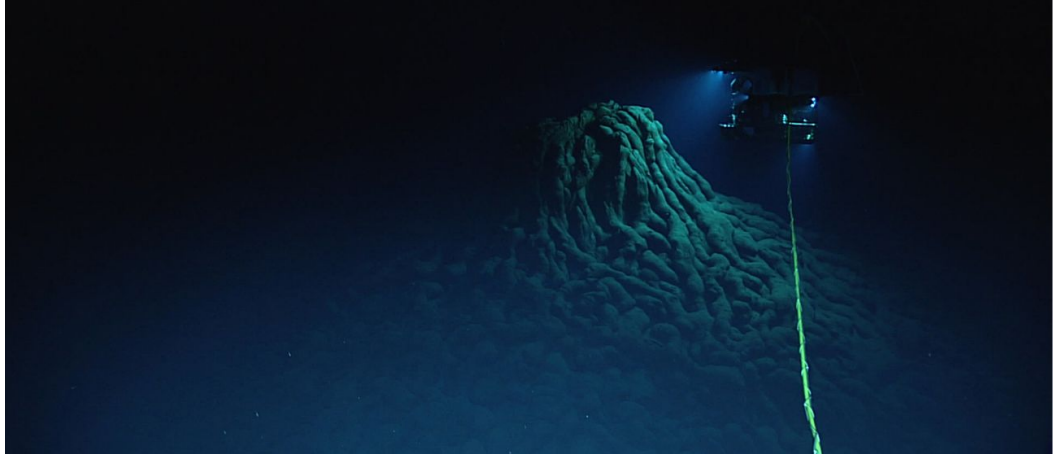
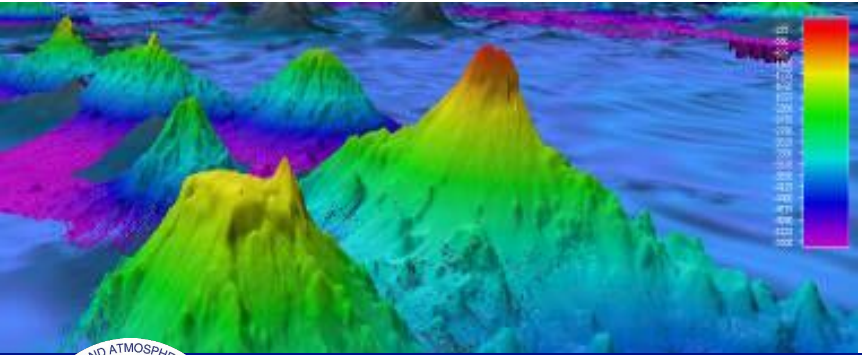


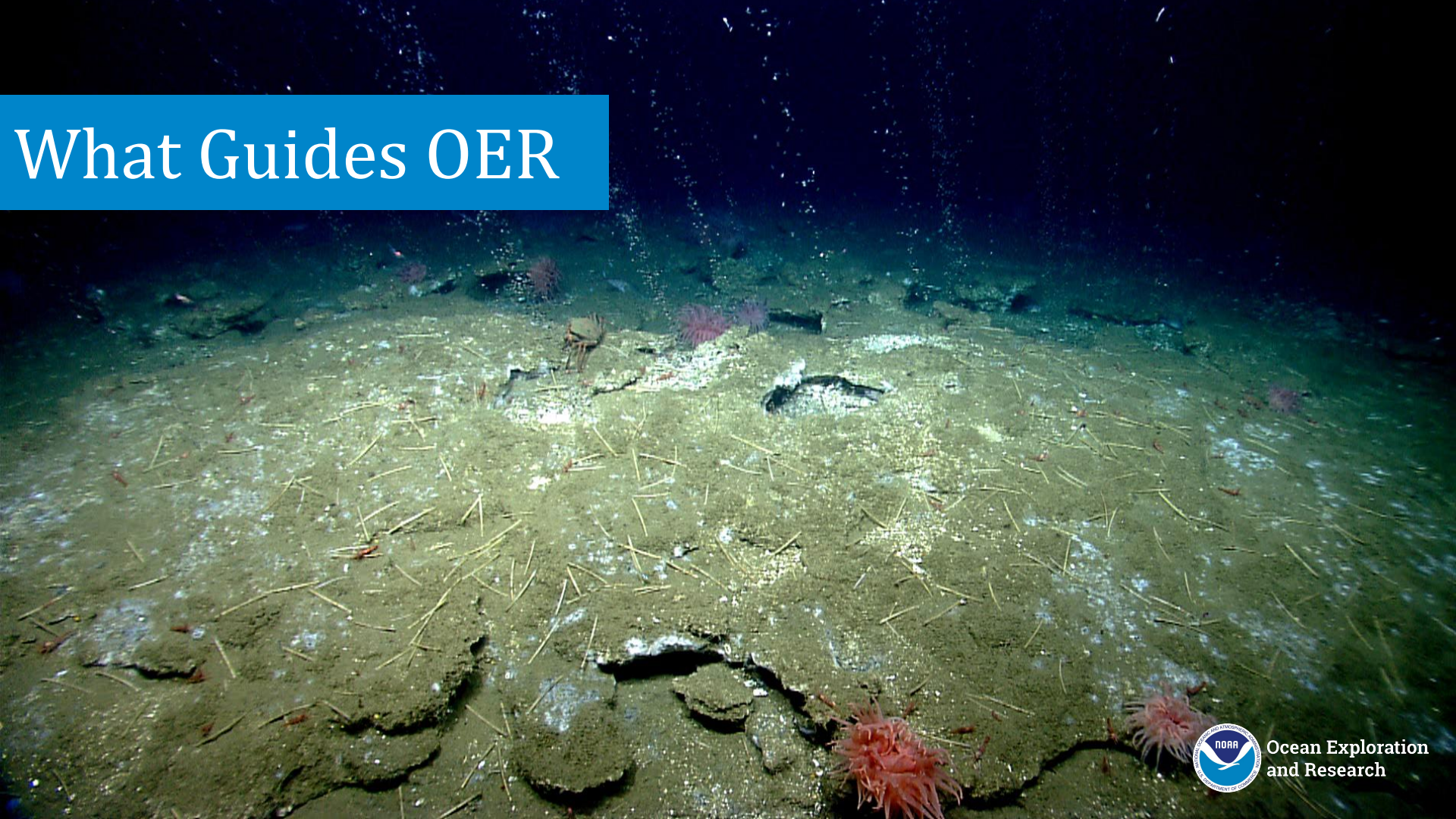


Ocean Exploration and Research

OER 101 for New OEAB Members

https://go.usa.gov/x7q6F

What Guides OER

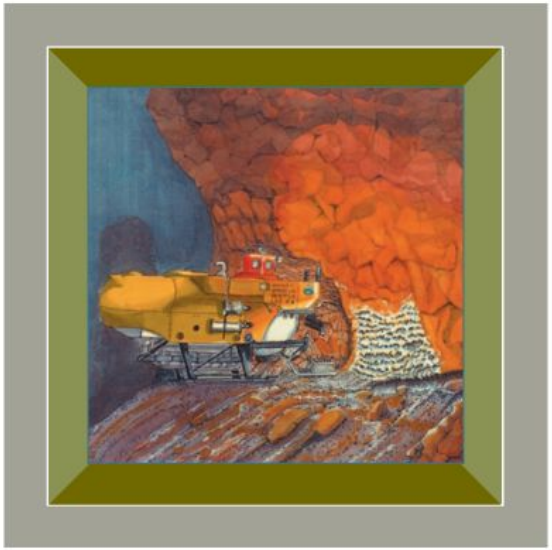


Ocean Exploration and Research

DISCOVERING

EARTH'S FINAL FRONTIER:

