

An underwater photograph of a rocky seabed covered in diverse marine life. The scene is dominated by dark, jagged volcanic rock. Various types of coral are visible, including large, branching pinkish-purple corals on the left and smaller, more delicate corals in shades of orange and brown. Several sea stars are scattered across the rock surface, some in vibrant orange and others in a reddish-pink hue. The lighting is focused, creating bright highlights on the organisms and deep shadows in the crevices of the rock.

Setting the Stage: Policy and Legislation for Ocean Exploration

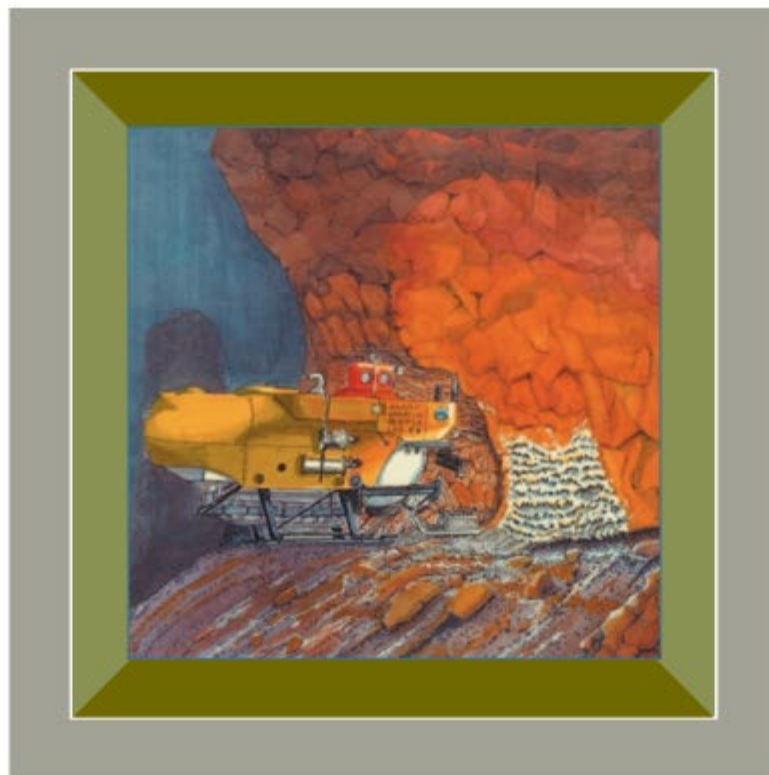
Dr. Alan P. Leonardi, Director
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DISCOVERING

EARTH'S FINAL FRONTIER:

A U.S. STRATEGY FOR OCEAN EXPLORATION



The Report of the President's Panel for Ocean Exploration

President's Panel for Ocean Exploration (2000)

"... 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."

National Academy of Sciences (2003)

"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."

NOAA Ship *Okeanos Explorer* (2008)



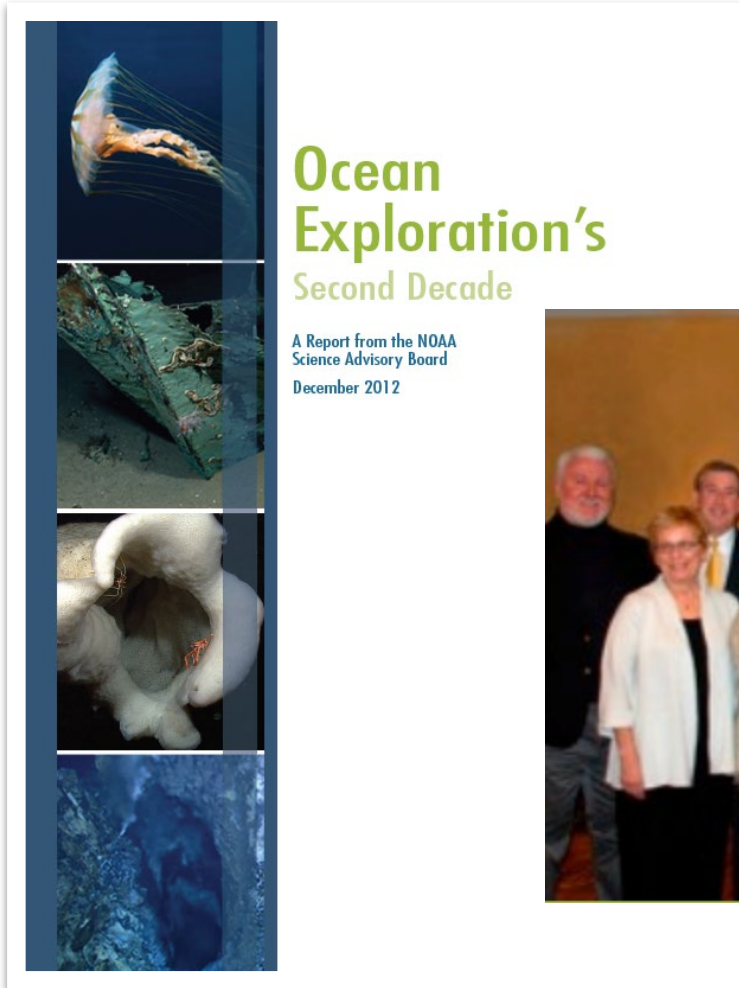
Omnibus Public Land Management Act of 2009

- “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

Indonesia-USA Deep-sea Exploration of the Sangihe Talaud Region (INDEX-SATAL, 2010)



OER Program Review (2012)



Ocean Exploration Advisory Board (2014)

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

1. to advise the Administrator on priority areas for survey and discovery;
2. 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;
3. to annually review the quality and effectiveness of the proposal review process established under section 12003(a)(4); and
4. to provide other assistance and advice as requested by the Administrator.

