

Ocean Exploration and Research Update

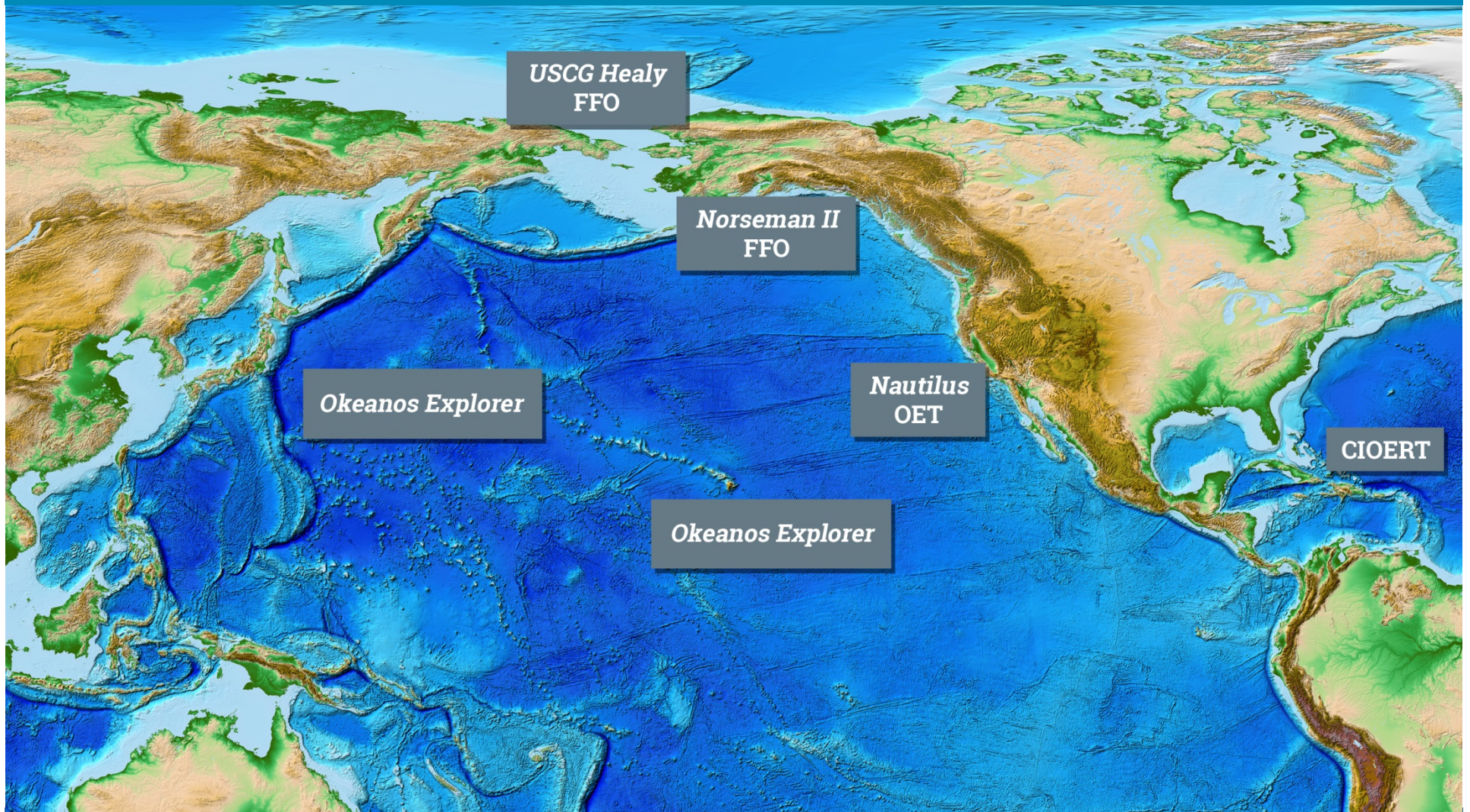
Alan Leonardi, Director
Fifth Meeting of the Ocean Exploration
Advisory Board
Washington, DC
April 26-26, 2016