A U.S. STRATEGY FOR OCEAN EXPLORATION



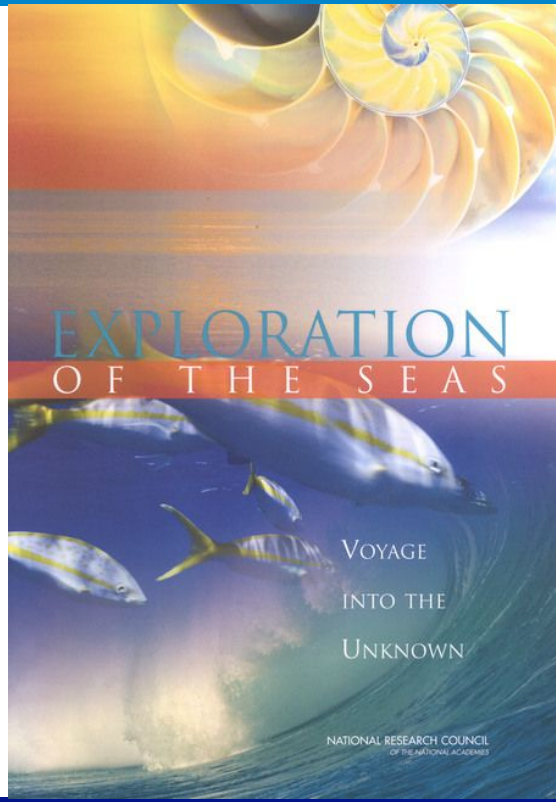
The Report of the President's Panel for Ocean Exploration

The First U.S. Strategy for Ocean Exploration

"... exploration is defined as **discovery** through **disciplined diverse observations** and the **recording of the findings**. An explorer is distinguished from a researcher by virtue of the fact that an explorer has not narrowly designed the observing strategy to test a specific hypothesis. A successful explorer leaves a legacy of new knowledge that can be used by those not yet born to answer questions not yet posed at the time of the exploration. This new knowledge may also have immediate beneficial applications in answering the needs of contemporary ocean scientists, natural resource managers, educators, and industries."

Refining the Definition of Ocean Exploration

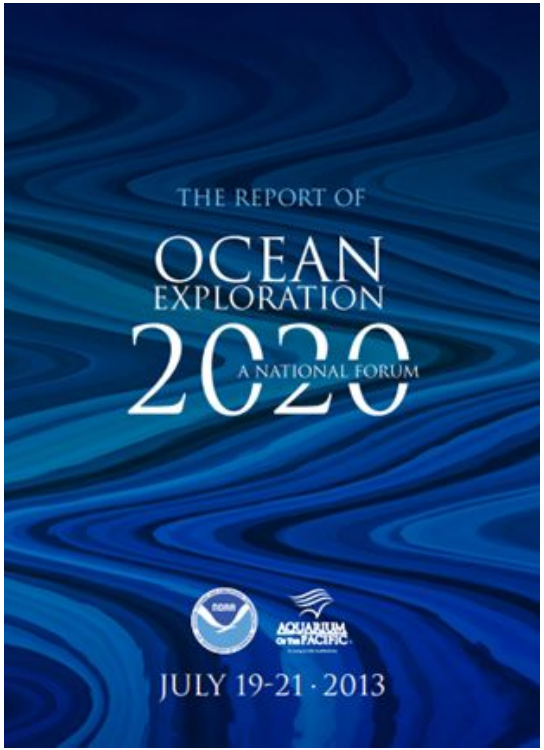
"Ocean exploration has included rigorous, systematic observation and documentation of the biological, chemical, physical, geological, and archaeological aspects of the ocean in the three dimensions of space and in time."



Omnibus Public Land Management Act of 2009

- The “Ocean Exploration Act”
  - National Ocean Exploration Program
  - Ocean Exploration and Undersea Research Technology and Infrastructure Task Force
  - Ocean Exploration Advisory Board
  - Ocean exploration forum
- NOAA Undersea Research Program Act

National Ocean Exploration Forums



Ocean Exploration Priorities

Partnerships

Platforms

Technology Development

Citizen Science

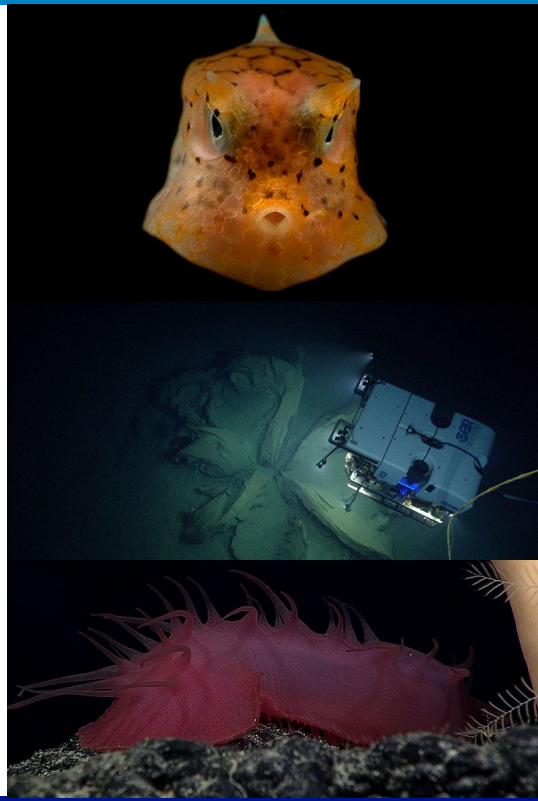
Data Sharing

Public Engagement

OER Program Reviews

In addition to the findings and information obtained from the national forum process, OER has benefited from external reviews:

- 2012 Science Advisory Board 10-year review
- 2018 OEAB Subcommittee on Ocean Exploration Education review
- 2019 OAR program review



Ocean Exploration Advisory Board

The administrator of the National Oceanic and Atmospheric Administration shall appoint an Ocean Exploration Advisory Board composed of experts in relevant fields

- To advise the administrator on priority areas for survey and discovery;
- To assist the program in the development of a 5-year strategic plan for the fields of ocean, marine, and Great Lakes science, exploration, and discovery;
- To annually review the quality and effectiveness of the proposal review process established under section 12003(a)(4); and
- To provide other assistance and advice as requested by the administrator.