Internal — NOAA Policies and Priorities

- NOAA Mission Priorities
- NOAA Strategic Plan
- NOAA Five-Year Research and Development Plan
- Direction from NOAA leadership
- OER Strategic Plan



NOAA Five-Year Research and Development Plan 2013-2017

What exists in the unexplored areas of our oceans?

- Map and characterize ocean basin boundaries
- Discover and characterize new ocean resources
- Transition ocean exploration discoveries to the rest of NOAA and other agencies



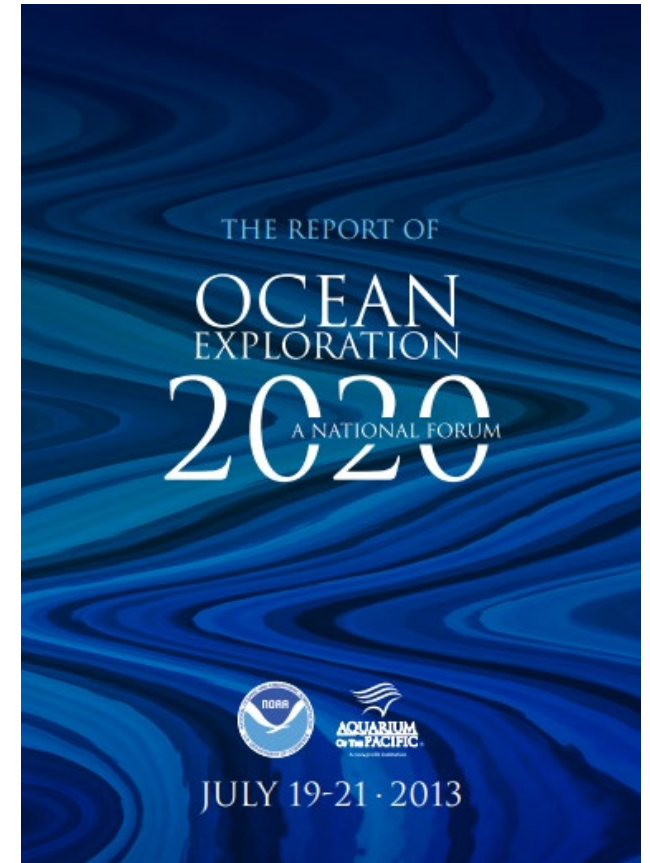
Advisory Board, Science Community, and Other Stakeholders

- Ocean Exploration Advisory Board
- Community Workshops
- National Forums on Ocean Exploration



Ocean Exploration 2020: A National Forum

- Ocean exploration priorities
- Partnerships
- Platforms
- Technology development
- Citizen science
- Data sharing
- Public engagement



OER's Response 2012-2014

- Pivot to NOAA mission priorities
- Two ships of ocean exploration
- Cultivated strong ties to the community and new partners
 - Schmidt Ocean Institute, industry, academia
 - Cooperative research and development agreements, other tech partnerships
 - Octonauts
- Focused competitive grants program
- Sustained effort to message ocean exploration internally and externally



An underwater photograph showing a group of sharks swimming in the upper portion of the frame. In the lower portion, a large, dark-colored fish is shown in profile, facing left, with its mouth open and a smaller fish held inside. The background is a sandy seabed with some greenish-brown vegetation.

