Marine Resource Plan for Hernando County

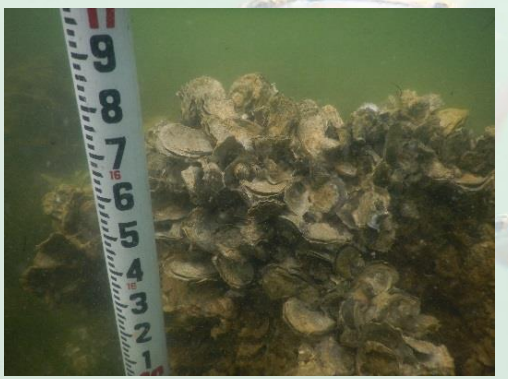
Keith Kolasa

Marine Resource Program

1. **Marine Resource Strategic Plan**
   - **Science based project planning**
   - **Identifies data gaps and monitoring needs**
   - **Promotes research partnerships**
   - **Identifies resource protection strategies**

2. **Coastal Habitat Enhancement**
   - **Oyster Reefs**
   - **Living Shorelines**
   - **Salt Marsh Nursery / Aquaculture Feasibility**

3. **Expand Offshore and Nearshore Artificial Reefs**



Marine Resource Program

4. Filing Data Gaps / Research Needs

Mapping and Characterization

- **Hard bottom / Seagrass**
- **Oyster habitat**

Community Structure

- **Sea turtle population assessments**
- **Benthic flora and fauna surveys**
- **Fisheries populations**
- **Coral abundance and distribution**

Monitoring / Research

- **Coral health monitoring**
- **Water quality**
- **Seagrass health**
- **Economic benefit studies**

Marine Resource Program

5. **Enhancing Recreation and Gulf Access**
   - **Boat ramps, parking, and amenities**
   - **Channel maintenance**
   - **Kayak / Paddling trails**

6. **Education / Promoting Awareness**
   - **Coastal and marine ecology**
   - **Economic value of our marine resource**
   - **Scallop harvest**
   - **Resource regulations**
   - **Red tide**

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Sea Grant

Research Partnerships

UF/IFAS, Nature Coast Biological Station,
FIO / FLRACEP
FDEP, FFWC, and SWFWMD

Education Outreach Partnerships

Florida Sea Grant
Public and Private Schools
Scubanauts International
Boy Scouts

Community Involvement

Coastal Residents and Businesses
Fishing Clubs, Environmental Nonprofits
Hernando County Port Authority
Hernando County Board of County Commissioners

A Strategic Marine Area Plan for Hernando County

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Samantha Sanders, J.D. Cand.

Conservation Clinic, University of Florida College of Law
Thomas T. Ankersen, Legal Skills Professor and Director,
Statewide Legal Specialist, Florida Sea Grant

Emma Pistole, M.S. Cand.

UF/IFAS Nature Coast Biological Station
Mike Allen, Professor and Director

Brittany Hall-Scharf, Extension Agent
Florida Sea Grant

Keith Kolasa
Aquatic Services Manager, Hernando County

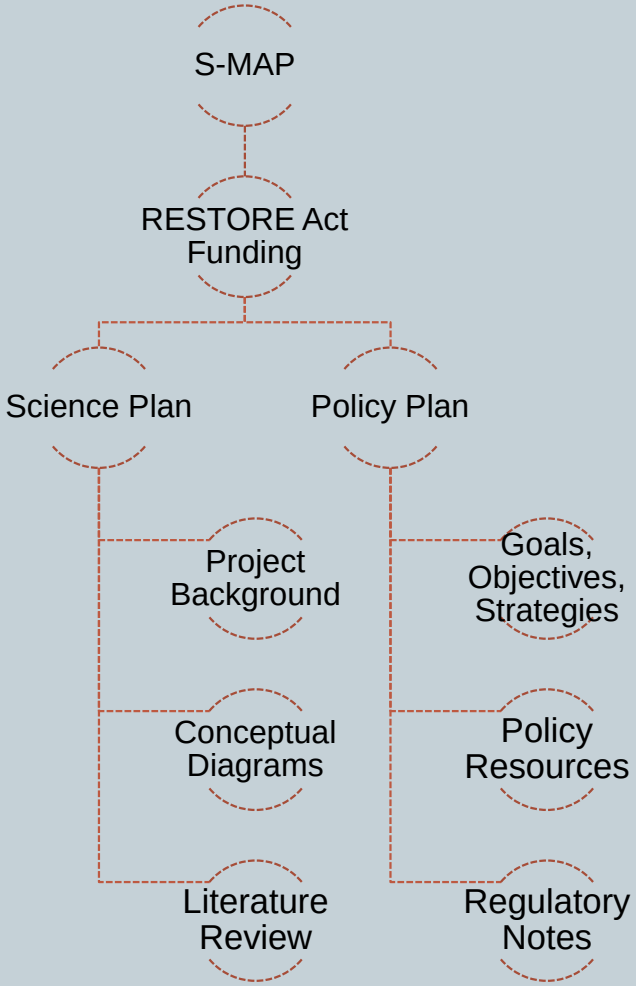
Identified Goals

- Goal 1: Shoreline stabilization
- Goal 2: Oyster reefs
- Goal 3: Artificial reefs
- Goal 4: Recreational and commercial fisheries
- Goal 5: Vessel navigation and gulf access
- Goal 6: Hard bottom habitat and seagrass

Organization and Legal Framework

- The policy plan will be framed similar to that of a comprehensive plan including:
  - Goals
  - Objectives
  - Strategies
    - *Regulatory notes*
    - *Sources of funding (RESTORE Act, ect.)*
- The science plan will be incorporated as an appendix to the policy plan and will be designed to provide scientific framework for proposed projects, including:
  - Review of relevant literature
  - Identification of available data
  - Identification of data gaps
  - Proposed future research
  - Conceptual diagram - Research objectives/actions

Framework


S-MAP
RESTORE Act Funding
Science Plan
Policy Plan
Project Background
Conceptual Diagrams
Literature Review
Goals, Objectives, Strategies
Policy Resources
Regulatory Notes

Goal 1: Shoreline Stabilization

- **To ensure that all estuarine shoreline interfaces in Hernando County contribute to the health and resiliency of the County's coastal and estuarine ecosystems**