Overview

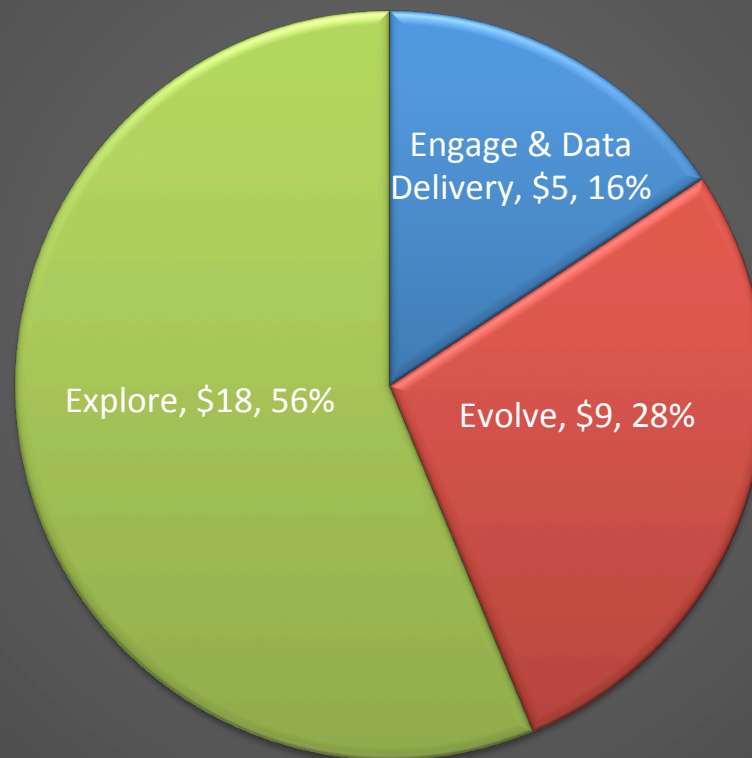
- General highlights: Cuba to CNMI
- FY16 budget and spend plan
- FY16-17 Federal Funding Opportunity

