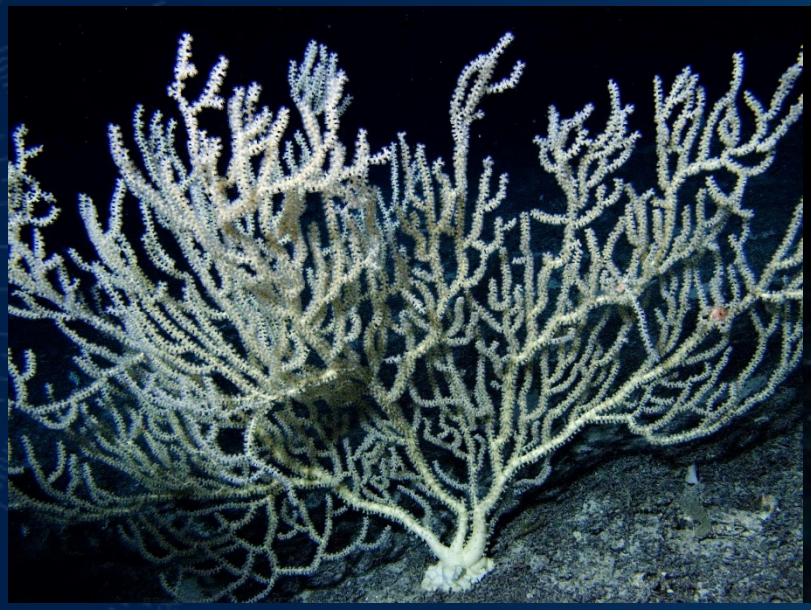
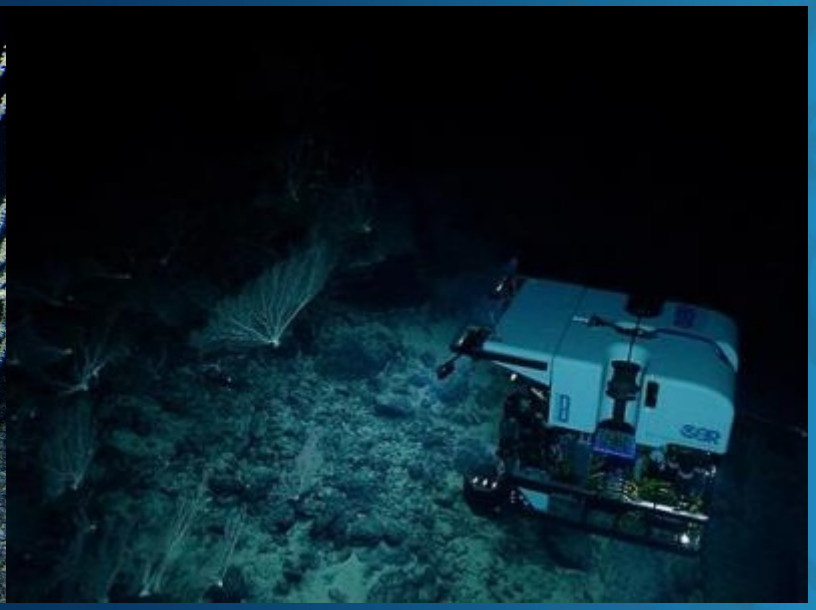
National Ocean Service

NOAA FISHERIES

Research
INNOVATE INCUBATE INTEGRATE

Southeast Deep Coral Initiative Efforts in the Gulf of Mexico

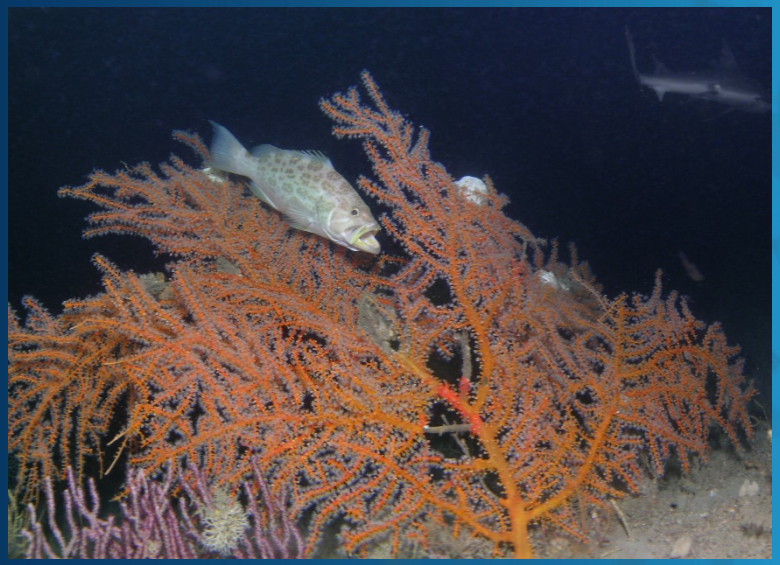




Daniel Wagner, Ph.D.
GMFMC SSC Meeting
January 9, 2018

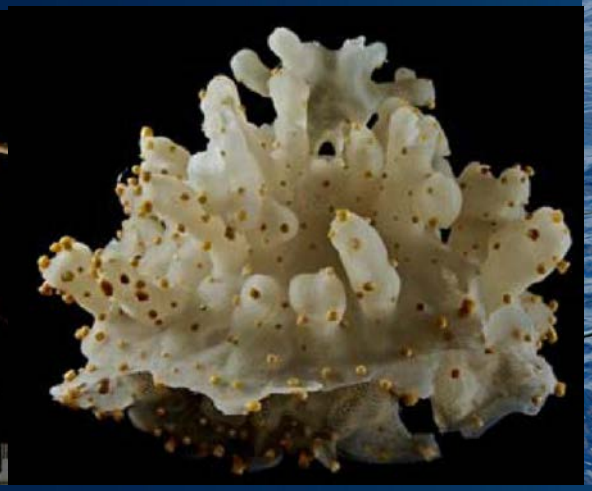
Deep-Sea Coral Research & Technology Program

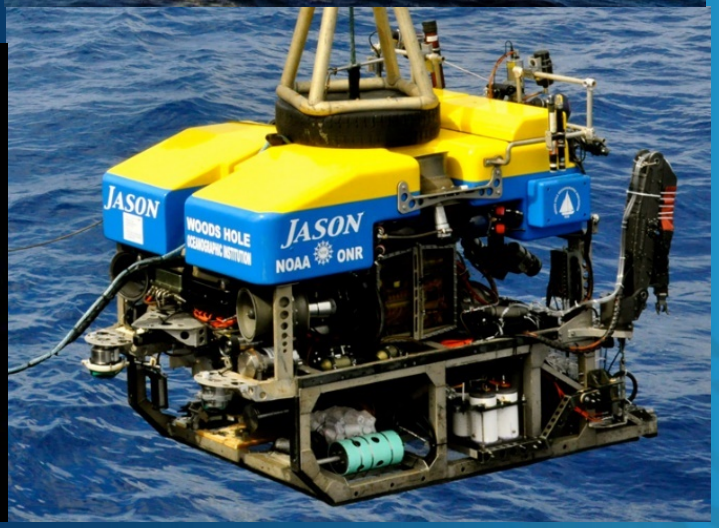
- 2009 following reauthorization of Magnuson-Stevens Act
- Science to address fishing & other threats to deep corals (>50 m, azooxanthellate)
- Integrate expertise & resources across NOAA
- Funding for studies and fieldwork initiatives



