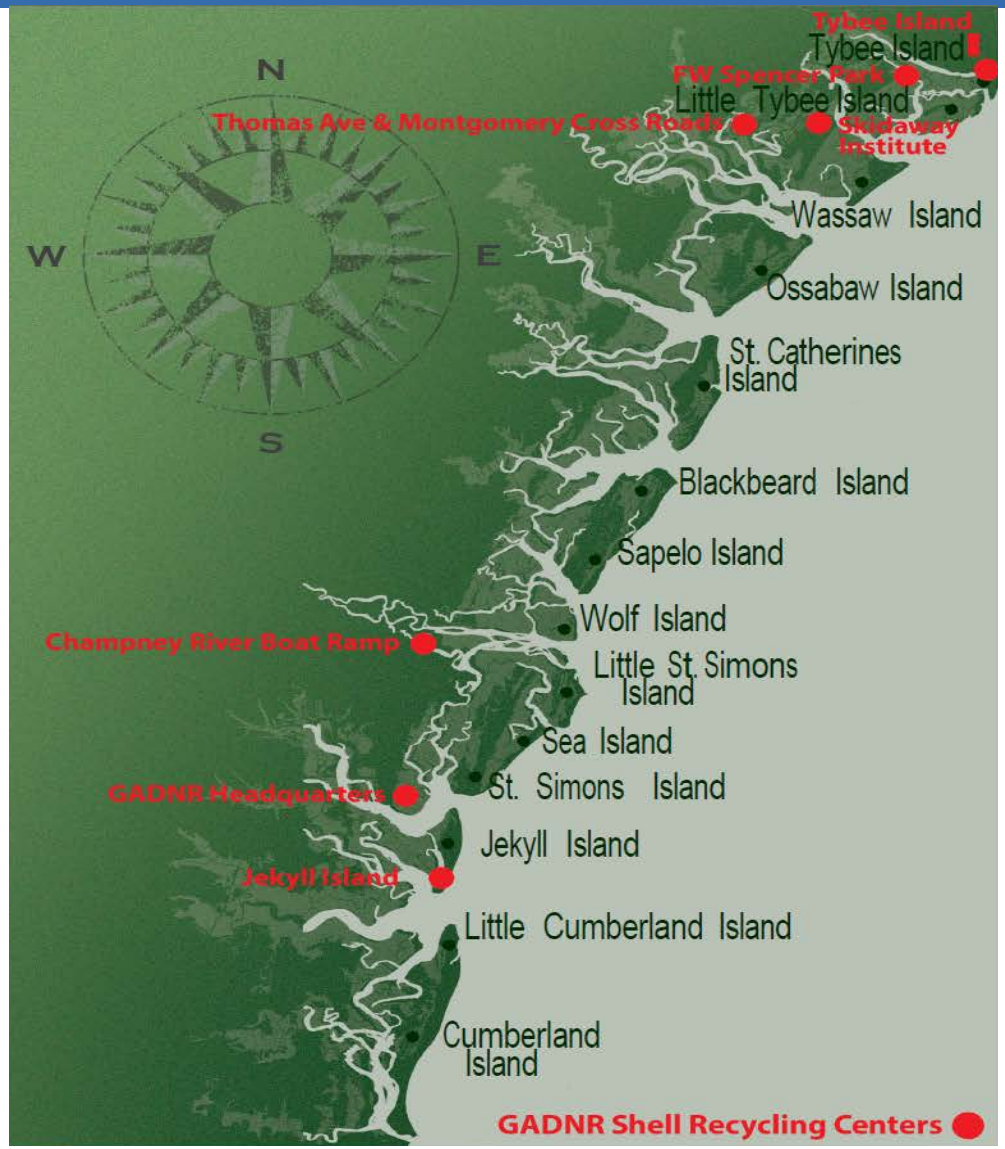
May 17th, 2018

Habitat Restoration & Enhancement Unit Projects

35 Project Deployments (2008 to 2017)

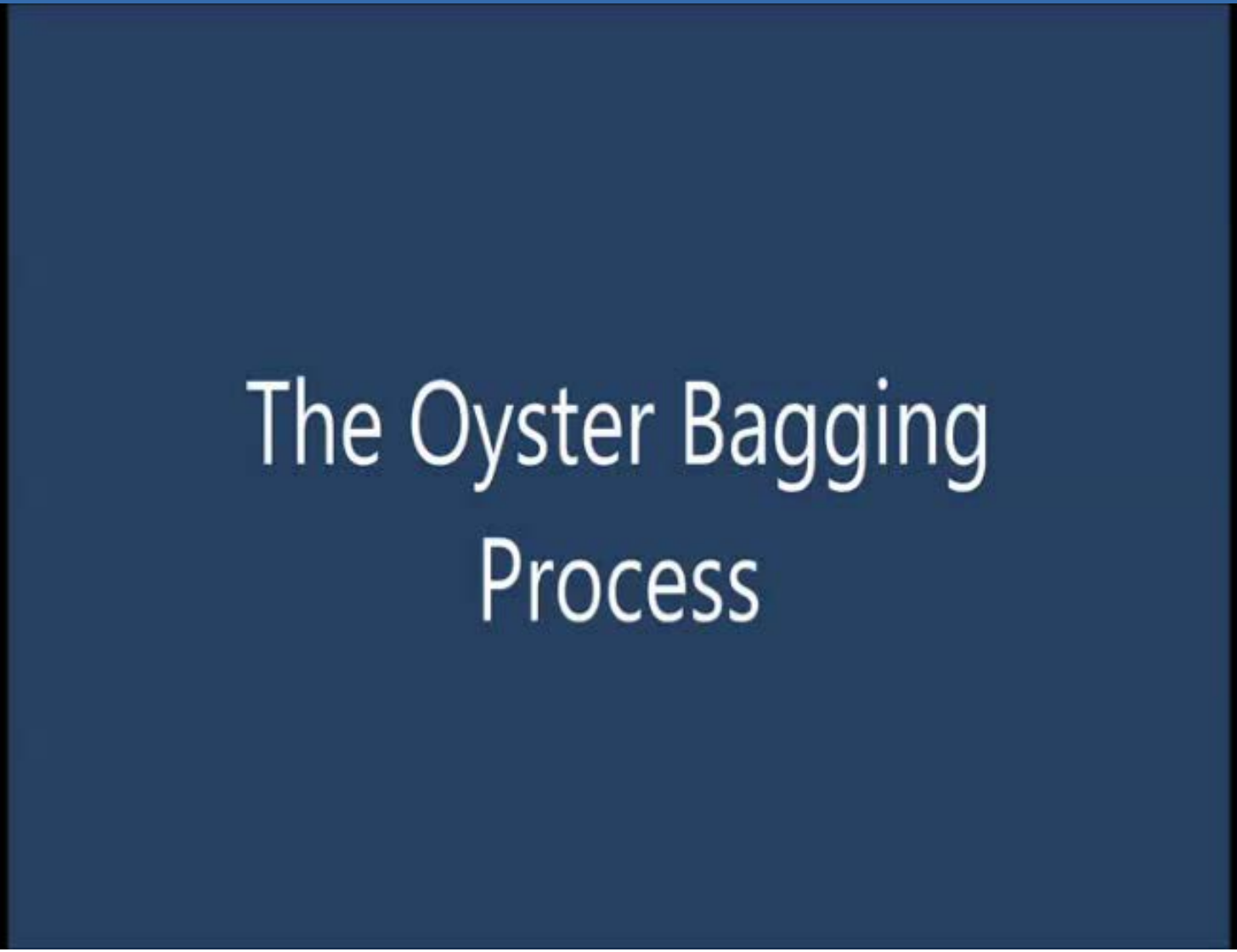
- 2 Oyster Mitigations: Jekyll Island Boat Ramp & Overlook Park
- 3 Oyster Enhancements: Jointer Creek x2 & Oyster Creek
- 2 Fish Enhancements: Joe's Cut & Troupe Creek Inshore Reefs
- 10 Oyster Restorations:
  - Bellville Ramp, Altamaha Island, Gaddis Memorial Reef, Skidaway River, Overlook Park x2, Florida Passage, Oatland Island x2, & Jove Creek
- 4 Oyster Maintenance Sites:
  - FL Passage, Oatland Island, Jove Creek, & Joe's Cut
- 14 Oyster Test Plot Sites:
  - Overlook Park x2, LCP x5, Jove Creek, Joe's Cut x2, Timmons River, Van Dyke Creek, DNR Dock, & Back River Bridge

Oyster Shell Recycling Centers



- 7 Recycling Centers
- Volunteer Deposits
- DNR Pick Up's at Local Roasts
- Shells Bagged & Stored for Restoration & Enhancement Projects
- Volunteers Help Construct Reef each Spring

Oyster Shell Bagging Process



Bellville Restoration 2008: Oak Bundles

Materials Deployed at

GADNR's Oyster Restoration Site:

Bellville Boat Ramp (2008)

Jekyll Island Mitigation 2009: Historical FADs

Materials Deployed at

GADNR's Oyster Restroration Site:

Jekyll Island Boat Ramp (2009)

Gabe Gaddis Memorial Restoration 2010: Bags

Materials Deployed at

GADNR's Oyster Restoration Site:

Plantation Creek (2010)
also known as the
Gabe Gaddis Memorial Reef

Skidaway River Restoration 2010: Bags

Materials Deployed at

GADNR's Oyster Restoration Site:

Skidaway River (2010)

Jointer Creek Enhancement 2012: Bags, Bundles, & Gabions

Materials Deployed at

GADNR's Oyster Enhancement Site:

Jointer Creek Harvest Area (2012)

"Operation Shell Drop"

Overlook Park Restoration 2013 - 2015: Bags, Bundles, Spat Sticks, & Oyster Balls

Materials Deployed at

GADNR's Oyster Restoration Site:

Overlook Park (2013-2015)

Overlook Park Restoration 2013 - 2016: Site Overview

Overlook Park Restoration 2015 - 2016: Bags, Bundles, Spat Sticks, & Oyster Balls

Test Ball: 10 Months/Bundle: 23 Months

Bundle: 28 Months/Coated SS: 15 Months

Test Plot Balls: 15 Months

Overlook Park Restoration 2016 - 2017: Bundles & Oyster Balls

Test Plot Balls: 20 Months

Bundle: 33 Months

Restoration Balls: 8 Months

Overlook Park Restoration Site as of July 2017

FL Passage Restoration 2013-2014: Bags

Materials Deployed at

GADNR's Oyster Restoration Site:

Florida Passage (2013)

FL Passage Maintenance 2016: Bags

Materials Deployed at

GADNR's Oyster Restoration Site:

Florida Passage
(2016) Maintenance

Oyster Creek Enhancement 2014: Bags & Bundles

Materials Deployed at

GADNR's Oyster Enhancement Site:

Oyster Creek Harvest Area (2014)

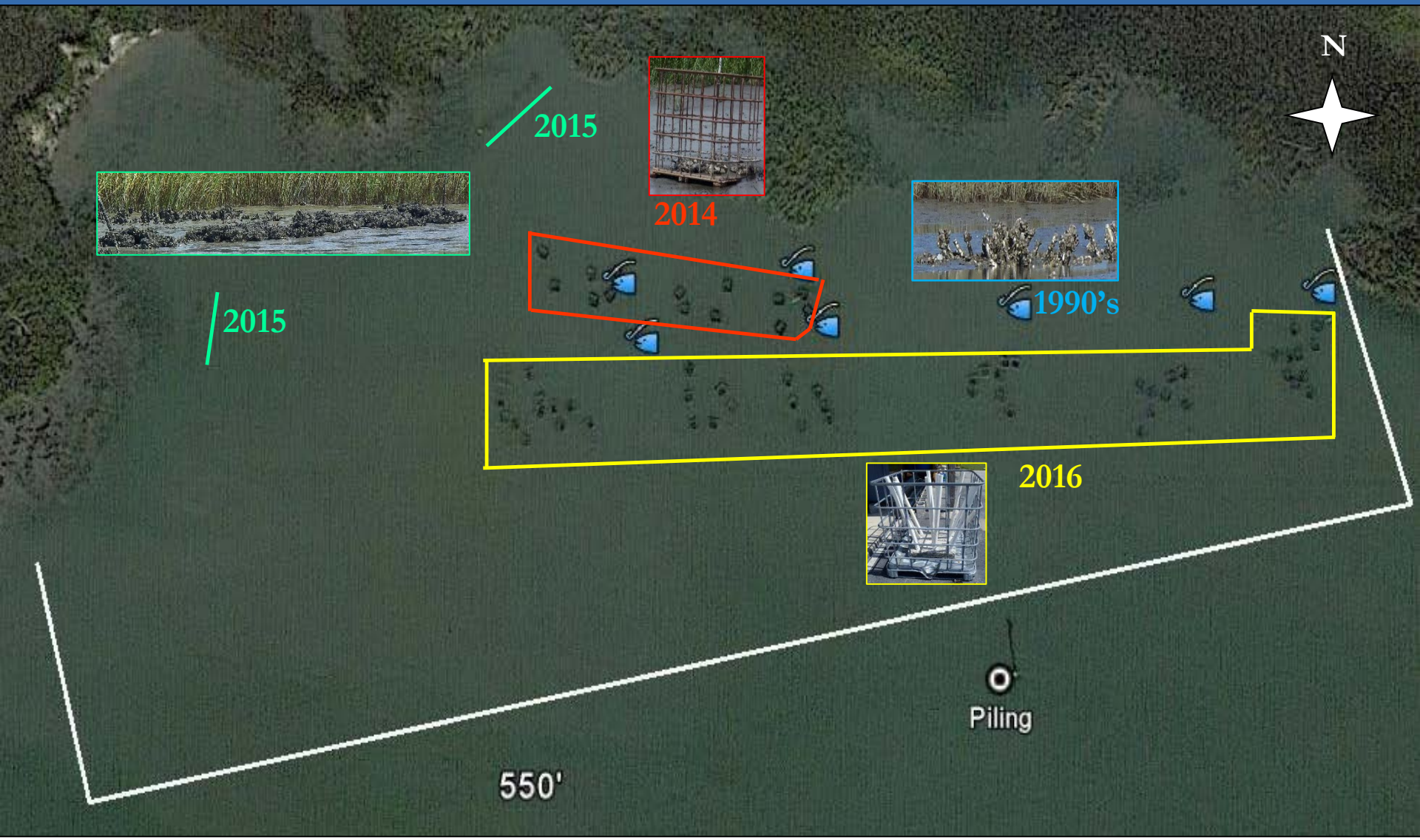
Oatland Island Restoration 2014 -2015: Bags