2016 OER Supported Expeditions



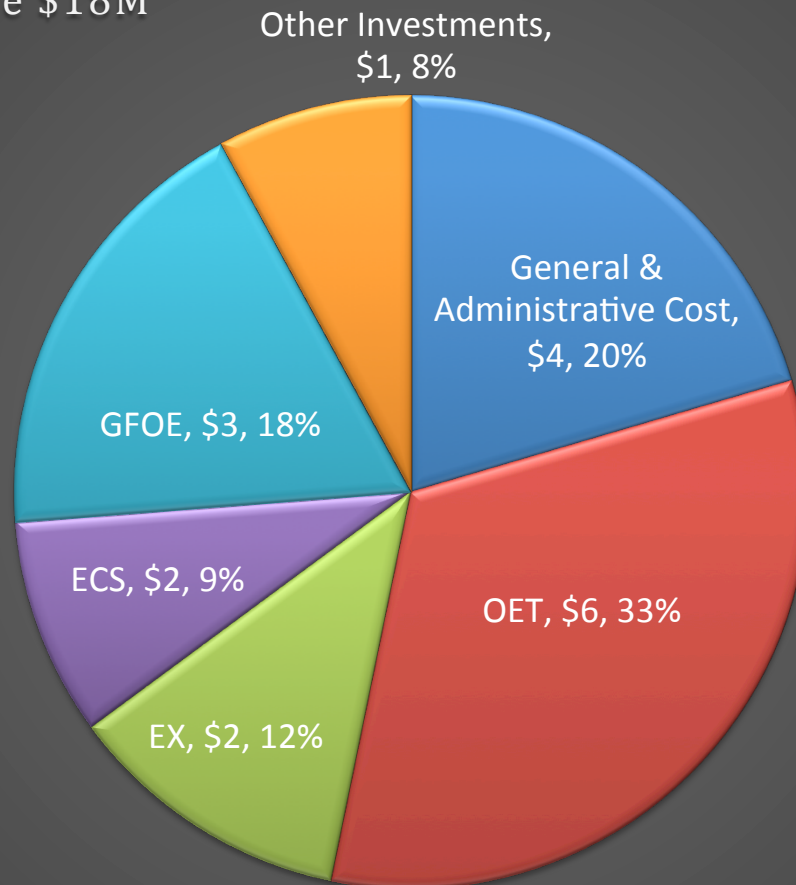
FY16 by Strategic Categories

FY 2016 OER Enacted Amount \$32M
by Strategic Categories



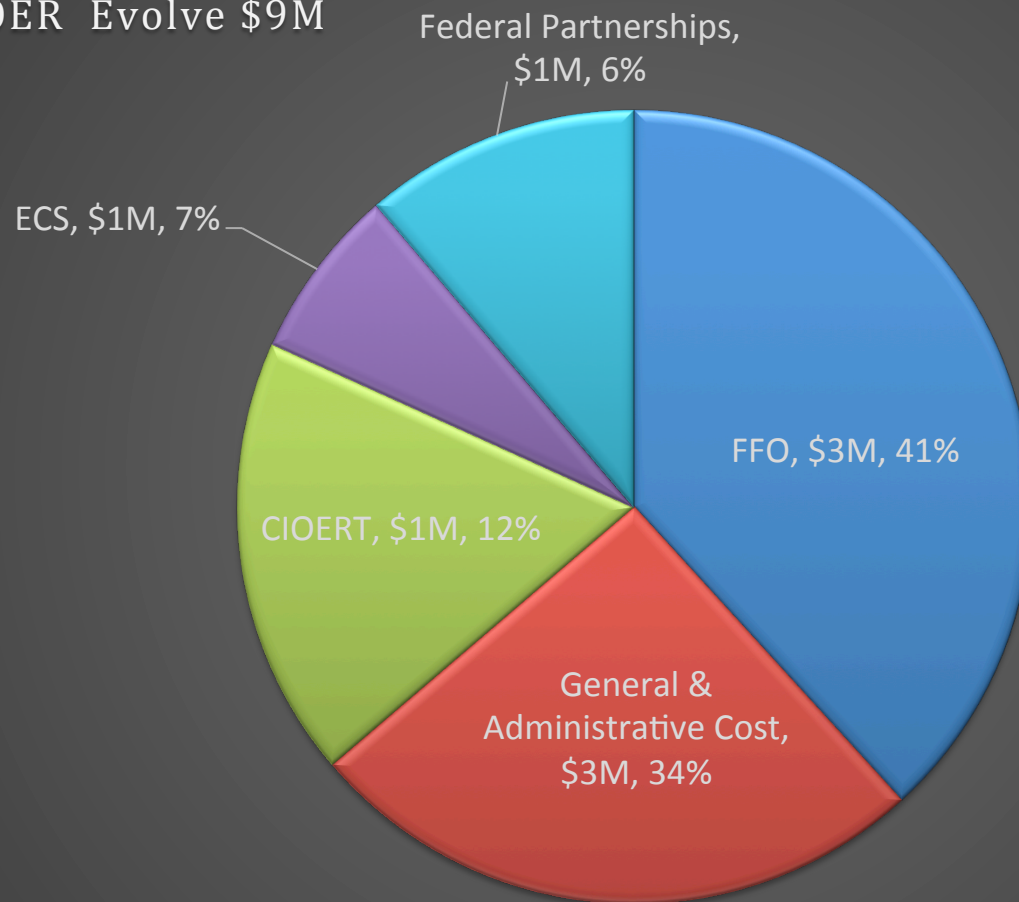
FY16 - Explore

FY 2016 OER Explore \$18M



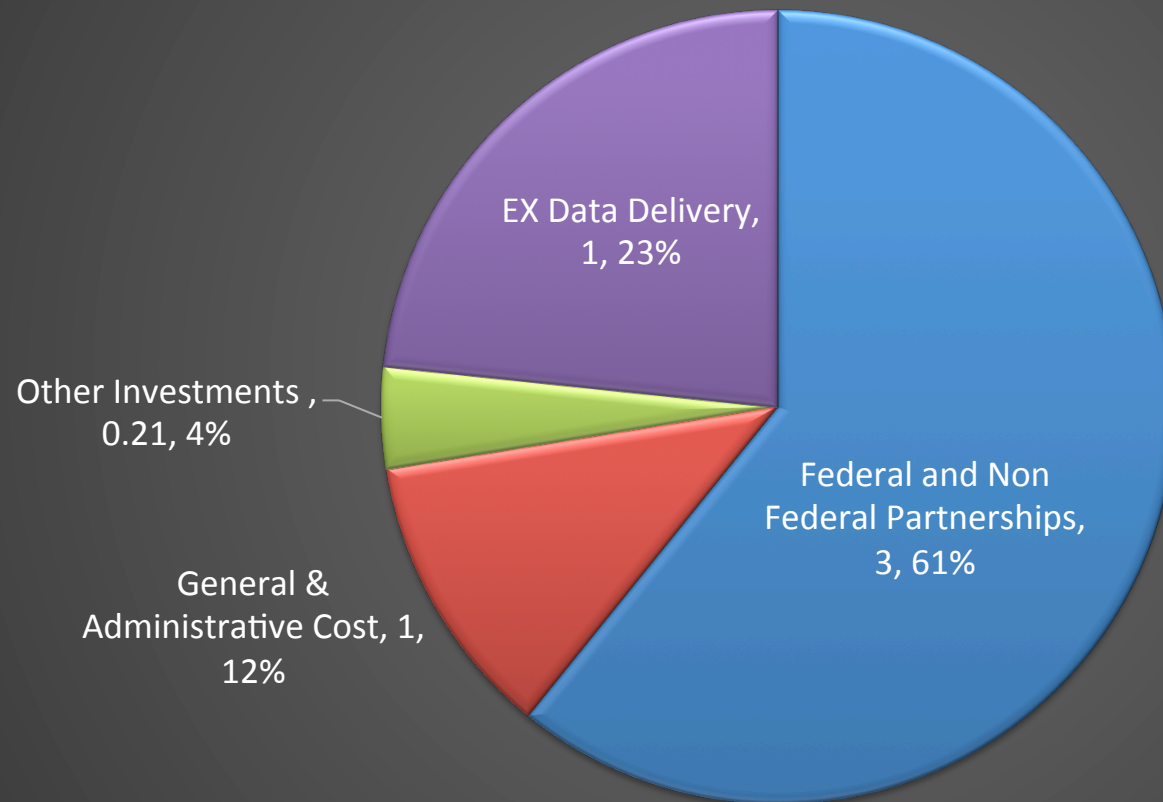
FY16 - Evolve

FY 2016 OER Evolve \$9M

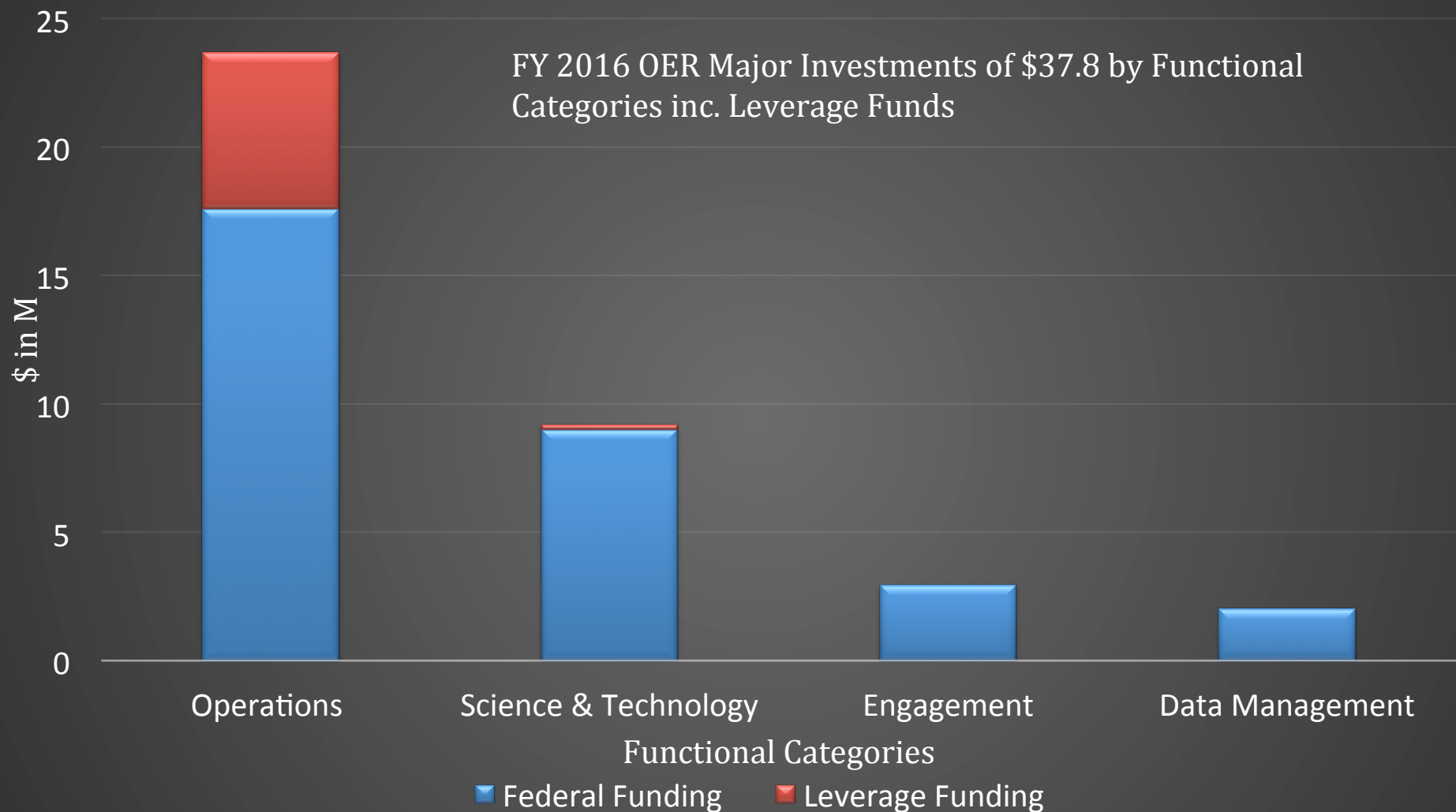


FY16 – Engagement and Data Delivery