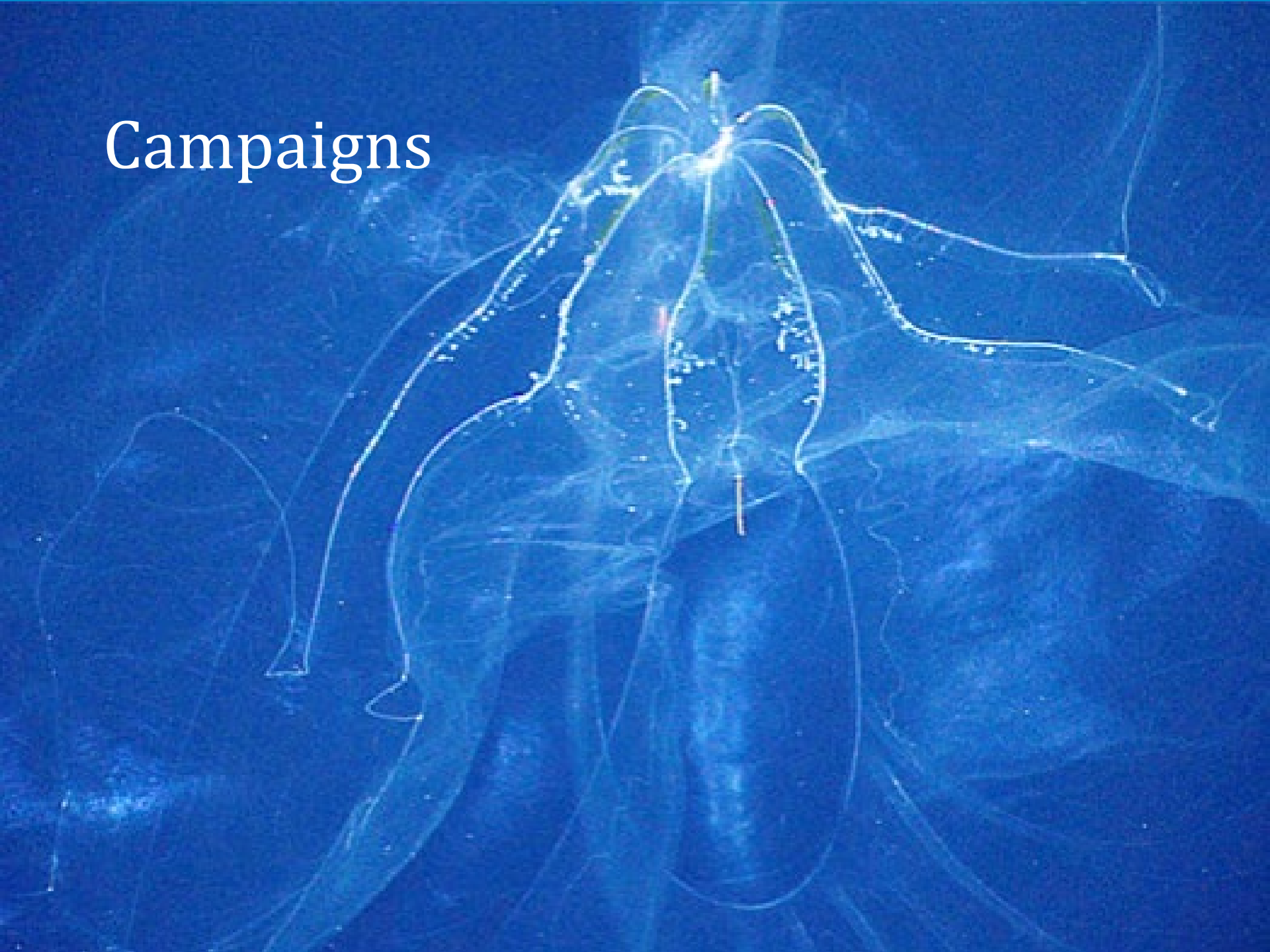
Setting the Stage: The Strategic Evolution of OER 2015-2019

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Timeline of Selected Events

- 2000** President's Panel for Ocean Exploration
- 2001** NOAA Office of Ocean Exploration established
- 2003** National Academy of Sciences report on ocean exploration
- 2007** NOAA Office of Ocean Exploration and National Undersea Research Program merged to create Office of Exploration and Research
- 2008** *Okeanos Explorer* commissioned, competitive grants program suspended
- 2009** "Ocean Exploration Act" (Public Law 111-11)
- 2010** Indonesia-U.S. ocean exploration of the Sangihe-Talaud Region (INDEX-SATAL)
- 2012** Decadal review
- 2012-2014** NOAA attempts to zero out the program
- 2013** First National Ocean Exploration Forum: Ocean Exploration 2020
- 2014** NOAA-focused forum, OEAB established, competitive grants program reintroduced
- 2015** CAPSTONE launch, new office leadership and structure, Forum: Characterizing the Unknown
- 2016** Forum: Beyond the Ships 2020-2025
- 2017** ASPIRE launch, Forum: Ocean Exploration in a Sea of Data
- 2018** Education program review, Forum: All Hands on Deck