Materials Deployed at

GADNR's Oyster Restoration Site:

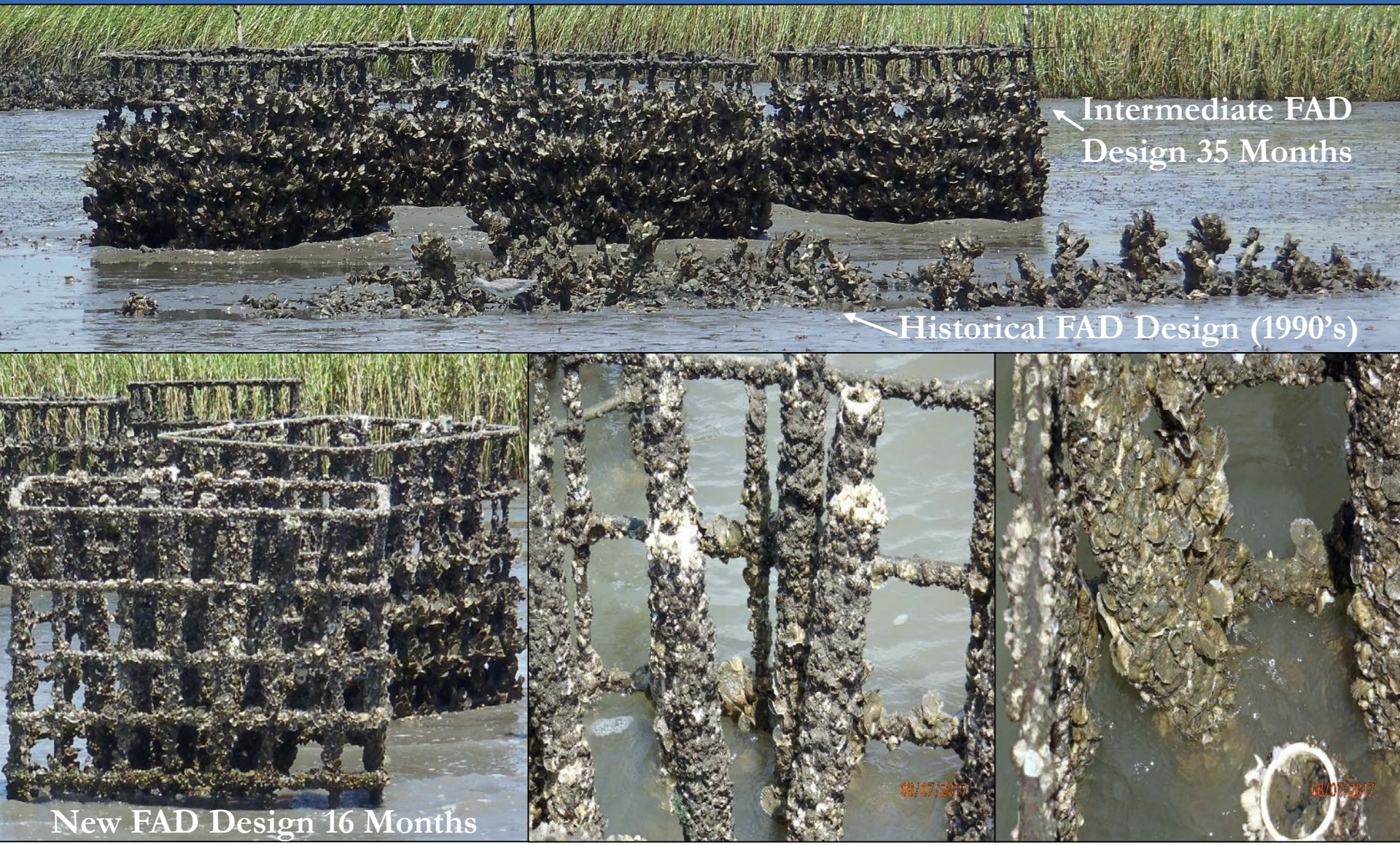
Oatland Island (2014-2015)

Joe's Cut IAR 2014 - 2016: Bags & FADs

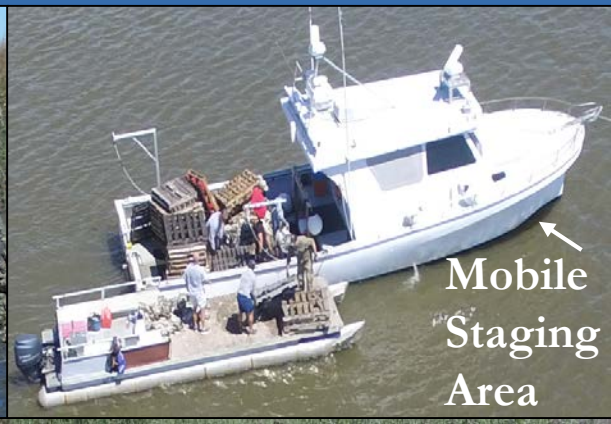


Joe's Cut IAR 2014 - 2016: FAD Designs

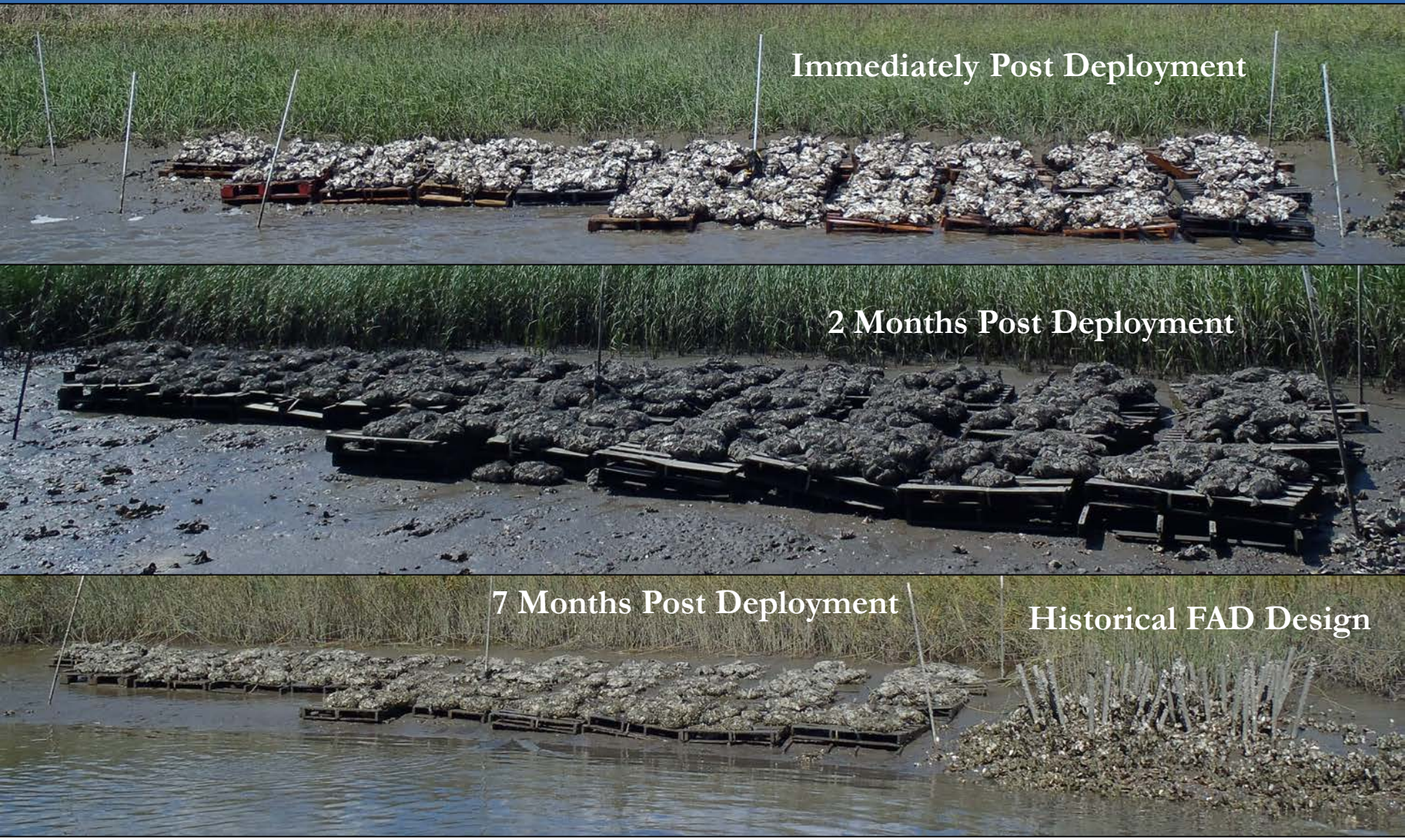
Joe's Cut IAR 2014 - 2017: FAD Designs



Jove Creek IAR Restoration 2017: Bags



Jove Creek IAR Restoration 2017: Bags



Back River Bridge Test Plots 2017: Bags

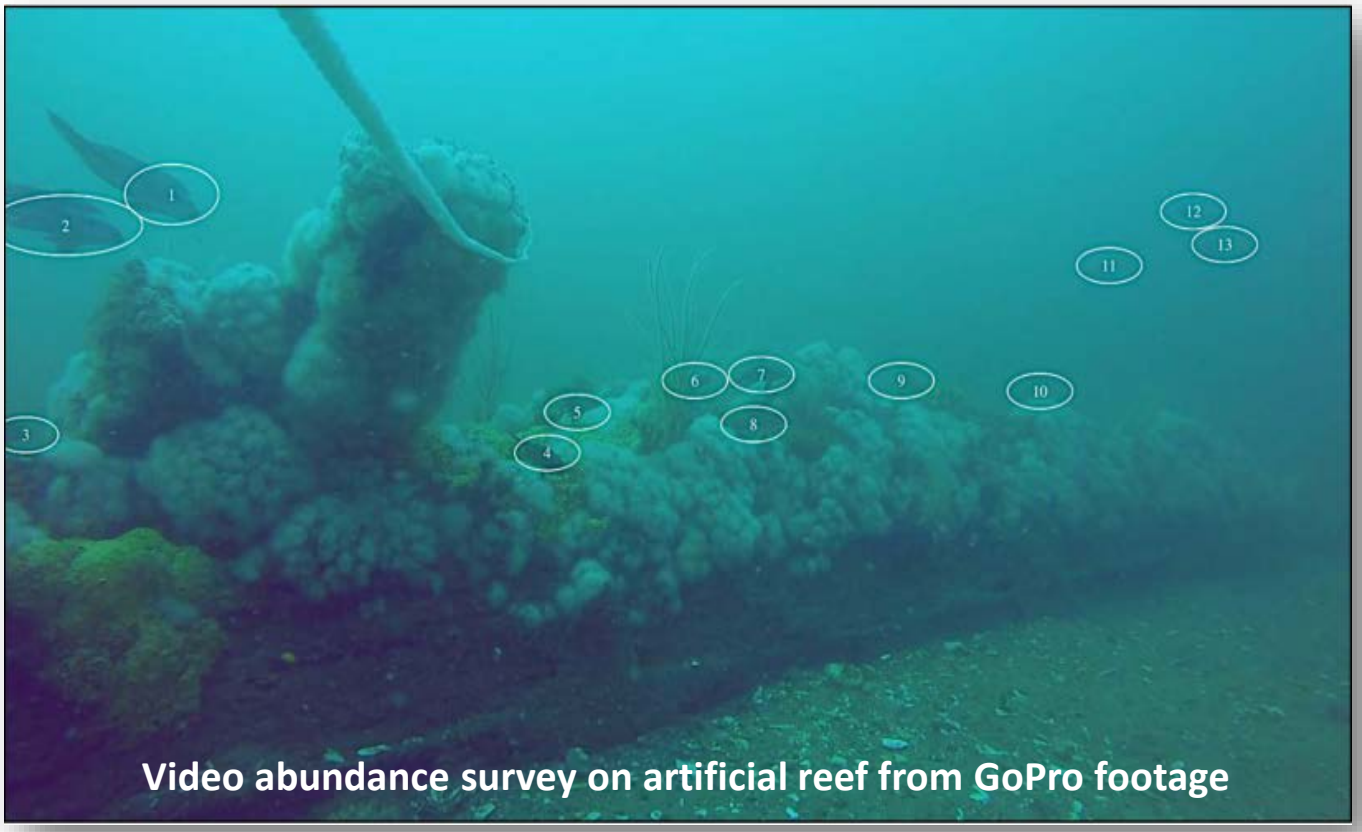
Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight

- MAFMC awarded $250,000 to ACFHP via the National Fish Habitat Fund to manage a research project focused on Mid-Atlantic habitat and fisheries productivity

- ACFHP selected Dr. Brad Stevens (Univ. MD - Eastern Shore) to improve our understanding of the relationship between BSB abundance and habitat characteristics
  - Determine the preference of BSB for particular habitats by assessing their abundance, size structure, and feeding ecology within natural and artificial reefs
  - Improve the understanding, and other habitat characteristics of natural and artificial reefs
  - Determine if reduced fragmentation and increased connectivity of habitats increases fish recruitment

Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight

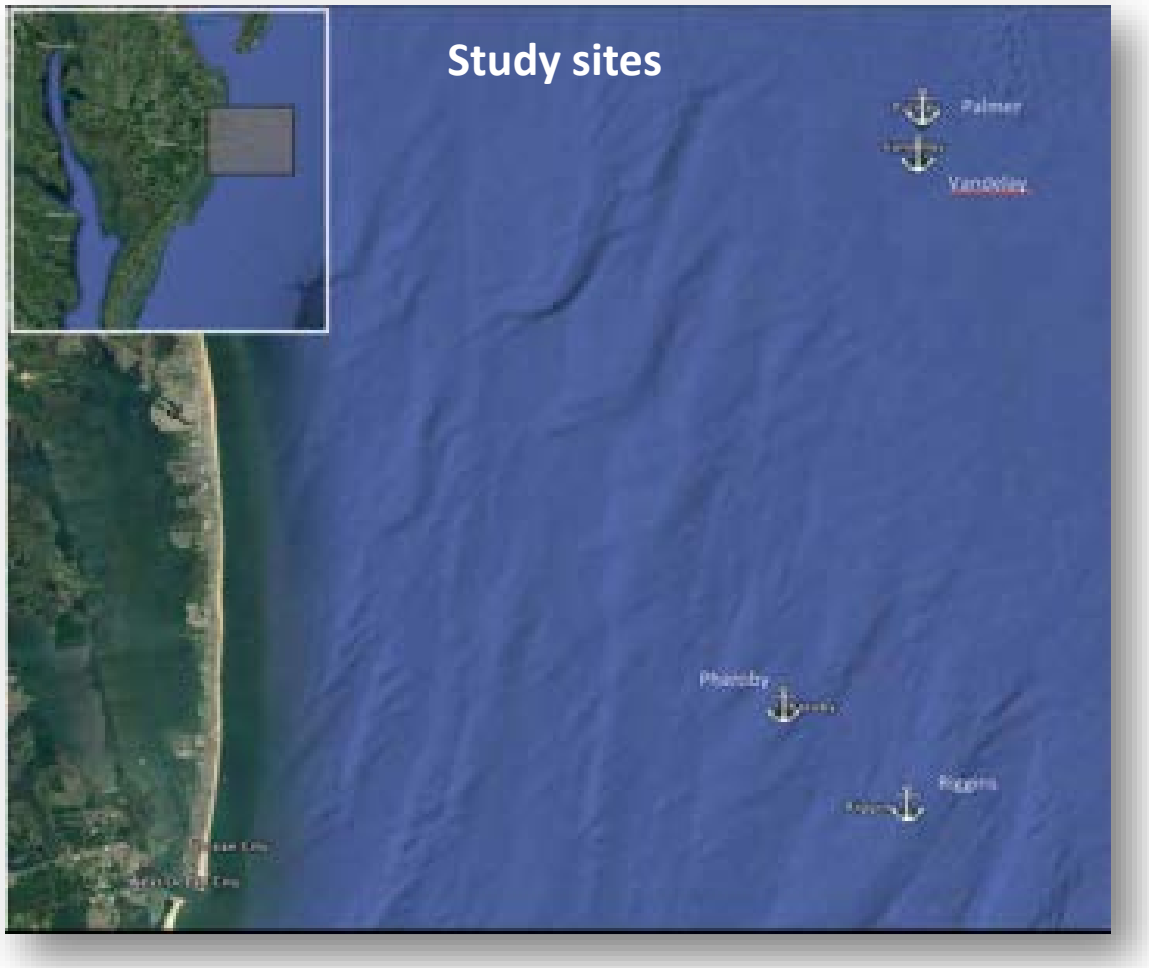
- Completed two years of sampling, 2018 will be 3rd & final year
  - Video surveys
  - Quadrat surveys
  - Stable isotope analysis



Video abundance survey on artificial reef from GoPro footage

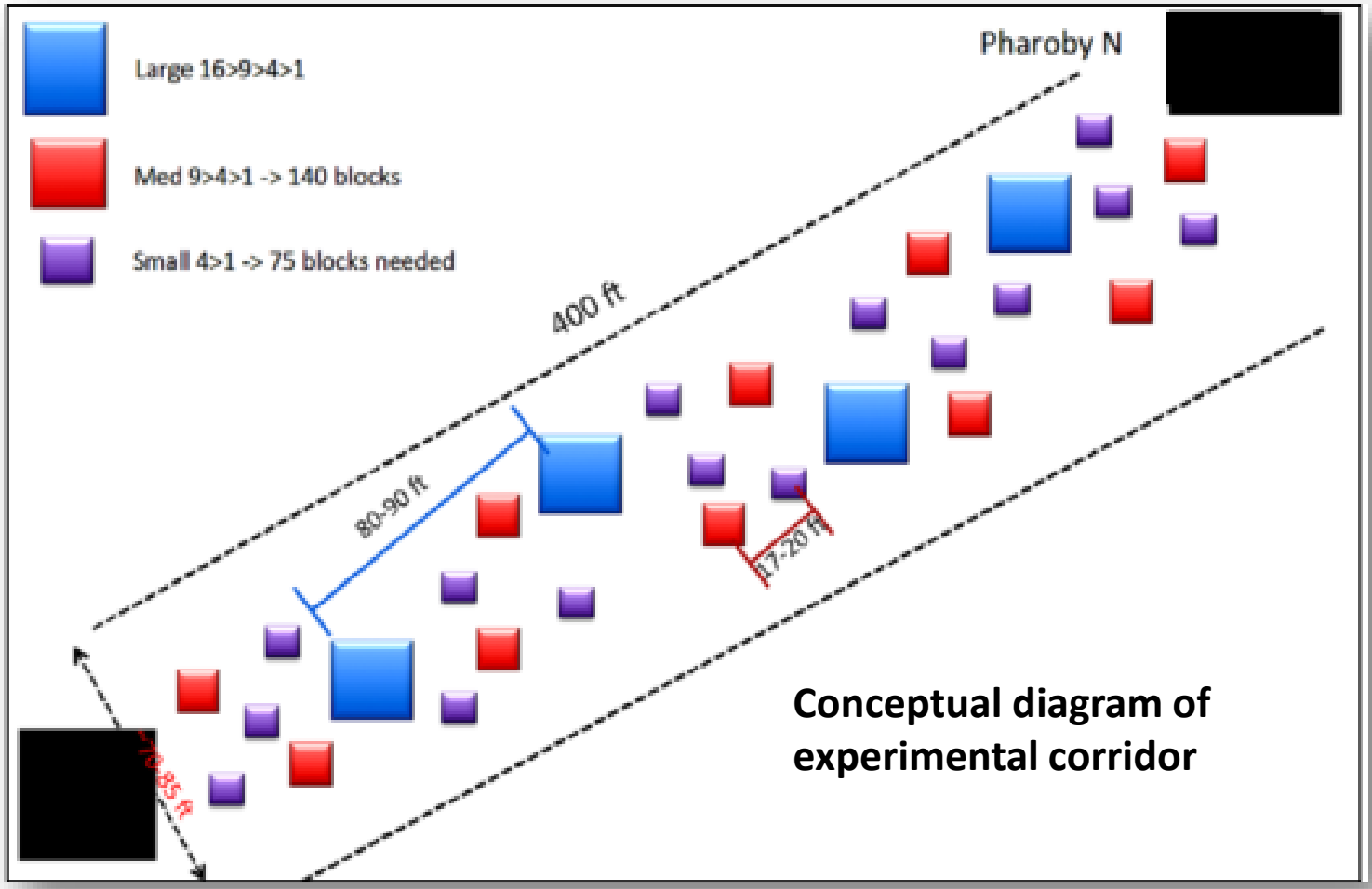
Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight

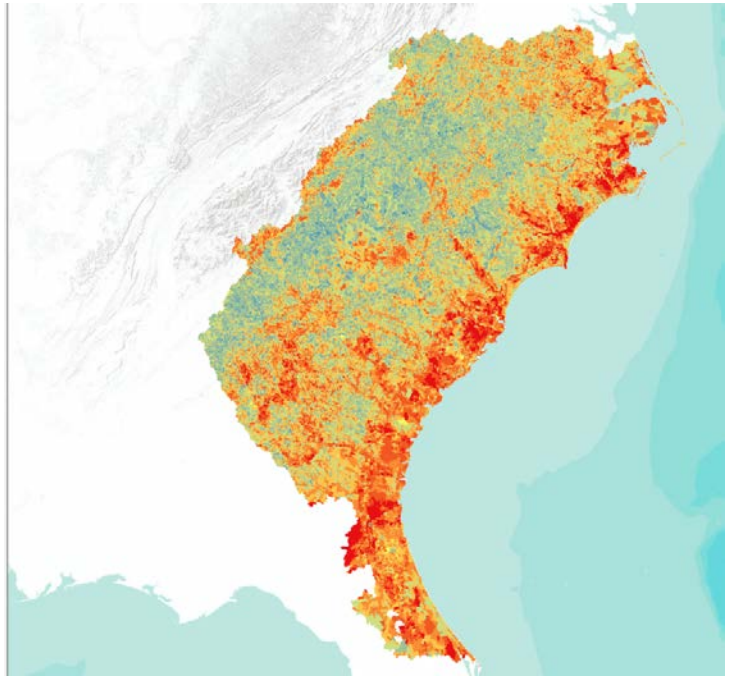
- Sampling 4 shipwrecks & nearby open bottom
- Will sample natural habitat in 2018

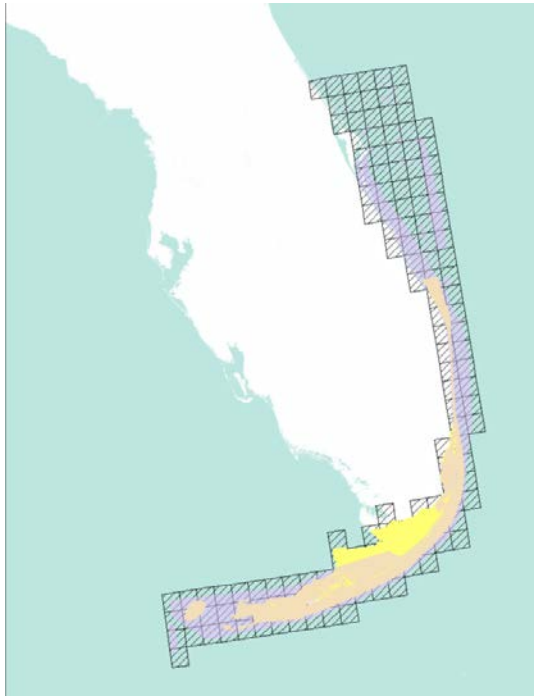


Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight

- Created experimental corridor between two artificial habitats to understand connectivity







