Florida Coastal Mapping Program

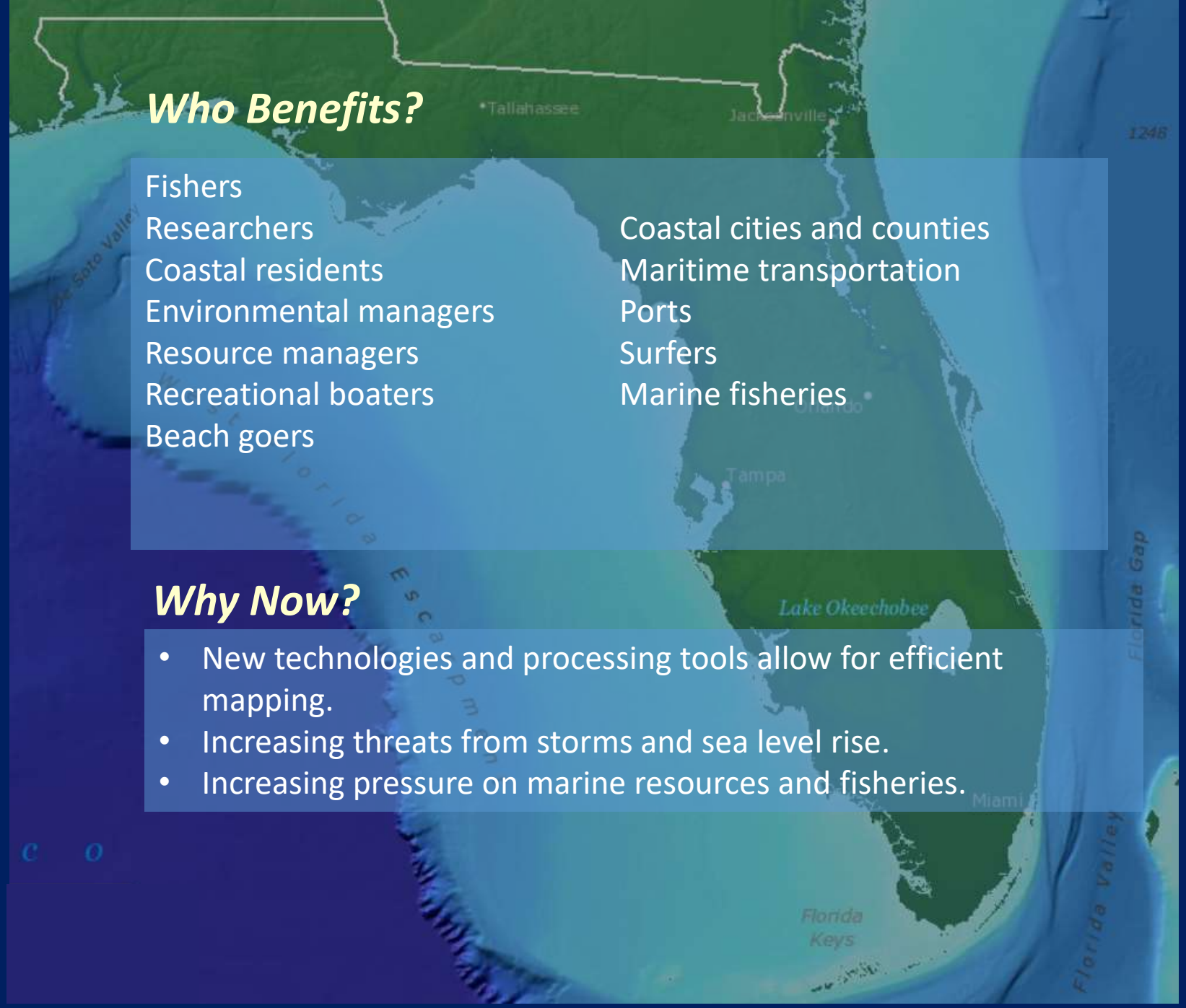
Vision

Accessible, high resolution seafloor data of Florida's coastal waters to support infrastructure, benthic habitat mapping, restoration projects, resource management, emergency response, and coastal resiliency and hazard studies for the citizens of Florida.