Current Administration Policies and Priorities

- E.O. 13817: A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals
- E.O. 13840: Ocean Policy to Advance the Economic, Security, and Environmental Interests of the U.S.
- Science and Technology for America's Oceans: A Decadal Vision
- White House Summit on Partnerships in Ocean Science and Technology
- Presidential Memorandum on Ocean Mapping of the United States Exclusive Economic Zone and the Shoreline and Nearshore of Alaska
- National Strategy for Mapping, Exploring, and Characterizing the U.S. Exclusive Economic Zone

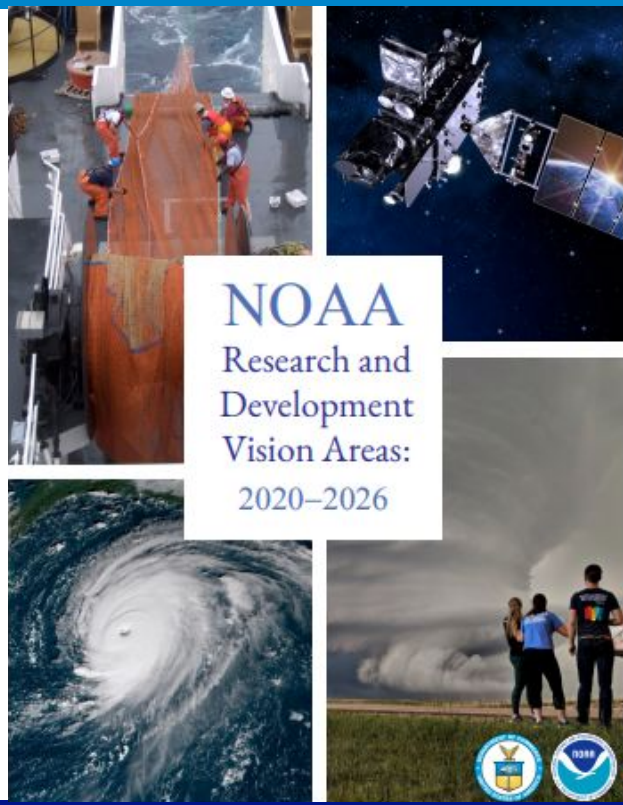
National Strategy Goals

GOAL

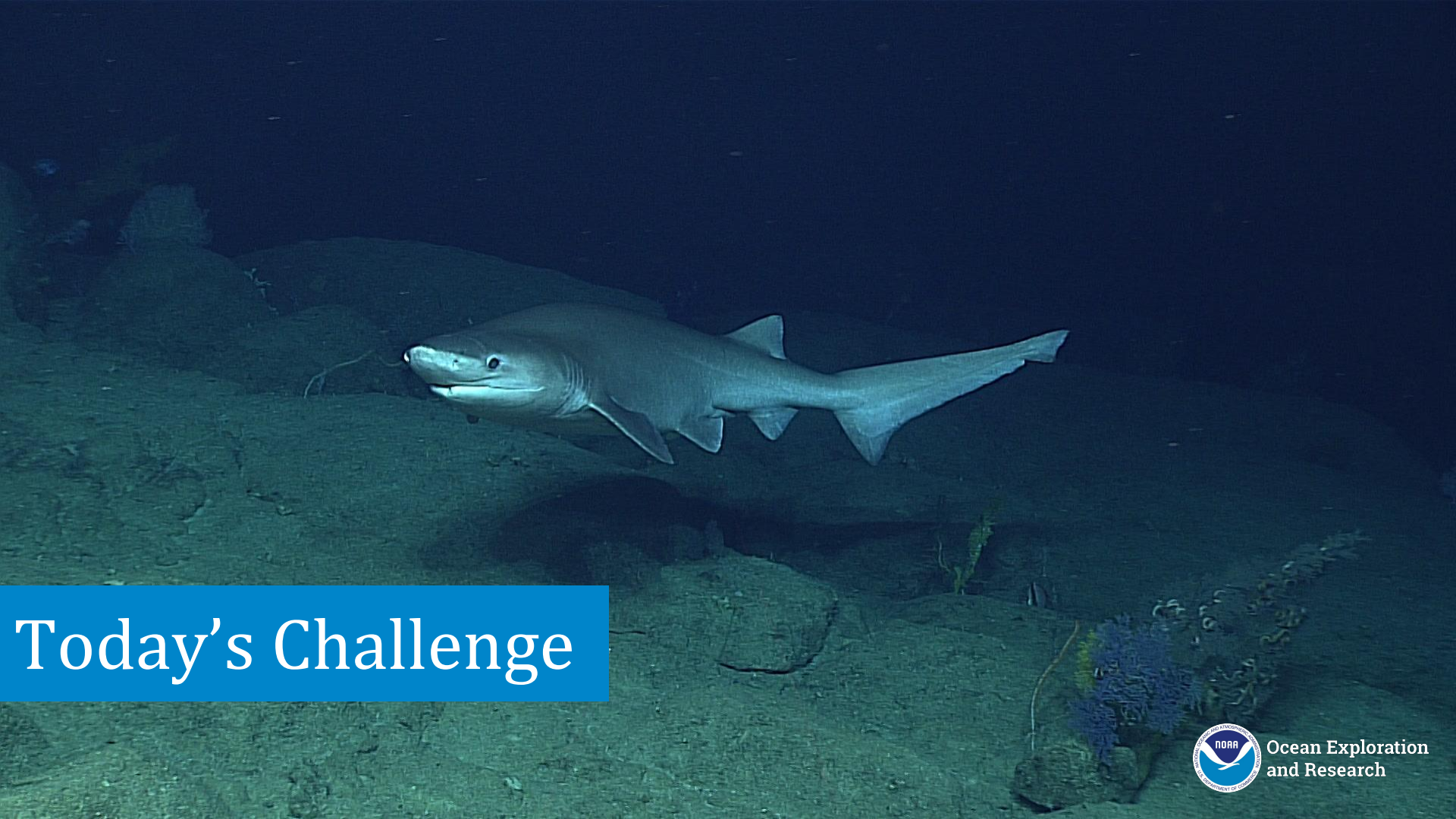
1. Coordinate Interagency Efforts and Resources to Map, Explore, and Characterize the United States EEZ
2. Map the United States EEZ
3. Explore and Characterize Priority Areas of the United States EEZ
4. Develop and Mature New and Emerging Science and Technologies to Map, Explore, and Characterize the United States EEZ
5. Build Public and Private Partnerships to Map, Explore, and Characterize the United States EEZ

NOAA Policies and Priorities

- NOAA Mission Priorities
- NOAA Strategic Plan
- NOAA Research and Development Vision Areas
- NOAA Science and Technology Strategies
- Direction from NOAA leadership
- OER Strategic Plan