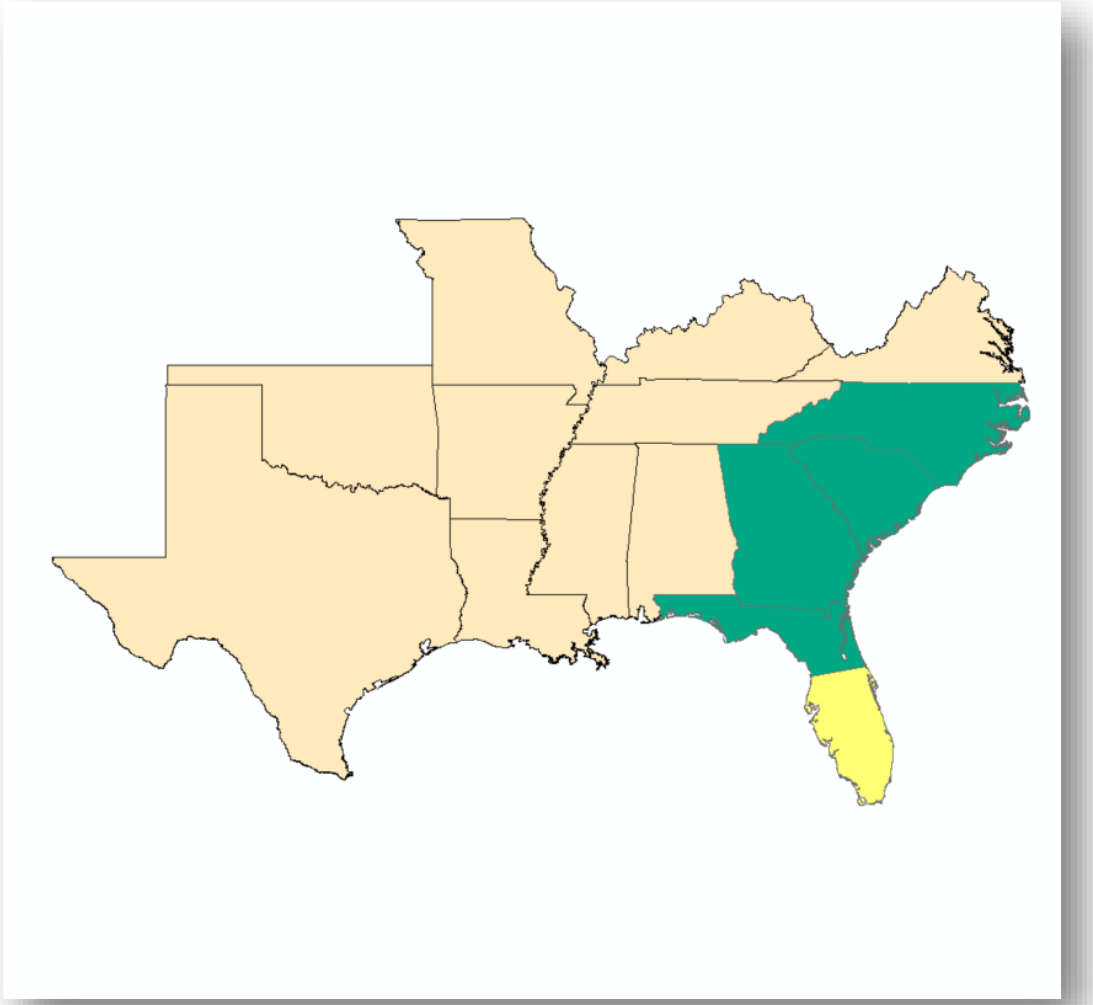
Southeast Mapping Project

Kat Hoenke, Jennifer Walters, Jessica Graham,

SARP

Scenarios

- Northern diadromous (green)
  - Unit: NHD Catchment
- Estuarine: Northern and Southern
  - Unit: 1 square km hexagon
- Southern coastal (yellow)
  - Unit: 10 minute squares

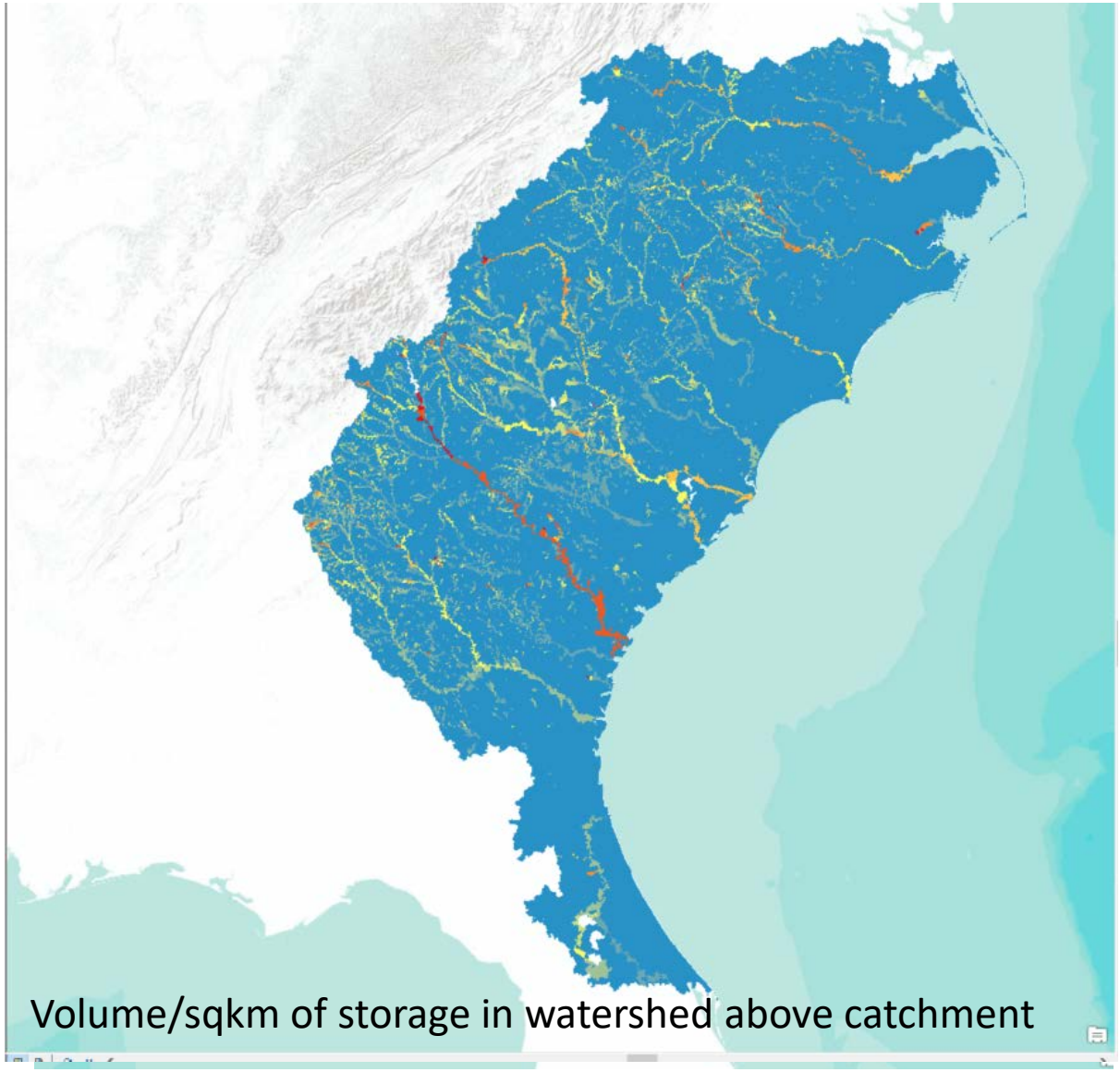


Diadromous Scenario

Many recommended metrics included calculating percent of reaches within a catchment. However, a catchment only represents one reach, so metrics were changed to reflect this. (They wanted all these metrics of % of reaches in catchment but a catchment is one reach).

Variable	Measurement	Metric	Source
Non-point source pollution	% agriculture in catchment	10 points if ranked in top 25% for least amount of agriculture	Cropscape USDA
Riparian Buffers	% of floodplain area with natural landcover	10 points if catchment is ranked top 25% for natural coverage	100 year floodplain dataset from FATHOM as boundary.
Potential for species access	# of downstream dams = 0	10 points if number = 0	SEACAP
Number of Species	Number of species in downstream network	10 points if the polygon ranks in the top 25%	SEACAP
Water Usage	Volume all reservoirs (NID_STORA in NID) per unit area of watershed (cubic meters/square km)	10 points if catchment is ranked in top 25% for lowest volume.	EPA StreamCat
Fragmentation	Density of road crossings and dams in catchment	10 points if catchment ranks in top 25% for least among of points	SARP SE Aquatic Barrier Inventory
Sturgeon Critical Habitat	Presence of critical habitat	10 points if on critical habitat	NOAA
Impervious Surface	% impervious surface above catchment	10 points if catchment is ranked top 25% for least amount of impervious	EPA streamCat
Point Source Pollution	Density of NPDES and TRI sites in catchment	10 points if catchment is ranked top 25% for least amount of sites	EPA StreamCat