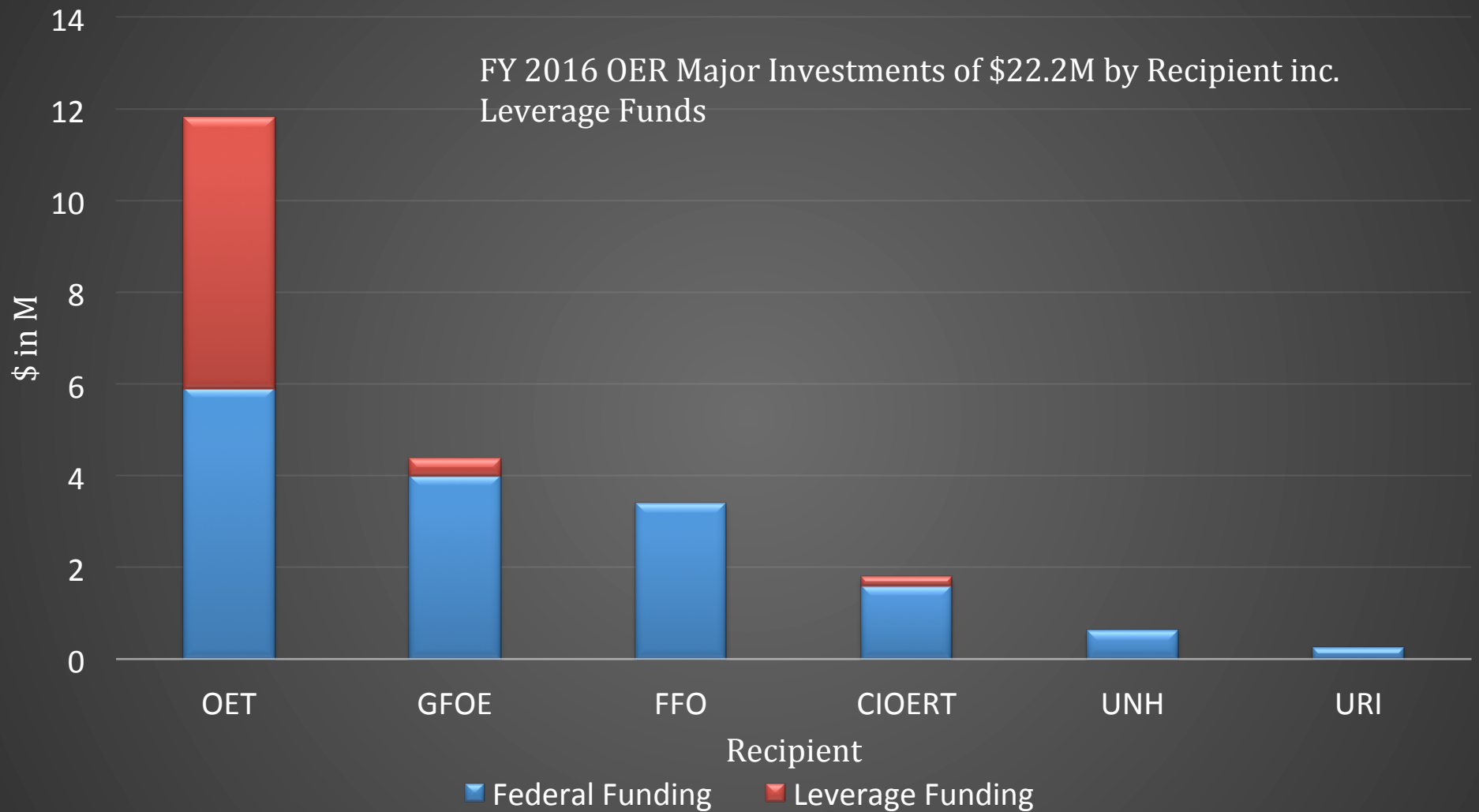
FY 2016 OER Engage & Data Delivery \$5M



FY16 – Functional Categories



FY16 – External Partners



FY17 FFO: Considerations

- FY16 review just completed
- FY17 considerations:
 - CIOERT work in GOM
 - EX, Nautilus* work in the Pacific
 - South Atlantic Bight
 - FY16 FFO expeditions/activity
- Place-based exploration
- Theme-based exploration
- Technology development

And, implication of recent activities, partner expeditions, potential for leveraging partner investments . . .

Questions?

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**Ocean Exploration
and Research**

Backup Slides



CAPSTONE NOAA & DOC Relevance

Foundational Environmental
Intelligence

Highlight Ocean Resiliency Efforts

Maximize Observational
Infrastructure

Demonstrating Organizational
Excellence

FY17? – Tech Demos to Support
NWS

4 of 5 DOC Strategic Goals and
Objectives

CAPSTONE Synopsis:

A major cross-NOAA foundational science effort focused on U.S. marine protected areas in the central and western Pacific. The investment provides timely actionable information to support decision-making based on reliable and authoritative science.

