

NOAA Update DeSSC Meeting December 2019

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OCEAN EXPLORATION



Seafloor Mapping



Visual Surveys



Sampling



Inform traditional and renewable energy siting



Evaluate availability of critical minerals resources



Discover new species with biopharmaceutical/biotechnology potential



Assess populations and habitats of managed marine species



Drive innovation of novel technologies



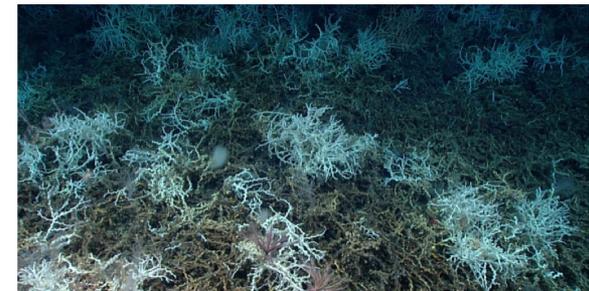
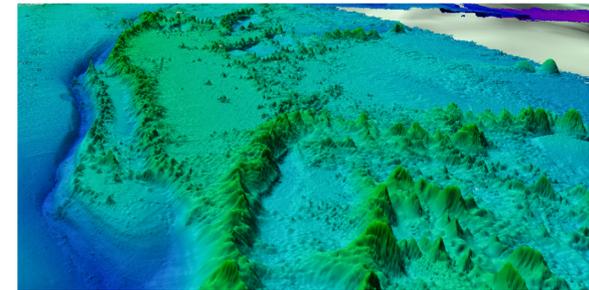
Inspire and educate the next generation of STEM professionals

Administration Policies and Priorities

- Executive Order 13817: A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals
- Executive Order 13840: Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States
- Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals
- Science and Technology for America's Oceans: a Decadal Vision
- Charting a Course for Success: America's Strategy for STEM Education
- NOAA Unmanned Systems, Artificial Intelligence, 'Omics, and Cloud Strategies
- Memorandum on Ocean Mapping of the United States Exclusive Economic Zone and the Shoreline and Nearshore of Alaska

Mechanisms to support ocean exploration

- **Dedicated Platform** - NOAA Ship *Okeanos Explorer*
- **Ocean Exploration Cooperative Institute** - New CI awarded in May 2019. Partnership with URI, WHOI, USM, UNH, and OET.
- **CRADAs** - All for maturation and investment of technology with industry
- **Contracts** - Hydro surveys and data buys from industry
- **Cross-agency partnerships** - NOAA works through the NOPP to facilitate exploration across the federal government, like with the DEEP SEARCH project and through the annual BAA funding call.
- **Competitive grant process** - FY20 proposals already in review. FY21 call for proposals in spring 2020.