Photo credit: reefball.org

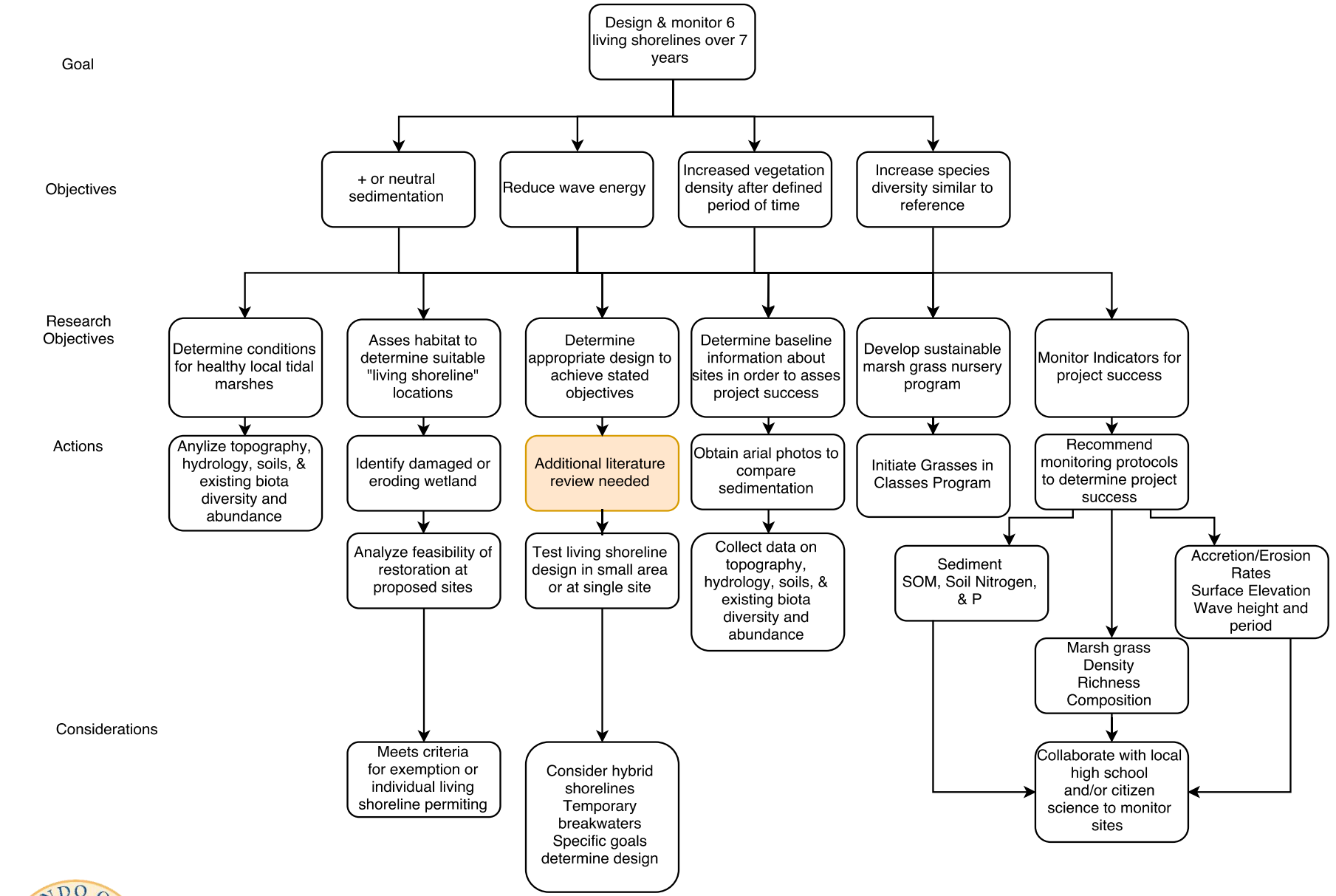
Linda Pedersen Park – Marsh Grass Planting, Hernando County

Goal 1: Shoreline Stabilization Objectives

- **Goal: To ensure that all estuarine shoreline interfaces in Hernando County contribute to the health and resiliency of the County's coastal and estuarine ecosystems**
  - Objective 1.1: Promote the use of "living shorelines" as the preferred method of shoreline stabilization
  - Objective 1.2: Promote the use of "oyster gardens" by waterfront homeowners who have suitable habitats and available waterfront infrastructure
  - Objective 1.3 : Explore the potential for "living seawalls" to serve as a method for enhancing the ability of existing hardened shorelines to provide ecological benefits and to promote coastal resiliency.
  - Objective 1.4: Develop incentives to encourage riparian landowners to install living shorelines, oyster gardens, living seawalls and other shoreline-friendly techniques
  - Objective 1.5 : Promote community involvement and K-12 education related to shoreline management

Goal 1: Shoreline Stabilization Policy Plan

- **Goal: To ensure that all estuarine shoreline interfaces in Hernando County contribute to the health and resiliency of the County's coastal and estuarine ecosystems**
  - Objective 1.1 : Promote the use of "living shorelines" as the preferred method of shoreline stabilization
    - Stategy 1.1.1 : Inventory the linear extent of all private residential and commercial shoreline parcels and publicly owned shoreline parcels to identify those parcels that can take full advantage of regulatory streamlining for Living Shorelines
    - Strategy 1.1.2: Based on the inventory in Policy 1 above, identify those parcels whose biophysical characteristics that make them suitable for living shorelines
    - Strategy 1.1.3: For those parcels that exhibit features suitable for living shorelines develop an outreach/stakeholder engagement program and permitting/regulatory strategy to maximize their use
    - Strategy 1.1.4: Develop a living shoreline monitoring program that tracks the success of living shorelines over time



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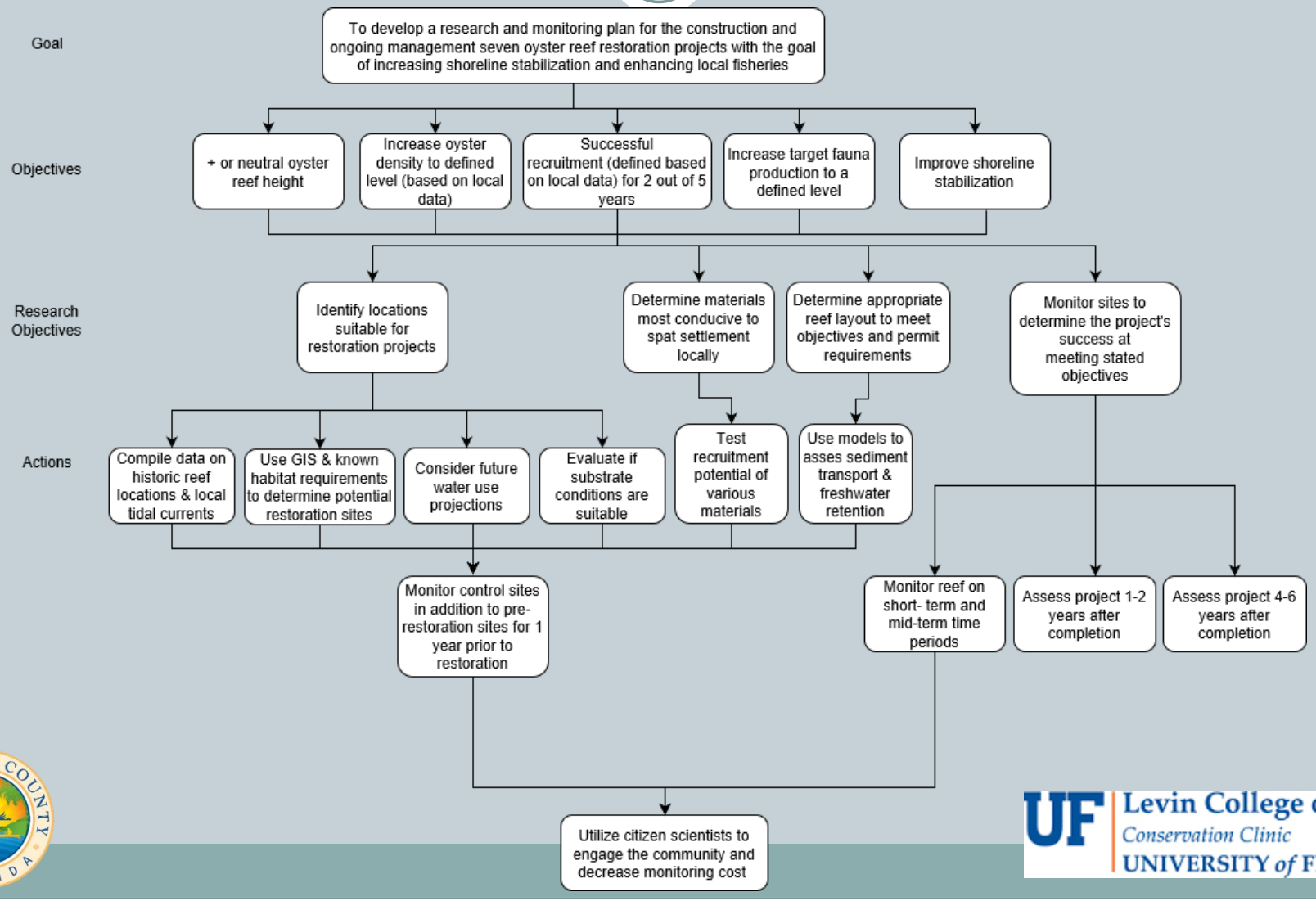
Goal 2: Oyster Reef Restoration