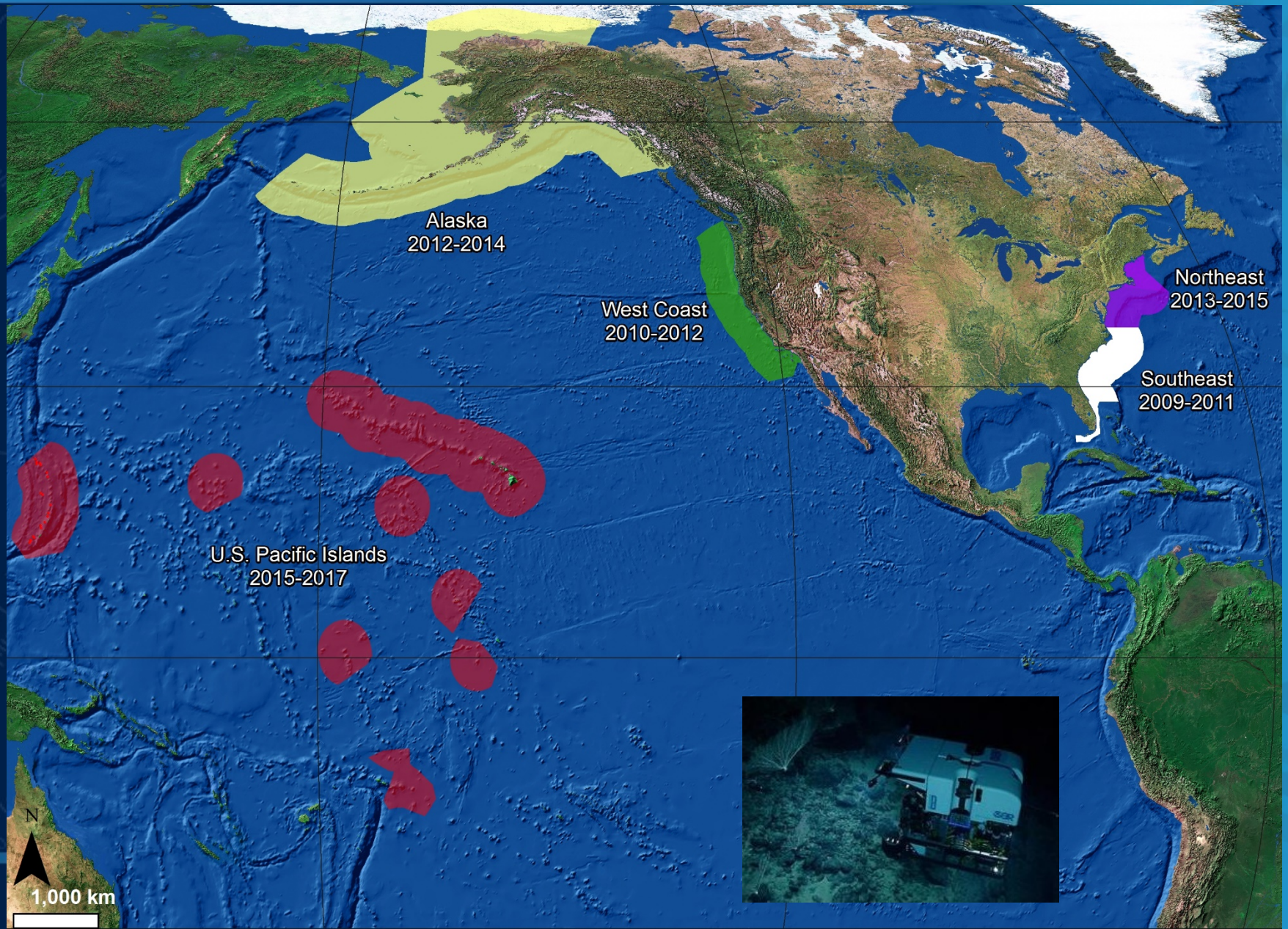
DSCRTP Fieldwork Initiatives

- 3-4 year efforts
- Research expeditions
- Data/sample analysis

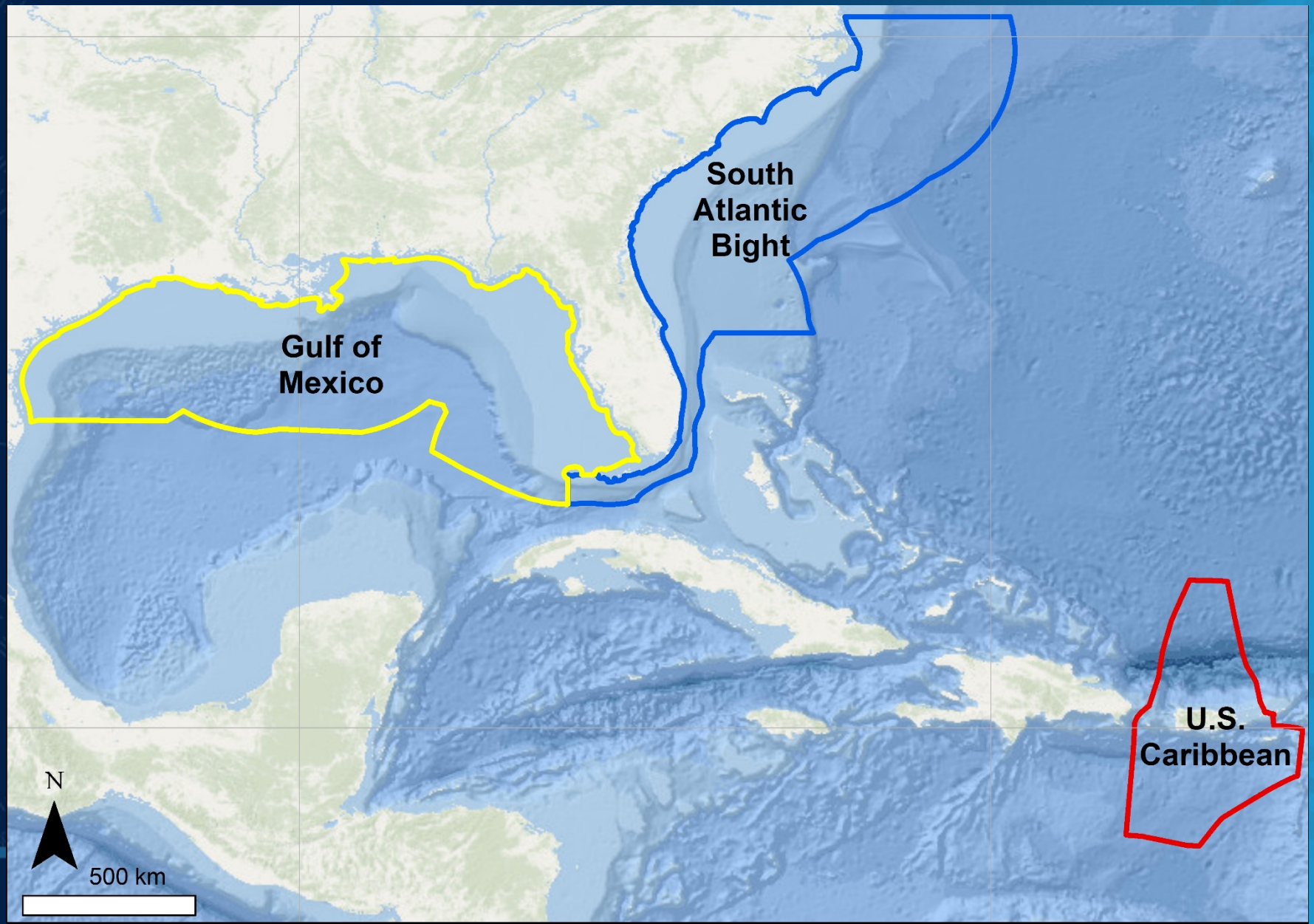




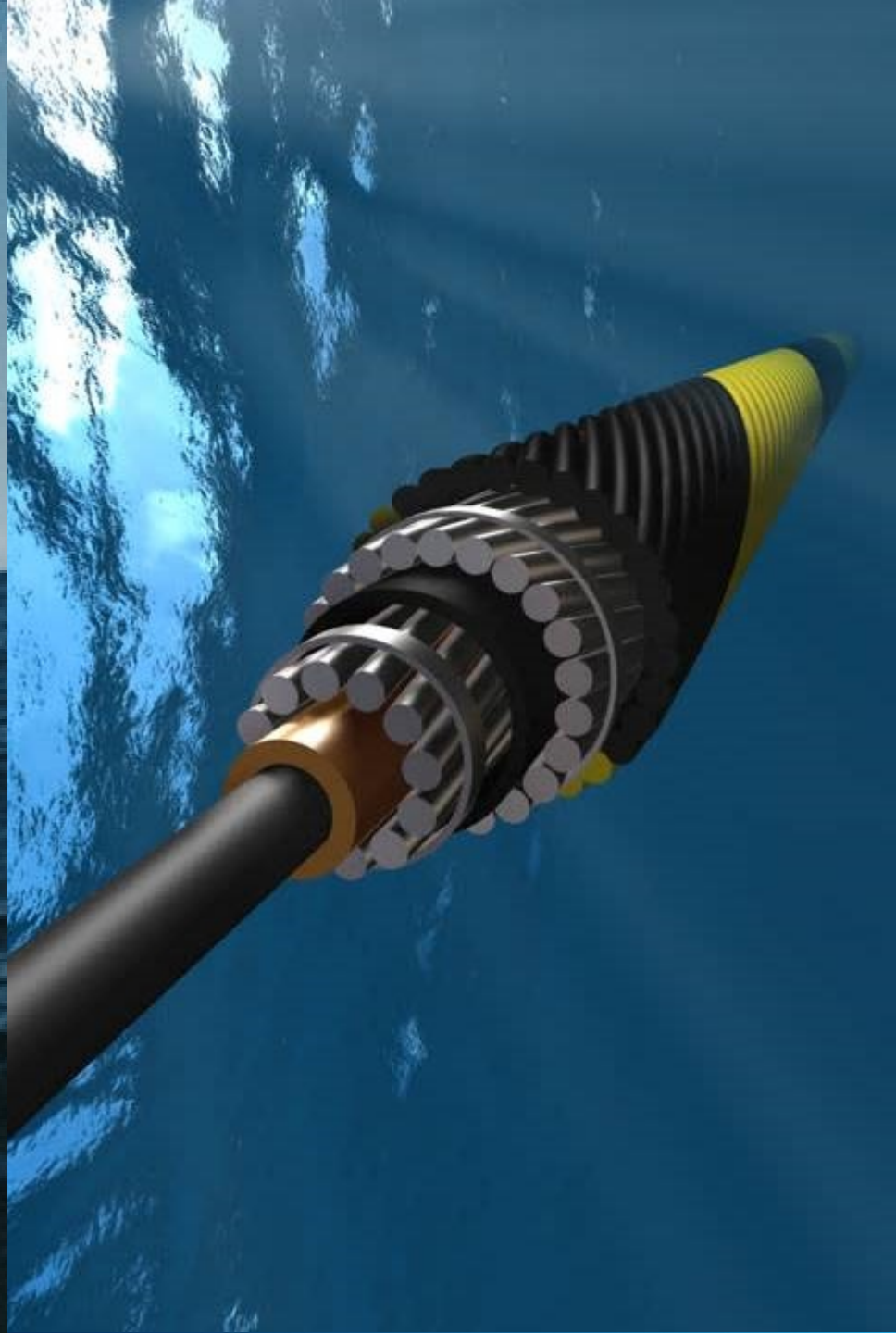
Previous DSCRTP Initiatives



2016-2019 Southeast Deep Coral Initiative



Large Area



SURVEY

Our Approach

REVIEW

Management priorities

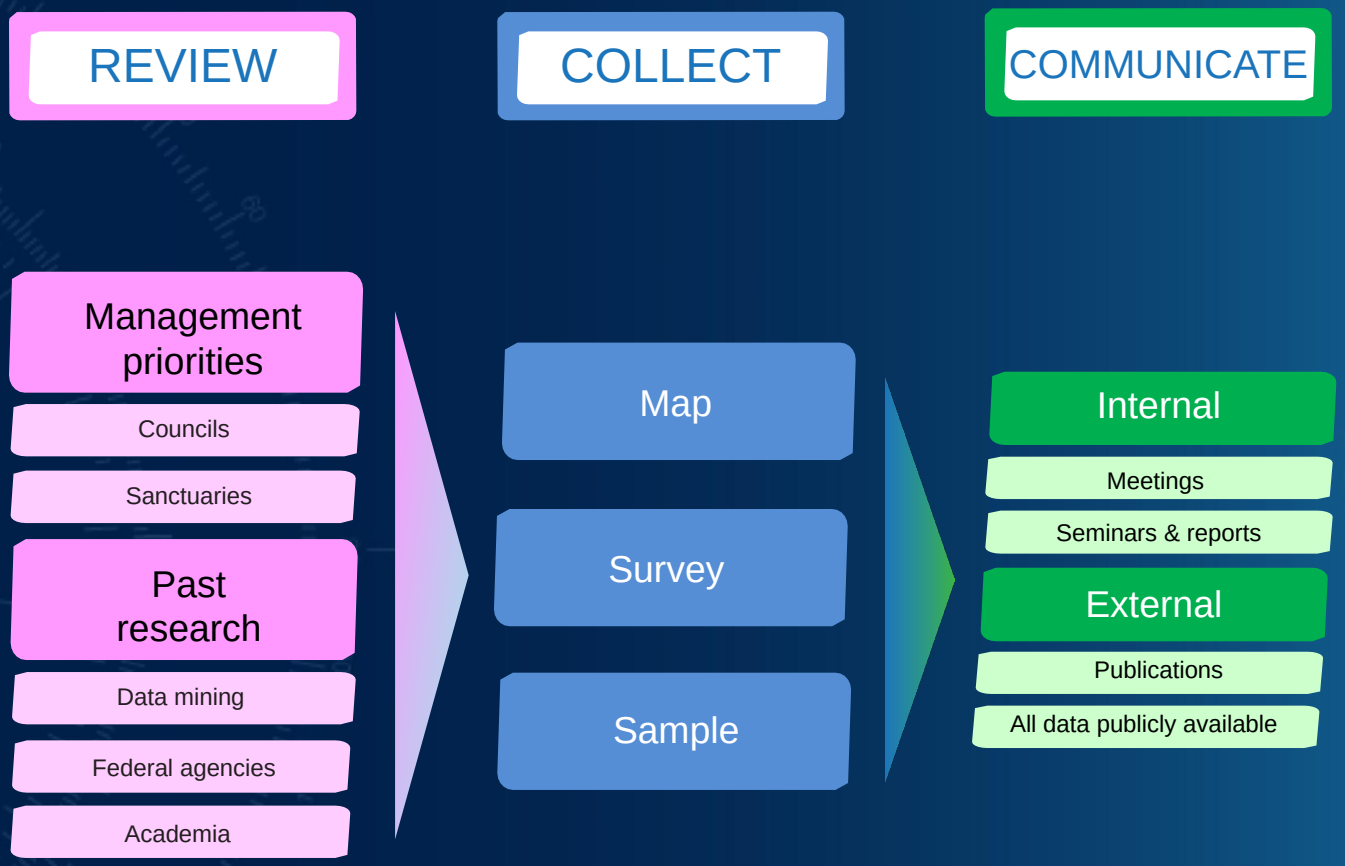
- Councils
- Sanctuaries

Past research

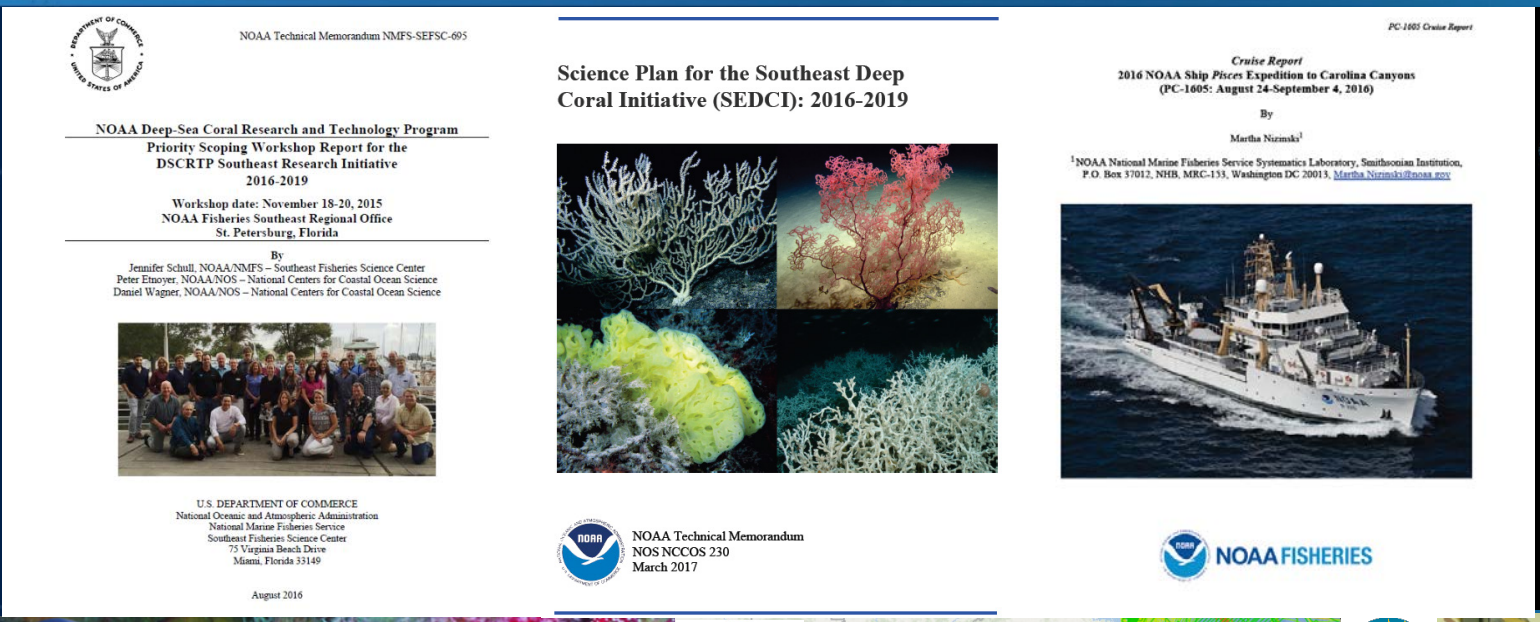
- Data mining
- Federal agencies
- Academia

Our Approach

Our Approach



Publicly Available Data



NOAA Technical Memorandum NMFS-SEFSC-695

NOAA Deep-Sea Coral Research and Technology Program
Priority Scoping Workshop Report for the DSCRTP Southeast Research Initiative 2016-2019