NOAA Science and Technology Strategies



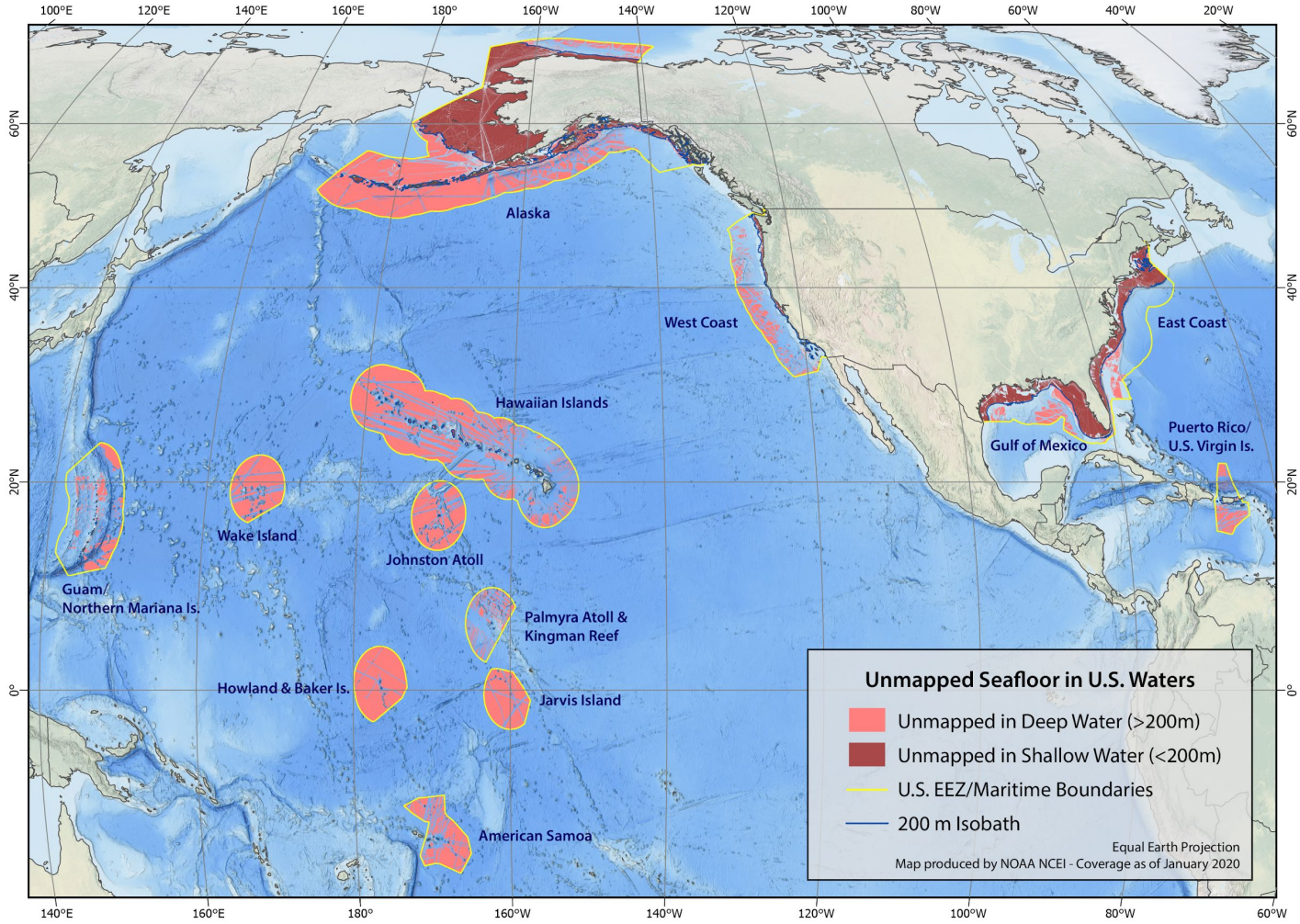
Today's Challenge

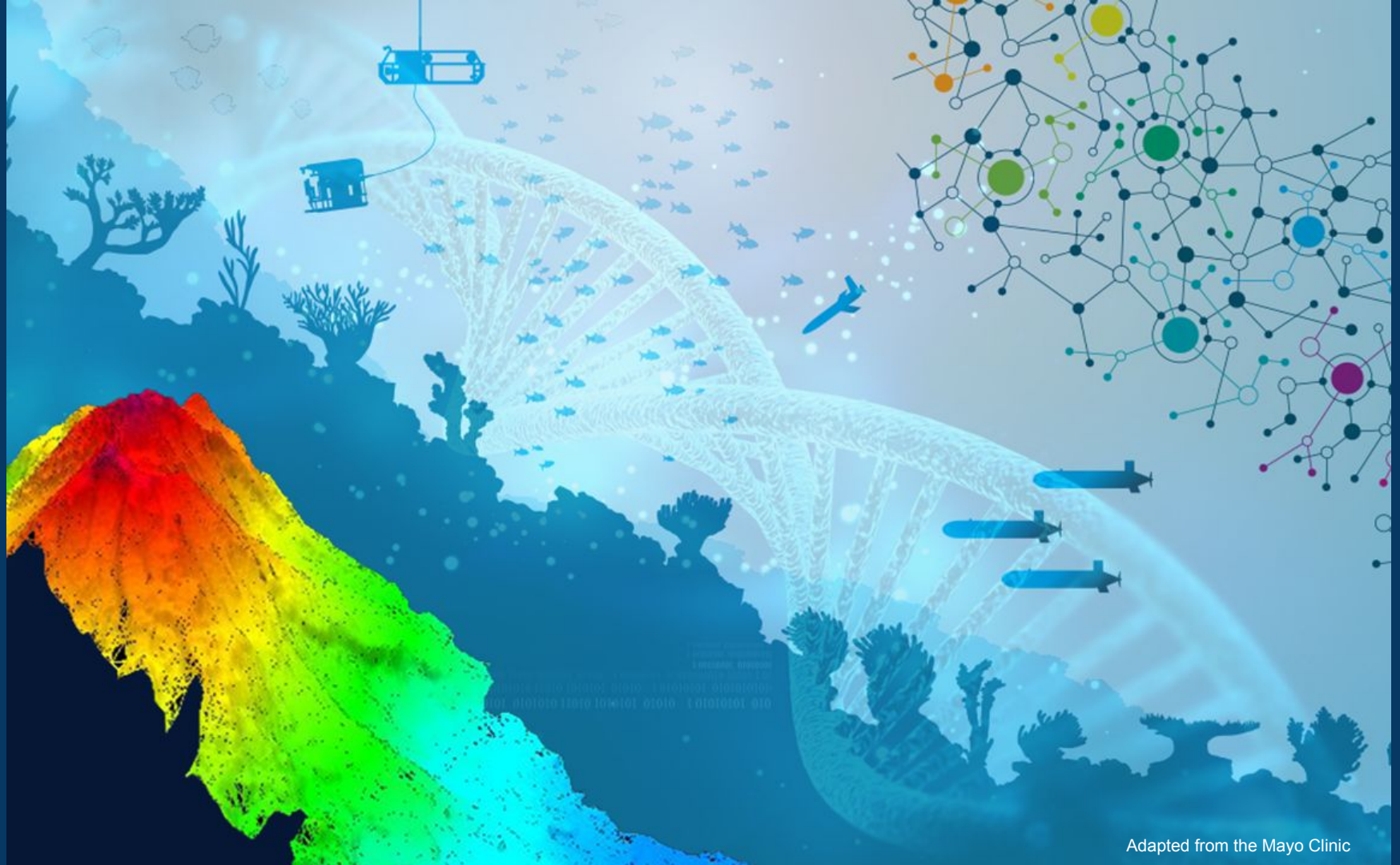
Ocean Exploration and Research

Ocean Exploration: An Exponential Task

- Collect high-resolution bathymetry in areas with no (or low-quality) data
- Identify, map, and explore the diversity and distribution of benthic habitats and resources
- Investigate deep ocean biogeographic patterns and connectivity
- Collect data to better understand the characteristics of the water column and the fauna that live there
- Acquire data to support priority science and management needs