- **To establish/reestablish a robust system of oyster reefs that contributes to estuarine health and coastal resiliency**
  - **Suitable habitat inventory**
  - **Design and construct oyster reef**
  - **Monitor**

Oyster Reef Research Map



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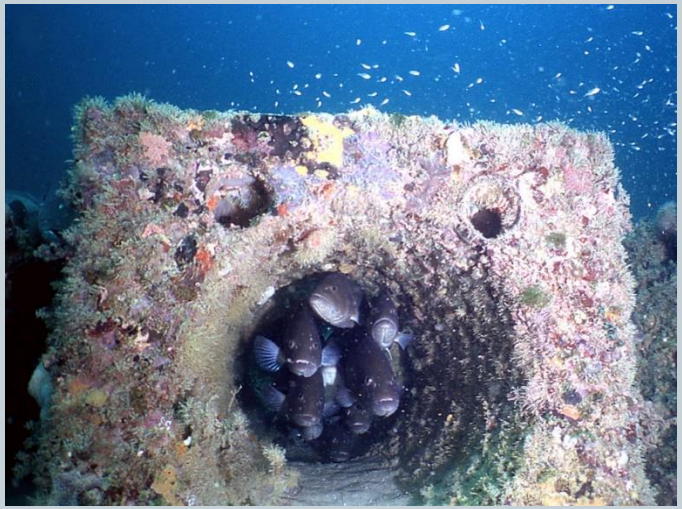
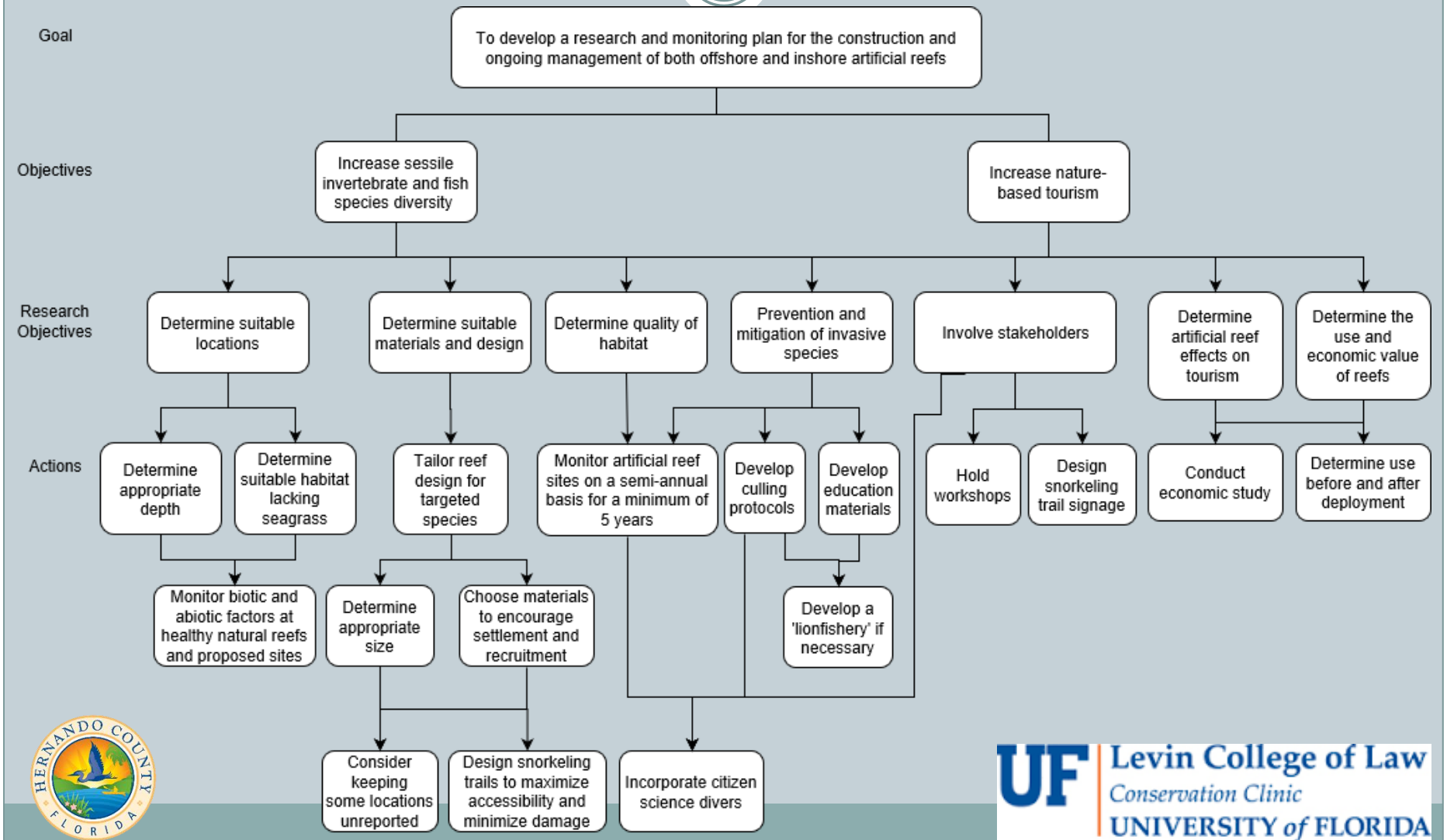
Goal 3: Artificial Reefs