Mission

Coordinate across Federal and FL State agencies, and other stakeholders, to build a comprehensive understanding of the Florida coastal seafloor.

Philip Kramer, P.h D.
Director, Florida Institute of Oceanography



Who Benefits?

Fishers
Researchers
Coastal residents
Environmental managers
Resource managers
Recreational boaters
Beach goers
Coastal cities and counties
Maritime transportation
Ports
Surfers
Marine fisheries

Why Now?

- New technologies and processing tools allow for efficient mapping.
- Increasing threats from storms and sea level rise.
- Increasing pressure on marine resources and fisheries.

Florida Coastal Mapping Program – Organizational Chart

Technical Team

Co-chairs

- Florida Institute of Oceanography
- U.S. Geological Survey

Steering Committee

- FL Fish & Wildlife Research Institute
- FL Dept. of Environmental Protection and FL Geological Survey
- FL Dept. of Emergency Management
- National Oceanographic & Atmospheric Administration
- U.S. Army Corps of Engineers
- U.S. Bureau of Ocean Energy Management
- USF College of Marine Science
- NOVA Southeastern University
- U Miami Rosenstiel School of Marine & Atmospheric Science
- FL Atlantic University

USGS
science for a changing world

Florida Department of Environmental Protection

Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

Southeastern Regional Partnership for Planning and Sustainability

Mapping of Florida's Coastal and Marine Resources: Setting Priorities Workshop

Whitepaper

By Lisa Robbins, Steven Wolfe, and Ellen Raabe

Open-File Report 2008–1157

2008

U.S. Department of the Interior
U.S. Geological Survey

2007

- USGS, FDEP, and SRPPS Florida marine mapping workshop
  → mapping coastal resources was a top priority
    - High resolution bathymetry
    - Coastal elevation
    - Shoreline changes
    - Subsurface geology
    - Benthic habitats

- Identified lack of coordination, priorities, and a mapping plan

- Little follow-up on the workshop recommendations for improving coordination

Until Now!

USGS

Why Map Florida's Coastal Waters?

- State of Florida has one of the most valuable coastal zones in the nation (over $30 billion in revenue per year) that extends over 1,300 miles of coastline, the longest coastline in the lower 48 states.
- Florida has the greatest number of recreational boats and saltwater fishers in the US and large concentrations of people and infrastructure in the coastal zone.
- The coast is highly vulnerable to hurricanes and sea level rise impacts.
- Many areas of the Florida coast have not been mapped, or existing maps are old and of low resolution.
- New high resolution maps of the seabed are a necessary investment if Florida is going to continue to grow its Blue economy and facilitate sustainable aquaculture and alternative energy.
- New high resolution maps will dramatically increase scientific baseline characterization of coastal resources (sand availability and habitats) and processes that drive changes.

"You can't measure it, monitor it, or restore it if you don't know what "it" is"

(modified from Sam Johnson, CSMP)

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FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