Mapping Gaps



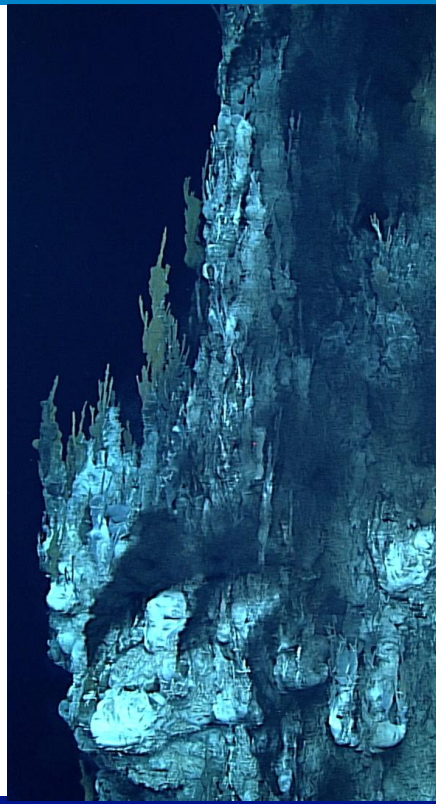

Adapted from the Mayo Clinic

How OER Operates

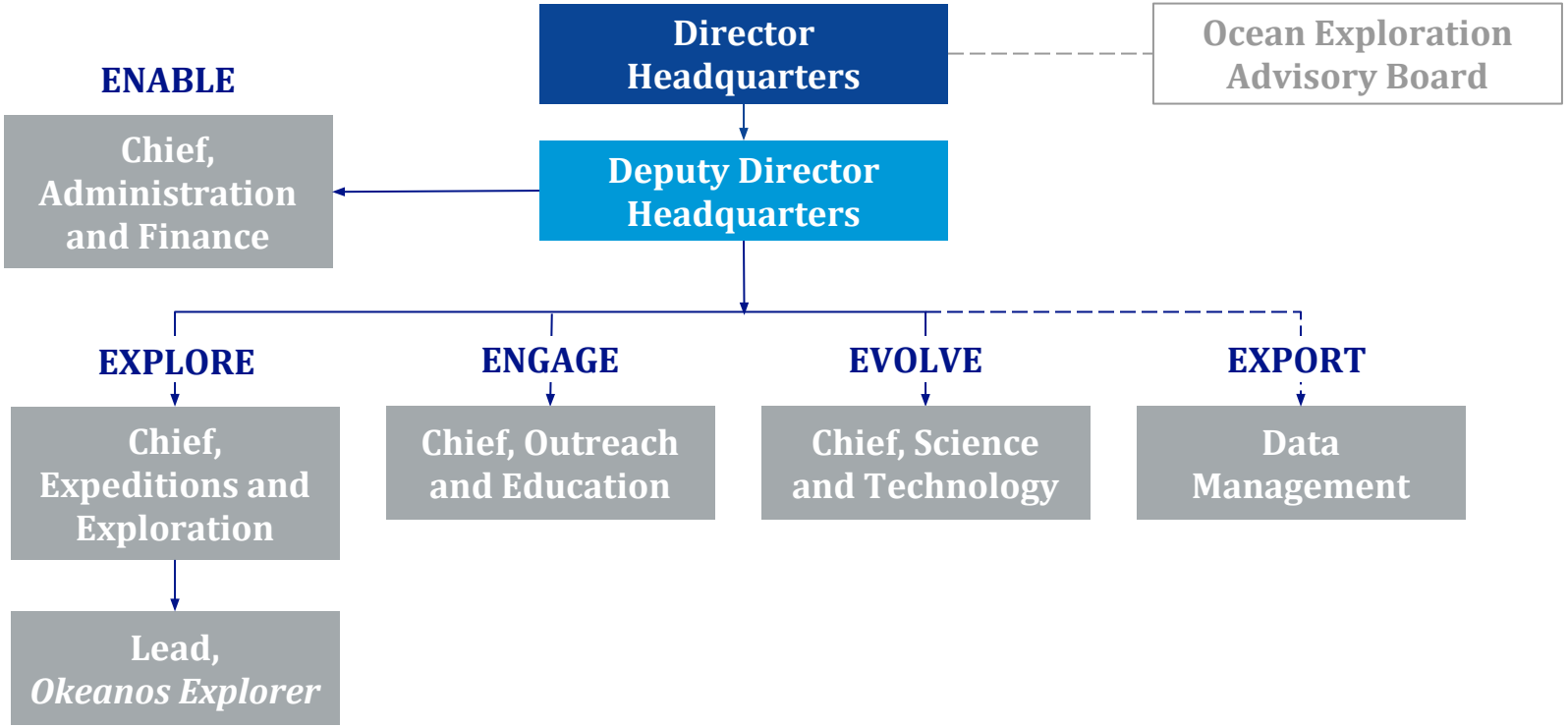
Ocean Exploration and Research

Ocean Exploration: One Puzzle Piece

- Conduct or support ~450 operating mission days at sea each year
- Use ship-based sonars to collect ocean floor and water column data
- Conduct remotely operated vehicle operations for fine-scale observing and sample collection
- Test and evaluate emerging sensors and technologies to increase pace, scope, and efficiency of exploration
- Work with and fund partners and collaborators to do the same
- Conduct outreach and education programs to improve public understanding of ocean resources



OER Office Structure



Exploration Campaigns

A series of expeditions over multiple years to a geographic area or theme of **exploration priority** interest

Complementary expeditions using a wide variety of **platforms**, **technologies**, and strategies