- **To enhance Hernando County's recreational fishery by maximizing available structure for recreationally important fish species at all life history stages through artificial reef deployment.**
  - Identify gaps in habitat structure
  - Snorkeling trails
  - Biological monitoring of fish and invertebrates



Artificial Reef Research Map



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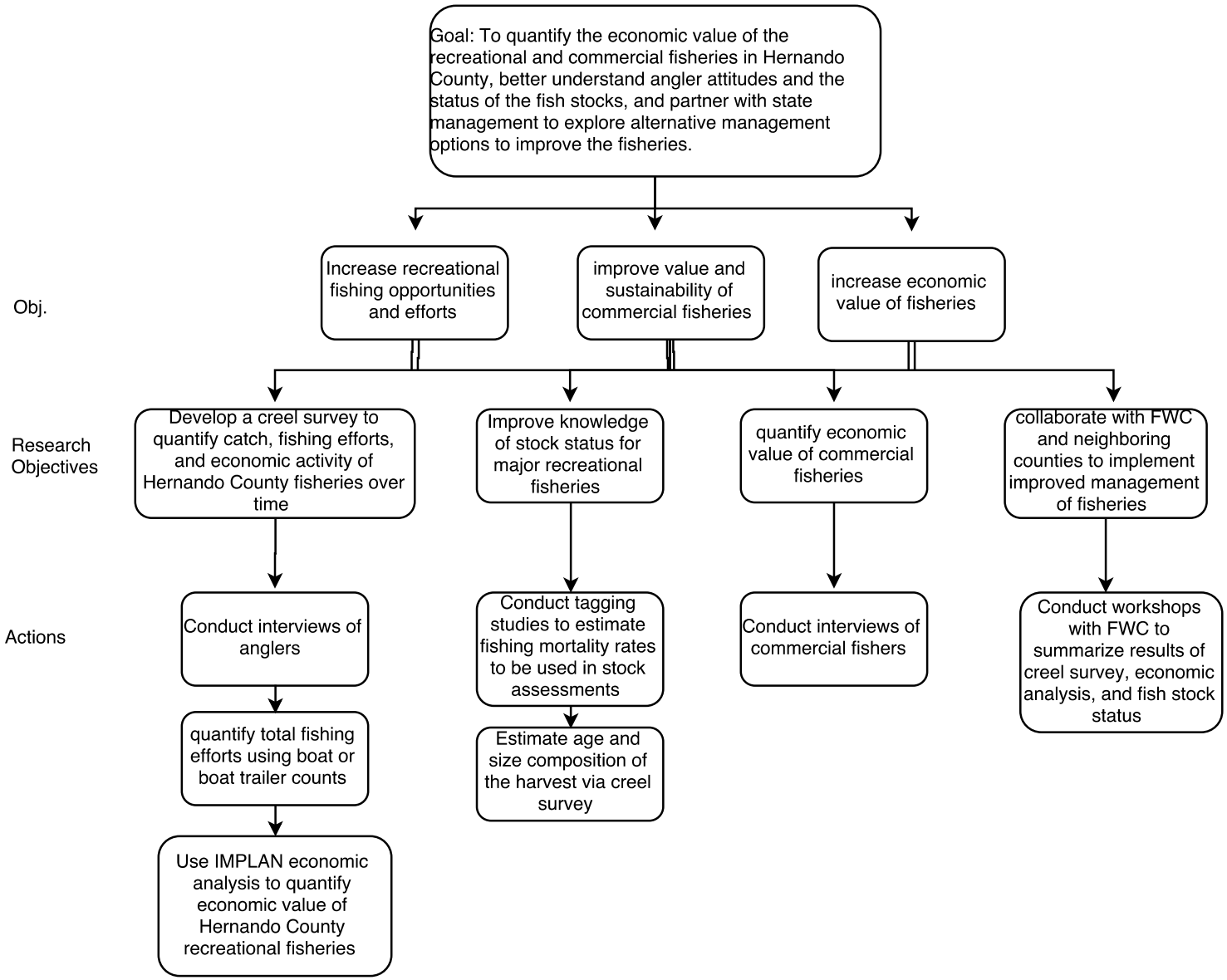
Goal 4: Recreation and Commercial Fisheries

- **To maintain a robust and economically and ecologically sustainable commercial fishery**



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Goal 5: Vessel Navigation and Gulf Access

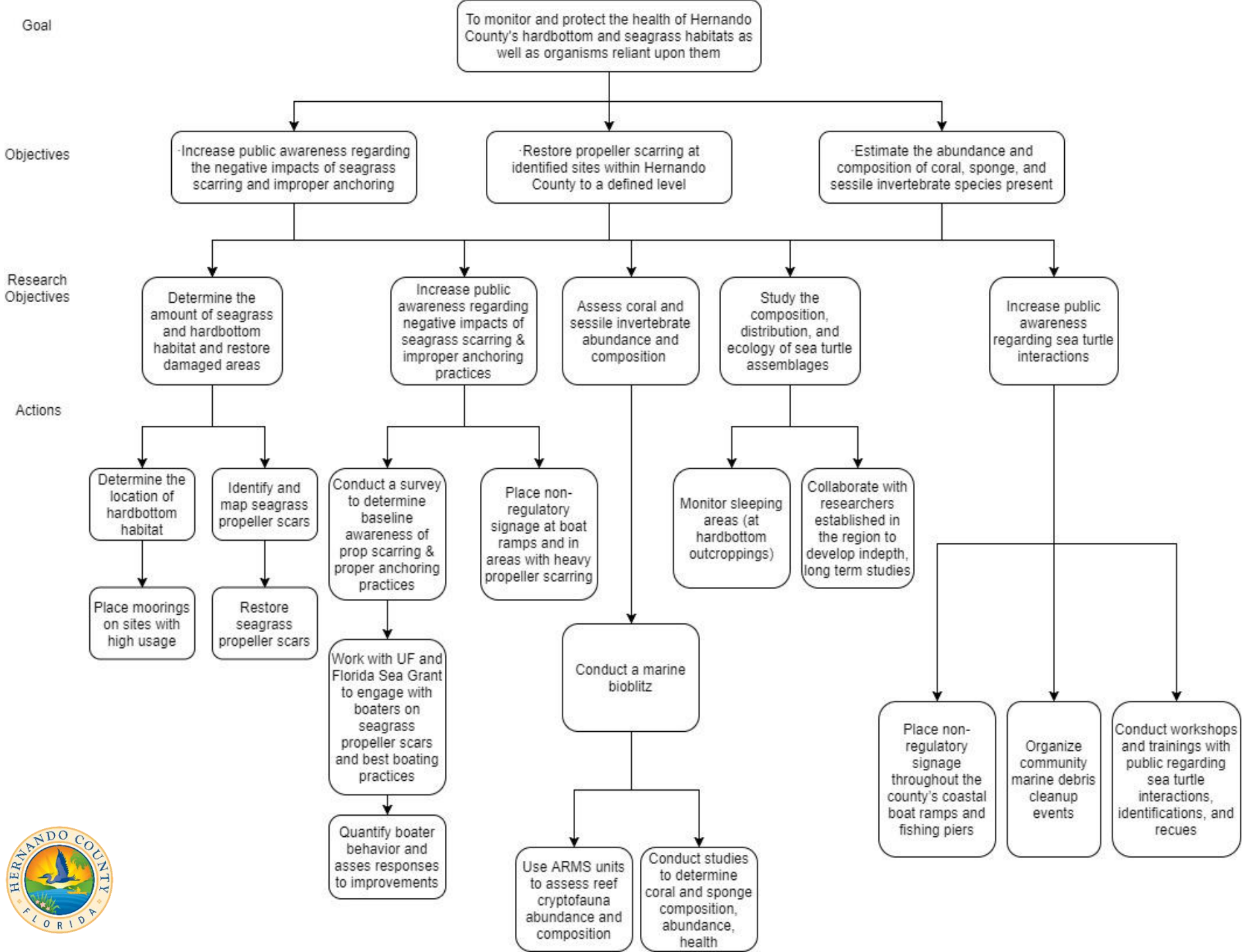
- **To maintain and improve vessel navigation in and through the waters of Hernando County, including the beneficial use of dredge spoil for restoration and enhancement.**
  - Channel and boat ramp improvements, parking, and amenities, improvements to coastal parks, Seagrass Signage