2016 Hohonu Moana: Exploring Deep Waters off Hawai'i

NOAA Ship *Okeanos Explorer*, February 25 – March 18, 2016



Exploration Area: Papahānaumokuākea Marine National Monument



~38,000 square kilometers mapped



8 remotely operated vehicle dives
63+ hours dive time



125,000+ live video views online



34 samples collected

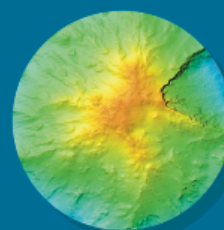


249 types of animals observed



26 shore-side science participants

Highlights



Seafloor mapping data collected for five never-mapped seamounts



High-density coral and sponge communities documented at six sites, includes discovery of five new communities and range expansion at one site



600+ media articles about this unknown octopus including NBC, ABC, CNN, National Geographic, Associated Press, Reuters, Forbes, and Scientific American



New live video mobile app installed more than 1,200 times on both Apple and Android devices

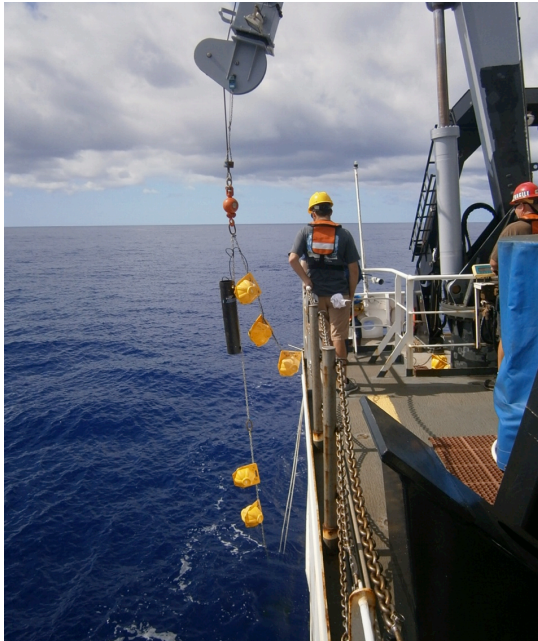
<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1603/>

Glacier Bay National Park Results



- First ever deepwater or ROV work in the Park
- Expedition discovered extensive, healthy, high density aggregations of very large corals (3m long and 3m wide) and first recorded stony corals in the Park
- Octocorals observed deeper than anywhere else in the world, and discovery of new corals showing succession as glaciers retreat
- FFO funding; expedition aboard chartered vessel using *KRAKEN II* ROV

PIRMNM Mapping Results



- 7,517 km transit while mapping almost exclusively in areas un-mapped with multibeam sonar
- 19,176 square kilometers of seafloor was mapped inside the Wake Atoll Unit of the Pacific Remote Islands Marine National Monument.
- Portions of 37 individual seamounts were mapped during the cruise, with 10 of these seamounts mapped in their entirety.
- Measurements of seamount elevations using high resolution multibeam sonar from the ship revealed differences of up to 1400 meters from what was predicted via interpretation of satellite-derived bathymetry

FY16 Major Expeditions: Pacific

Central Pacific ECS Mapping - *Ron Brown*

- Pacific Remote Islands MNM (Kingman/Palmyra)

Central/Western Pacific – *Okeanos Explorer*

- Papahānaumokuākea MNM
- Pacific Remote Islands MNM (Wake Island)
- Mariana Trench MNM