Workshop date: November 18-20, 2015
NOAA Fisheries Southeast Regional Office
St. Petersburg, Florida

By
Jennifer Schull, NOAA/NMFS – Southeast Fisheries Science Center
Peter Etnoyer, NOAA/NOS – National Centers for Coastal Ocean Science
Daniel Wagner, NOAA/NOS – National Centers for Coastal Ocean Science

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

August 2016

Science Plan for the Southeast Deep Coral Initiative (SEDCI): 2016-2019

NOAA Technical Memorandum
NOS NCCOS 230
March 2017

PC-1605 Cruise Report

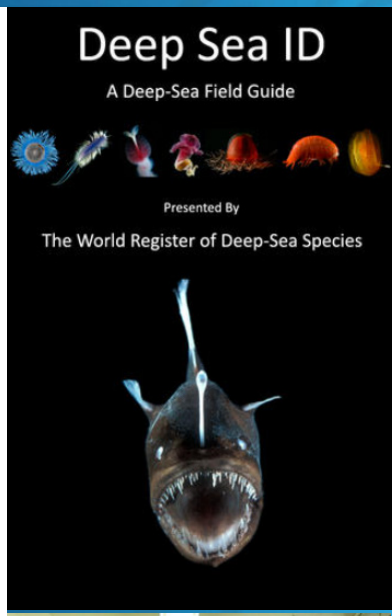
Cruise Report
2016 NOAA Ship *Pisces* Expedition to Carolina Canyons (PC-1605: August 24-September 4, 2016)

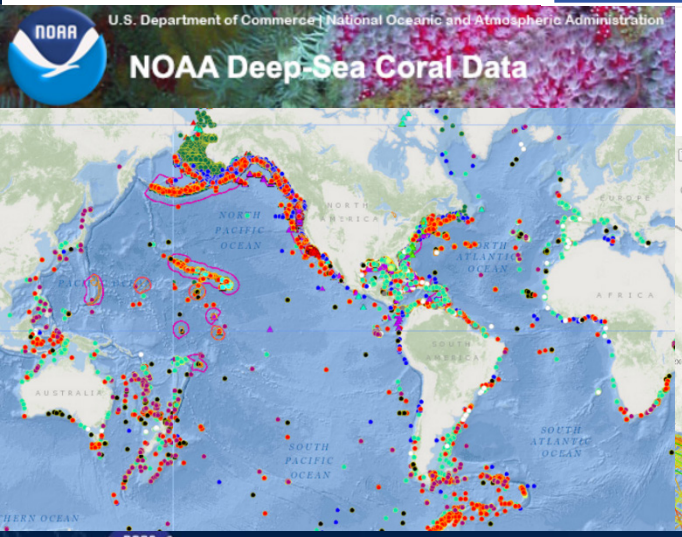
By

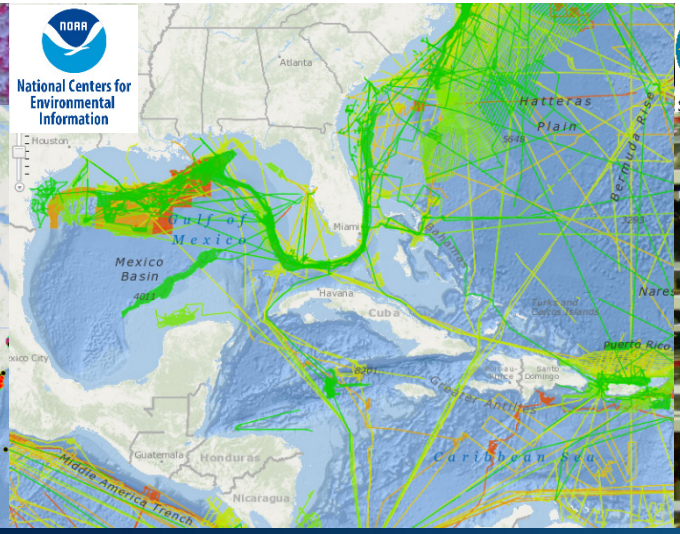
Martha Nizinski[1]

[1]NOAA National Marine Fisheries Service Systematics Laboratory, Smithsonian Institution, P.O. Box 37012, NHB, MRC-133, Washington DC 20013, Martha.Nizinski@noaa.gov

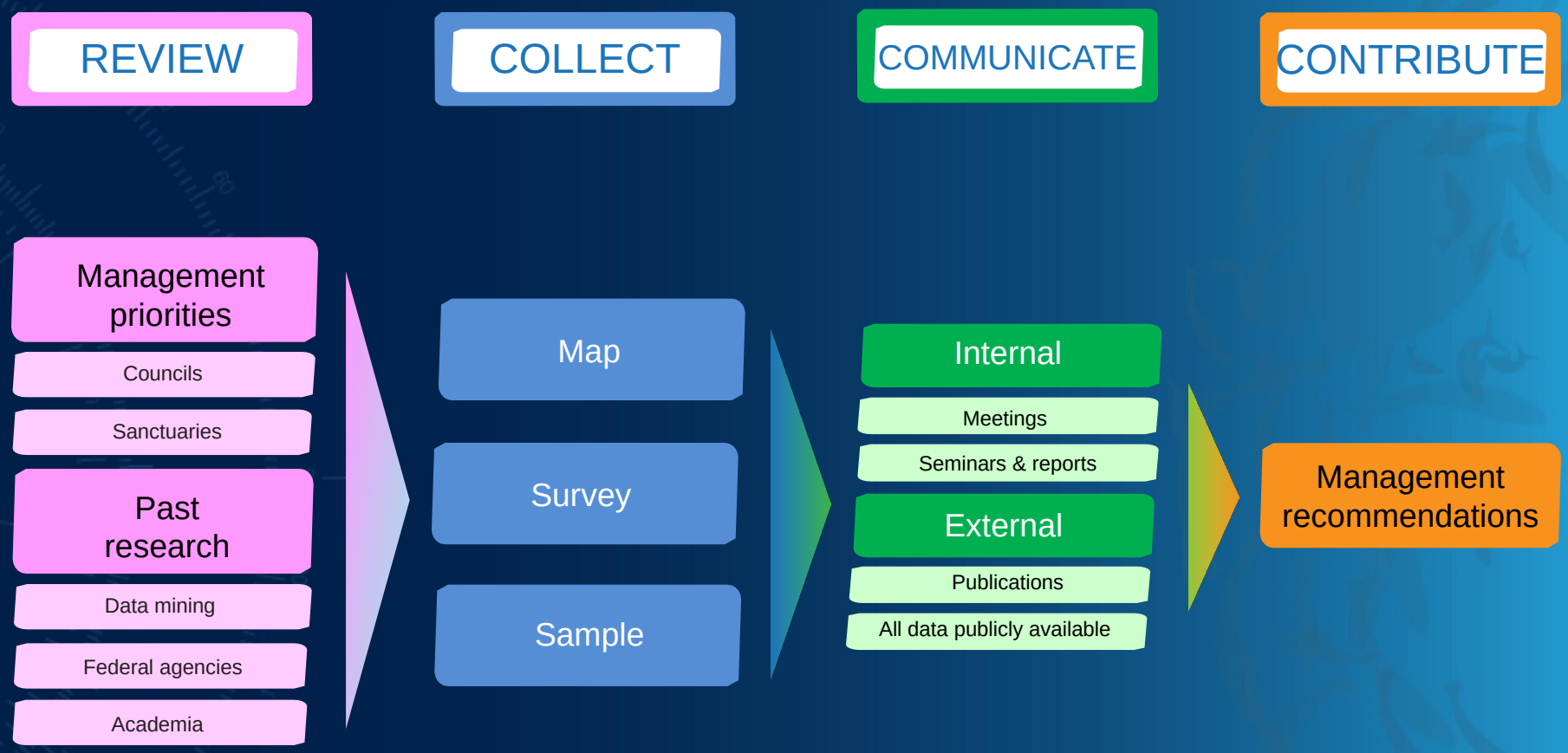
NOAA FISHERIES





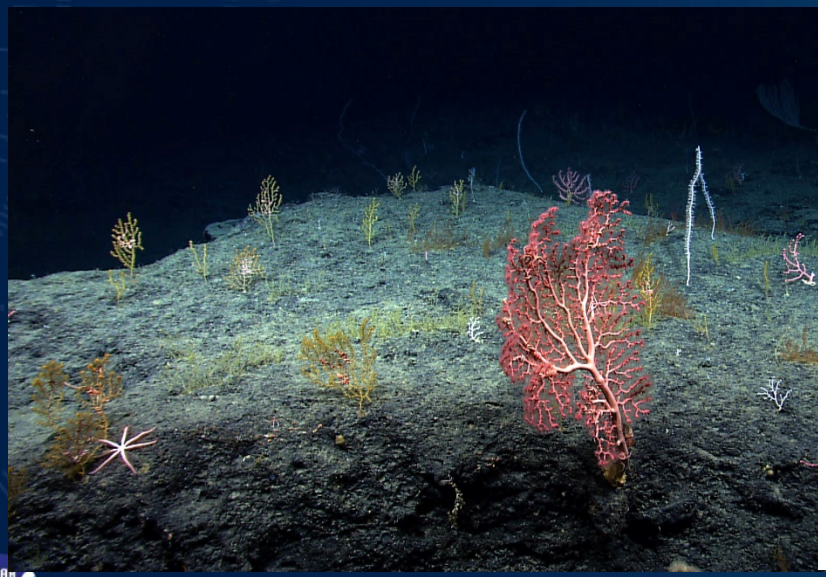


Our Approach



SEDCI Science Plan

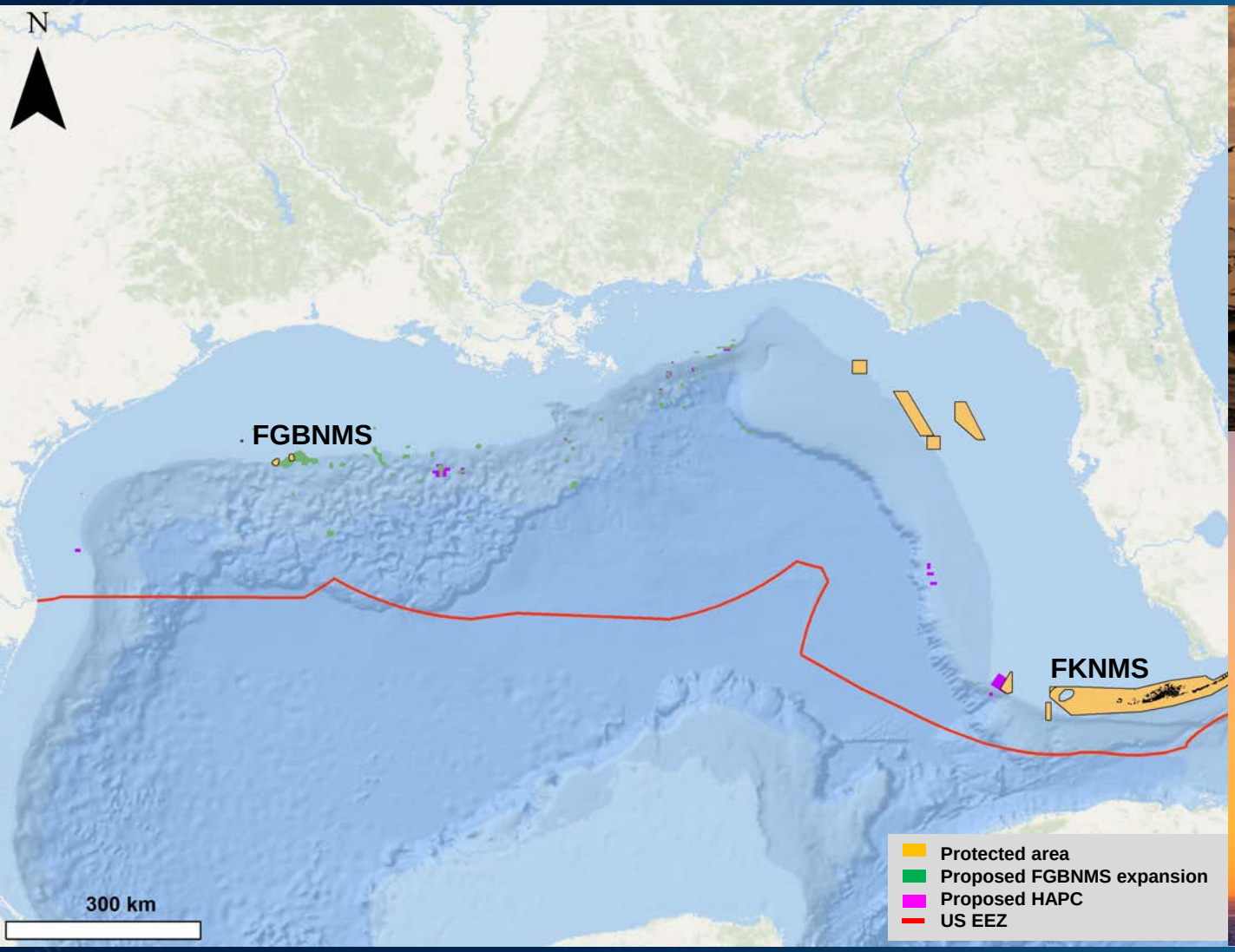
- Management issues
- Research questions
- Expeditions & projects