Photo Credit: IFAS Communications

Goal 6: Hard Bottom Habitat and Seagrass

- **To ensure the ecological integrity of Hernando County's unique assemblage of hard bottom habitats and interspersed sea grass beds.**
  - Hard bottom community characterization
  - Assess coral abundance and distribution
  - Complete sea turtle population assessment

Photo Credits: Keith Kolasa


Goal
To monitor and protect the health of Hernando County's hardbottom and seagrass habitats as well as organisms reliant upon them
Objectives
·Increase public awareness regarding the negative impacts of seagrass scarring and improper anchoring
·Restore propeller scarring at identified sites within Hernando County to a defined level
·Estimate the abundance and composition of coral, sponge, and sessile invertebrate species present
Research Objectives
Determine the amount of seagrass and hardbottom habitat and restore damaged areas
Increase public awareness regarding negative impacts of seagrass scarring & improper anchoring practices
Assess coral and sessile invertebrate abundance and composition
Study the composition, distribution, and ecology of sea turtle assemblages
Increase public awareness regarding sea turtle interactions
Actions
Determine the location of hardbottom habitat
Identify and map seagrass propeller scars
Conduct a survey to determine baseline awareness of prop scarring & proper anchoring practices
Place non-regulatory signage at boat ramps and in areas with heavy propeller scarring
Monitor sleeping areas (at hardbottom outcroppings)
Collaborate with researchers established in the region to develop indepth, long term studies
Place moorings on sites with high usage
Restore seagrass propeller scars
Work with UF and Florida Sea Grant to engage with boaters on seagrass propeller scars and best boating practices
Conduct a marine bioblitz
Quantify boater behavior and asses responses to improvements
Use ARMS units to assess reef cryptofauna abundance and composition
Conduct studies to determine coral and sponge composition, abundance, health
Place non-regulatory signage throughout the county's coastal boat ramps and fishing piers
Organize community marine debris cleanup events
Conduct workshops and trainings with public regarding sea turtle interactions, identifications, and recues
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FLORIDA PLANNING

American Planning Association Florida Chapter
Making Great Communities Happen

A Publication of the Florida Chapter of the American Planning Association

www.floridaplanning.org

Summer 2018

Hernando County First in Florida to Bring

ENTIRE COASTAL ZONE

into Comprehensive Plan

By Dorothy Zimmerman

With technical support from Florida Sea Grant, Hernando County has become Florida's first county to add a long-term management strategy for its entire marine and coastal zone to the county's comprehensive plan.

"To my knowledge this is the most comprehensive and explicit treatment of marine resources in a local government comprehensive plan in Florida," said Tom Ankersen, Florida Sea Grant's legal specialist who led the initiative.

Typically in Florida, a county's comprehensive plan provides long-range guidance on dry land or shoreline issues to keep growth and development in balance among competing interests, Ankersen said. Management of marine submerged lands has not been factored into the planning equation.

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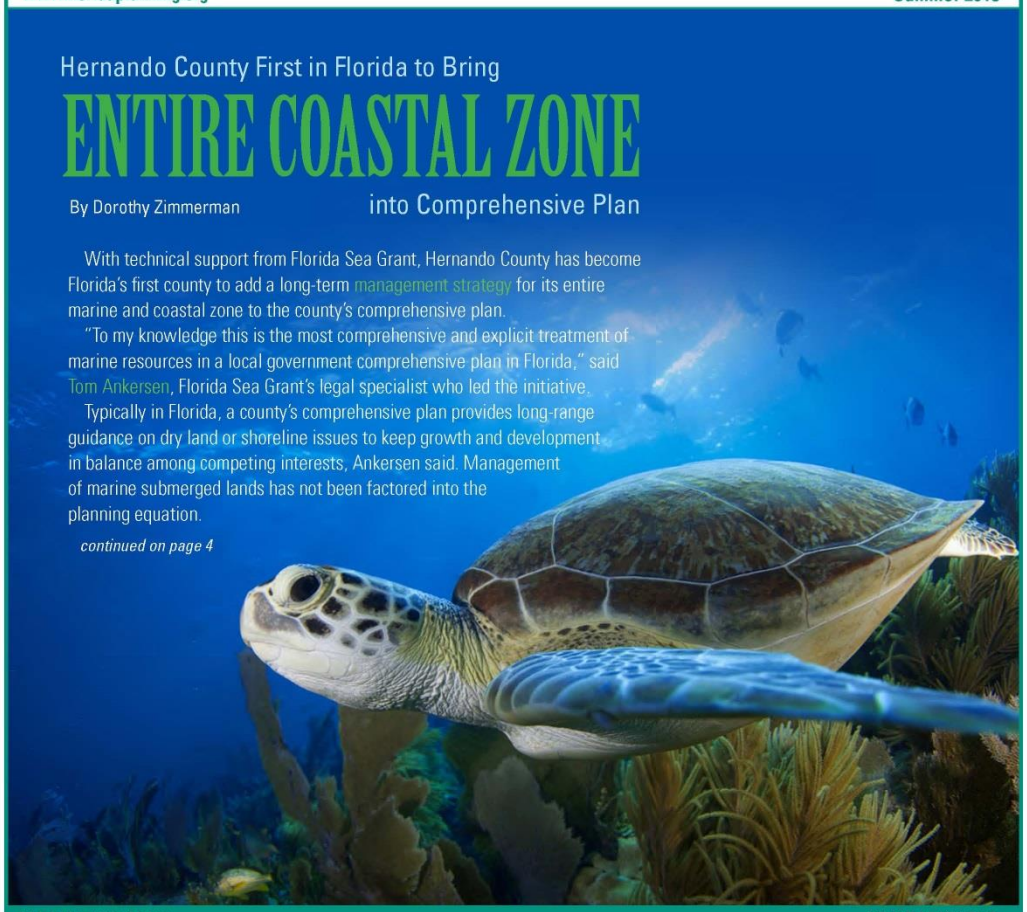

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The Florida Chapter of APA provides statewide leadership in the development of sustainable communities by advocating excellence in planning, providing professional development for its members, and working to protect and enhance the natural and built environments.