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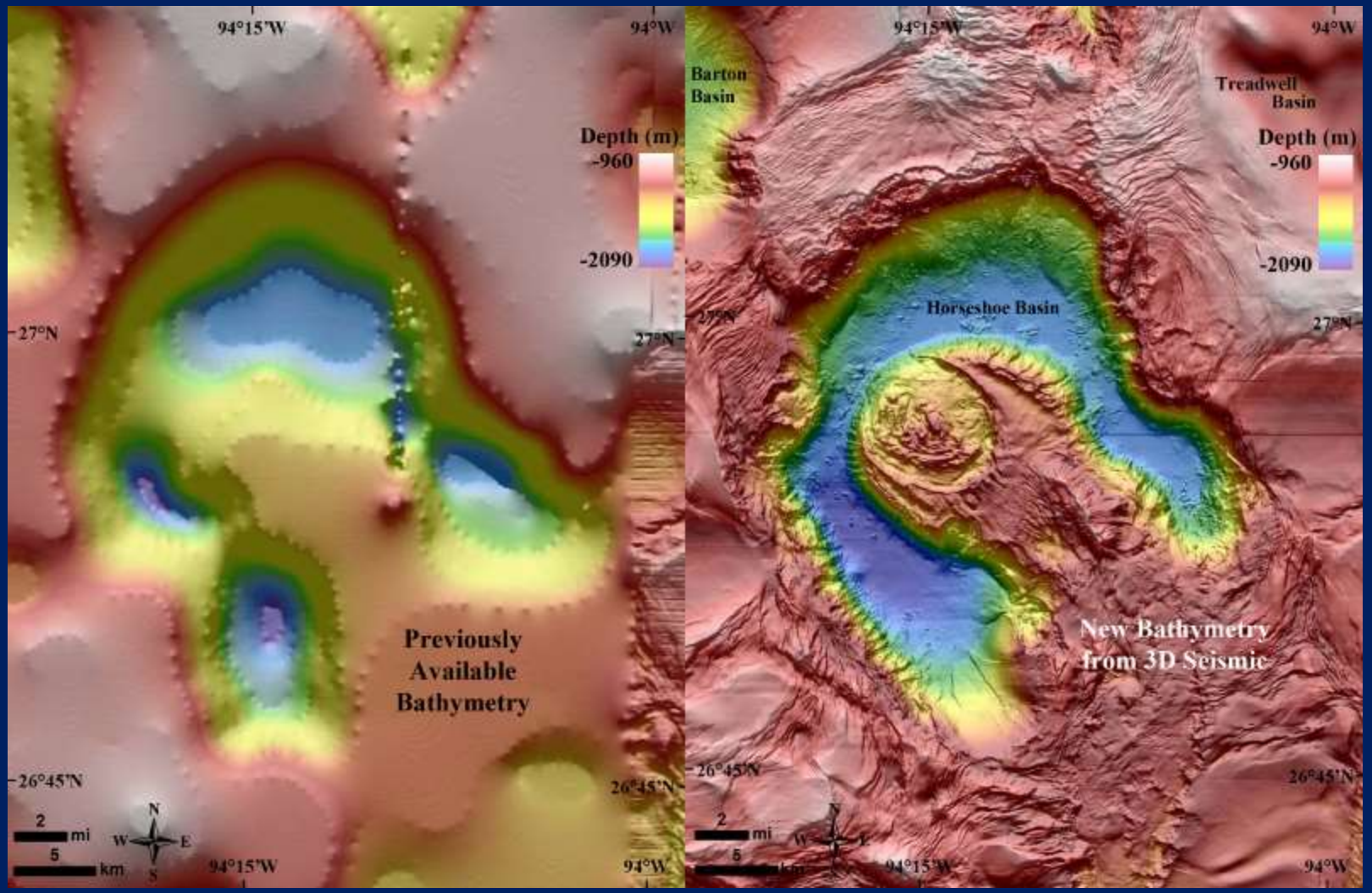
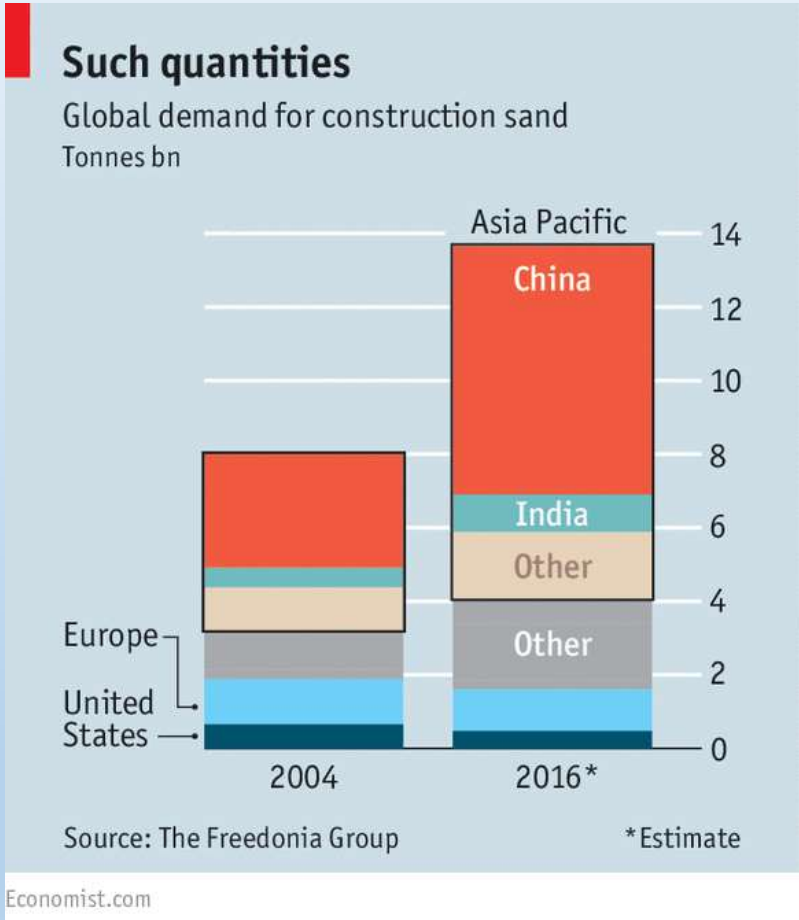
Low versus High Resolution