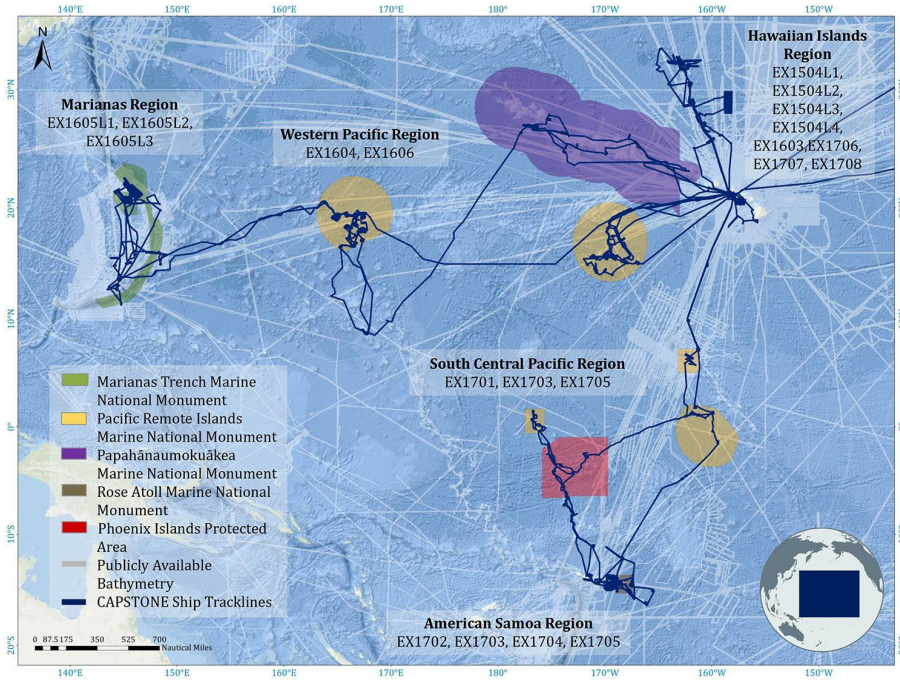
Package of **data and information sharing** across platforms serves as foundation of environmental intelligence

Robust **engagement** in education and outreach efforts are integral activities

Partners focus messaging on the breadth of work

NOAA Ship *Okeanos Explorer*

Key Campaigns

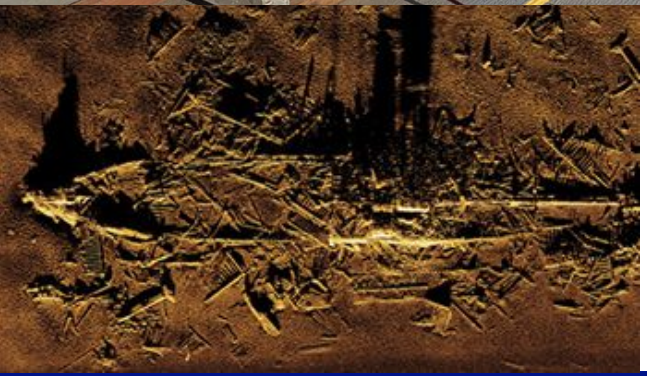


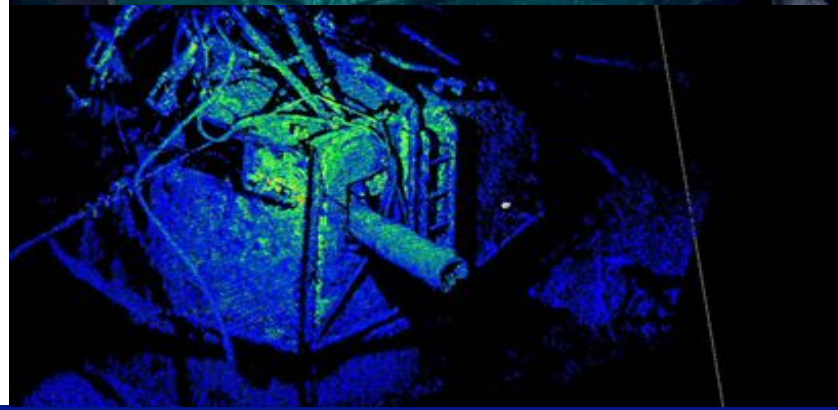
Campaign to Address Pacific monument Science, Technology, and Ocean NEeds (CAPSTONE)

Atlantic Seafloor Partnership for Integrated Research and Exploration (ASPIRE)