Campaigns

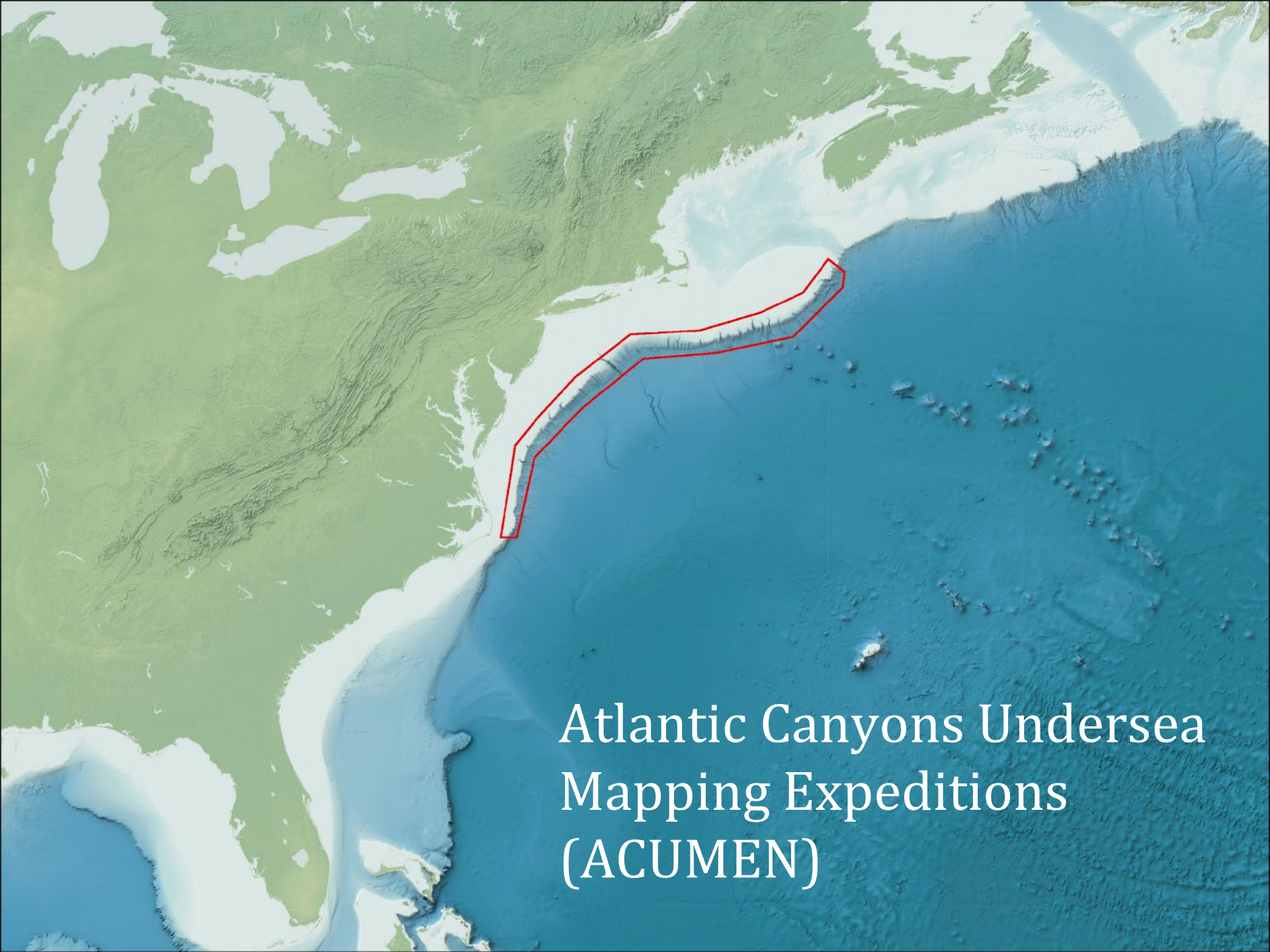


Ocean Exploration Campaign Framework

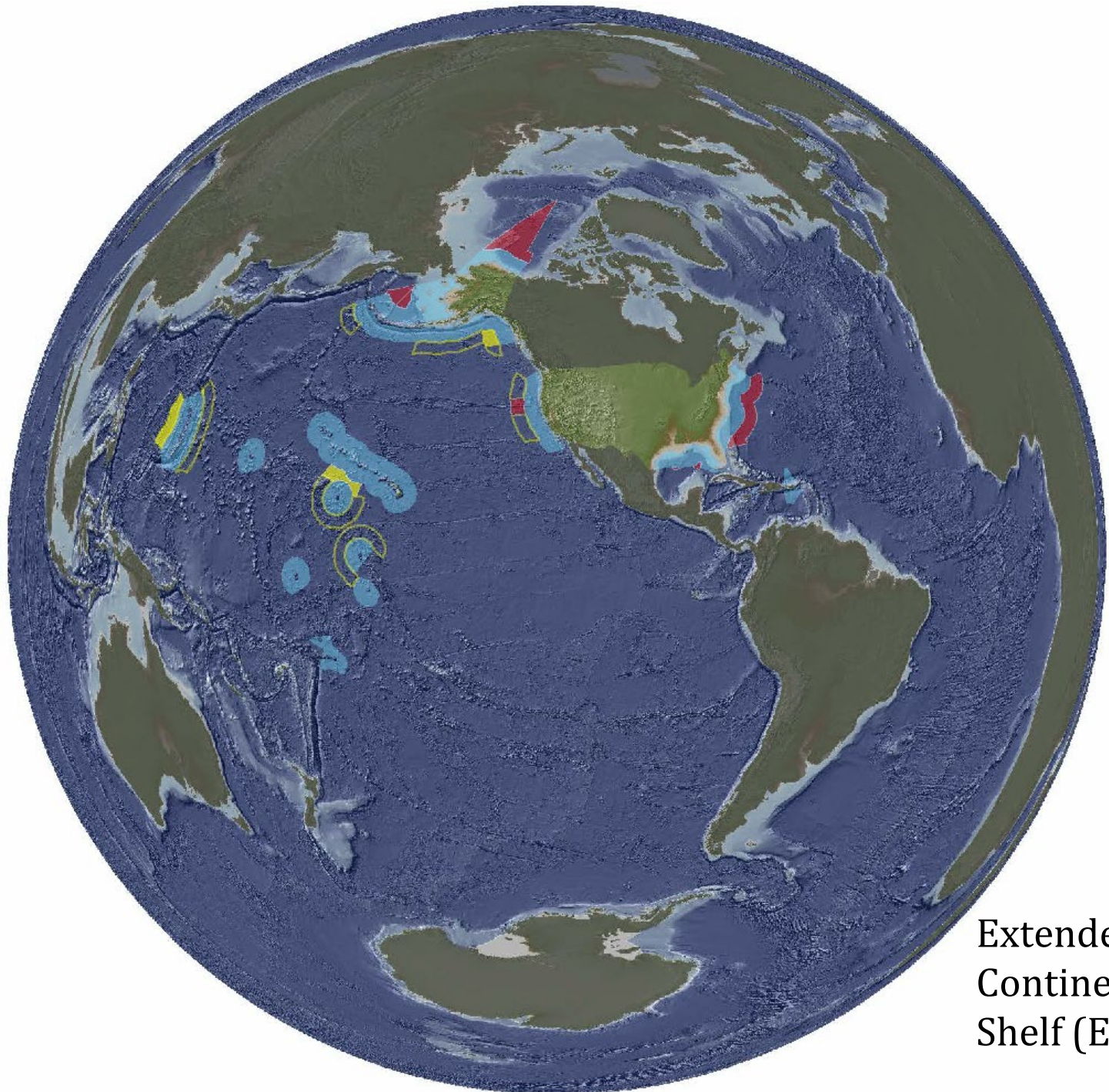


Early “Campaigns”