BOEM data; image from: https://www.smithsonianmag.com/smart-news/see-gulf-mexico-never-before-billion-pixel-map-180963459/

USGS

HRB can help inform coastal rebuilding: Identifying sand sources/mitigating impacts to extract sand for rebuilding around SLR



1920- Miami Beach and Fisher Island

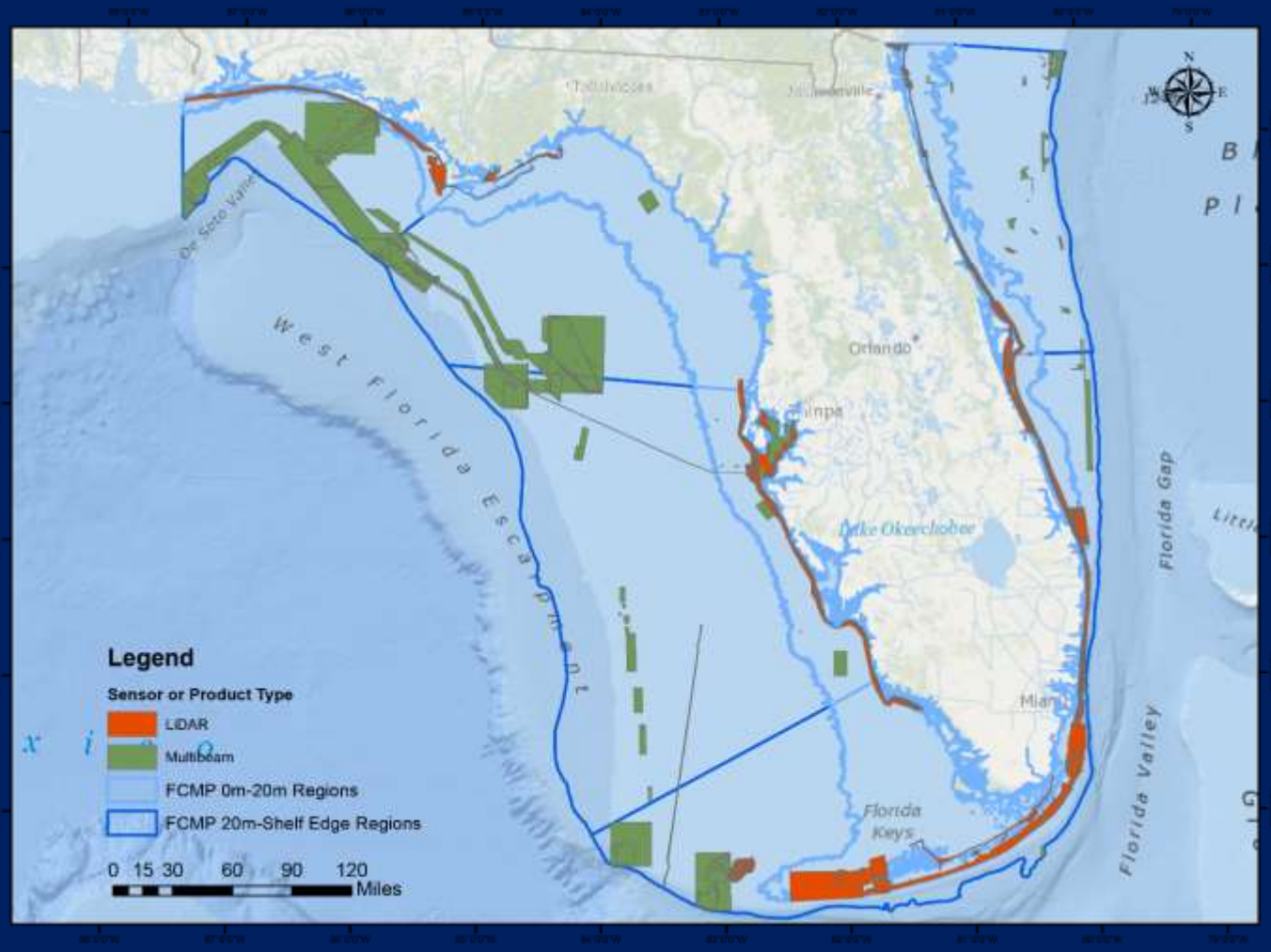
HRB can help grow Florida's Blue Economy: Renewable energy in Florida