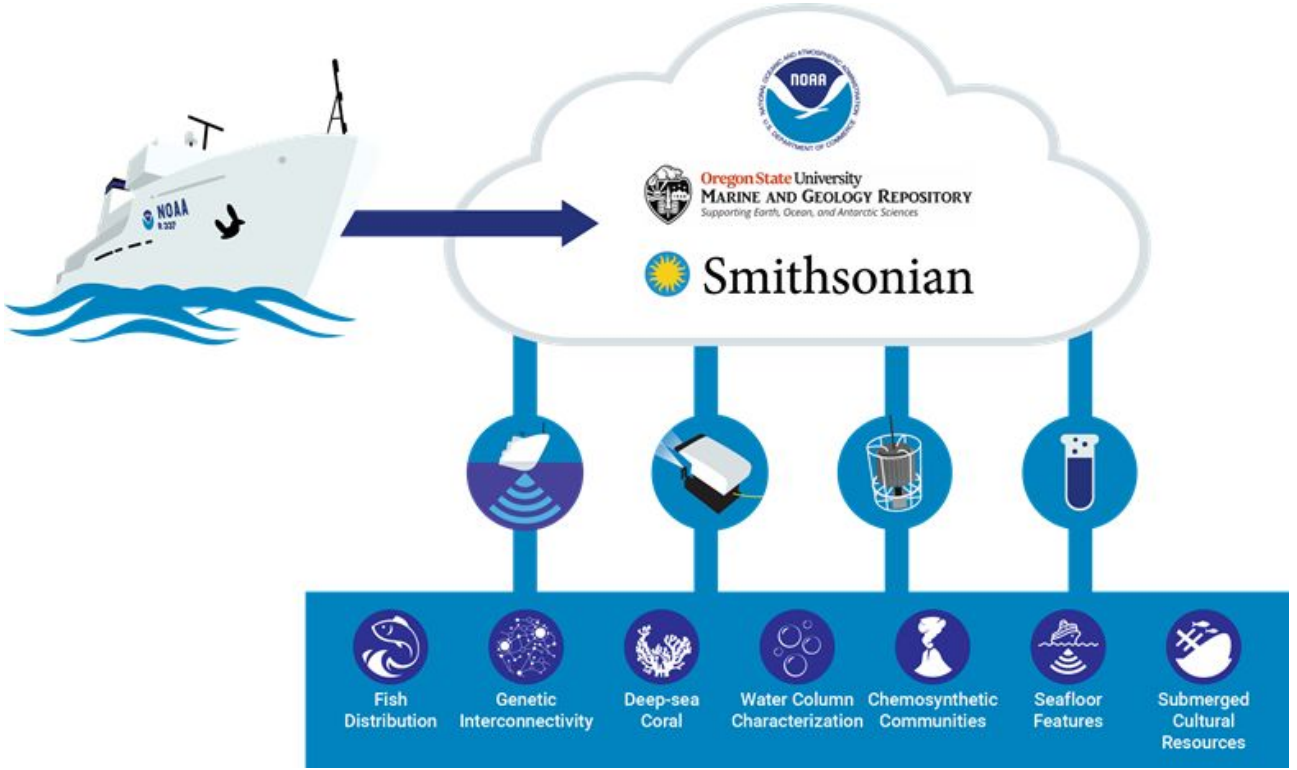

BOEM
Bureau of Ocean Energy Management
CCOM JHC
Center for Coastal & Ocean Mapping
Joint Hydrographic Center
University of New Hampshire
Woods Hole Oceanographic Institution
THE UNIVERSITY OF SOUTHERN MISSISSIPPI
THE UNIVERSITY OF RHODE ISLAND
XPRIZE
OCEAN NETWORKS CANADA
USGS
science for a changing world
NASA
Inner Space center
OCEAN EXPLORATION TRUST
AQUARIUM OF THE PACIFIC
A non-profit institution
PHOENIX ISLANDS PROTECTED AREA
SAILDRONE
South Atlantic Fishery Management Council
"To Conserve and Manage"
DEPARTMENT OF STATE
UNITED STATES OF AMERICA
CINAR
Cooperative Institute for the North Atlantic Region
MARCO
MID-ATLANTIC REGIONAL COUNCIL ON THE OCEAN
SCHMIDT OCEAN INSTITUTE
SPREP
Secretariat of the Pacific Regional Environment Programme
INTERRIDGE
international cooperation in ridge-crest studies
NATIONAL PARK SERVICE
U.S. FISH & WILDLIFE SERVICE
UNIVERSITY of HAWAI'I
HARBOR BRANCH
FLORIDA ATLANTIC UNIVERSITY
ThayerMahan
KRAKEN
NIWA
Taihoro Nukurangi
MONMOUTH UNIVERSITY
CALADAN OCEANIC
OCEAN INFINITY
atlas
Sea Grant
Smithsonian
VULCAN
UNIVERSITY of LOUISIANA LAFAYETTE
UNITED STATES NAVY
CIOERT
COOPERATIVE INSTITUTE FOR Ocean Exploration, Research & Technology
UNDERWATER WORLD
GUAM USA
Big Ocean NETWORK
learn | discover | acculturate
exploratorium
INTERNATIONAL SEABED AUTHORITY
OCEANX
MBARI
Monterey Bay Aquarium Research Institute
iAtlantic
PEW
FUGRO
Marae Moana
Oregon State University
MID-ATLANTIC FISHERY MANAGEMENT COUNCIL
AORA
ATLANTIC OCEAN RESEARCH ALLIANCE
SponGES

Technology Demonstrations





From Data to Information



Ocean Exploration Cooperative Institute

- Established in May 2019 to support and technologically enhance core NOAA ocean exploration priorities
- Designed to facilitate a long-term collaborative environment between NOAA and the awardees in which broad-based exploration, research, technological, educational, and outreach capabilities can be developed and sustained
- Provides opportunities to advance:
  - Industry partnerships
  - New modes of operation using a variety of platforms and systems
  - Autonomy (vehicles, platforms, processing)

THE UNIVERSITY OF RHODE ISLAND

OCEAN EXPLORATION TRUST

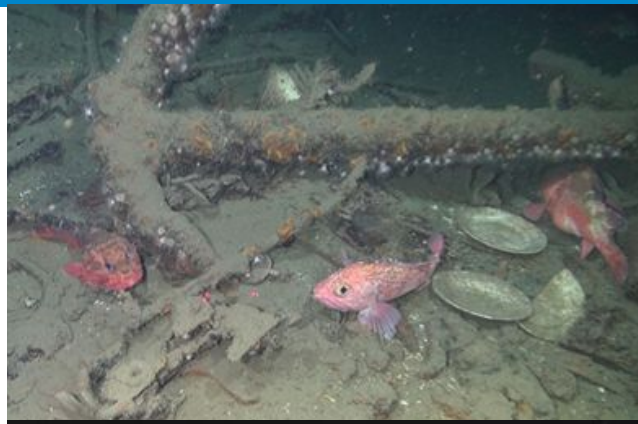
Woods Hole Oceanographic INSTITUTION

University of New Hampshire

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

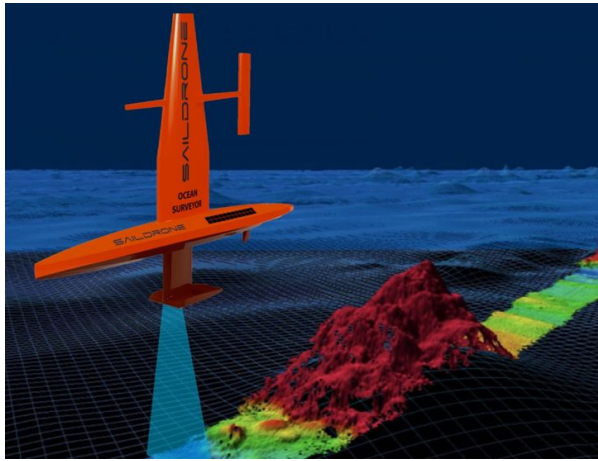
Competitive Grant Program

Supports projects that provide data and information that may inform ocean-related segments of the U.S. economy through mapping, characterization, and exploration of the deep seafloor and water column of the U.S. Exclusive Economic Zone as well as marine cultural heritage in U.S. waters (Fiscal Year 2021)

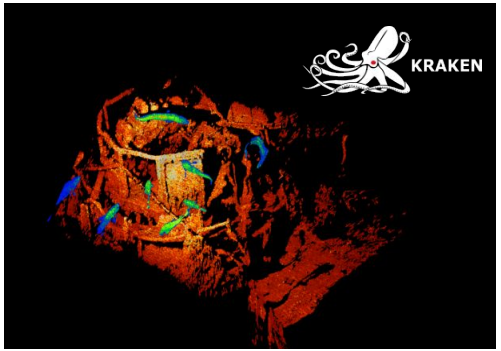


National Oceanographic Partnership Program

The National Oceanographic Partnership Program (NOPP) facilitates partnerships between federal agencies, academia, and industry to advance ocean science research and education. Through this collaboration, federal agencies can leverage resources to invest in priorities that fall between agency missions or that are too large for any single agency to support.

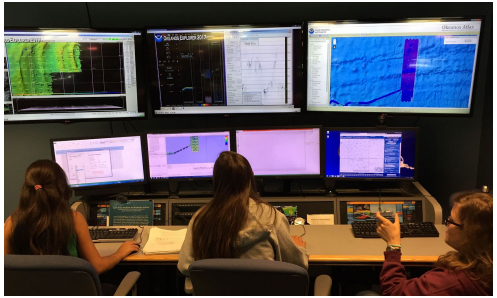


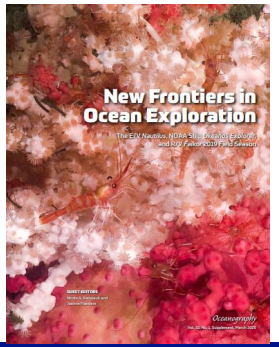
Partners and Platforms

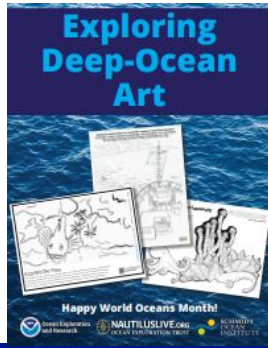


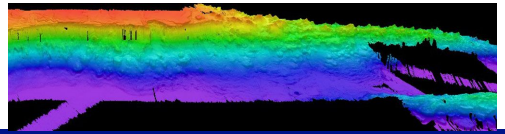
Engagement Activities

- Education
- Communications
- Web/Social Media
- Special Projects
- Internships
- Diversity and Inclusion