- Islands in the Stream
- Indonesia-USA Deep-sea Exploration of the Sangihe Talaud Region (INDEX-SATAL)
- Atlantic Canyons Undersea Mapping Expeditions (ACUMEN)
- Extended Continental Shelf (ECS)

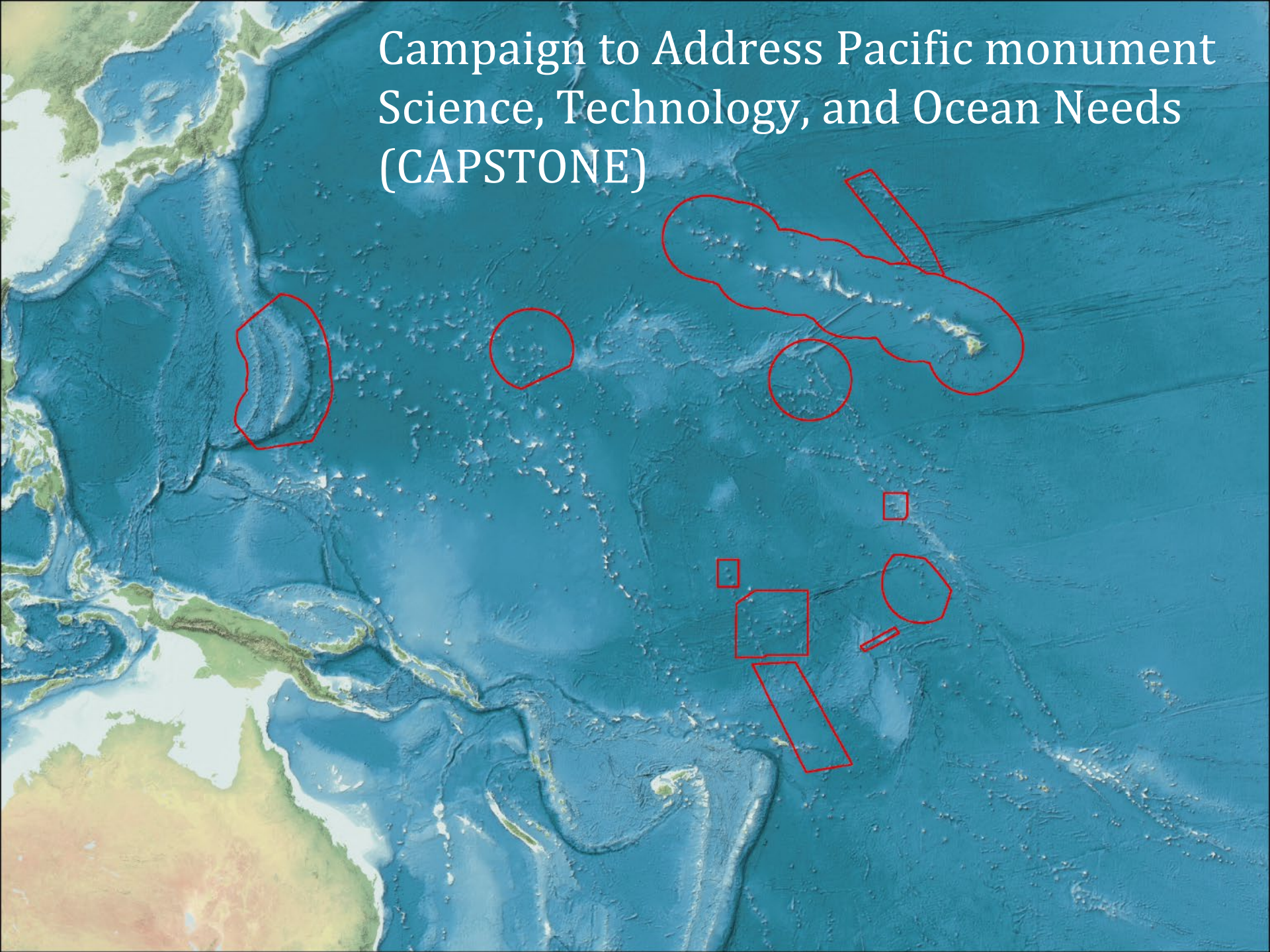


Atlantic Canyons Undersea
Mapping Expeditions
(ACUMEN)