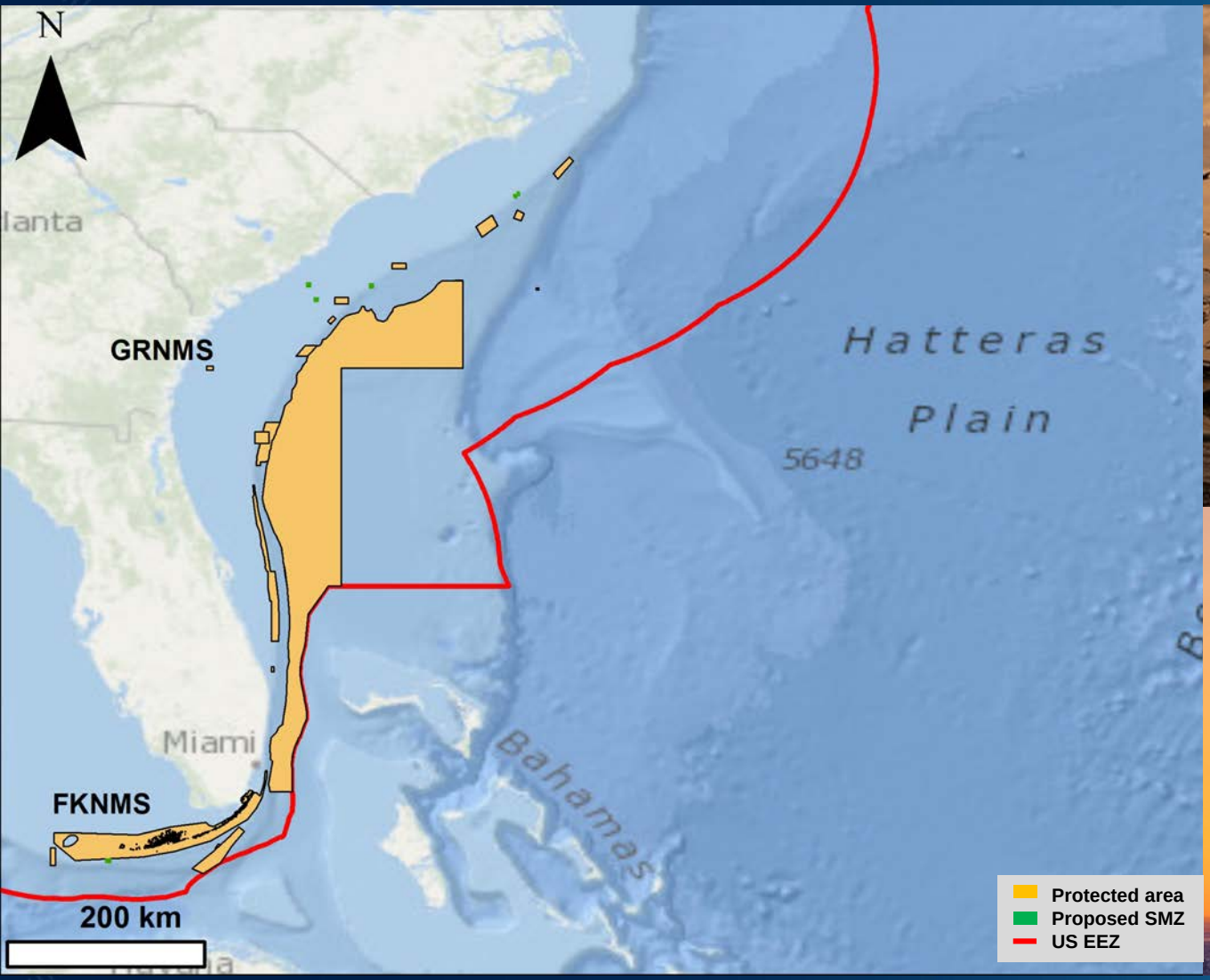
Science Plan for the Southeast Deep Coral Initiative (SEDCI): 2016-2019

NOAA Technical Memorandum
NOS NCCOS 230
March 2017

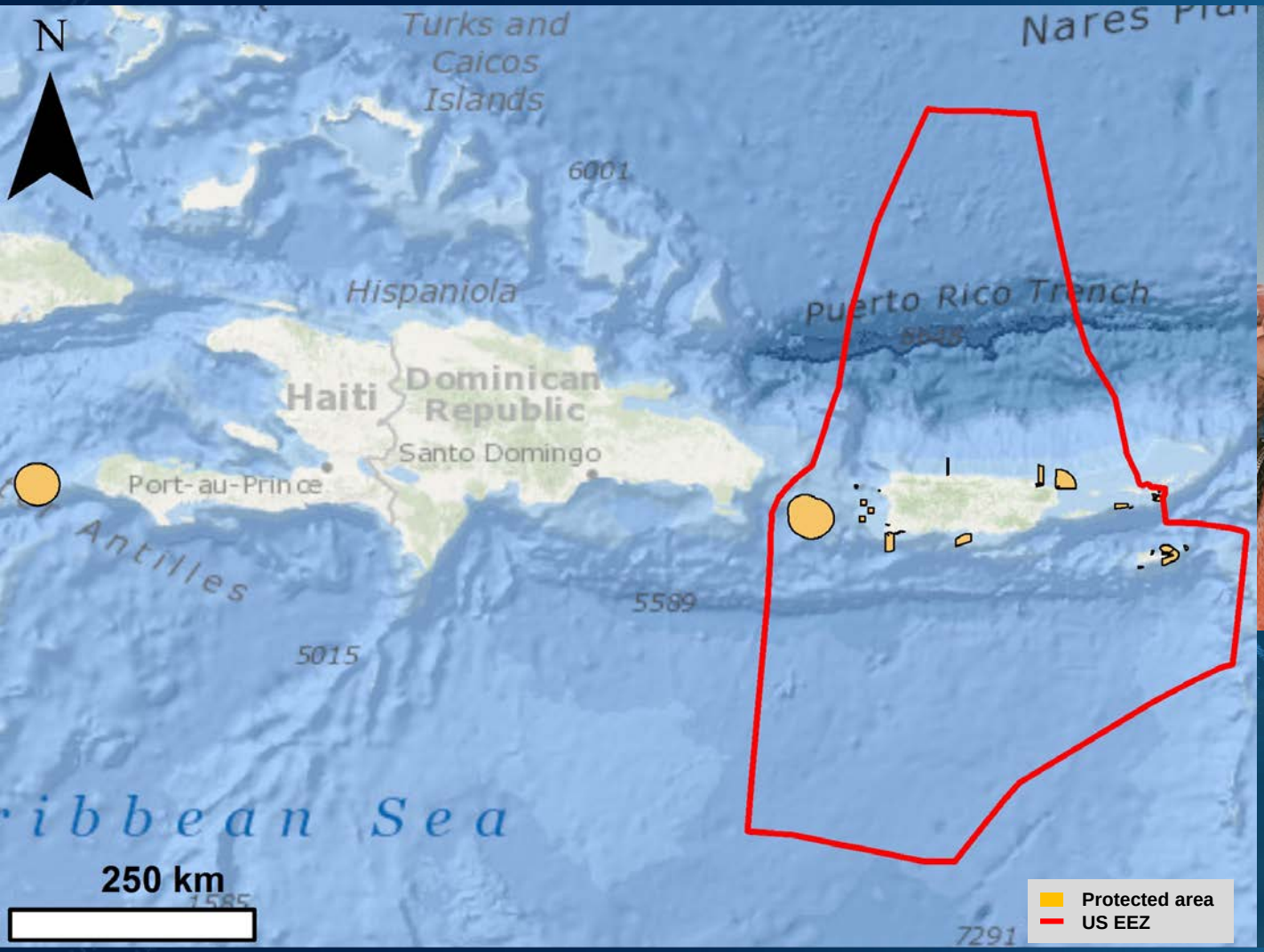
Gulf of Mexico

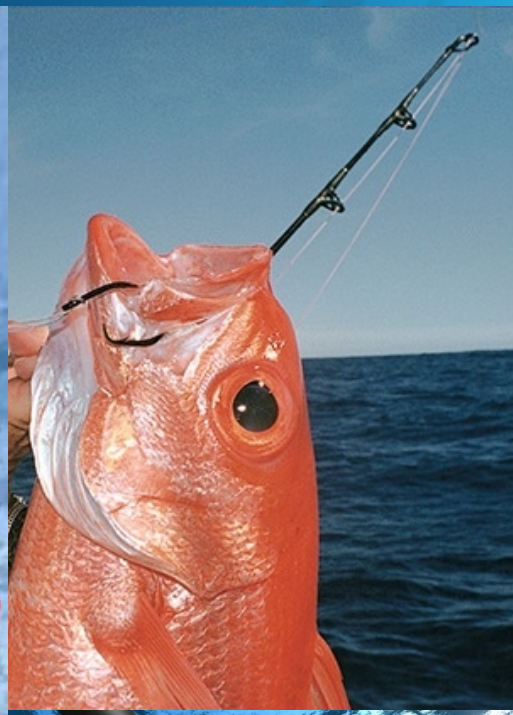


U.S. South Atlantic



U.S. Caribbean





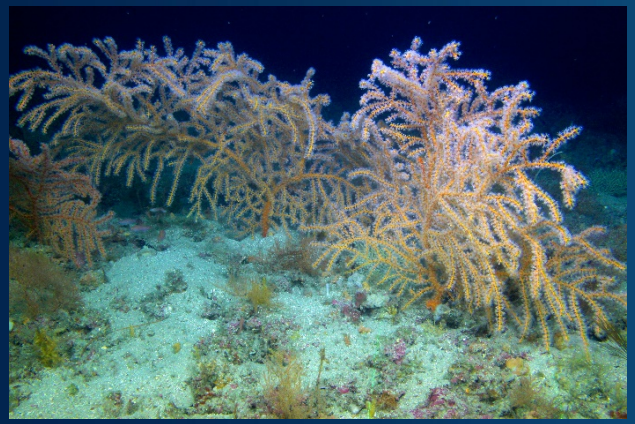
Priority Research Questions

U.S. Caribbean

- What species?
- Location of ecosystems?
- Fishery impacts?
- Anthropogenic impacts?

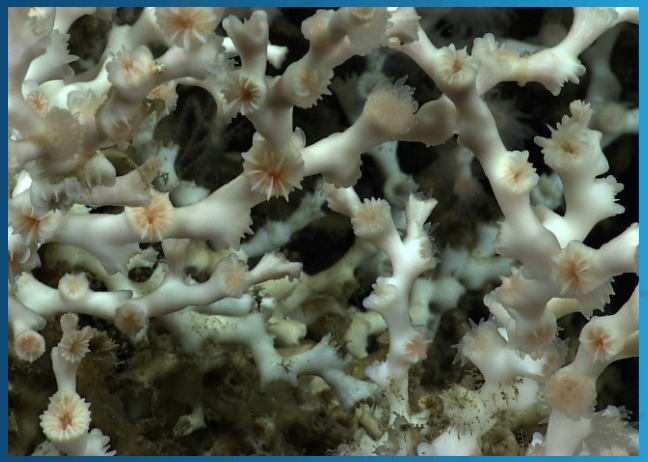
South Atlantic

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Differences inside/outside MPAs?



Gulf of Mexico

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Human activity buffer distances to improve management efforts?



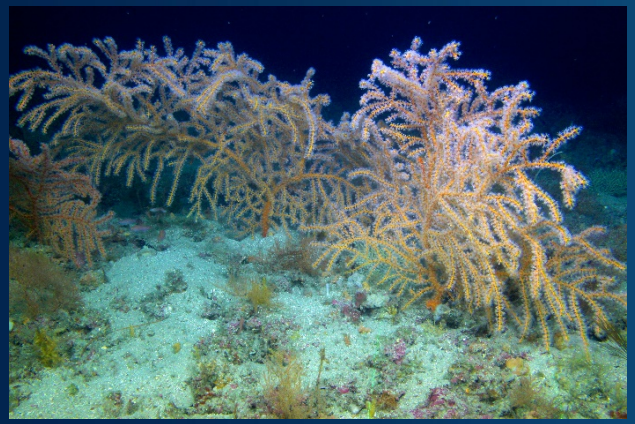
Priority Research Questions

U.S. Caribbean

- What species?
- Location of ecosystems?
- Fishery impacts?
- Anthropogenic impacts?