ASPIRE EXPEDITIONS

Northern Neighbors: Transboundary Exploration of Deepwater Communities

June 2017, June 2019

NOAA NMFS/Dalhousie University, NOAA Ship *Henry B. Bigelow*

Northeast US Tech Demonstration

July 2019

NOAA OER, NOAA Ship *Okeanos Explorer*

Carolina Canyons

August 2016, August 2017

NOAA NMFS, NOAA Ship *Pisces*

DEEP SEARCH

2017-2019

BOEM/USGS/NOAA, Multiple Platforms

Blake Plateau Mapping

Spring 2020

NOAA OER, NOAA Ship *Okeanos Explorer*

Southeast US ROV and Mapping

Summer 2018, Spring 2019

NOAA OER/NMFS/ONMS, NOAA Ship *Okeanos Explorer*

US-Canada ROV and Mapping

Summer 2019

NOAA OER/ONMS, NOAA Ship *Okeanos Explorer*

Canada Mapping

Summer 2020

NOAA OER, NOAA Ship *Okeanos Explorer*

Mid-Atlantic Ridge ROV and Mapping

Summer 2020

NOAA OER, NOAA Ship *Okeanos Explorer*

Southeast US ROV and Mapping

Fall 2019

NOAA OER/OCS, NOAA Ship *Okeanos Explorer*

US Southeast and Bahama Ridge Mapping

October 2018

NOAA OER/OCS, NOAA Ship *Okeanos Explorer*

ASMIWG Pilot Area Mapping

July 2018

NOAA OER, NOAA Ship *Okeanos Explorer*

US Caribbean ROV and Mapping

Fall 2018

NOAA OER/OCS, NOAA Ship *Okeanos Explorer*

US Caribbean Tech Demonstration

Spring 2020

NOAA OER/OCS, NOAA Ship *Okeanos Explorer*

US Caribbean Mapping

Spring 2020

NOAA OER/OCS, NOAA Ship *Okeanos Explorer*

Mid-Atlantic Ridge ROV and Mapping

Summer 2020

NOAA OER, NOAA Ship *Okeanos Explorer*

Mid-Atlantic Ridge Mapping

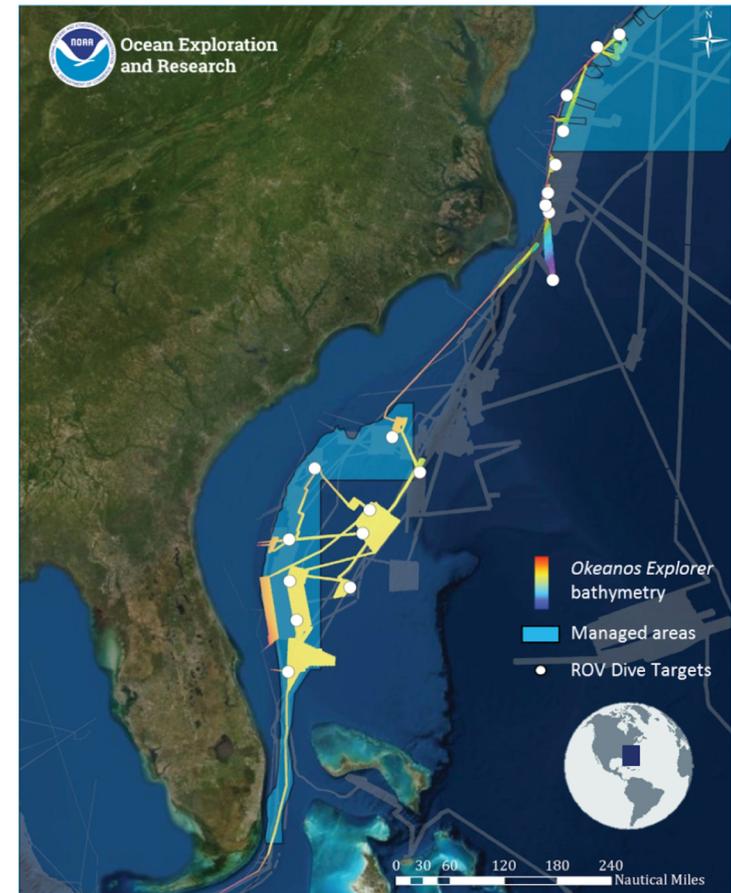
Summer 2020

NOAA OER, NOAA Ship *Okeanos Explorer*

Last updated: October 8, 2019

Execution: Ocean exploration in 2019 - US Southeast

- **Windows to the Deep 2019** - Two leg *Okeanos Explorer* expedition that completed 19 ROV dives and mapped over 35,000 sq km of US SE continental margin, including discovery of extensive deep sea coral and sponge habitat in an area of the Central Blake Plateau not previously mapped or explored.
- **Fugro hydrographic survey contract** - OER contracted Fugro through existing Office of Coast Survey contract mechanism to add more than 27,000 sq km of mapping coverage on Blake Plateau
- **DEEP SEARCH 2019** - April expedition using ROV *Jason* and October expedition on *Nancy Foster* were final fieldwork efforts for multi year project to characterize sensitive habitats of US South and Mid-Atlantic.