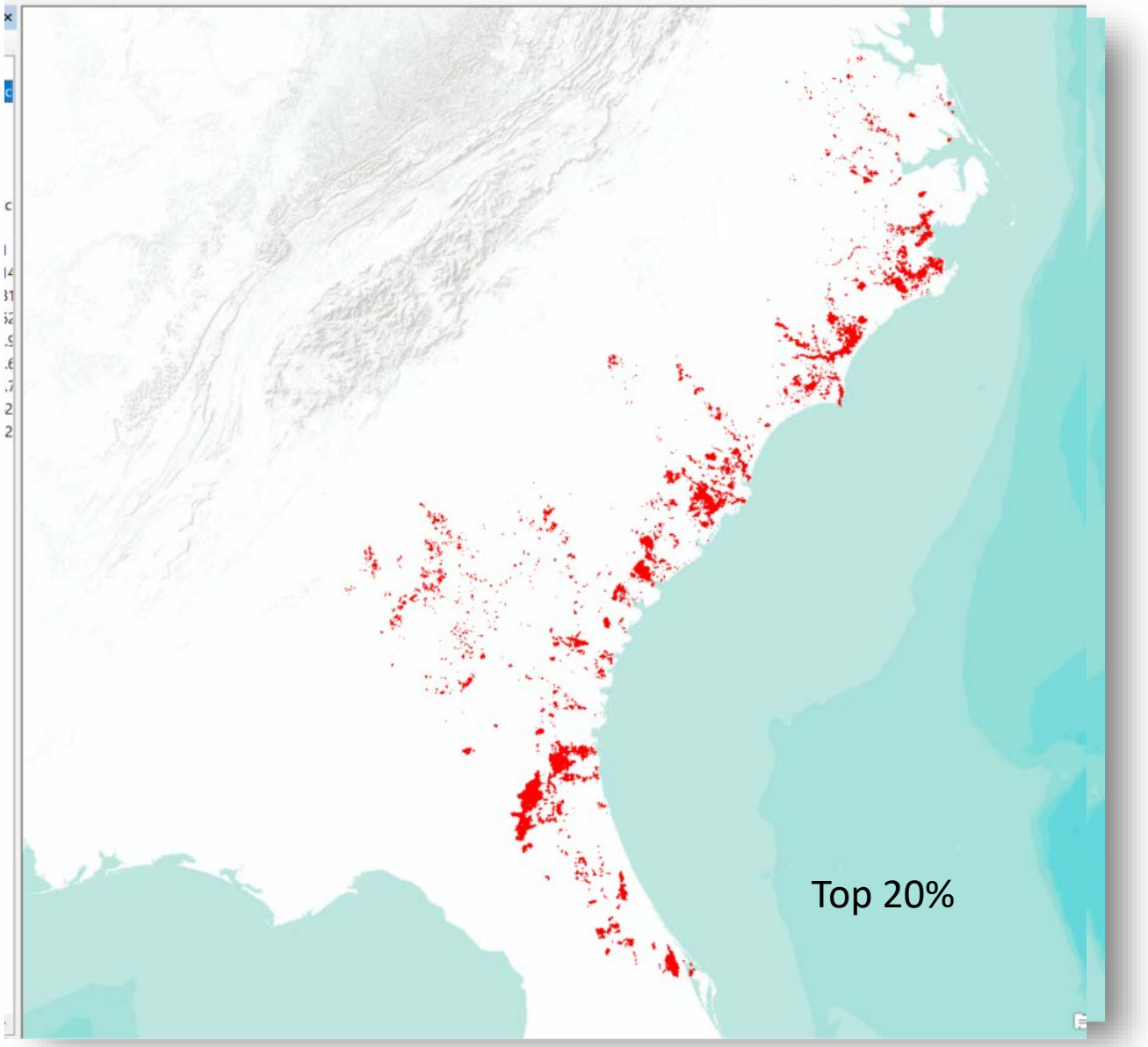
Metrics Examples



Volume/sqkm of storage in watershed above catchment

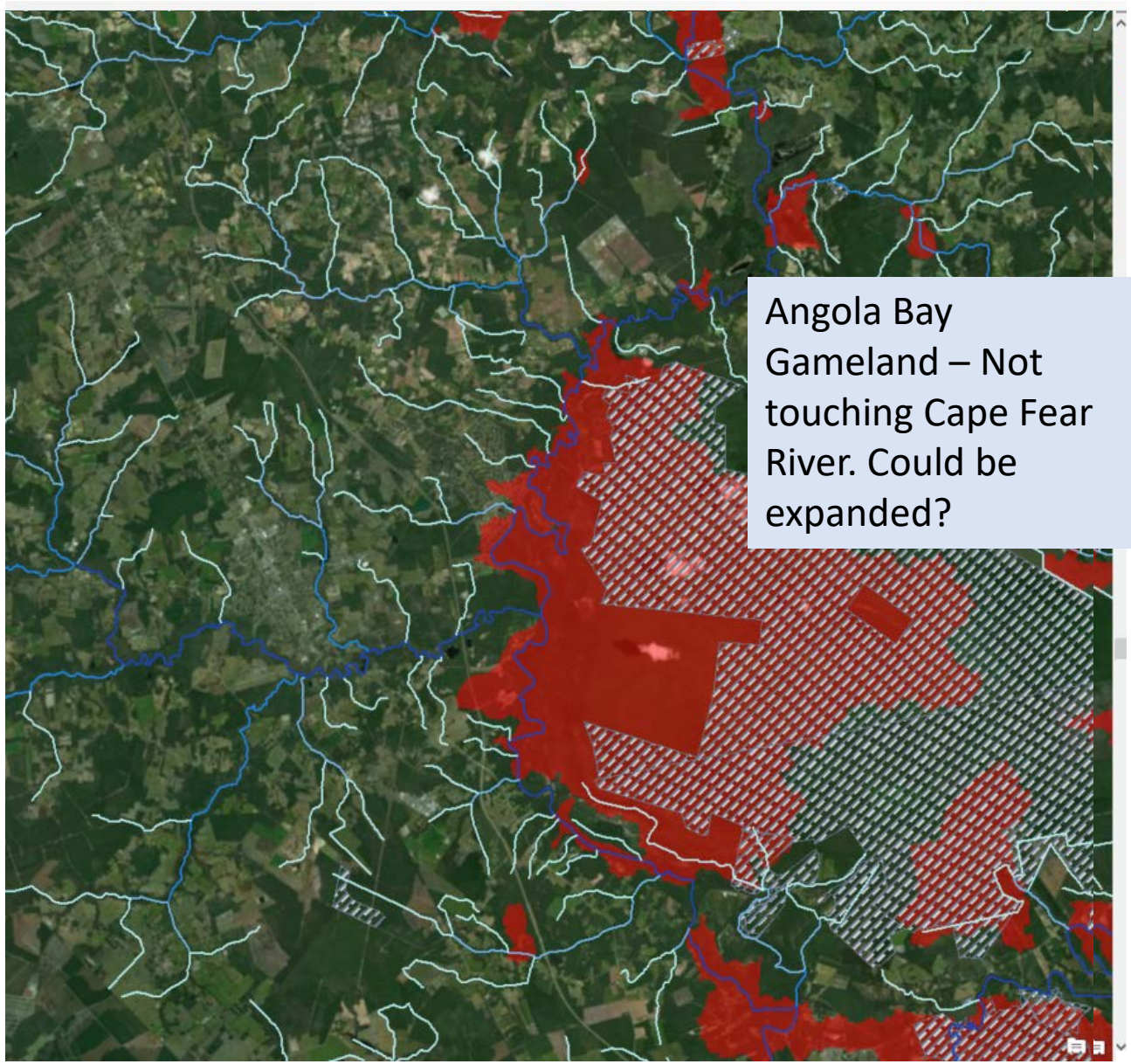
Final Score

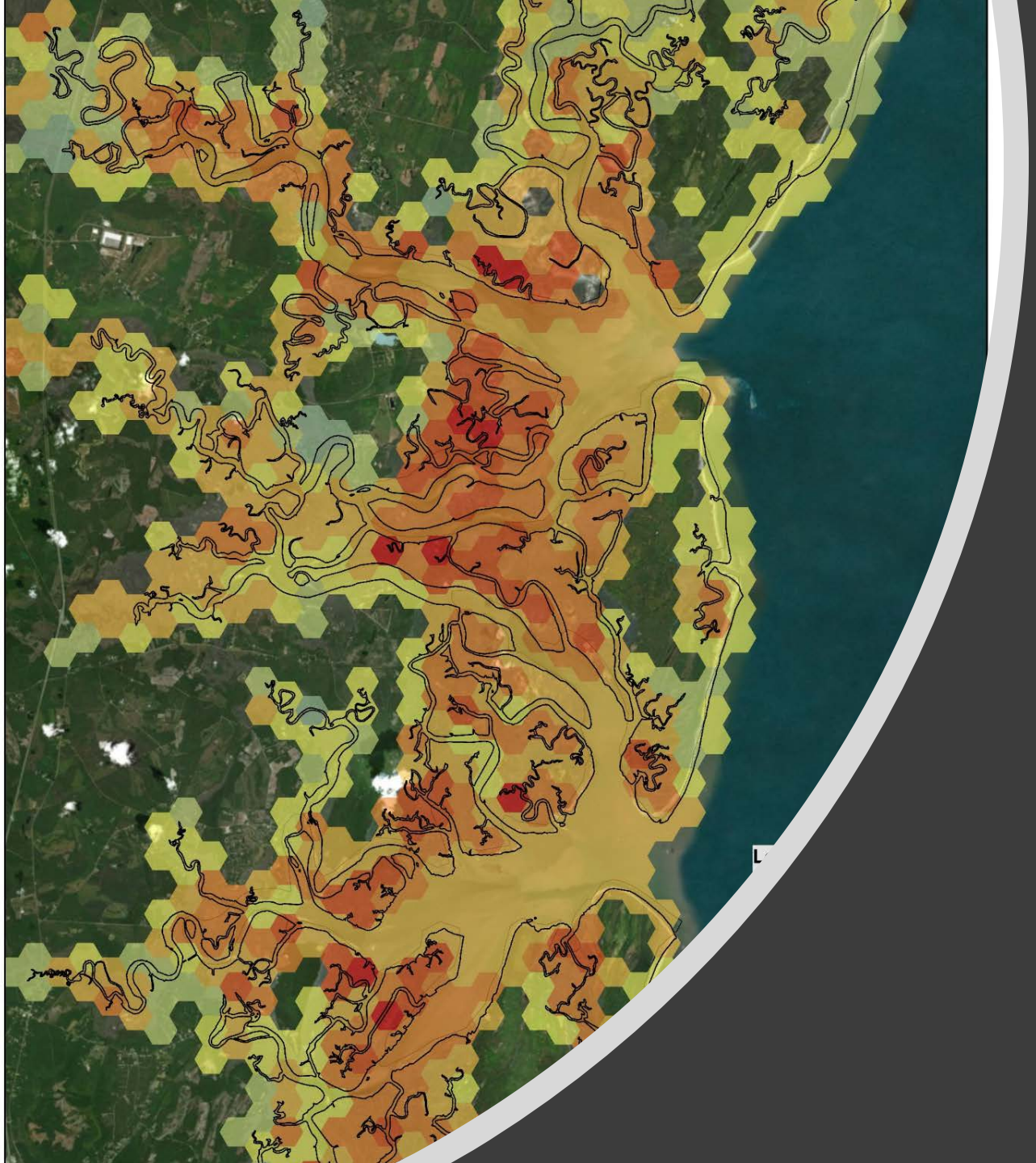
Red = Higher priority.



Example

- Northeast Cape Fear River, NC
- 5 anadromous species downstream





Estuarine Scenario

Estuarine Scenario

Variable	Measurement	Metric	Source
Seagrass and oyster reef habitat	% of polygon covered by habitat	10 points if the polygon ranks in top 25%	TNC SABMA
Wetland habitat	% of polygon covered by wetlands	10 points if the polygon ranks in the top 25%	National Wetlands Inventory
Estuarine –Marsh Water edge (Northern scenario only)	Average edge score by polygon	10 points if the polygon ranks in the top 25%	SALCC water veg edge scored raster
Proximity to protected habitat	Distance to HAPCs	10 points if the polygon is within ½ km of inlet	Marine cadastre
Proximity to development	Distance from marinas and ports	10 points if the polygon ranks in the top 25% farthest from ports.	State specific
Water Quality	% of polygon covered by 303d listed areas.	10 points if the polygon ranks in the top 25%	EPA 303D areas
Hardened shoreline	Length of hardened shoreline in polygon	10 points if the polygon ranks in the top 25%	SABMA supplemented with state data
Habitat fragmentation	Linear feet of causeway within polygon	10 points if the polygon ranks in the top 25%	Tiger roads 2017 and intersected tidal wetlands from NWI

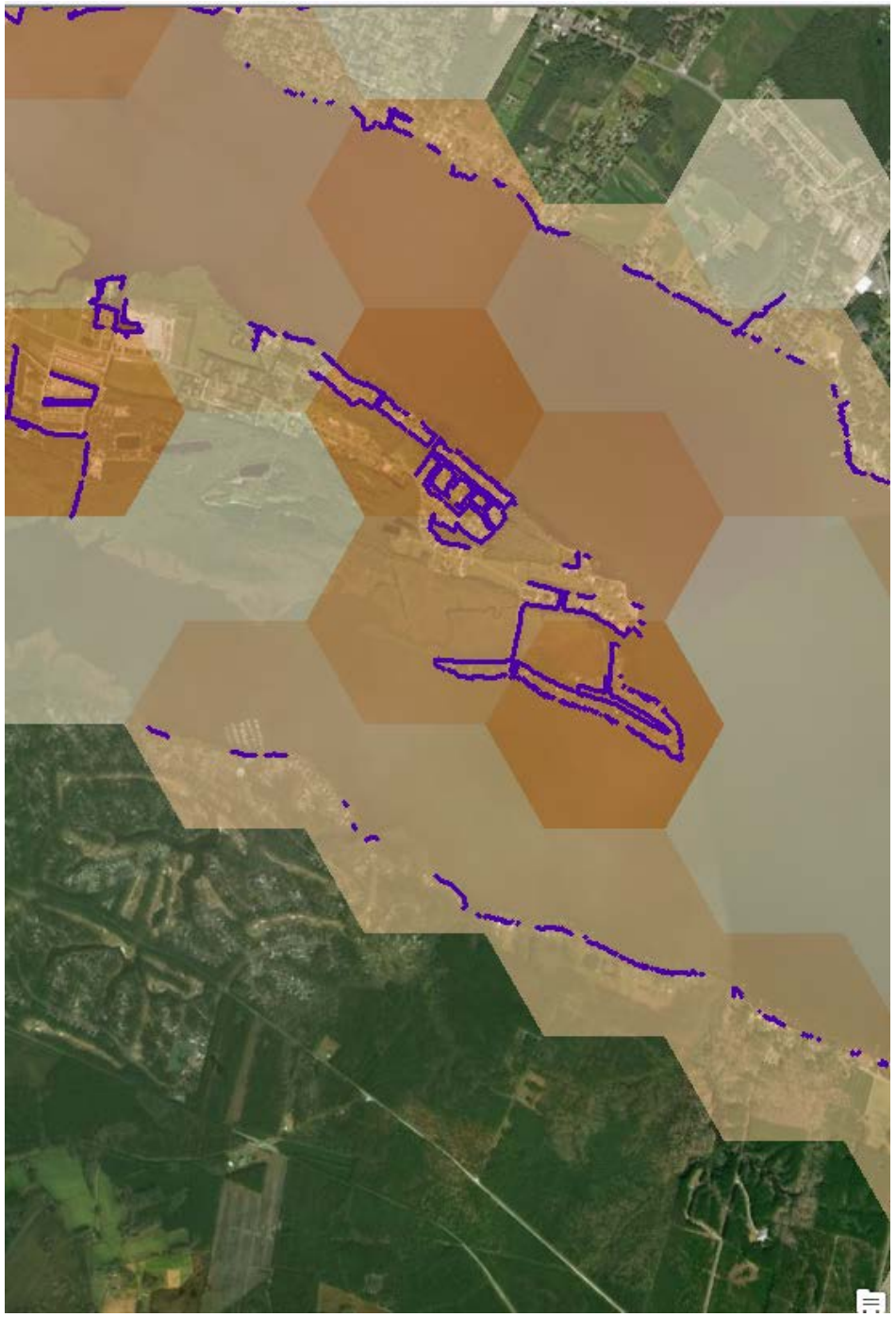
Metrics Examples

Causeways

- Causeways were more difficult to analyze.
- Combined tidal wetlands and river/estuary water polygons.
- Clipped roads by wetlands/estuary.
- May have some false positives.

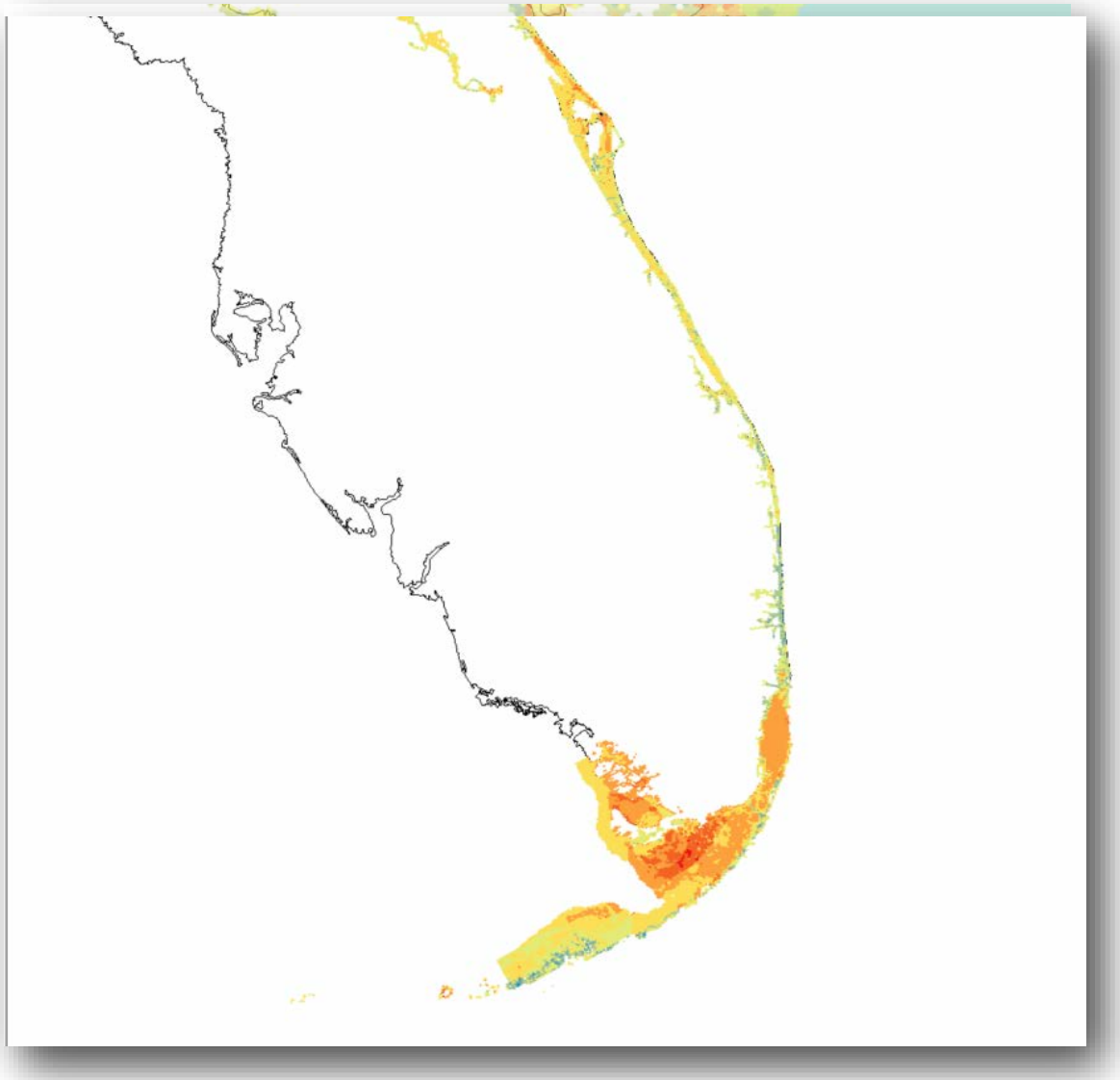
Hardened Shoreline

Combined state datasets for hardened shoreline.