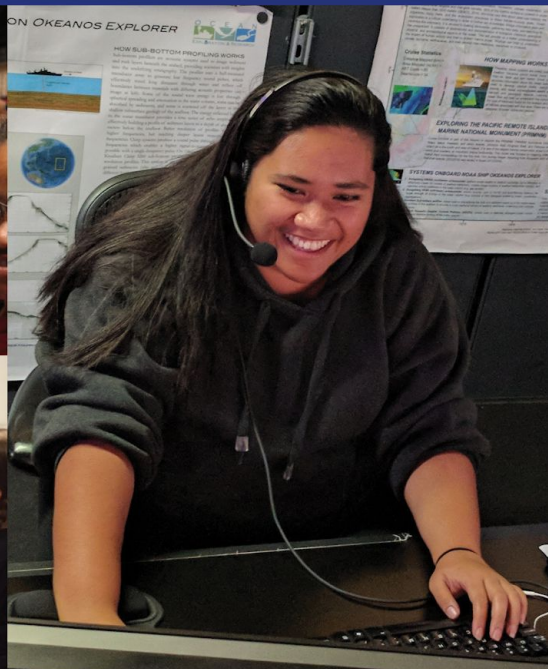
Education Initiatives

Educator Professional Development

Workshops, Lessons/Activities, Webinars, Resources

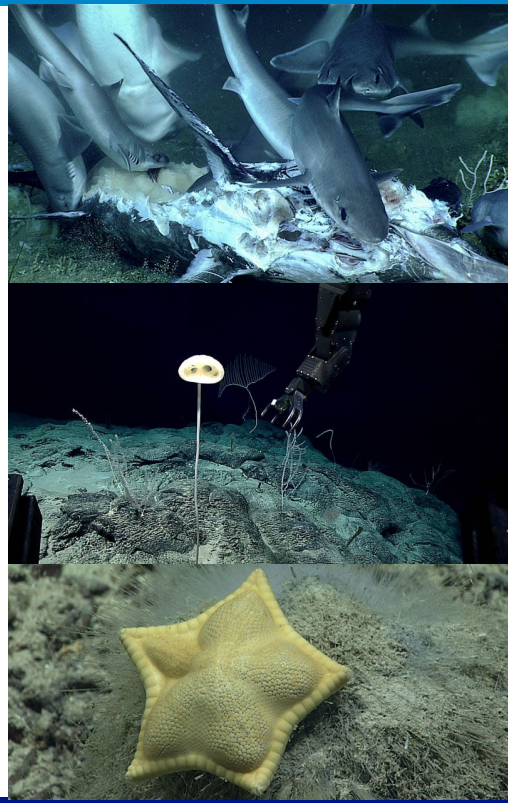
Scientist Professional Development

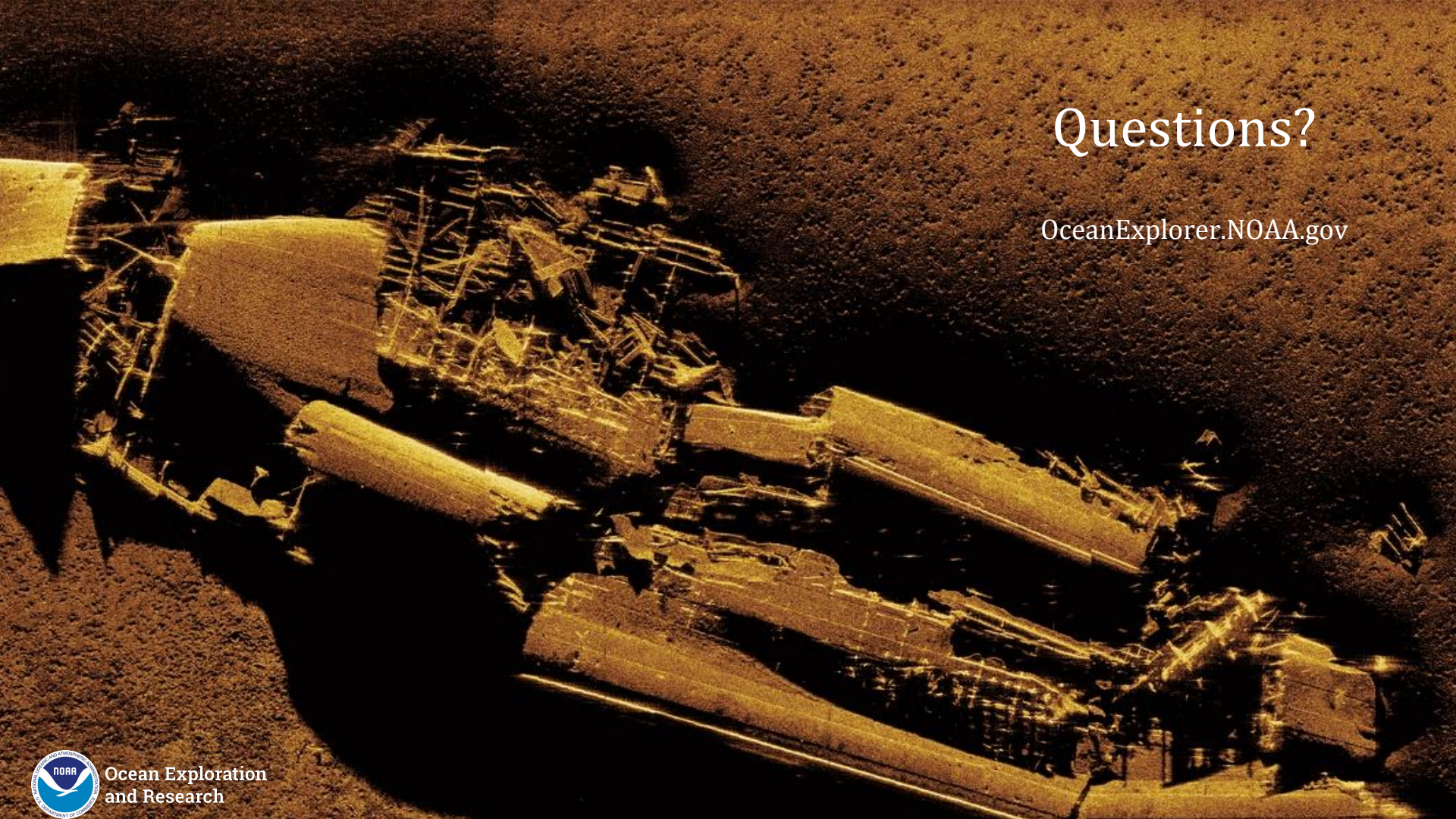
Explorer-in-Training, Hollings Scholar, Knauss Fellowship



Communications and Web

- Target a variety of audiences:
  - Ocean-interested public
  - Science community
  - Resource managers and decision makers
  - Educators
  - Internal NOAA
- Use social media to drive traffic to website, a repository of ocean exploration information and a record of OER's exploration activities
- Respond to internal and external requests for ocean exploration-related content





Questions?

OceanExplorer.NOAA.gov

Ocean Exploration and Research