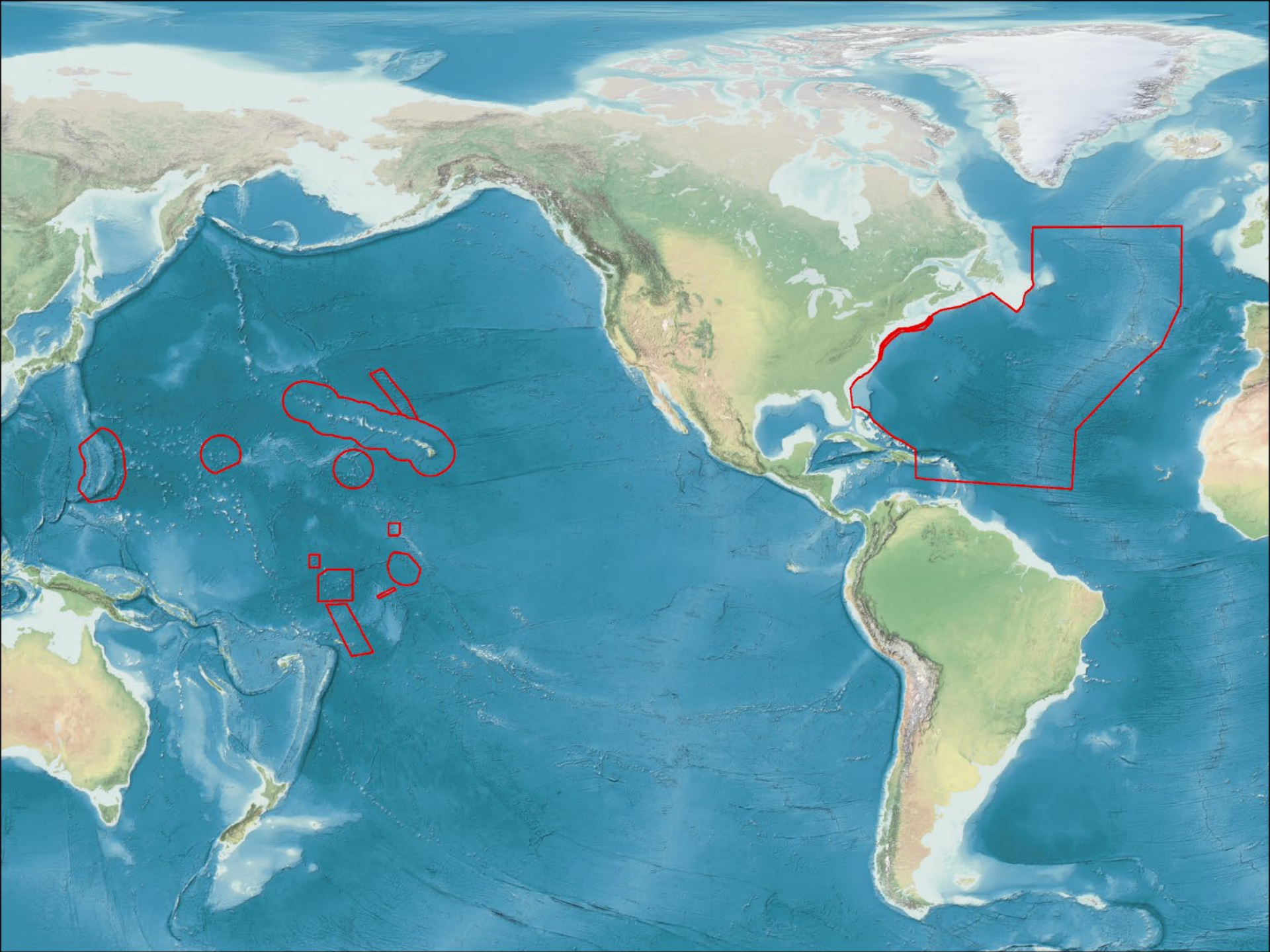
Extended
Continental
Shelf (ECS)