HRB can help grow Florida’s blue economy: Aquaculture

HRB can inform tourism and increase value of diving and recreational fishing

> 3,200 artificial reefs in Florida and growing

Technical Team Data Inventory and Portal



Acoustic data:

- Multibeam bathymetry (2-200 m)
- Sub-bottom Chirp (0-200 m)
- Side Scan Sonar (0-200m)
- Seismic Profiling (boomer)

Optical data:

- Bathymetric Lidar (seafloor bathymetry to 10m)
- Coastal Lidar (coastal elevation and very shallow water bathymetry)

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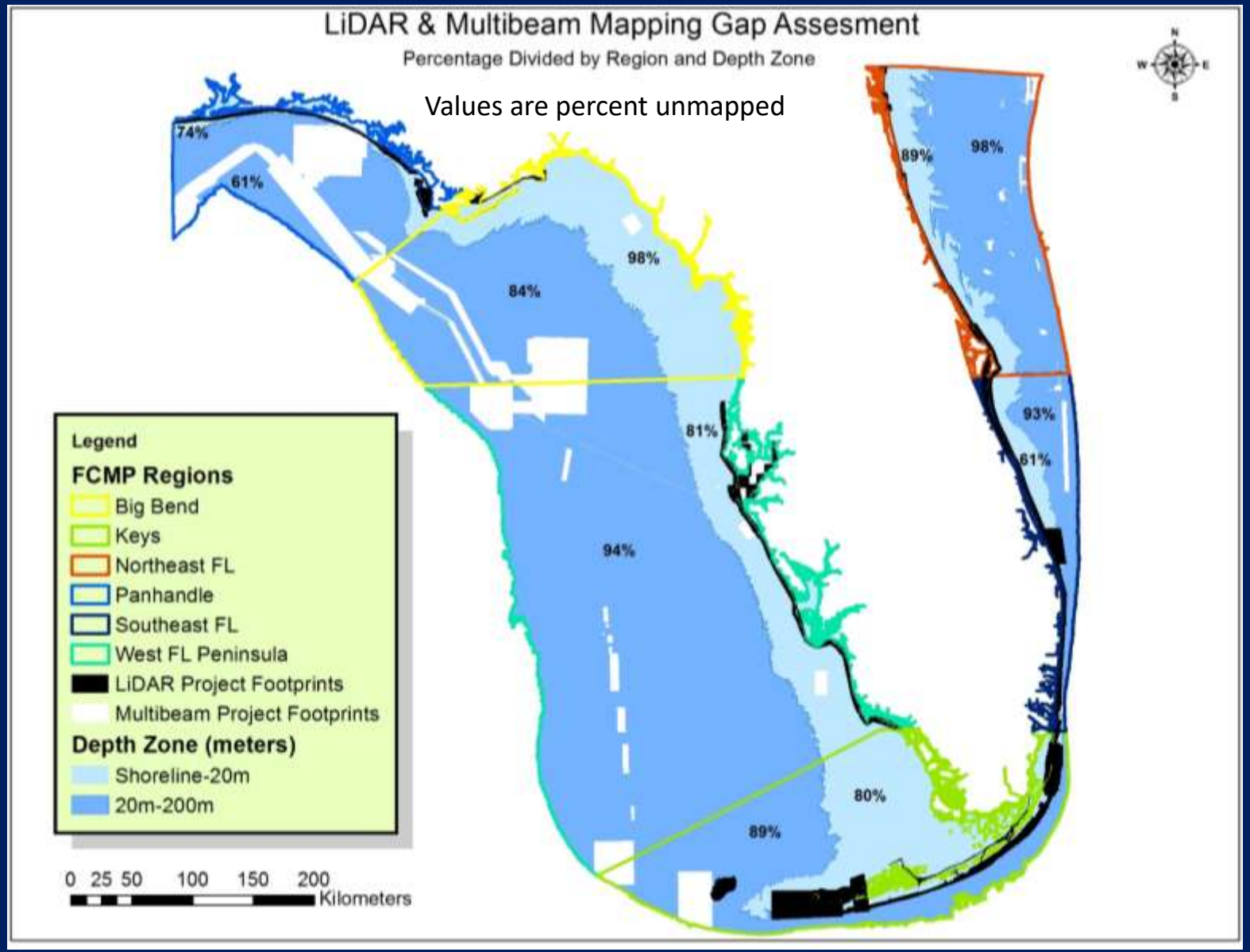
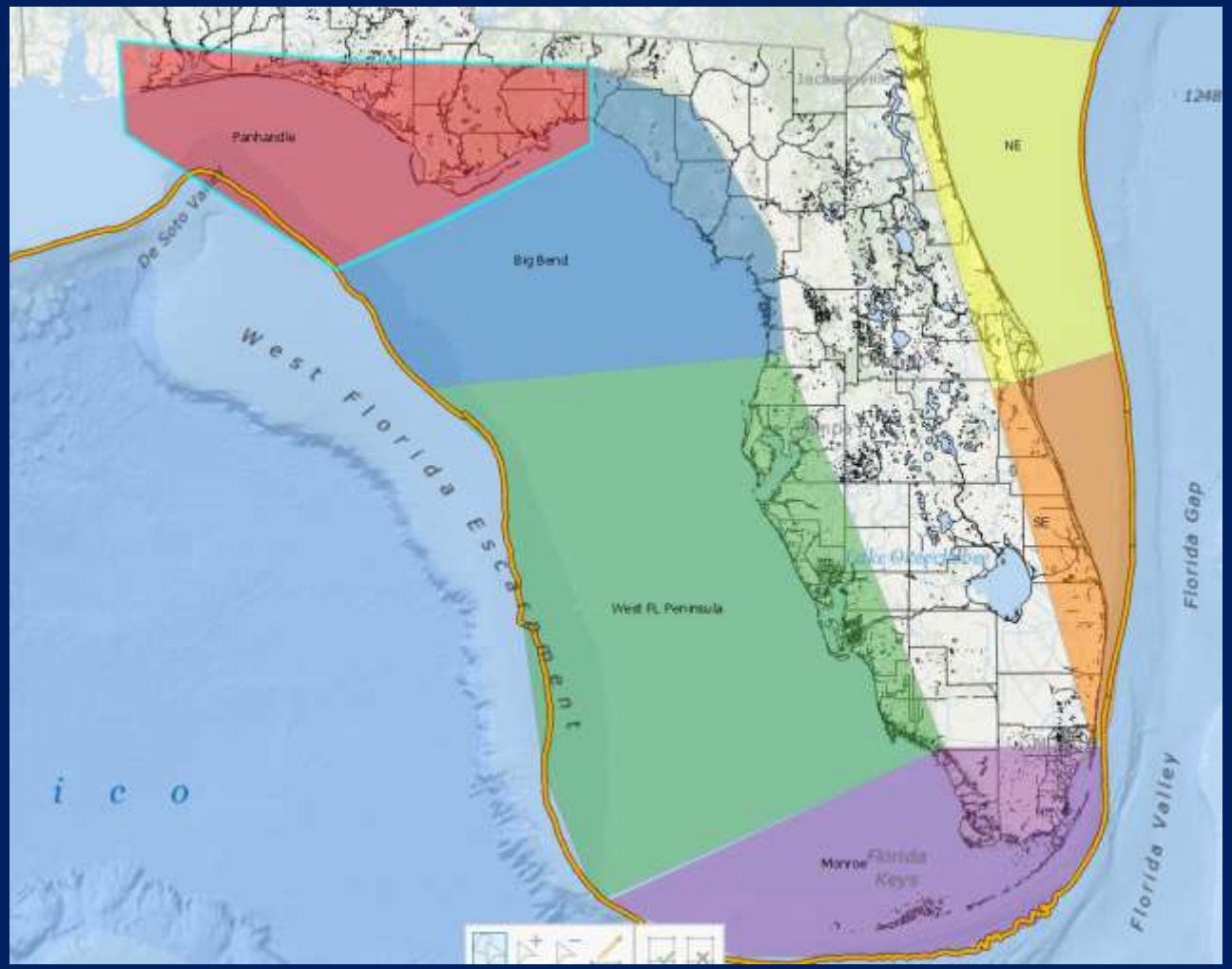