GULF CONSORTIUM

State of Florida

STATE EXPENDITURE PLAN

Submitted Pursuant to
the Spill Impact Component
of the RESTORE Act

33 U.S.C. § 1321(t)(3)

Prepared by the Gulf Consortium
for the State of Florida

Hernando County – Proposed Project Budgets – RESTORE Funds (Pot 3)

Project	Total Cost	Pot 3 Request	Other Potential Funding Sources
Marine and Coastal Habitat Enhancement	**$3.1 M**	**$3.1 M**	*FIO – Centers of Excellence *NFWF *NRDA FDEP Coastal Initiative SWFWMD
Waterway/Gulf Access	**$4.56 M**	**$4.56 M**	FDEP Trail Grants Florida Boating Improvement
Water Quality	**$5.0 M**	**$5.0 M**	FDEP, SWFWMD

*FIO – Florida Institute of Oceanography
*NFWF – National Fish and Wildlife Foundation
*NRDA – Natural Resource Damage Assessment

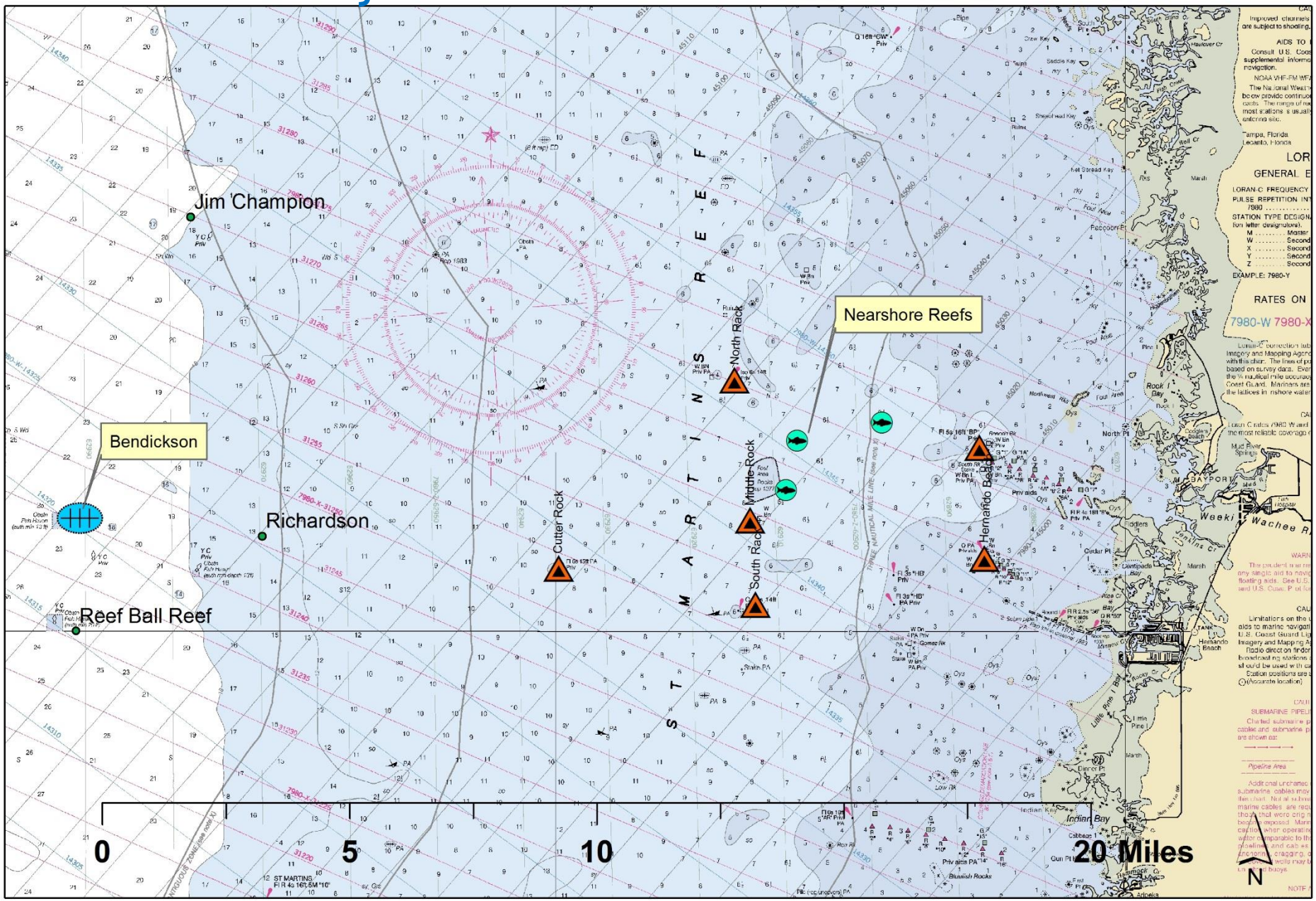
Hernando County - Pot 3 Project Budgets

Project	Cost
Artificial Reef Program	$ 2,350,000
Oyster Reefs and Living Shorelines	$ 750,000
Boat Ramp and Coastal Park Amenities	$ 1,165,000
Channel Improvements - Hernando Beach, Pine Island, Weeki Wachee Canals	$ 3,135,000
Paddling Trails	$ 260,000
Water Quality – Calienta Street	$ 2,400,000
Septic to Sewer	$ 2,600,000
TOTAL	$12,660,000

Project Budget Summary

Project	Cost
Artificial Reef Program	$ **2,350,000**
Feasibility, Design, Permitting	$ 200,000
Baseline Data	$ 450,000
Deployments	$ 1,350,000
Success Monitoring	$ 350,000
Oyster Reefs and Living Shorelines	**$ 750,000**
Feasibility, Design, Permitting	$ 150,000
Deployments	$ 440,000
Success Monitoring	$ 160,000
TOTAL	**$ 3,100,000**

Hernando County Artificial Reefs



Bendickson Reef Expansion

Bendickson 1995

Bendickson 2016

Bendickson Reef Expansion
600 tons deployed - August 2017

Bendickson Reef Expansion
600 tons deployed - August 2017

Bendickson Reef Expansion

Bendickson Army Tank Reef Expansion

ACOE Permit Boundary Coordinates

NW 28 31.828
82 58.833
NE 28 31.828
82 58.553
SW 28 31.585
82 58.833
SE 28 31.585
82 58.553

Site 1: Approximate Area 0.5 acres (150 ft x 150 ft)