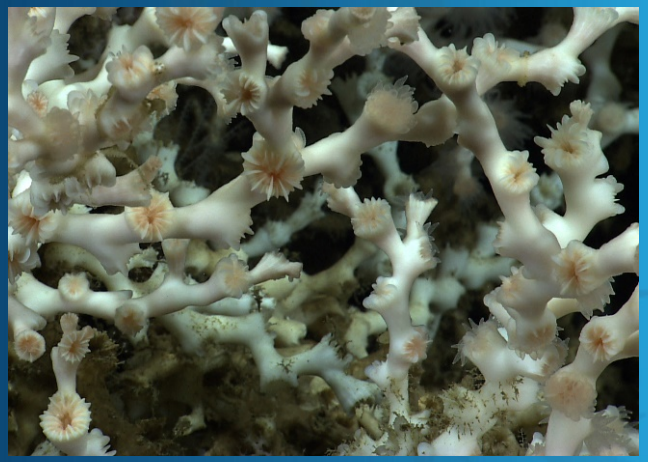
South Atlantic

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Differences inside/outside MPAs?



Gulf of Mexico

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Human activity buffer distances to improve management efforts?



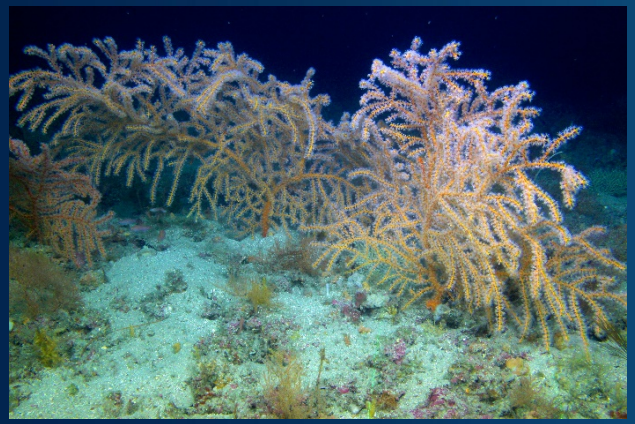
Priority Research Questions

U.S. Caribbean

- What species?
- Location of ecosystems?
- Fishery impacts?
- Anthropogenic impacts?

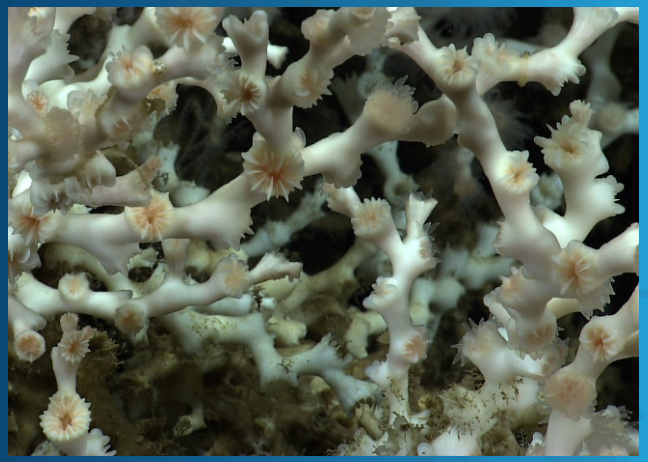
South Atlantic

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Differences inside/outside MPAs?



Gulf of Mexico

- Location of ecosystems?
- Fishery impacts?
- Accuracy of habitat models?
- Genetic connectivity?
- Community structure drivers?
- Human activity buffer distances to improve management efforts?



Our Strategy

Management Relevance

Our Strategy

Our Strategy

Research Projects

Project	Leads	Region
Data Mining	Tim Battista (NCCOS) Travis Sterne (FGBNMS) John Reed (HBOI) Sandra Brooke (FSU) Charles Messing (NSU)	All
Deep-Sea Species Guide	Daniel Wagner (NCCOS) Peter Etnoyer (NCCOS)	All
Geodatabase	Tim Battista (NCCOS) Daniel Wagner (NCCOS)	All
Modeling	Matt Poti (NCCOS)	All
Environmental Monitoring	Peter Etnoyer (NCCOS)	All
Fishery/Citizen Science	Andy David (NMFS)	Caribbean

Data Mining

Gulf of Mexico:

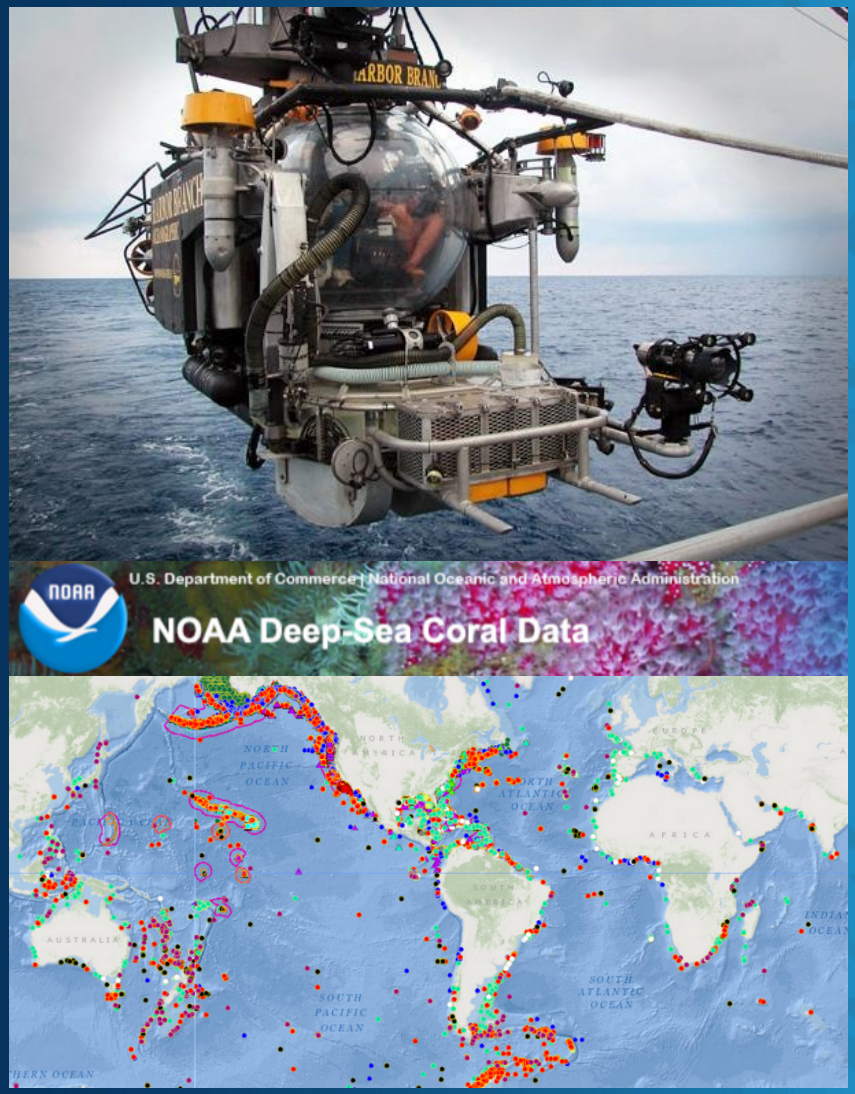
- HBOI (1986-present)
- FGBNMS (2001-present)

Caribbean:

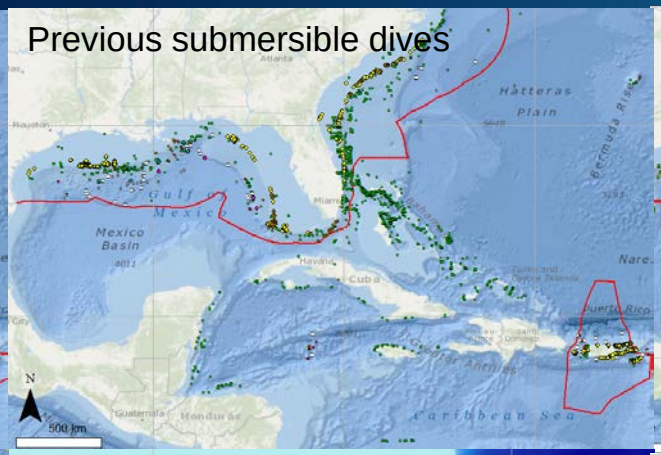
- NCCOS (2004-present)
- *Okeanos Explorer* (2015)

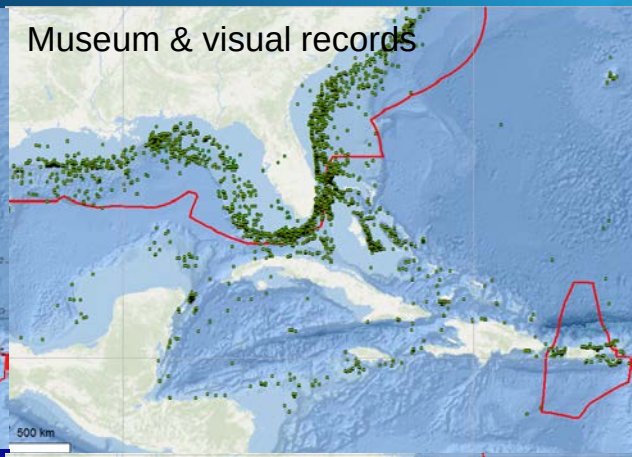
South Atlantic:

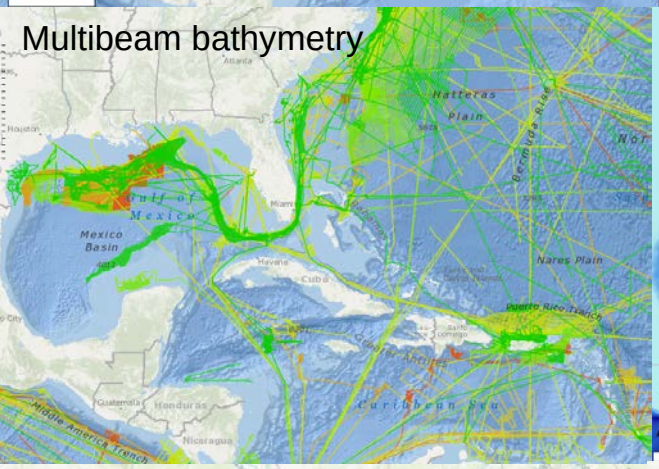
- HBOI (1986-present)
- NOAA Ship *Nancy Foster* (2011)