Region	Percent mapped (nearshore)	Percent mapped (shelf)
Panhandle	43	39
Big Bend	3	16
West Peninsula	28	6
Keys	27	19
Southeast	84	20
Northeast	61	4



6 Regions Prioritization

- Panhandle
- Big Bend
- West FL Peninsula
- FL Keys
- SE Coast
- NE Coast

Florida Coastal Mapping Program
Regional Prioritization Workshops
2018-19

Big Bend Workshop (Cedar Key)- September 6, 2018-

West Florida Workshop (St. Pete)- December 4, 2018

SE Florida /Keys Workshop (Ft Lauderdale)- March, 2019

NE Florida Workshop (Jacksonville)- April, 2019

Panhandle Workshop (Pensacola)- May/June, 2019

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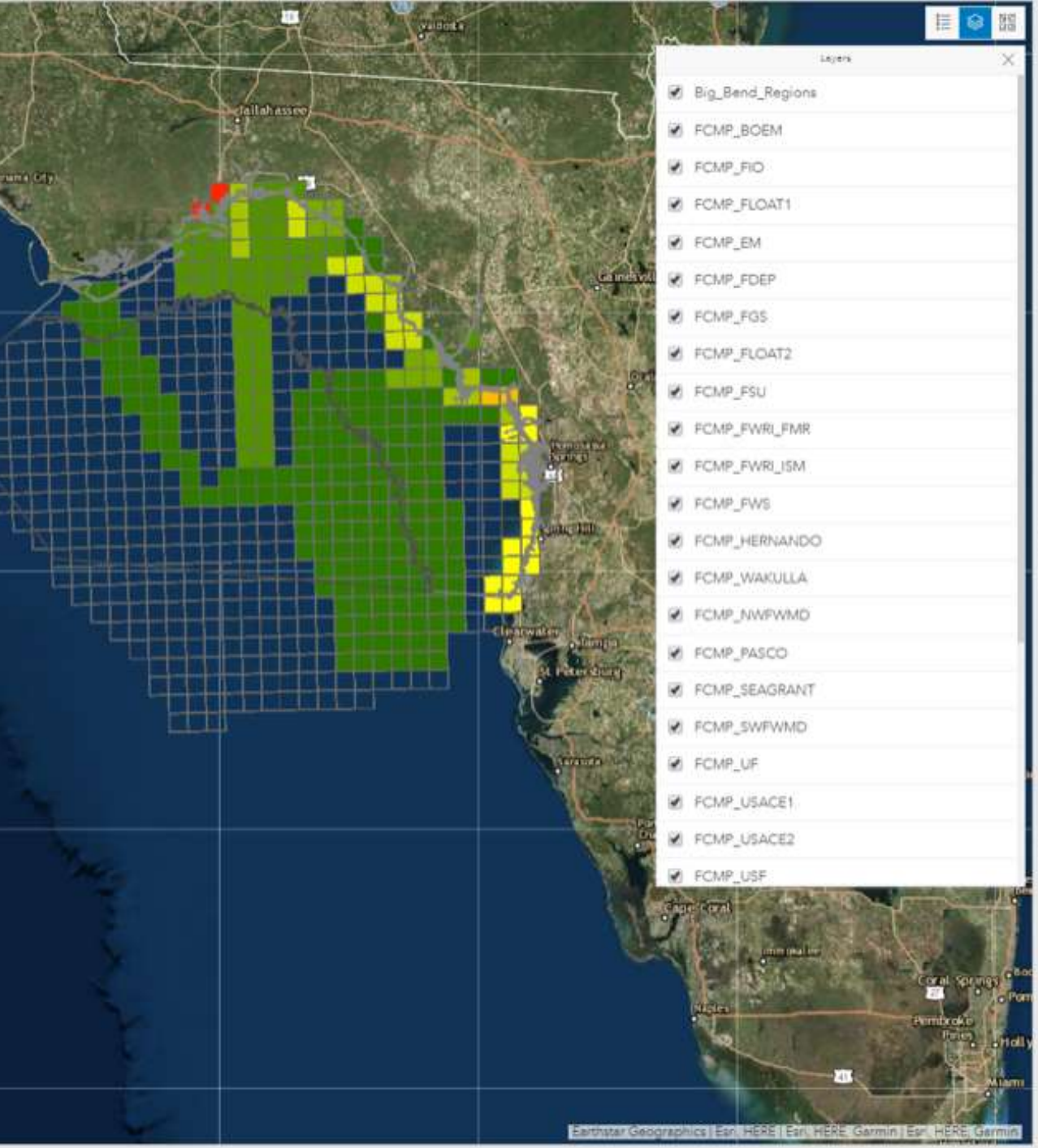