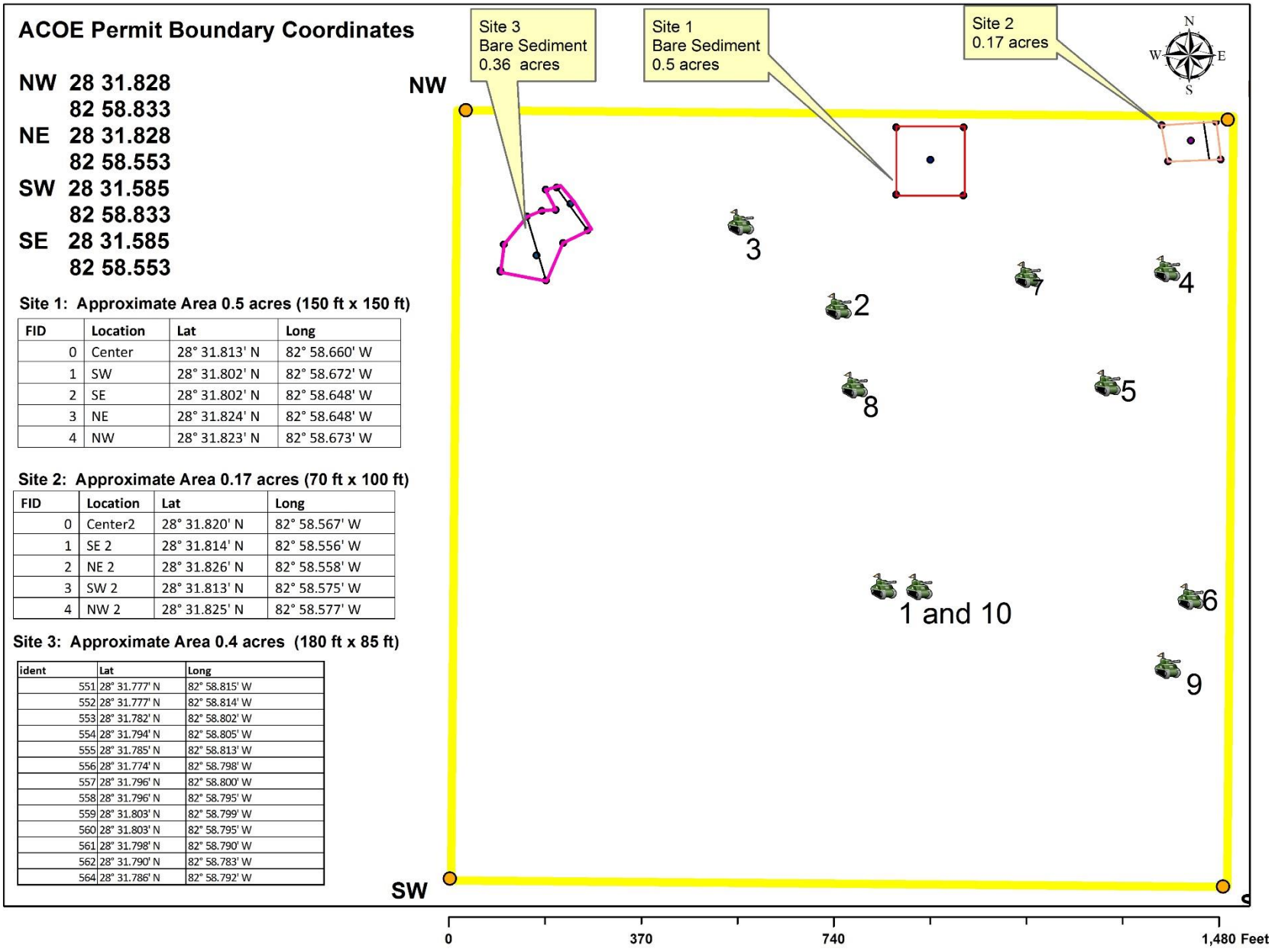
FID	Location	Lat	Long
0	Center	28° 31.813' N	82° 58.660' W
1	SW	28° 31.802' N	82° 58.672' W
2	SE	28° 31.802' N	82° 58.648' W
3	NE	28° 31.824' N	82° 58.648' W
4	NW	28° 31.823' N	82° 58.673' W

Site 2: Approximate Area 0.17 acres (70 ft x 100 ft)

FID	Location	Lat	Long
0	Center2	28° 31.820' N	82° 58.567' W
1	SE 2	28° 31.814' N	82° 58.556' W
2	NE 2	28° 31.826' N	82° 58.558' W
3	SW 2	28° 31.813' N	82° 58.575' W
4	NW 2	28° 31.825' N	82° 58.577' W

Site 3: Approximate Area 0.4 acres (180 ft x 85 ft)

ident	Lat	Long
551	28° 31.777' N	82° 58.815' W
552	28° 31.777' N	82° 58.814' W
553	28° 31.782' N	82° 58.802' W
554	28° 31.794' N	82° 58.805' W
555	28° 31.785' N	82° 58.813' W
556	28° 31.774' N	82° 58.798' W
557	28° 31.796' N	82° 58.800' W
558	28° 31.796' N	82° 58.795' W
559	28° 31.803' N	82° 58.799' W
560	28° 31.803' N	82° 58.795' W
561	28° 31.798' N	82° 58.790' W
562	28° 31.790' N	82° 58.783' W
564	28° 31.786' N	82° 58.792' W



Shallow Reef Arrays – Reef Balls

Community Outreach - Reef Ball Construction

MERCURY
MERCURY

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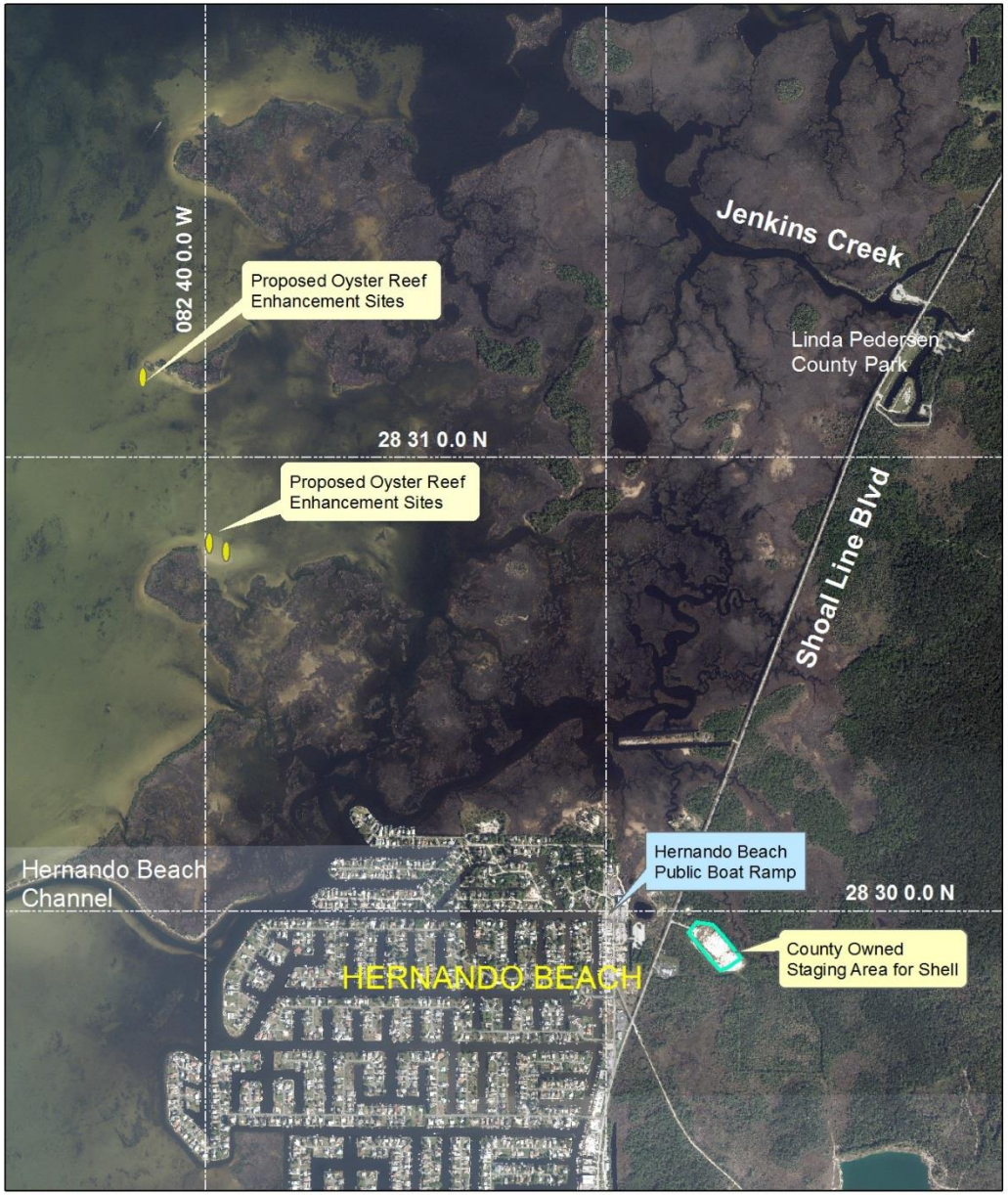
FLORIDA