Final Score

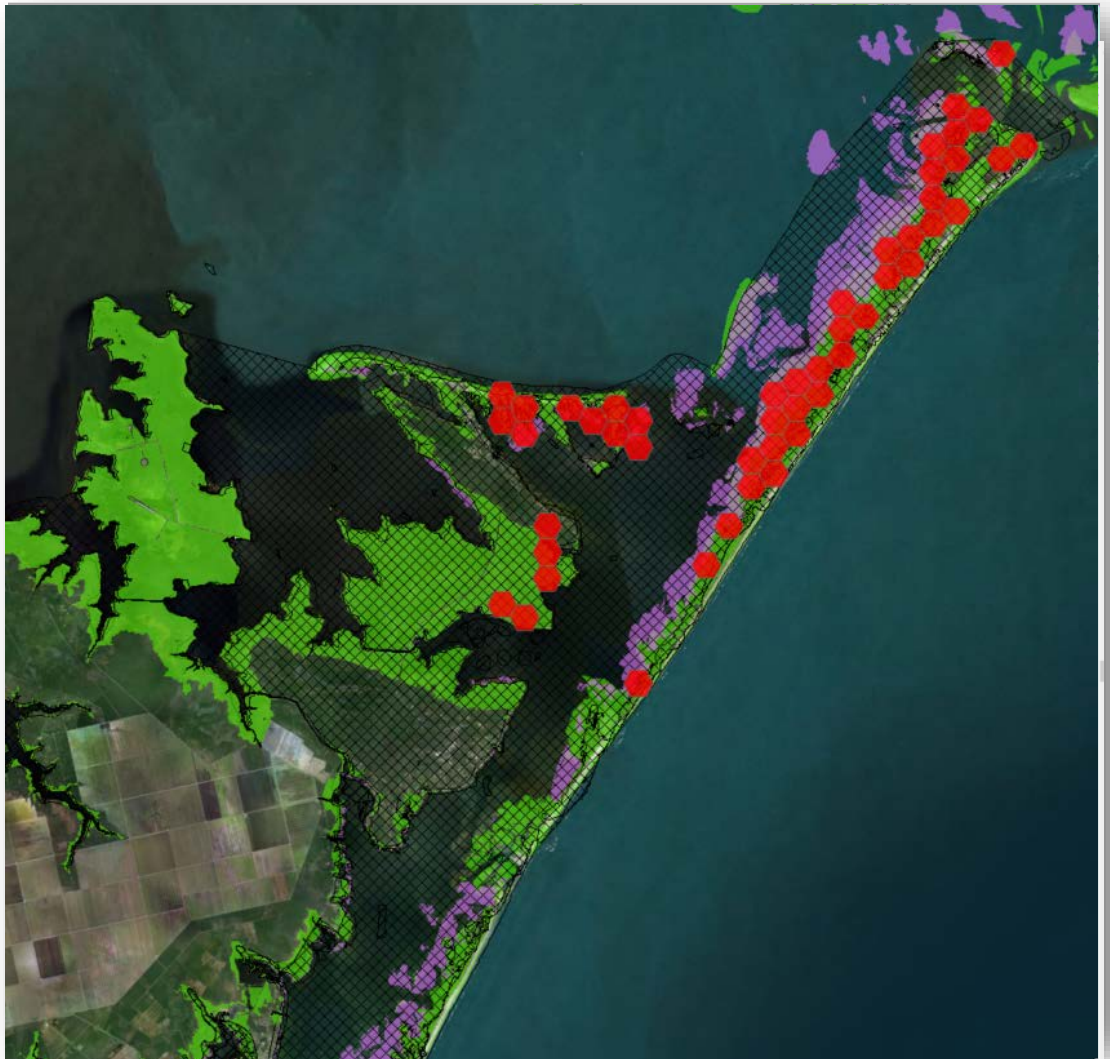
Northern and Southern Scenarios.
Warm colors = higher priority



Final Score

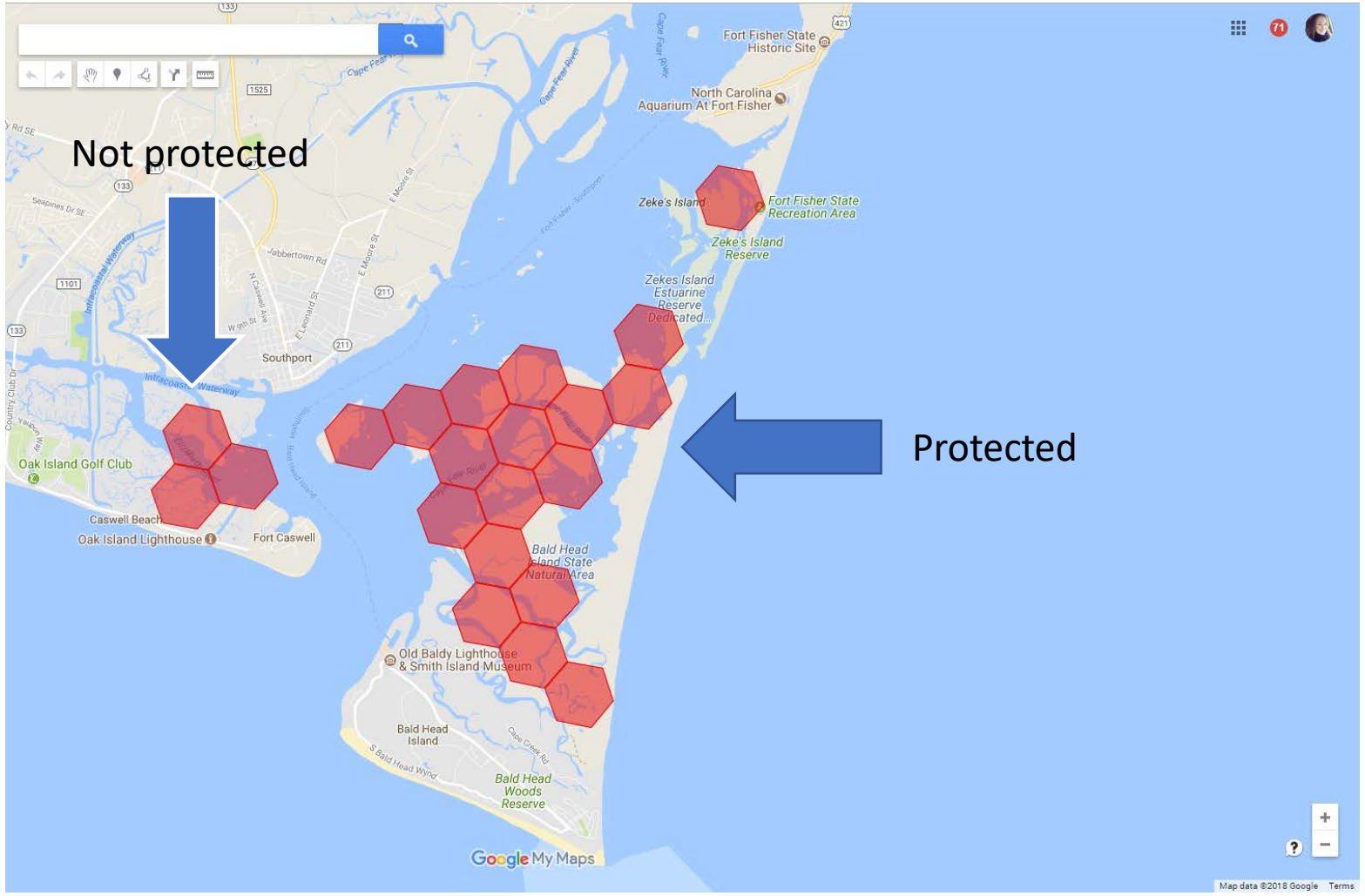
- High scores concentrated around undeveloped marsh land containing oyster/seagrass/wetland habitat

Purple = Seagrass
Green = marsh
Checkered = Oyster



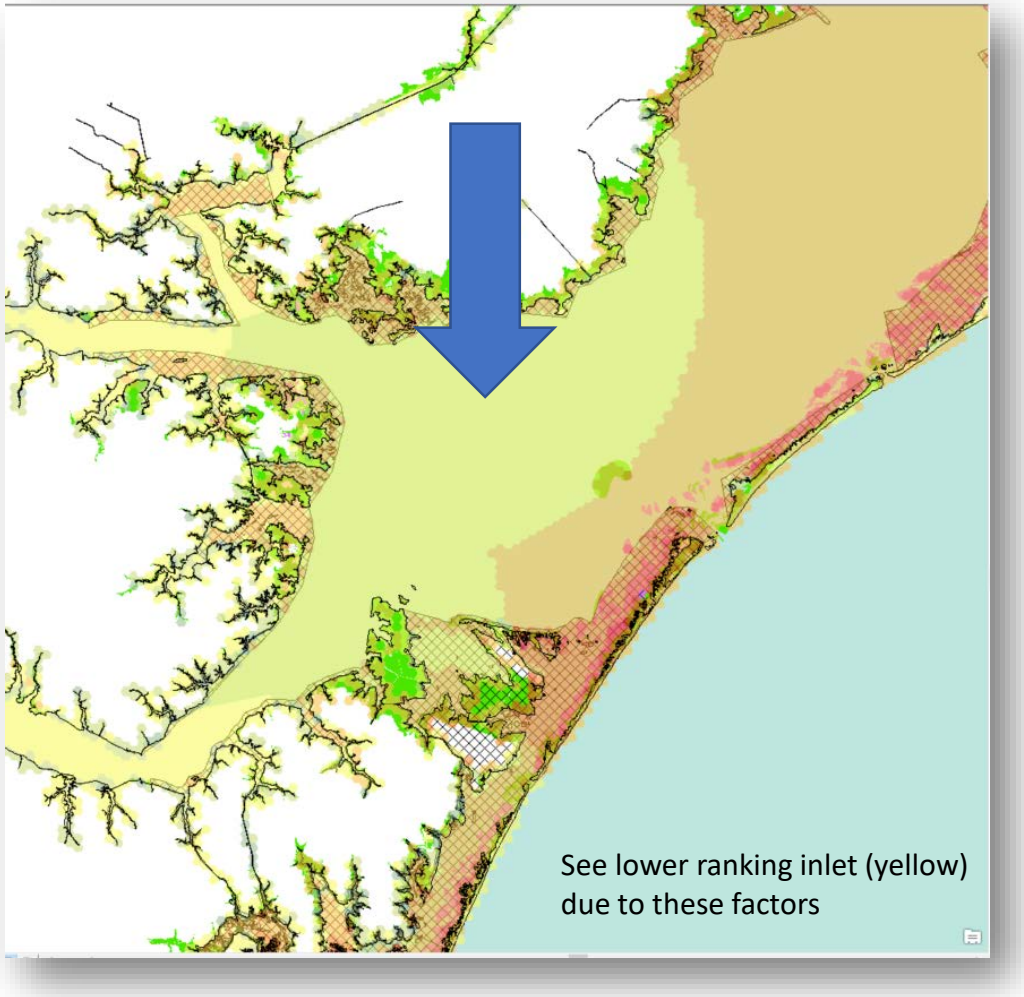
Final Score

- Areas of high priority:
  - **Roanoke Island, NC**
  - **Elizabeth River, NC**
  - Copahee Sound, SC
  - Blackbeard Creek,GA
  - Mosquito Lagoon, FL



Considerations

- Not many 303D listed areas. Need a metric for water quality. Could use:
  - % agriculture above catchment containing polygons
  - #NPDES +TRI sites in catchment containing polygons.
  - Excludes deep water.
  - Unless model of dissolved oxygen or other is available?
- Deep water is ranking high due to lack of hardened shoreline, further from ports/marinas and lack of wetland habitat. Suggest subsetting the analysis to exclude deep water.
- Remove already protected areas
- Re-rank after changes made above.