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



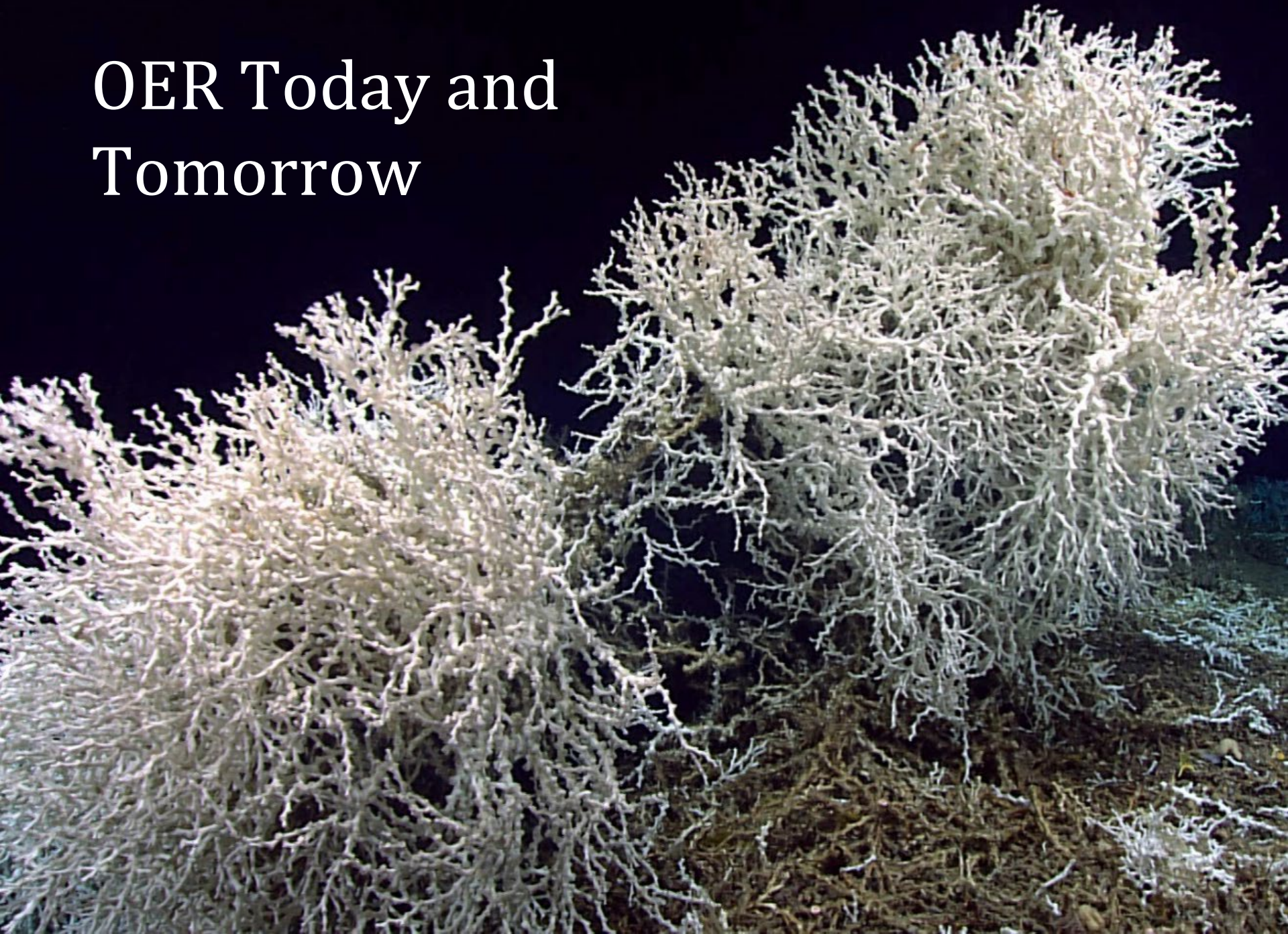
Atlantic Seafloor Partnership for Integrated Research and Exploration