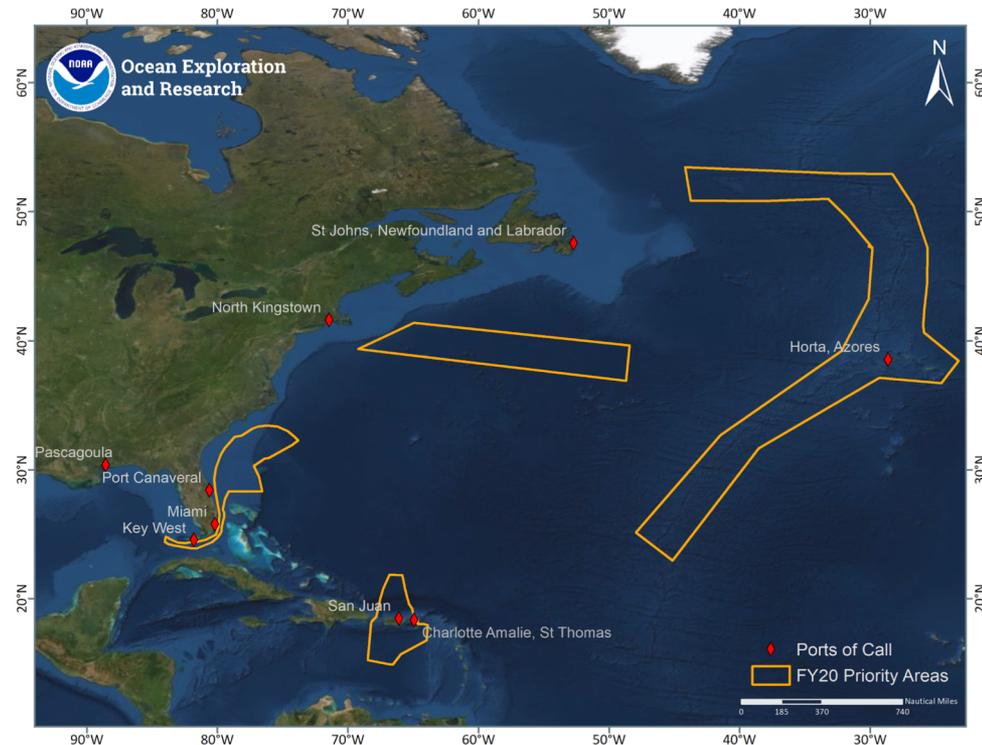
Execution: Ocean exploration in 2019 - Mid- and North Atlantic

- **2019 Technology Demonstration** - 15-day *Okeanos Explorer* cruise deployed and tested emerging technologies, and used Kraken Robotics/ ThayerMahan's towed KATFISH™ (top right) and Kraken Robotics's SeaVision® (bottom right) to image cultural heritage sites.
- **Deep Connections 2019** - 32-day, two-leg *Okeanos Explorer* to map and characterize US and Canadian Atlantic continental margin that included 6 dives in 3 marine managed areas: Gully Marine Protected Area, Northeast Canyons and Seamounts Marine National Monument, and the Frank R. Lautenberg Deep-Sea Coral Protection Area.