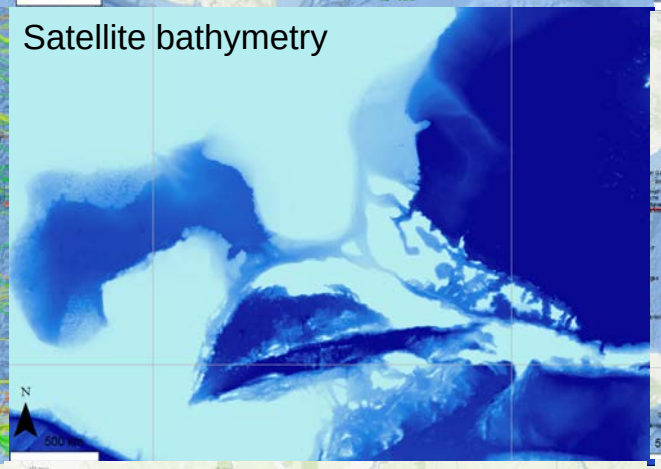


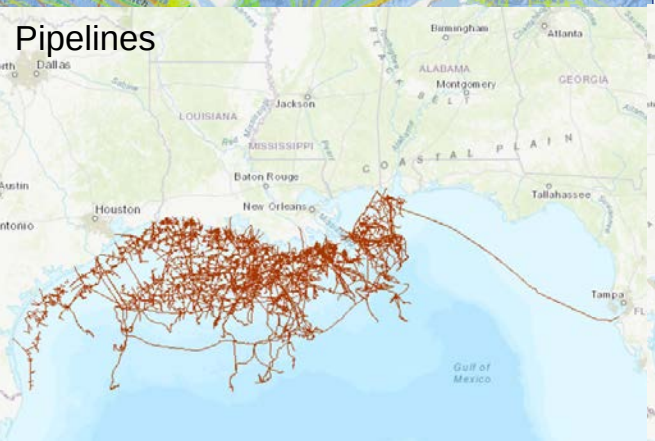
Online Geodatabase

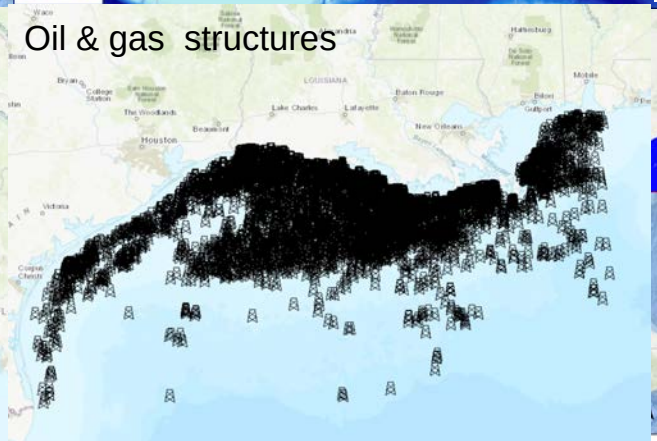


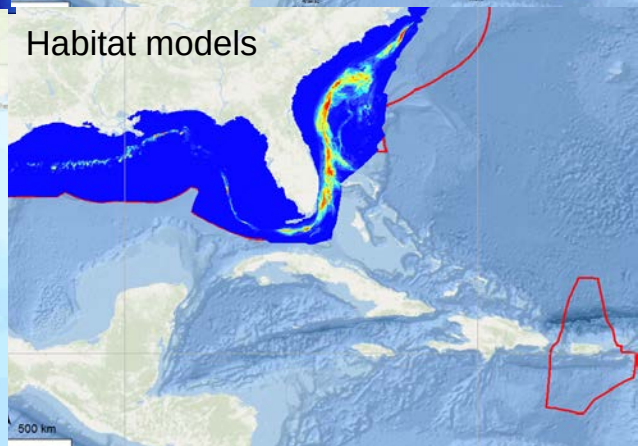




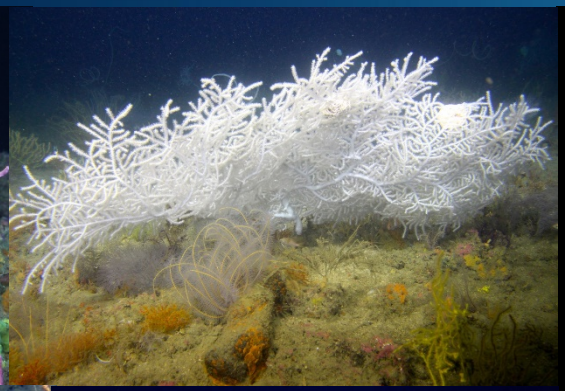


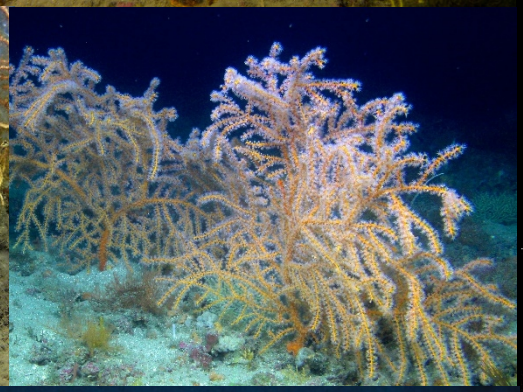




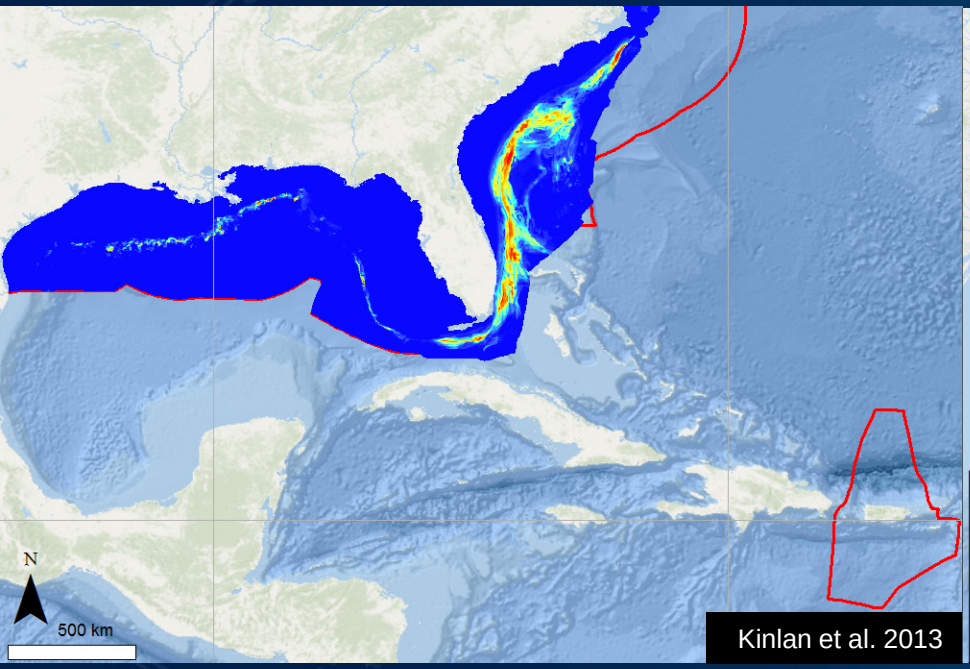


Deep-Sea Species Guide

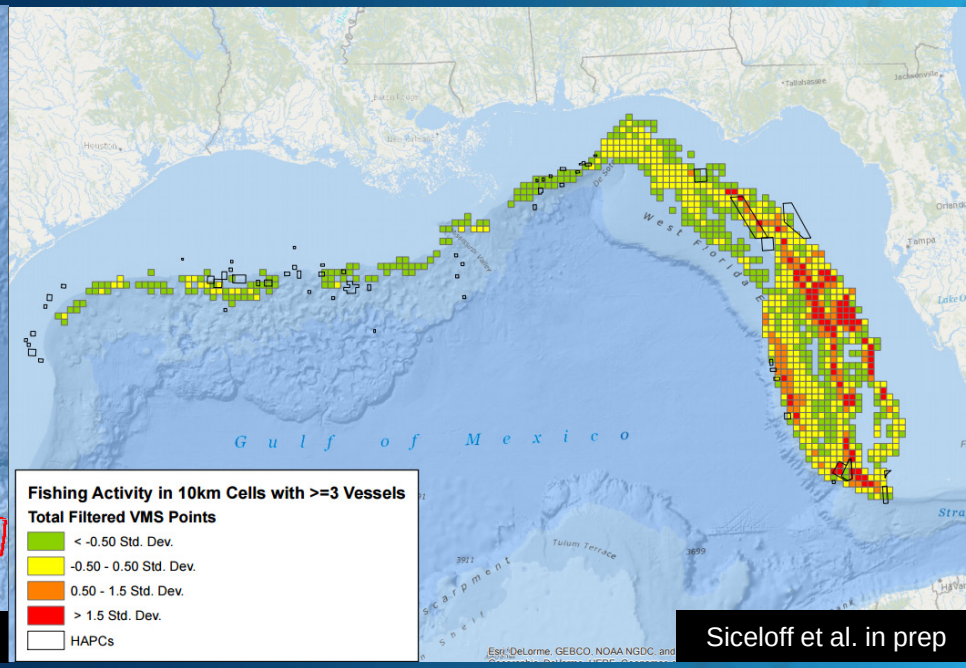




Modeling



Kinlan et al. 2013



Siceloff et al. in prep

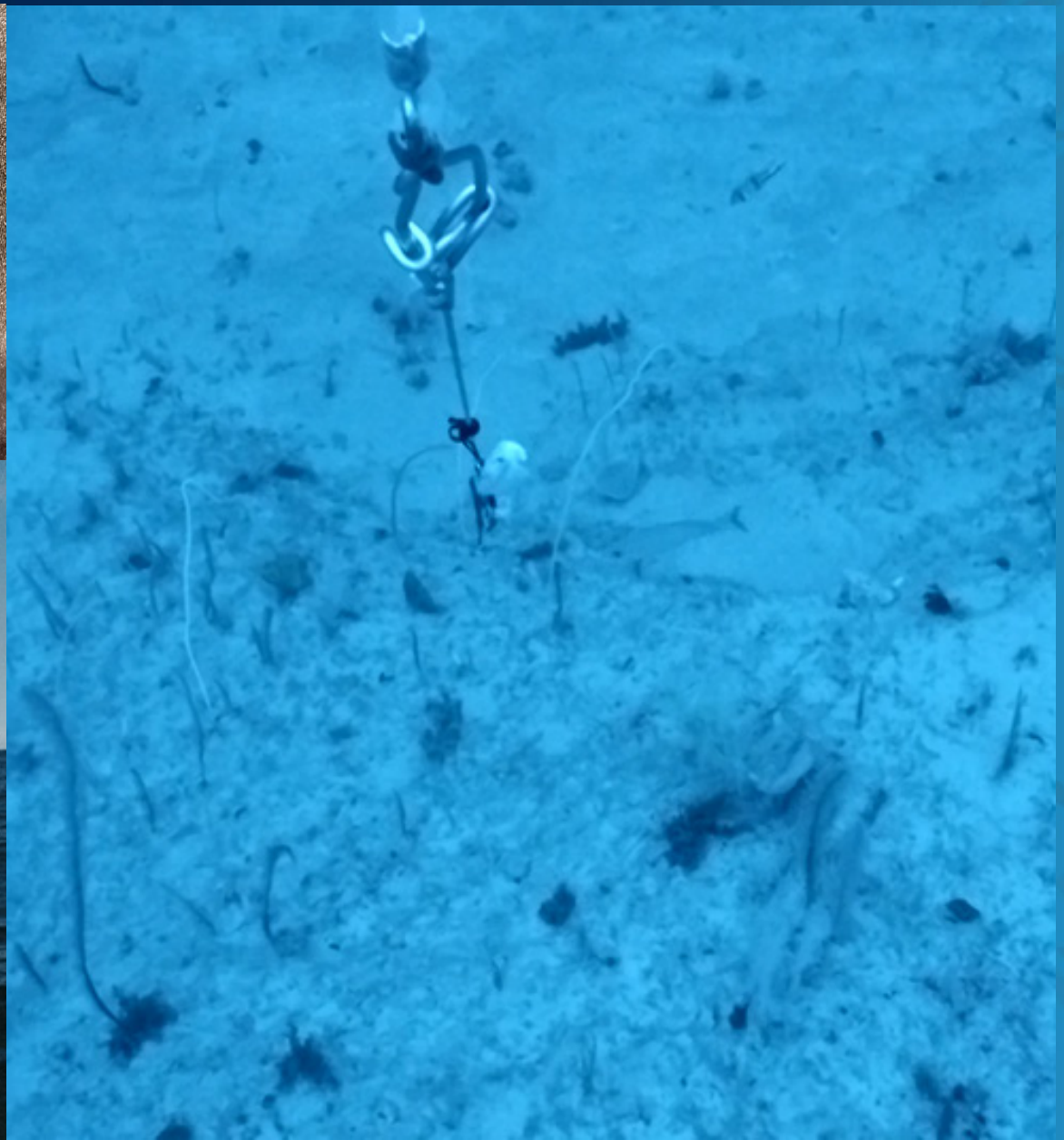
Habitat suitability

- Field test existing models to refine
- New models for important taxa and U.S. Caribbean