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Boem Coins
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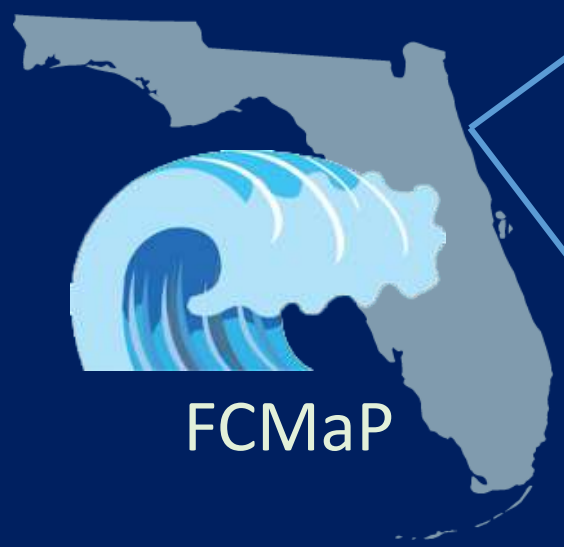
Linking FCMaP to Other Mapping Efforts



MMIM	BOEM
GOMOSES Benthic Habitat Workshop	GOMA
FL DOI RESTORE	USGS
Gulfwide DOI RESTORE	FWS
IWG-OCM	NOAA
IWG-OCM	USGS
3D Nation	USGS FL Liaison
3D Nation	FL State Champion
Southeast Comprehensive Study	USACE - Jacksonville
SEACART	NOAA
CMAP	NOAA
HRSP	NOAA
2017 Storm Supplemental	NOAA
2017 Storm Supplemental	USACE
MMP	FWRI
Monitoring Community of Practice	GOMA

Funding/Next Steps

- Immediate: Funding for a coordinator/technical position.
- Develop a funding strategy for high-resolution bathymetry (HRB) that includes federal and state sources and an action plan for undertaking the required mapping within 10 years.
- Update Portal with missing data & planned/funded federal efforts.
- Determine minimum habitat resolution standard for derived products.
- Prioritize coastal seafloor mapping by region.
- Take-away: "**Map once, use many times!"**

Demonstration Studies

- Multi-mission, multi-agency demonstration of capabilities of FCMaP members to address coastal priorities.

- In alignment with CMAP and MMP, develop and implement a 3-tier approach for establishing a workflow for Gulfwide RESTORE projects:
  1. High resolution baseline elevation data
  2. Derivative products (e.g. benthic habitat maps)
  3. Visualization and outreach

- Multibeam, topobathy lidar, side-scan sonar, sub-bottom, ground-truthing

- Big Bend, FL (2019)

- Other priority urban areas (TBD?)

FCMaP & Joint Meeting of the Treasure Coast and South Florida Regional Planning Council

SE Florida /Keys Prioritization Workshop (Ft Lauderdale)
date (TBD); venue (TBD); invitees (TBD)

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