Western Pacific – *Falkor*

- Marianas Back-Arc

Eastern Pacific – *Nautilus*

- *Pacific Northwest*
- *West Coast Sanctuaries*

FY16 Arctic Expeditions

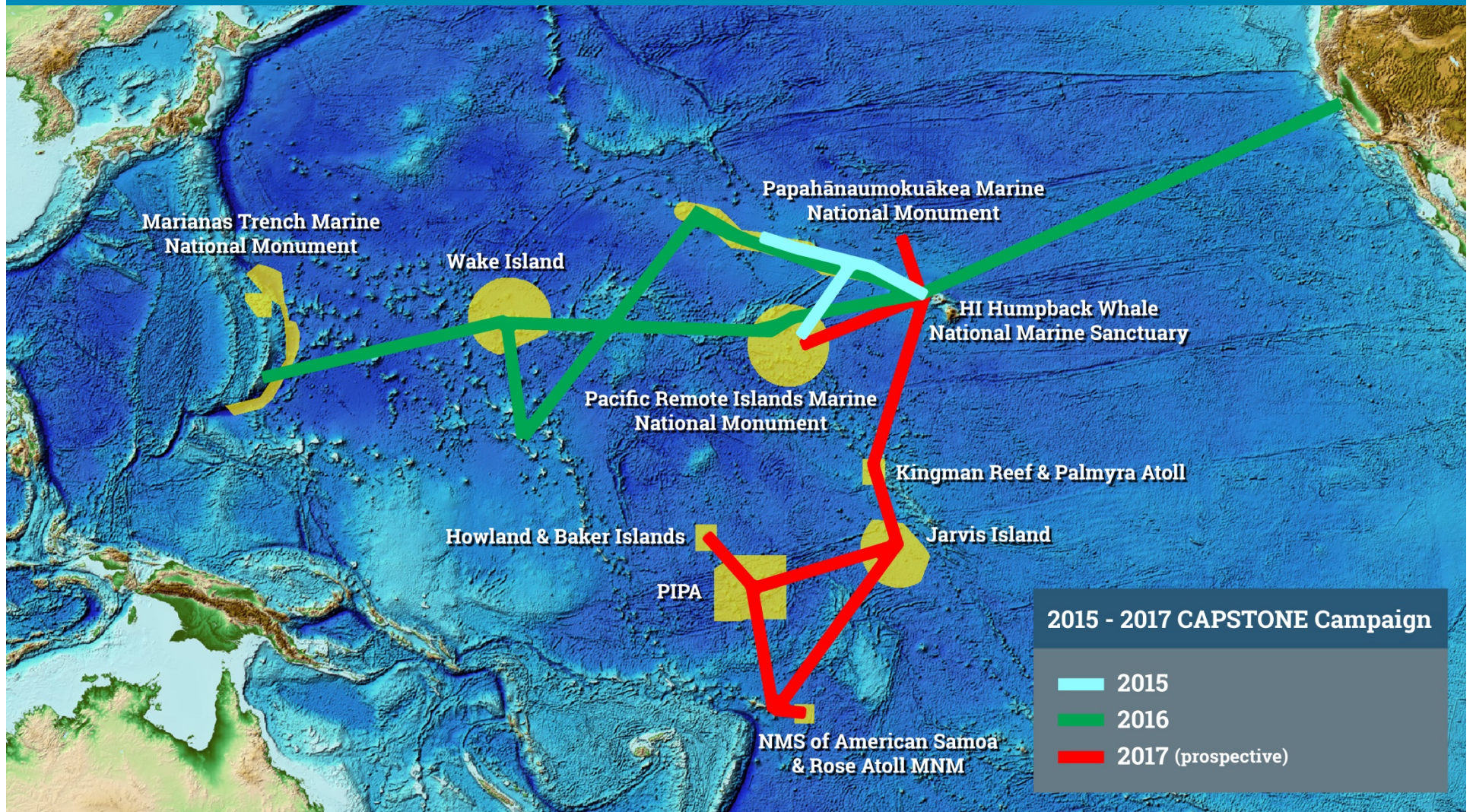
Chukchi Sea – FY15 FFO

- USCGC Healy
- Oceaneering Global Explorer ROV
- Sea ice, pelagic, benthic habitats
- 11-years since prior cruise

Arctic Shield – FY14 FFO

- USCGC Healy
- Originally funded as tech demo in FY14 and FY15
- No cost continuation of previous work

CAPSTONE FY15-FY17



FY17: PRIMNM, American Samoa, & Musician Seamounts

- Final year of CAPSTONE
- Targets remaining U.S. MPAs in central and western Pacific
- PIFSC, ONMS, OER submitted integrated package of ship time request for ~190 DAS
- Potential for some external funding for a few DAS
- Coordinated operations with R/V *Falkor* and ECS effort
- NWS technology testing opportunity?