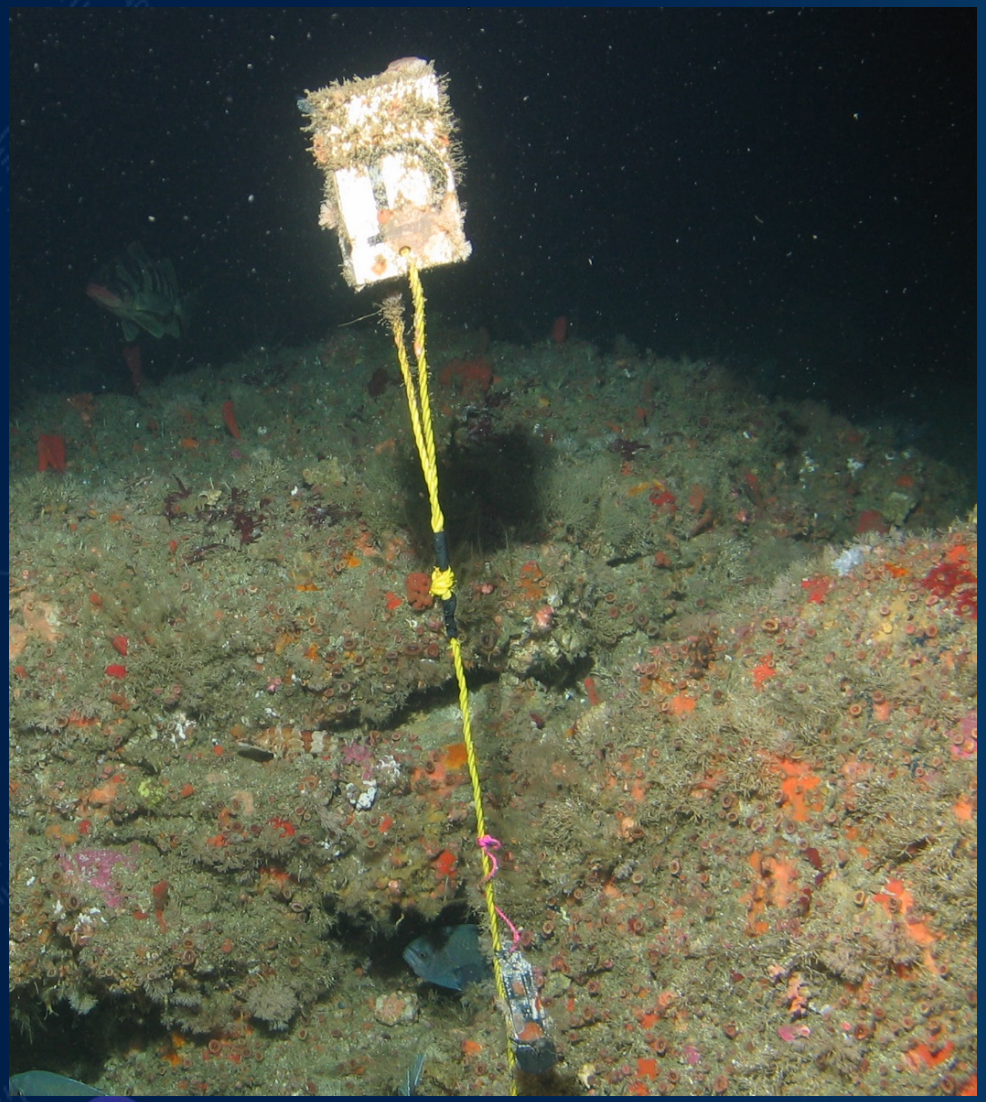
Fishing

- Models on fishing activity
- Areas surrounding proposed protections

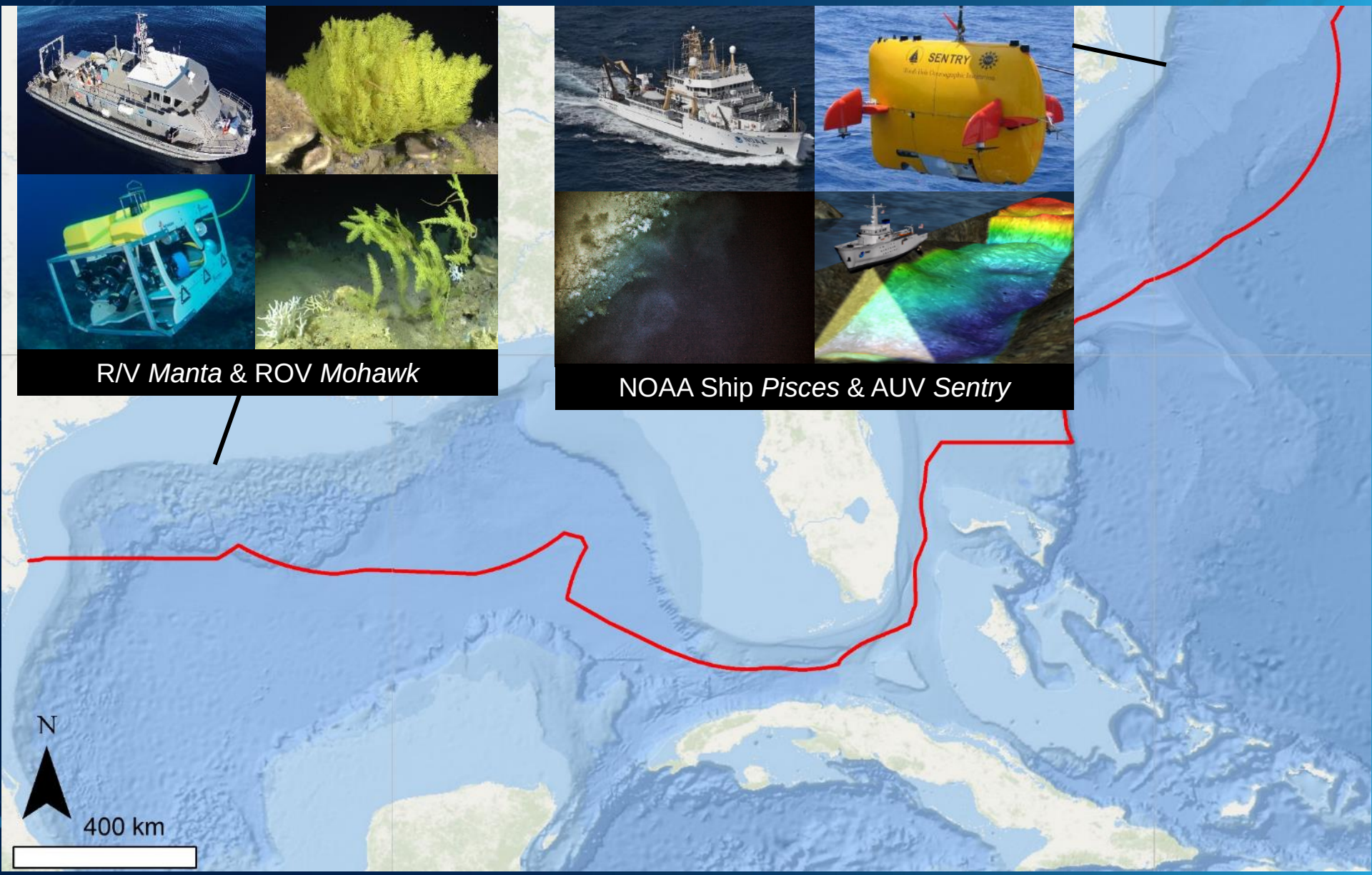
Fishery/Citizen Science



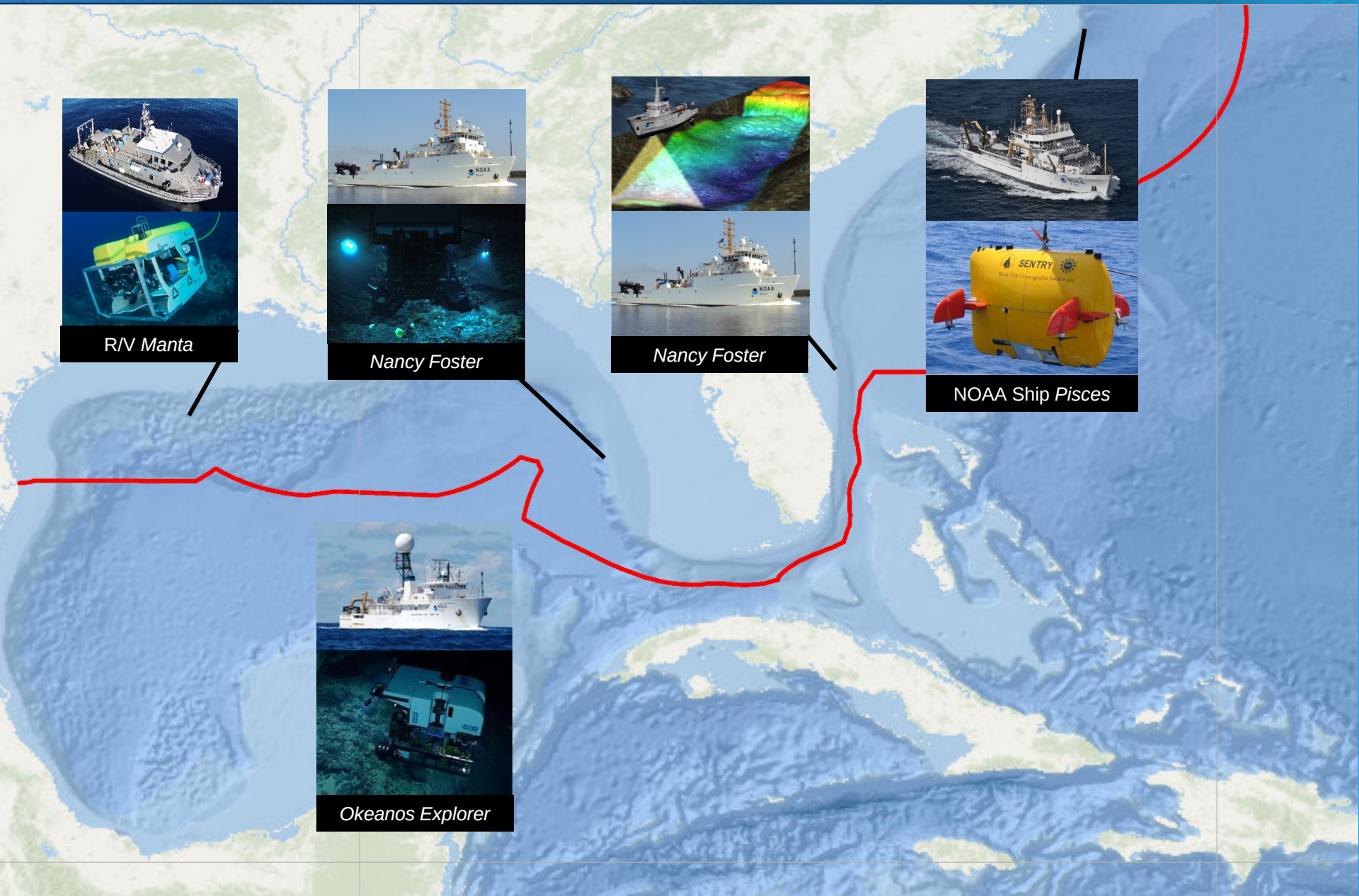
Environmental Monitoring



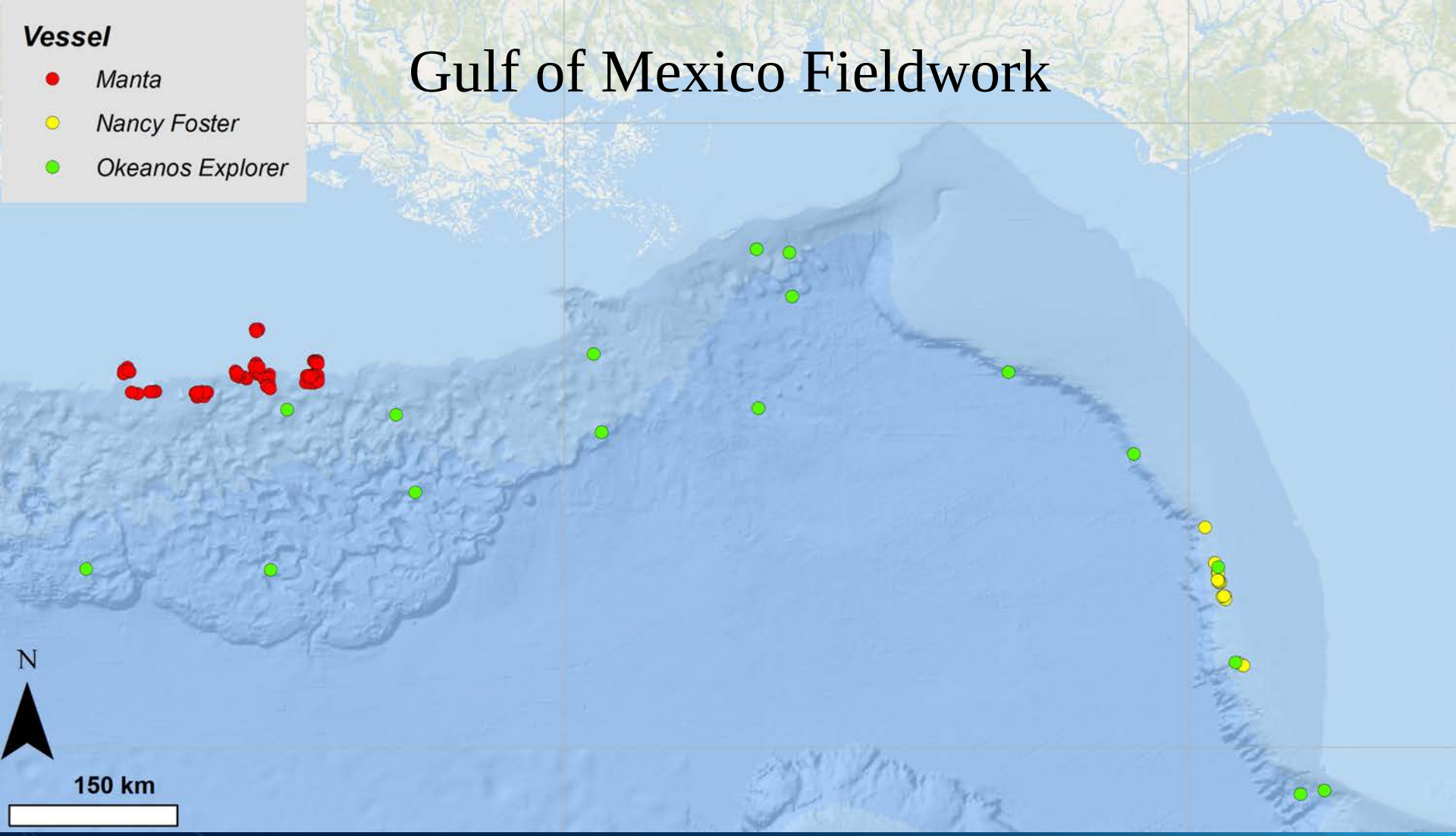
2016 Fieldwork



2017 Fieldwork



Gulf of Mexico Fieldwork

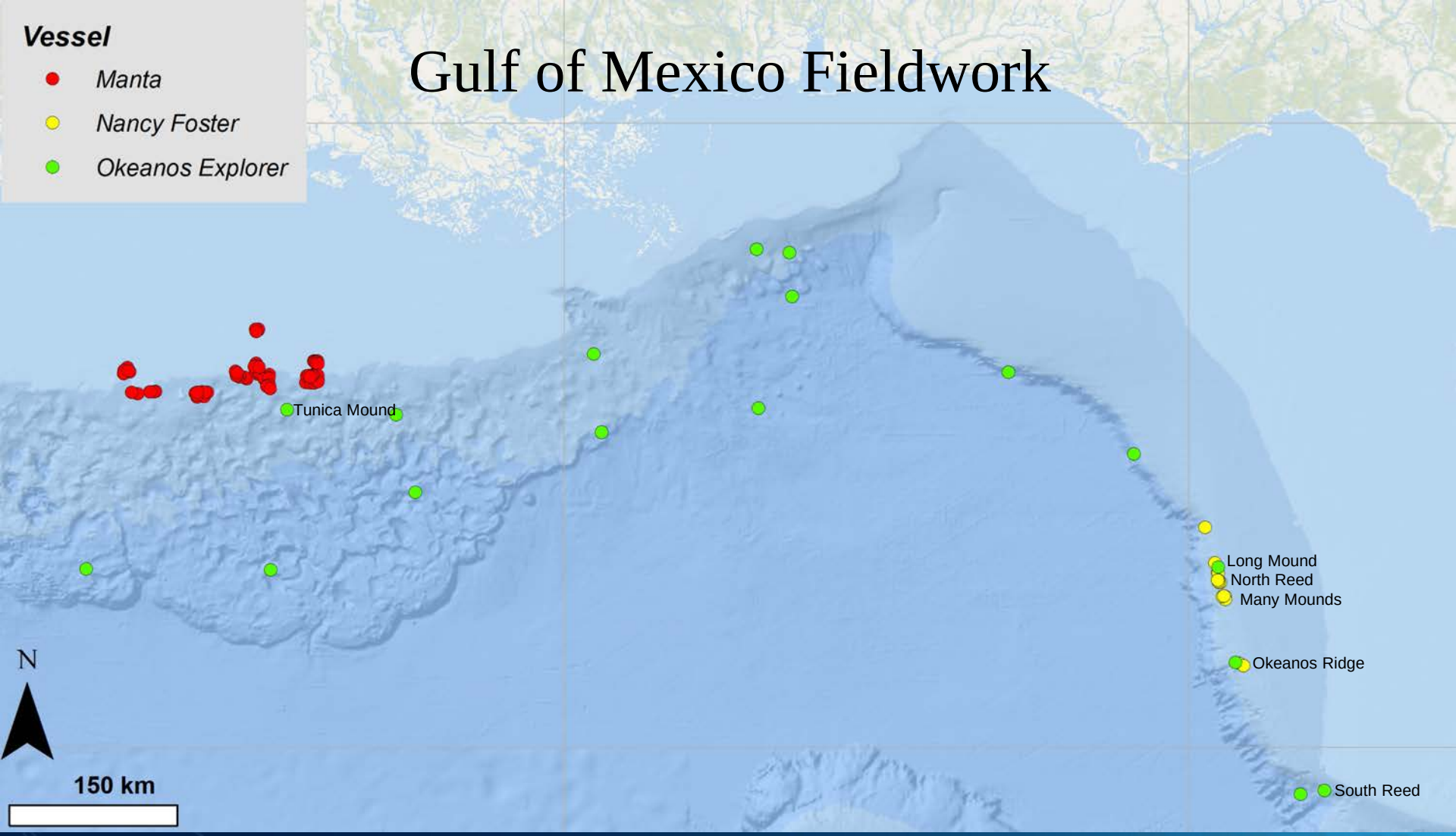


R/V *Manta*
- 77 ROV *Mohawk* dives
- 75 h bottom time
- 50 – 200 m
- 12 banks considered for FGBNMS expansion (alt. 3)

NOAA Ship *Okeanos Explorer*
- 17 ROV *Deep Discoverer* dives
- 93 h bottom time
- 400 – 2300 m
- 4 FGBNMS proposed expansion areas (alt. 5) & 3 proposed HAPCs

NOAA Ship *Nancy Foster*
- 13 ROV *Odysseus* dives
- 51 h bottom time
- 400 – 700 m
- 3 proposed HAPCs & 1 GMFMC area of interest

Gulf of Mexico Fieldwork



R/V *Manta*
- 77 ROV *Mohawk* dives
- 75 h bottom time
- 50 – 200 m
- 12 banks considered for FGBNMS expansion (alt. 3)

NOAA Ship *Okeanos Explorer*
- 17 ROV *Deep Discoverer* dives
- 93 h bottom time
- 400 – 2300 m
- 4 FGBNMS proposed expansion areas (alt. 5) & 3 proposed HAPCs

NOAA Ship *Nancy Foster*
- 13 ROV *Odysseus* dives
- 51 h bottom time
- 400 – 700 m
- 3 proposed HAPCs & 1 GMFMC area of interest

Proposed HAPCs & areas of interest

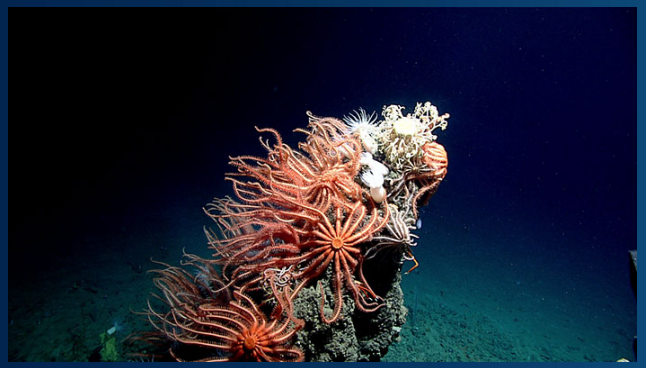
Long Mound
- 4 dives, 410 – 460 m

North Reed