082 40 0.0 W
Proposed Oyster Reef Enhancement Sites
Jenkins Creek
Linda Pedersen County Park
28 31 0.0 N
Proposed Oyster Reef Enhancement Sites
Shoal Line Blvd
Hernando Beach Channel
Hernando Beach Public Boat Ramp
28 30 0.0 N
County Owned Staging Area for Shell
HERNANDO BEACH
0
0.25
0.5
1 Miles
N

Centipede Bay April 14, 2018

Sea Grant

HERNANDO COUNTY FLORIDA

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Shoreline Stabilization
Marsh Grass Planting at Linda Pedersen Park

May 2018

Sea Grant

HERNANDO COUNTY FLORIDA

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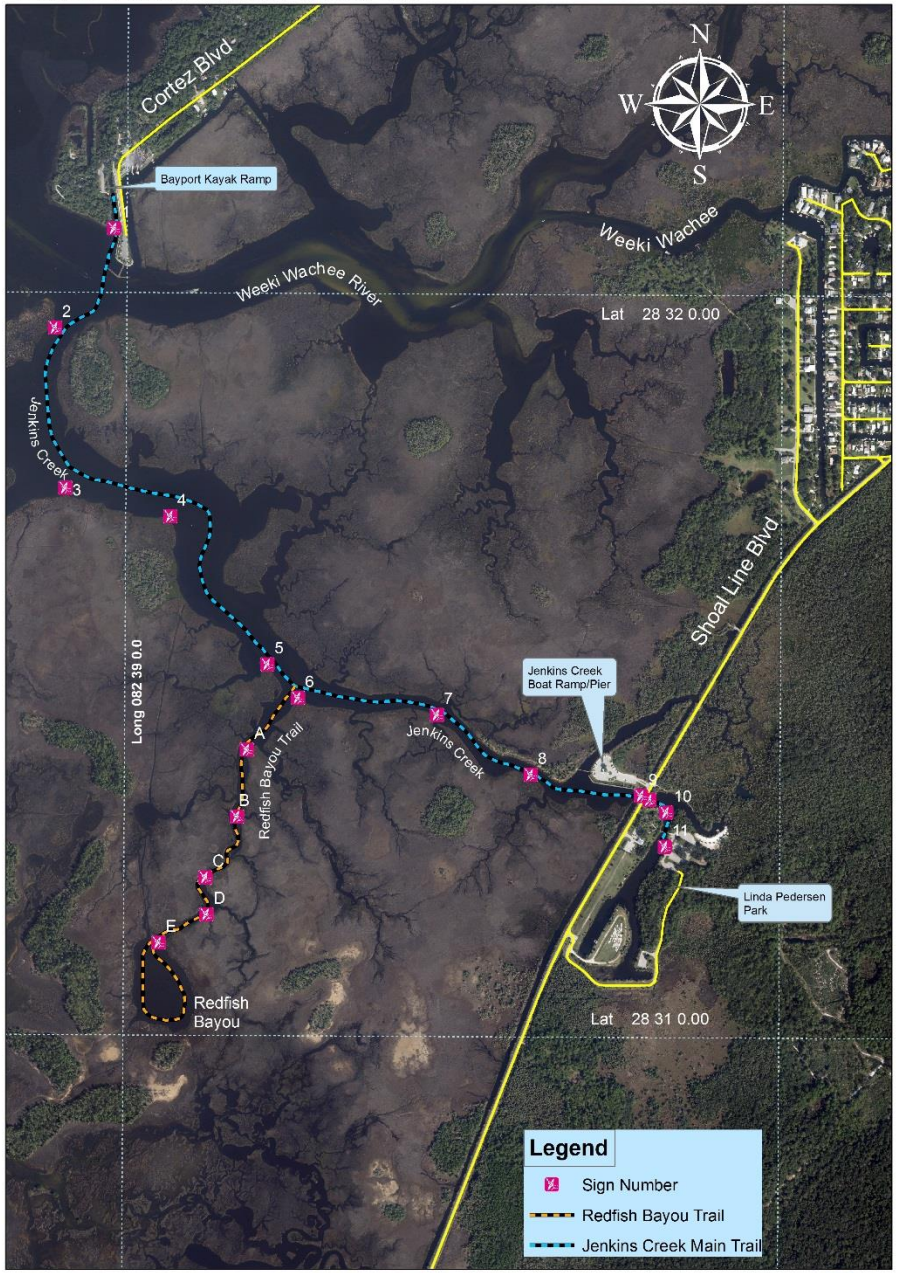
Coastal Paddling Trail

Bayport - Linda Pedersen Paddling Trail



0 0.15 0.3 0.6 Miles

Bayport to Linda Pedersen Trail (1.7 miles, 3.4 round trip), with Redfish Bayou Trail (1.4 miles, 4.9 miles round trip)

N

Prepared by Aquatics Services Division, Dept of Public Works

SUMMARY

- Numerous Projects Successfully Completed Over Past Two Years
- RESTORE Funding Allocated for Many Large Scale Projects
- Exciting Opportunity to Continue to Build Hernando County's Marine Resource Program

Bendickson Reef, Hernando County

Centipede Bay, Hernando County

THANK YOU

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Phone 352-754-5884

Photo Credits: Keith Kolasa