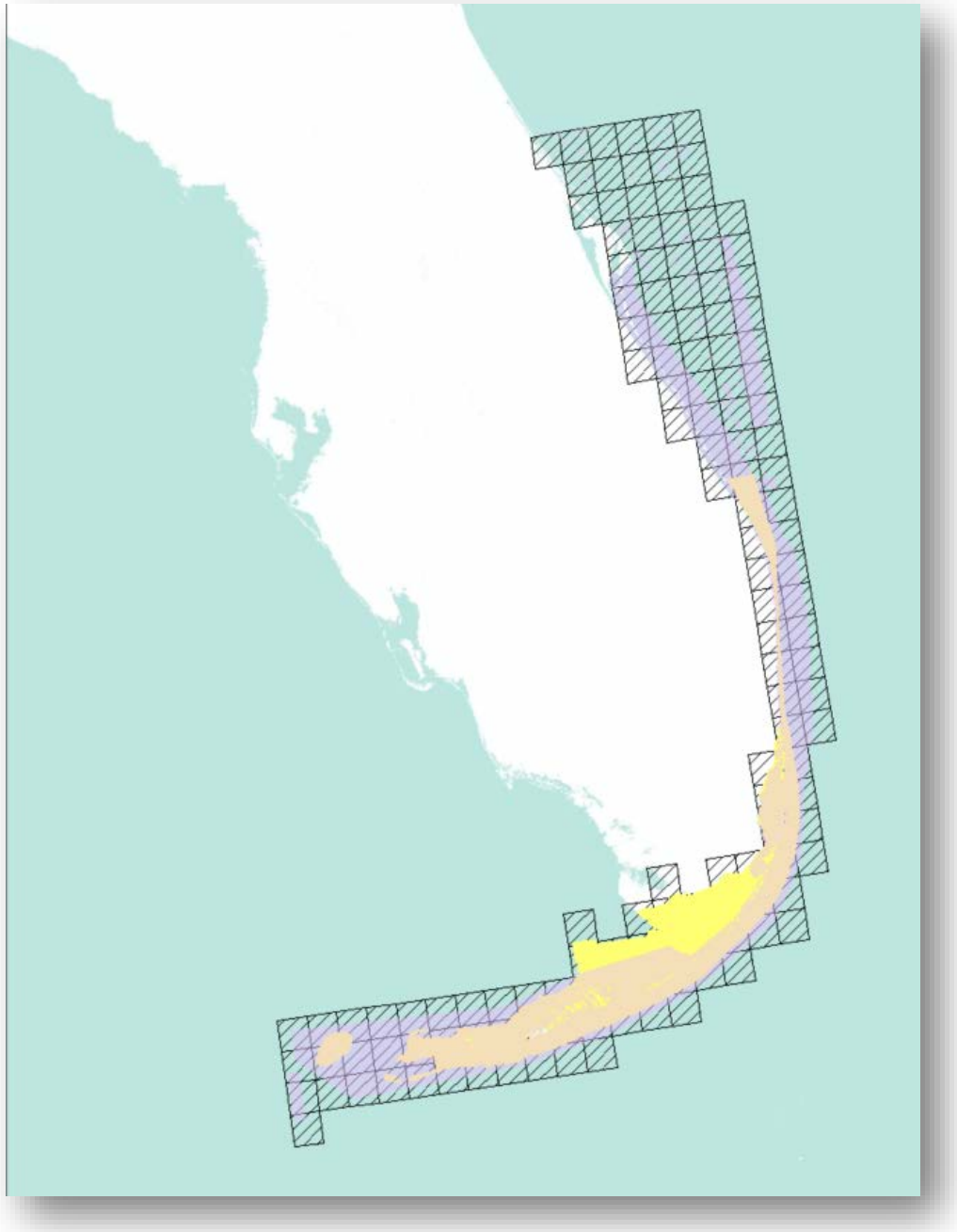


Southern Coastal Scenario

Variable	Measurement	Metric	Source
Proximity to protected habitat	Presence of HAPC	Protect area if it falls on HAPC	Marine Cadastre

Southern Coastal Scenario

- Purple are HAPCs listed as “corals reefs & hard bottom” only.
- Yellow is the unified reef map. There is a sliver of yellow that is not encompassed by the HAPCs (red arrow).
- We allotted 10 points for 10 minute squares that intersected the HAPCS or the additional unified reef map.



Sandbar Oyster Company Inc.

Inception and Development of Oyster Catcher™ and Related Products

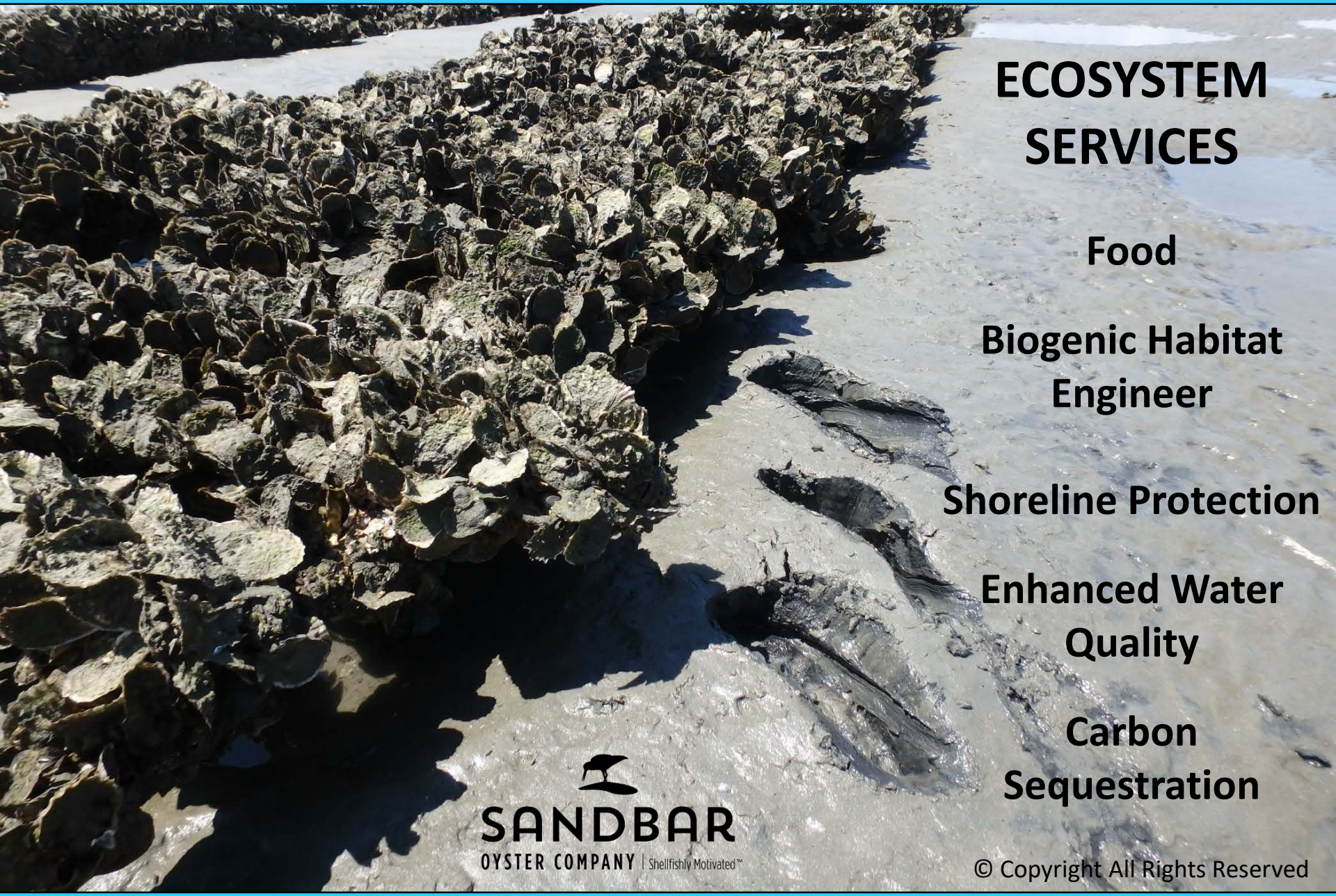
Fishery Resource Grant
NC Sea Grant

Cliona celata
boring sponge

Oyster Safe Zones

High Salinity
Intertidal

Low Salinity
Subtidal



1913 NATIONAL GEOGRAPHIC

OYSTERS: THE WORLD'S MOST VALUABLE WATER CROP

2009 85% Decline Worldwide

The Nature Conservancy

Materials for Oyster Reef Foundations and Cultch Planting

IMAGINE…turning cloth

…into oyster reefs!

Oyster Catcher™

Products for Aquaculture, Habitat Restoration & Living Shorelines

2015 Pilot Project funded by the UNC Office of Technology Development

Oyster Catcher™ - structurally versatile & biodegradable

SANDBAR
OYSTER COMPANY | Shellfishly Motivated

NCIDEA™

UNC
INSTITUTE of
MARINE SCIENCES

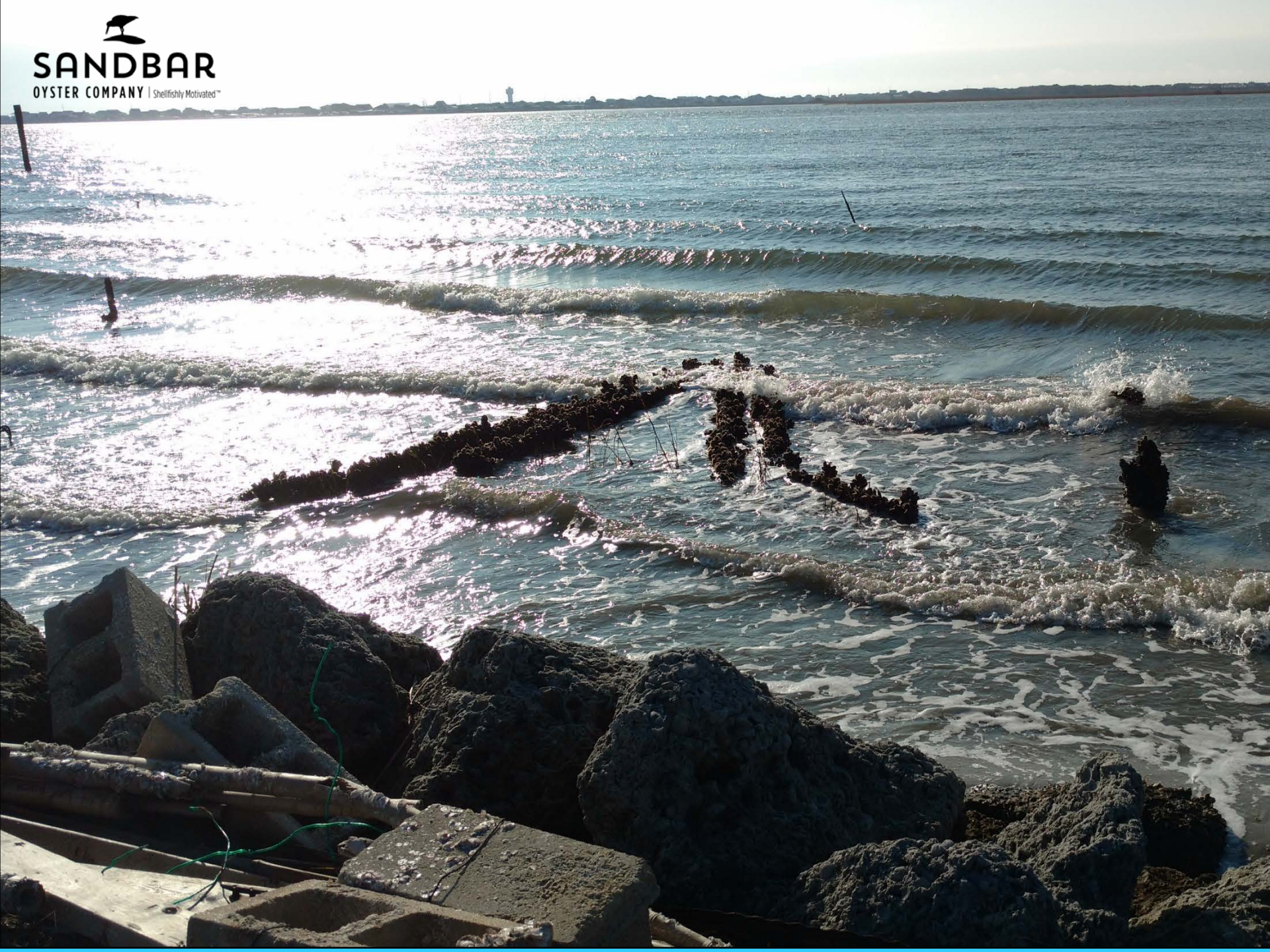
OFFICE OF COMMERCIALIZATION AND ECONOMIC DEVELOPMENT
THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

MBCOI
Fathom the Opportunities®

North Carolina
Coastal Federation
Working Together for a Healthy Coast

Division of Marine Fisheries

UNC makes no endorsements of products derived from licensed UNC technologies.


SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

Oyster Catcher™ Patty

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

"Oyster Highway"

6000 Oyster Catcher™ patties seeded with live oysters will be moved from the lower region of the estuary to create brood stock reefs in the mid-estuary.