- 4 dives, 310 – 530 m

Many Mounds
- 4 dives, 345 – 510 m

South Reed
- 1 dive, 750 – 820 m

Tunica Mound
- 1 dive, 415 m



Okeanos Ridge
- 3 dives, 450 – 750 m

2018 Fieldwork in Gulf of Mexico

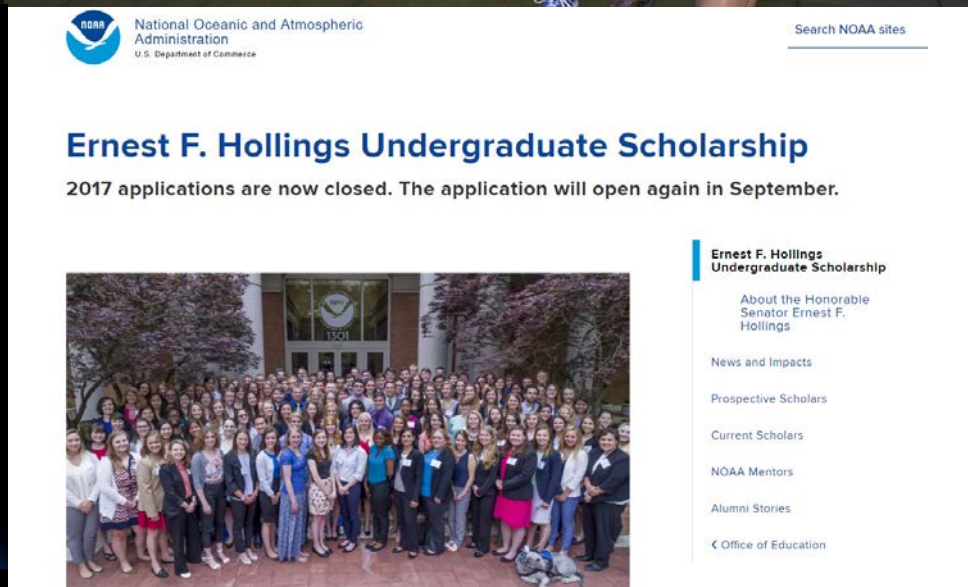
NOAA Ship *Okeanos Explorer*

- April 11 – May 3, 2018
- Galveston – Key West
- ROV surveys (<4500 m) and mapping
- Seeking input for areas to survey

NOAA R/V *Manta*

- August 19 – September 2, 2018
- Galveston – Galveston
- ROV surveys (<300 m)
- FGBNMS proposed expansion areas (alt. 3)

Education/outreach

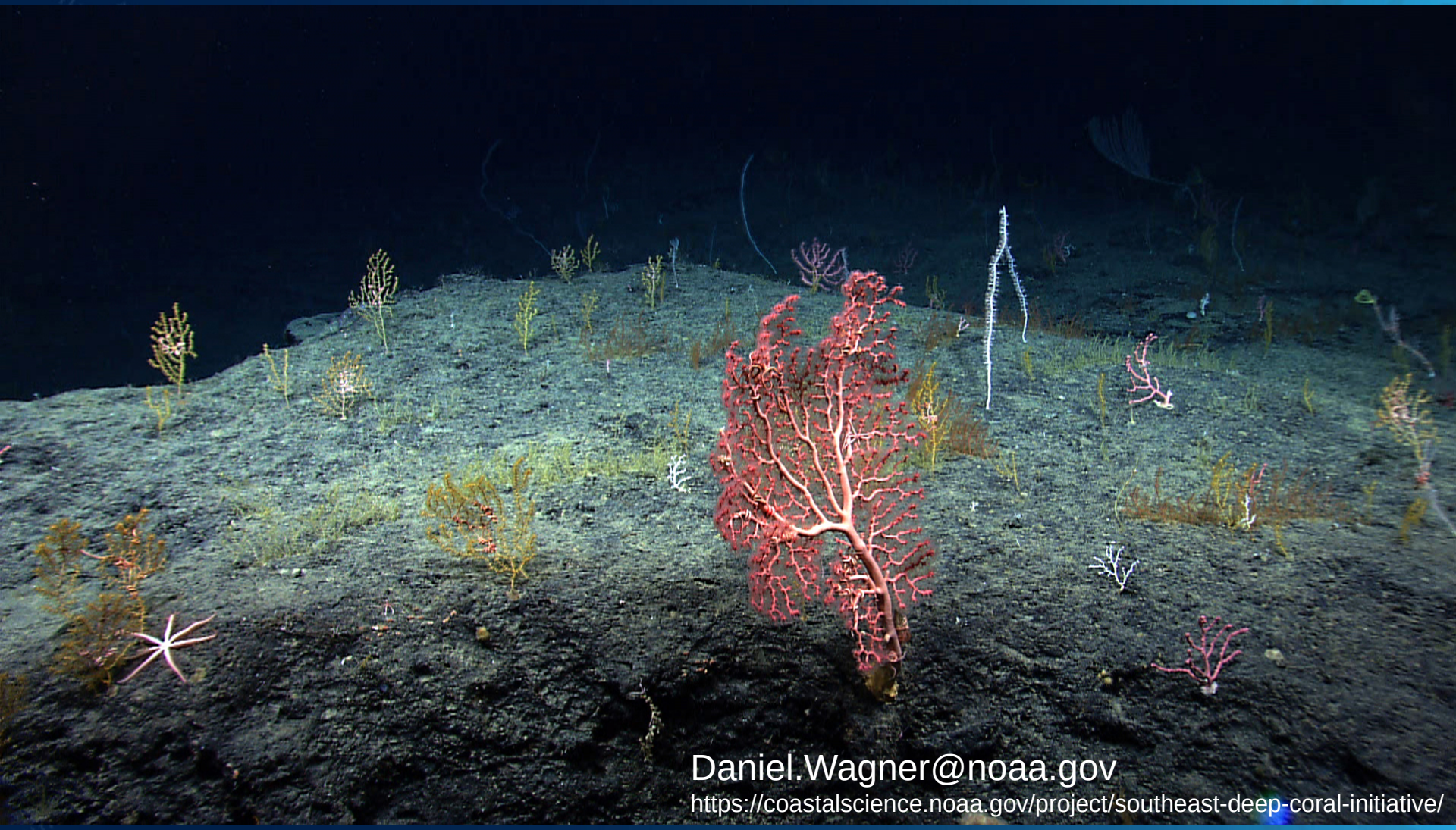


Our Team

Name	Affiliation
DSCRTP	
Tom Hourigan	NMFS/DSCRTP
Heather Coleman	NMFS/DSCRTP
Leadership & Coordination	
Peter Etnoyer	NOS/NCCOS
Daniel Wagner	NOS/NCCOS
Science Team	
Tim Battista	NOS/NCCOS
Andrew David & Stacey Harter	NMFS/SEFSC
Caitlin Adams	OAR/OER
Martha Nizinski	NMFS/NSL
G.P. Schmahl & Emma Hickerson	NOS/FGBNMS

Name	Affiliation
Project Leads	
Andy David	NMFS/SEFSC
Matt Poti	NOS/NCCOS
Travis Sterne	NOS/FGBNMS
John Reed	HBOI
Sandra Brooke	NOS/GRNMS
Charles Messing & Brian Walker	NSU
Data Management	
Robert McGuinn	NOS/NCCOS
Matt Dornback	NESDIS/NCEI
Fishery Management Councils	
Morgan Kilgour	GMFMC
Graciela Garcia-Moliner	CFMC
Chip Collier	SAFMC

Thank you!



Daniel.Wagner@noaa.gov

https://coastalscience.noaa.gov/project/southeast-deep-coral-initiative/