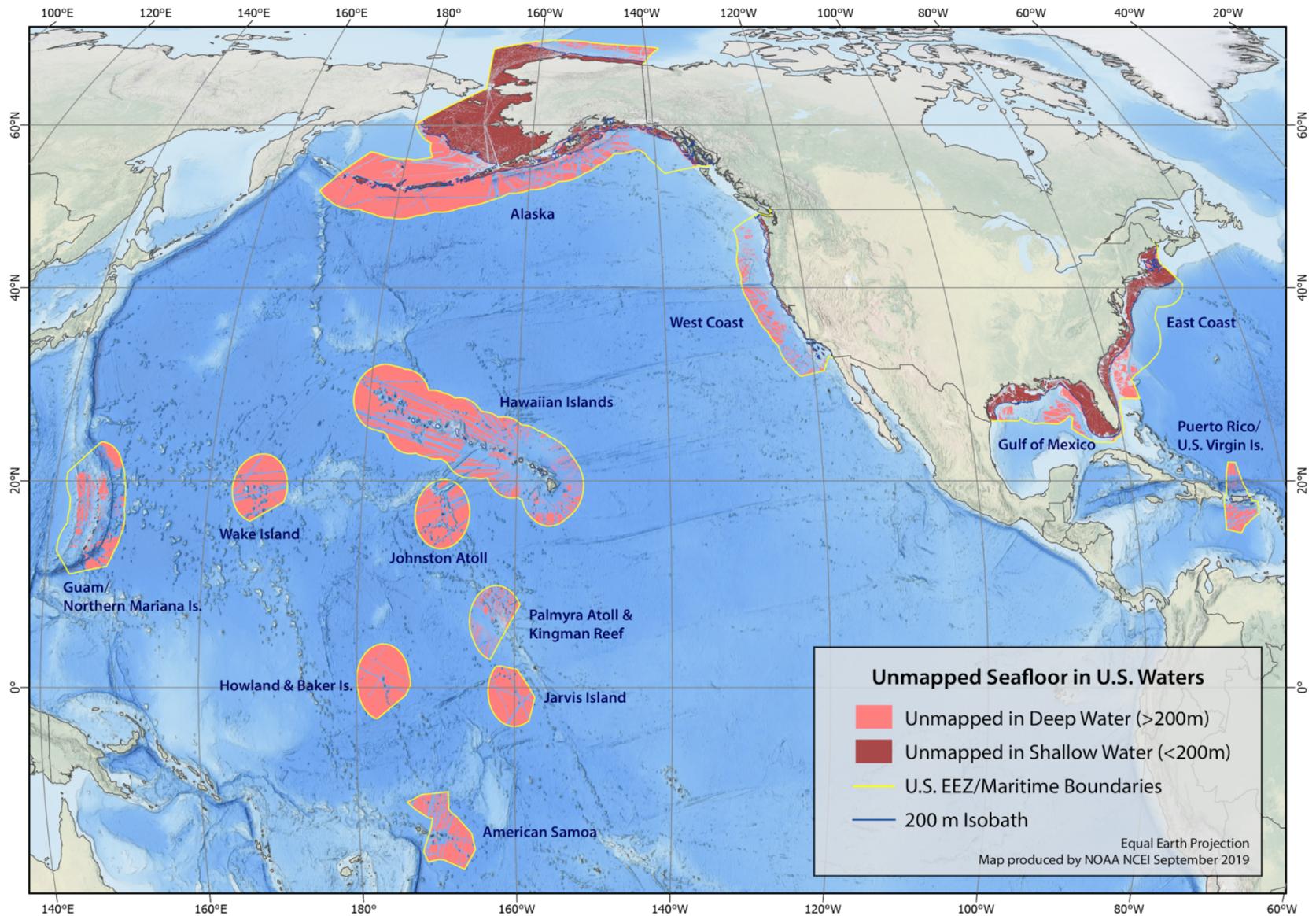


Okeanos Explorer in FY20

- **SE US Deep-sea Exploration** - Two leg, 43-day expedition just concluded.
- **U.S. Caribbean Mapping** - includes MACHC and OCS priorities to complete US EEZ mapping; and possible tech demo component.
- **Voyage to the Mid-Atlantic Ridge** - Three leg, 70-day expedition to MAR and Azores Plateau next summer.
- **High Seas Mapping** - Transit mapping cruise to end the season and bring the ship back to RI homeport



Looking to the Future





[OceanExplorer.NOAA.gov](https://oceanexplorer.noaa.gov)



**Ocean Exploration
and Research**