Intertidal seeding area

reef development sites

concrete rubble reef: no oysters due to a lack of larval delivery

Jacksonville, North Carolina

Camp Lejeune

Camp Lejeune

present spatial limit of oysters

10 km

Project Partners

JACKSONVILLE N.C. a Caring Community — CAMP LEJEUNE & MCAS NEW RIVER

SANDBAR OYSTER COMPANY | Shellfishly Motivated™

UNC INSTITUTE of MARINE SCIENCES

NORTH CAROLINA WILDLIFE HABITAT FOUNDATION

COASTAL CONSERVATION ASSOCIATION NORTH CAROLINA

THE GREAT SEAL OF THE STATE OF NORTH CAROLINA — MAY 20, 1775 — APRIL 12, 1776 — ESSE QUAM VIDERI

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

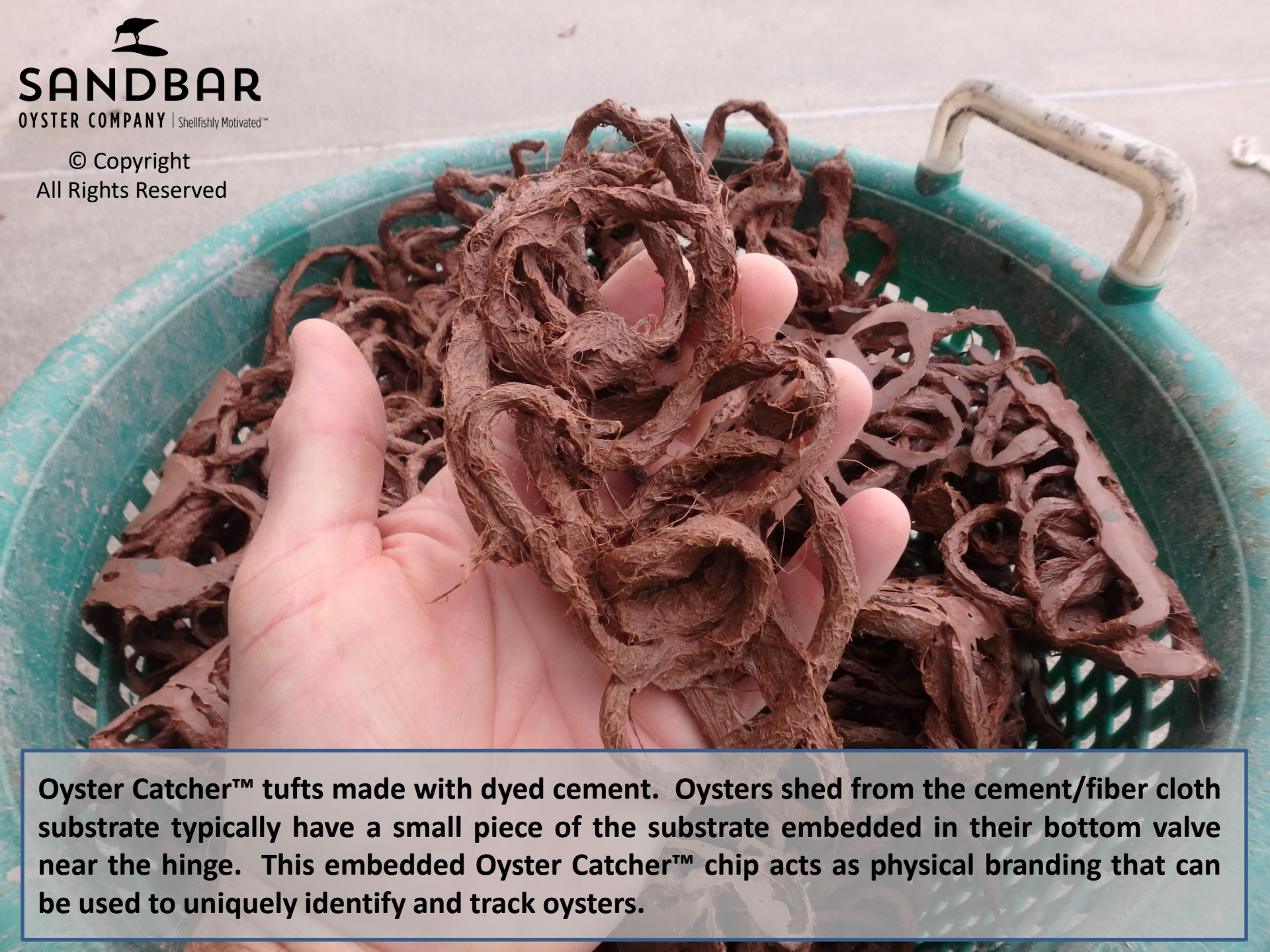
SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

Bushel basket of Oyster Catcher™ Tufts – an oyster shell substitute

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™



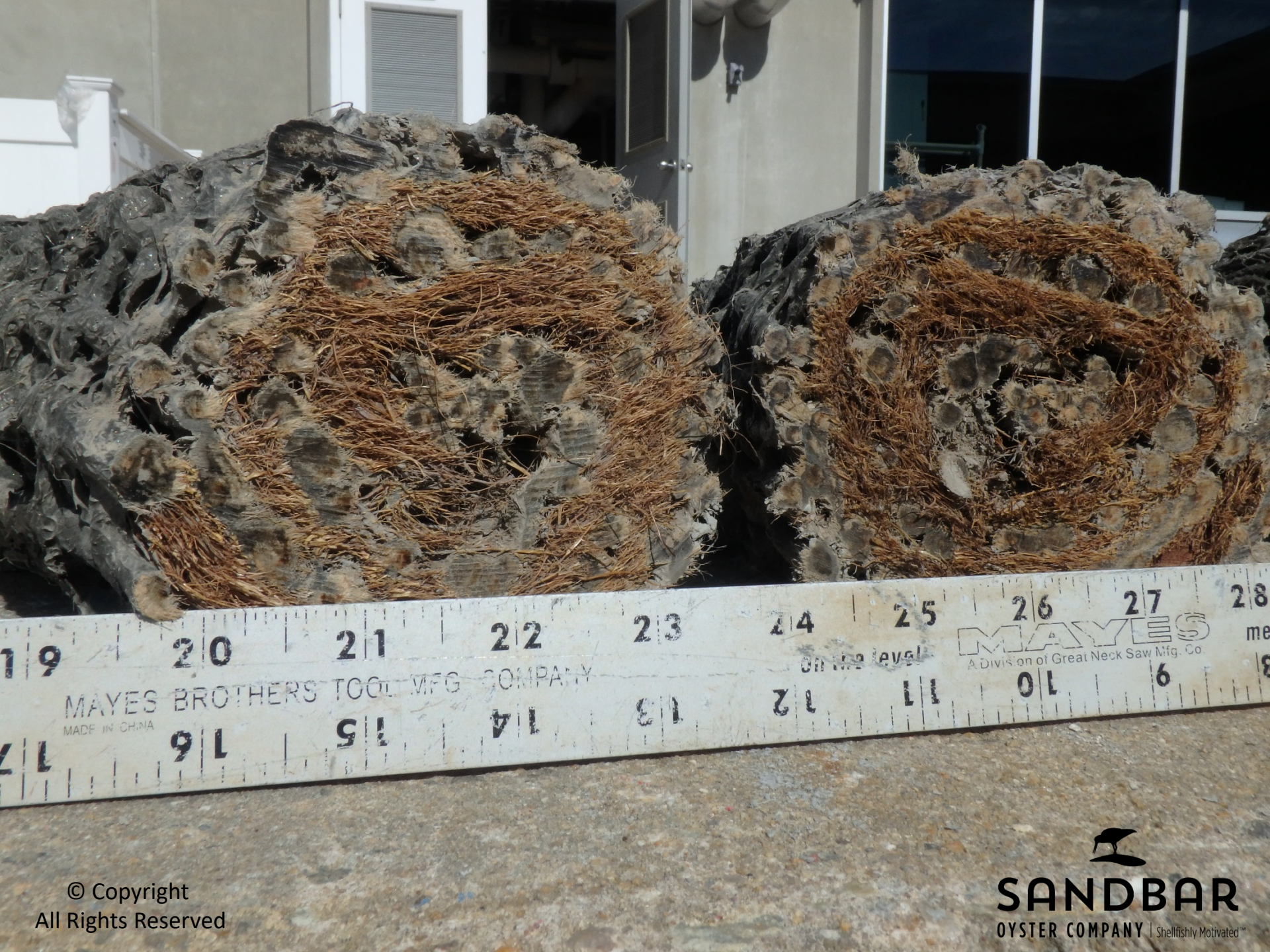
Oyster Catcher™ tufts made with dyed cement. Oysters shed from the cement/fiber cloth substrate typically have a small piece of the substrate embedded in their bottom valve near the hinge. This embedded Oyster Catcher™ chip acts as physical branding that can be used to uniquely identify and track oysters.

Oysters growing free on bottom on Sandbar Oyster Company's intertidal shellfish lease in the Newport River, North Carolina, a high energy site tamed with Oyster Catcher™ reefs.

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

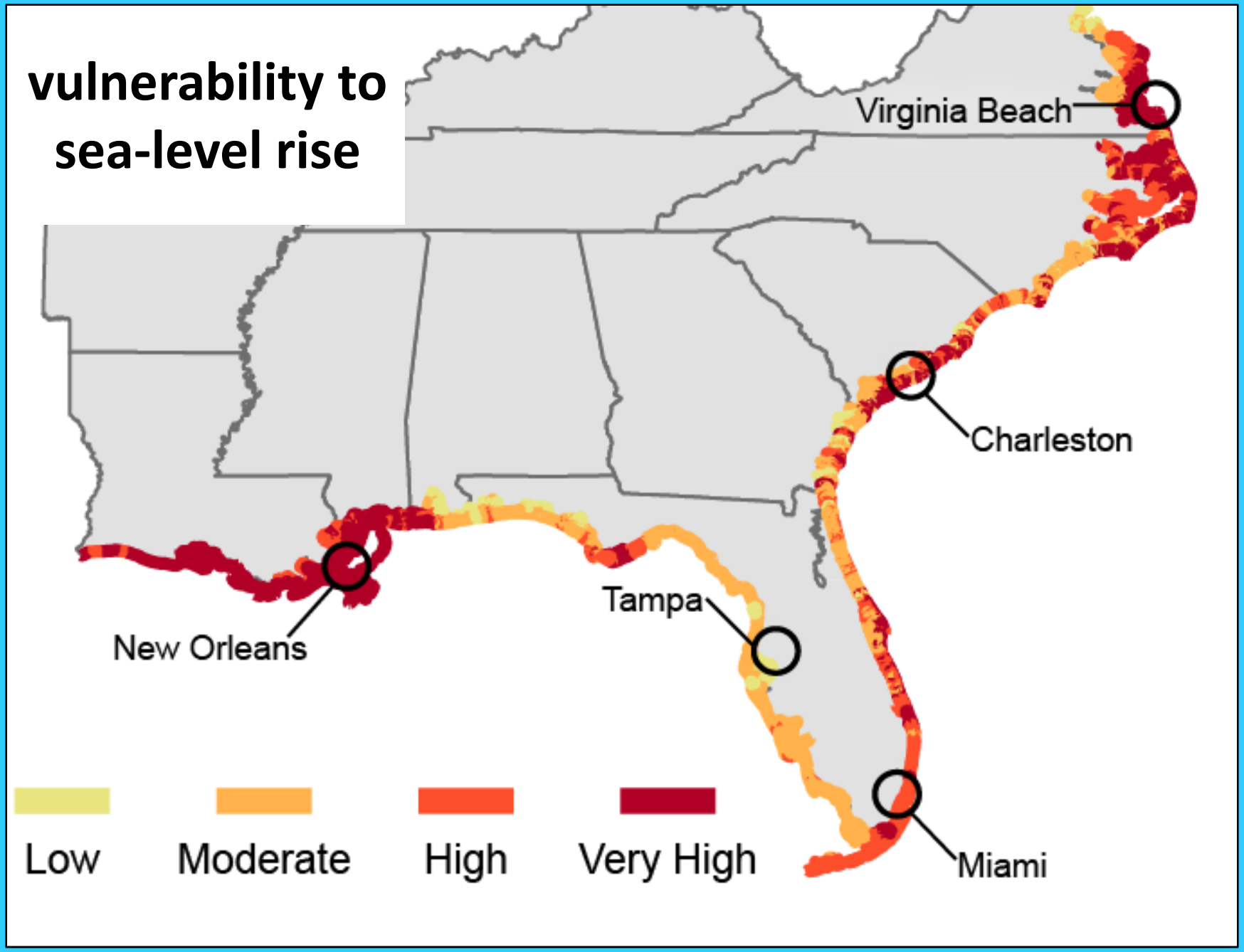
SANDBAR
OYSTER COMPANY | Shellfishly Motivated™



SANDBAR
OYSTER COMPANY | Shellfishly Motivated™


SANDBAR
OYSTER COMPANY | Shellfishly Motivated™

SANDBAR
OYSTER COMPANY | Shellfishly Motivated™


vulnerability to sea-level rise
Virginia Beach
Charleston
Tampa
New Orleans
Miami
Low
Moderate
High
Very High


SANDBAR
OYSTER COMPANY | Shellfishly Motivated™