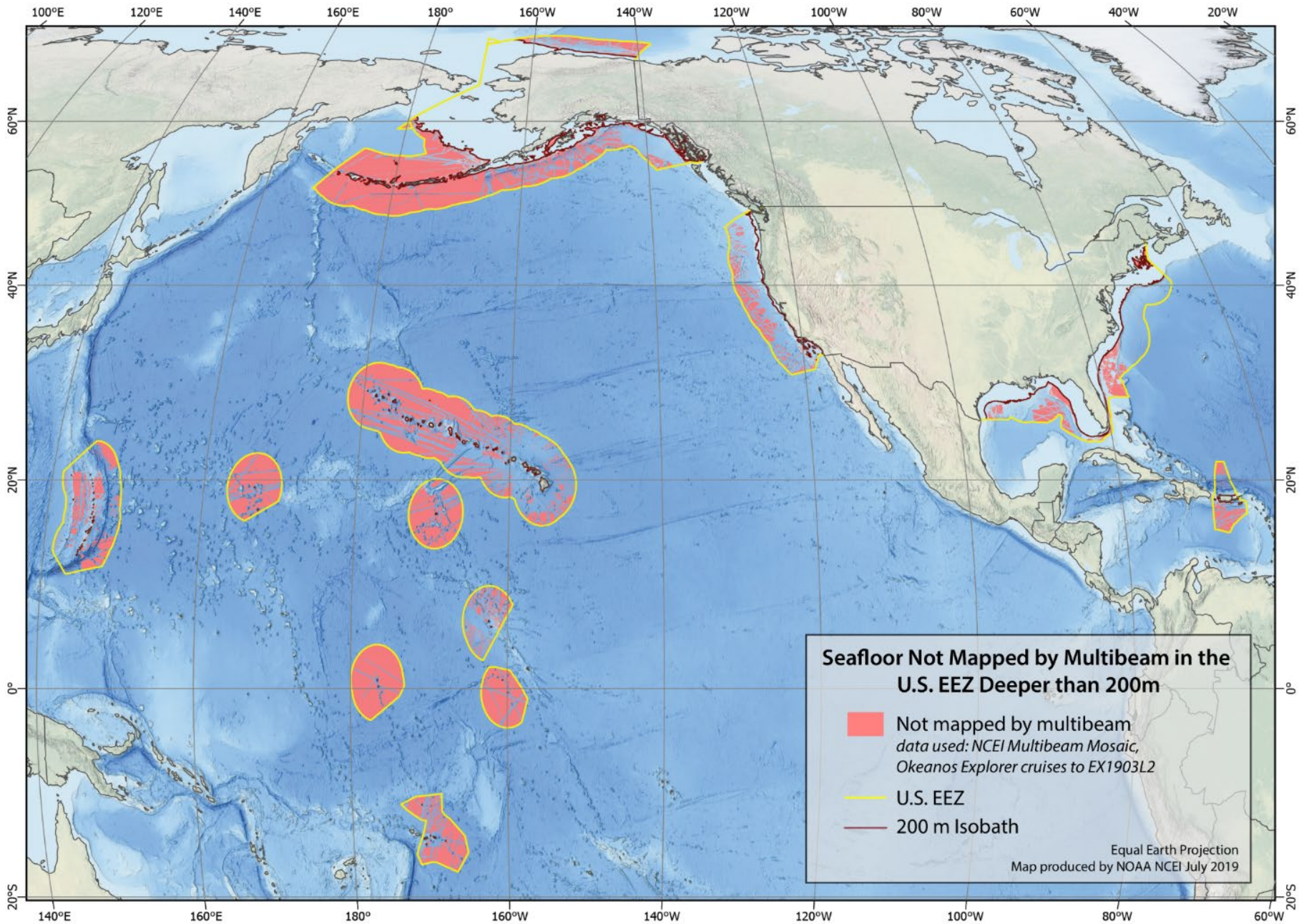


OER Today and Tomorrow

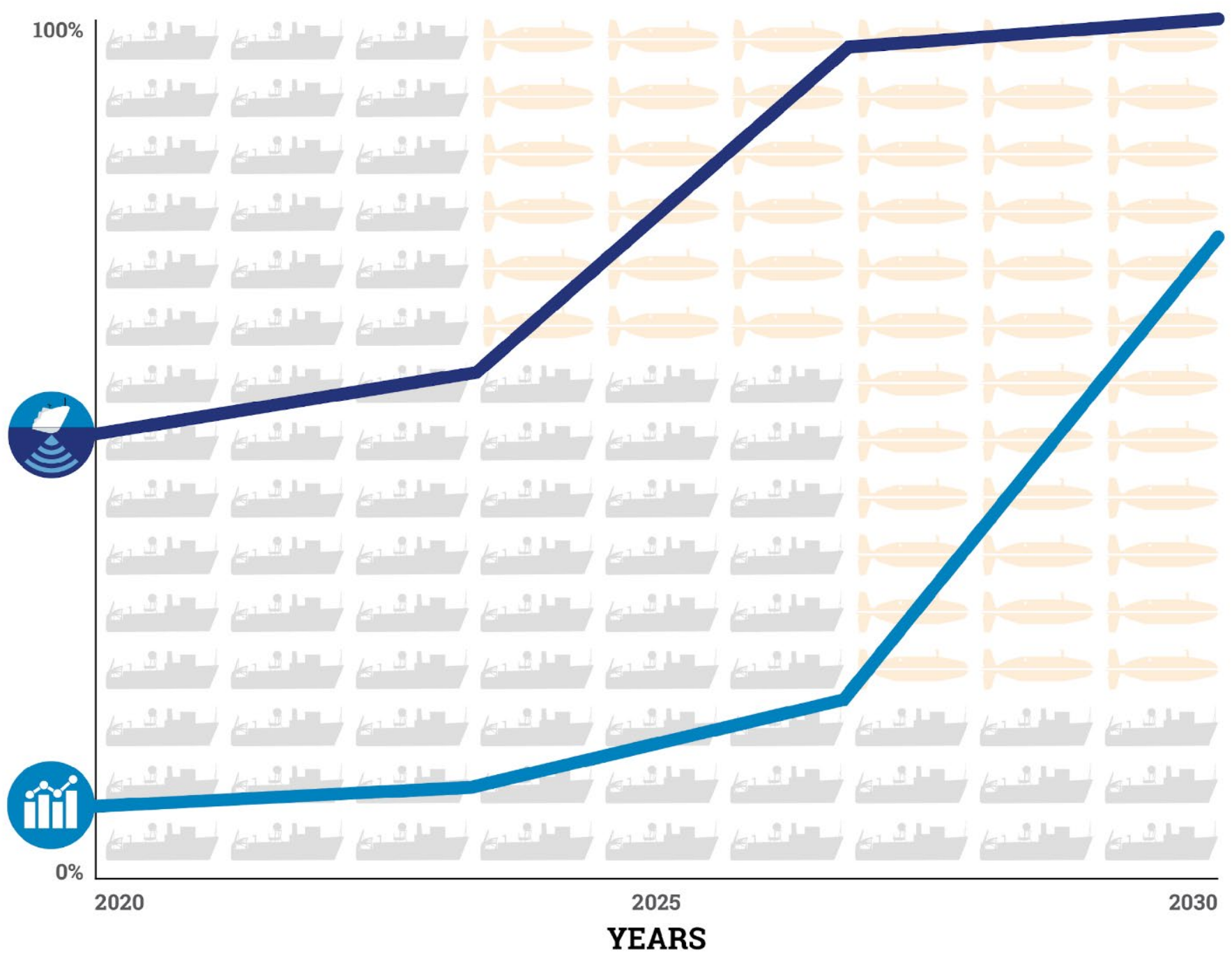


Current Administration Policies and Priorities

- 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
- Science and Technology for America's Oceans: A Decadal Vision
- Charting a Course for Success: America's Strategy for STEM Education



% COMPLETE/LEVEL OF EFFORT



2020

2025

2030

YEARS

Considerations

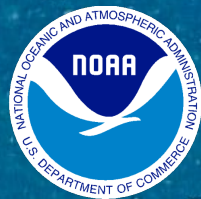
- End of life for NOAA Ship *Okeanos Explorer*
- Rapid advances in platforms, sensors, communications, data and information management
- Critical need for autonomy, machine learning, cloud-based data and information services

Rich Opportunity

- There is general consensus on the ocean exploration imperative
- Political support from the administration and Congress (both parties) means legislation and needed budgets are possible
- Advances in technology mean cost is dropping while capability is increasing
- Convergence of institutions, stakeholders creates opportunities for leverage and partnership



OceanExplorer.NOAA.gov



**Ocean Exploration
and Research**