Ocean Exploration and Research

NOAA Report 2015/2016 DeSSC

December 12, 2015

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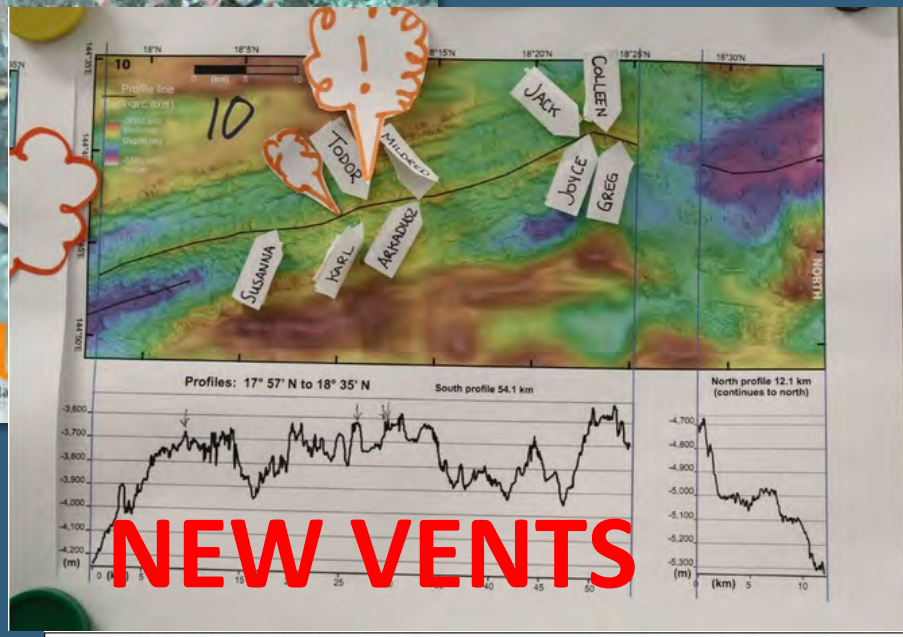
NOAA OER Updates

- Undersea efforts
- *Okeanos Explorer* efforts
- Other major office efforts

HYDROTHERMAL HUNT AT MARIANA



Ship: R/V Falkor

Dates: Nov 21 – Dec 17, 2015 - *currently underway*

Vehicles: AUV Sentry

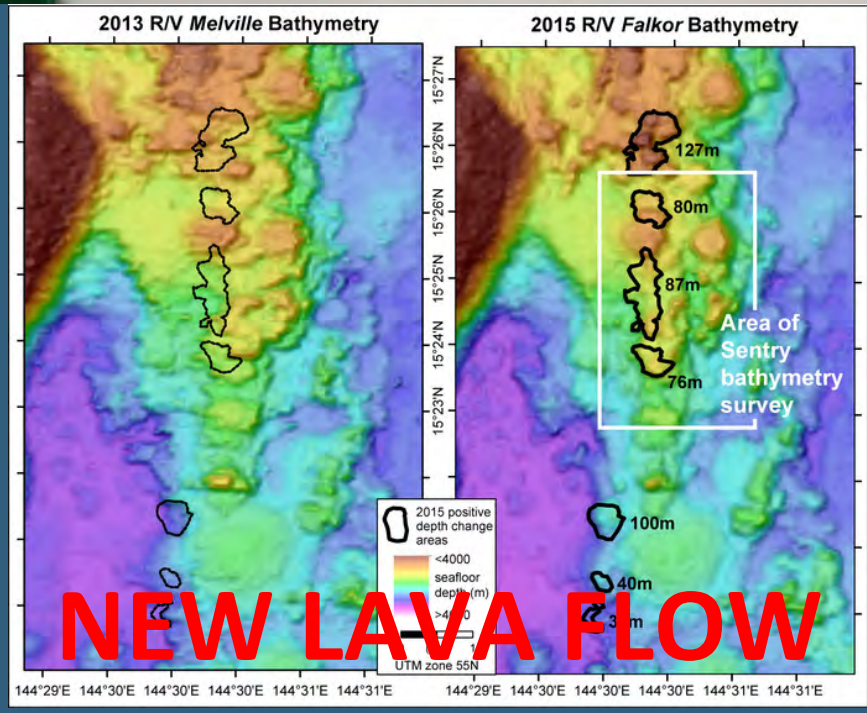
Objectives:

- Explore back-arc spreading center to find new sites of hydrothermal activity
- Add to the understanding of forces that shape biodiversity of vent systems

Chief Sci: Joe Resing

PI's: Ed Baker, Dave Butterfield, Bill Chadwick, John Lupton, Joe Resing

Funding: NSF, NOAA, UW, Oregon State, Schmidt Ocean Institute



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Images: Top Bill Chadwck, bottom Susan Merle.

Coral Ecosystem Connectivity - Pulley Ridge

Ship: F.G. Walton Smith

Dates: August 22 – September 2

Vehicles: ROV Mohawk

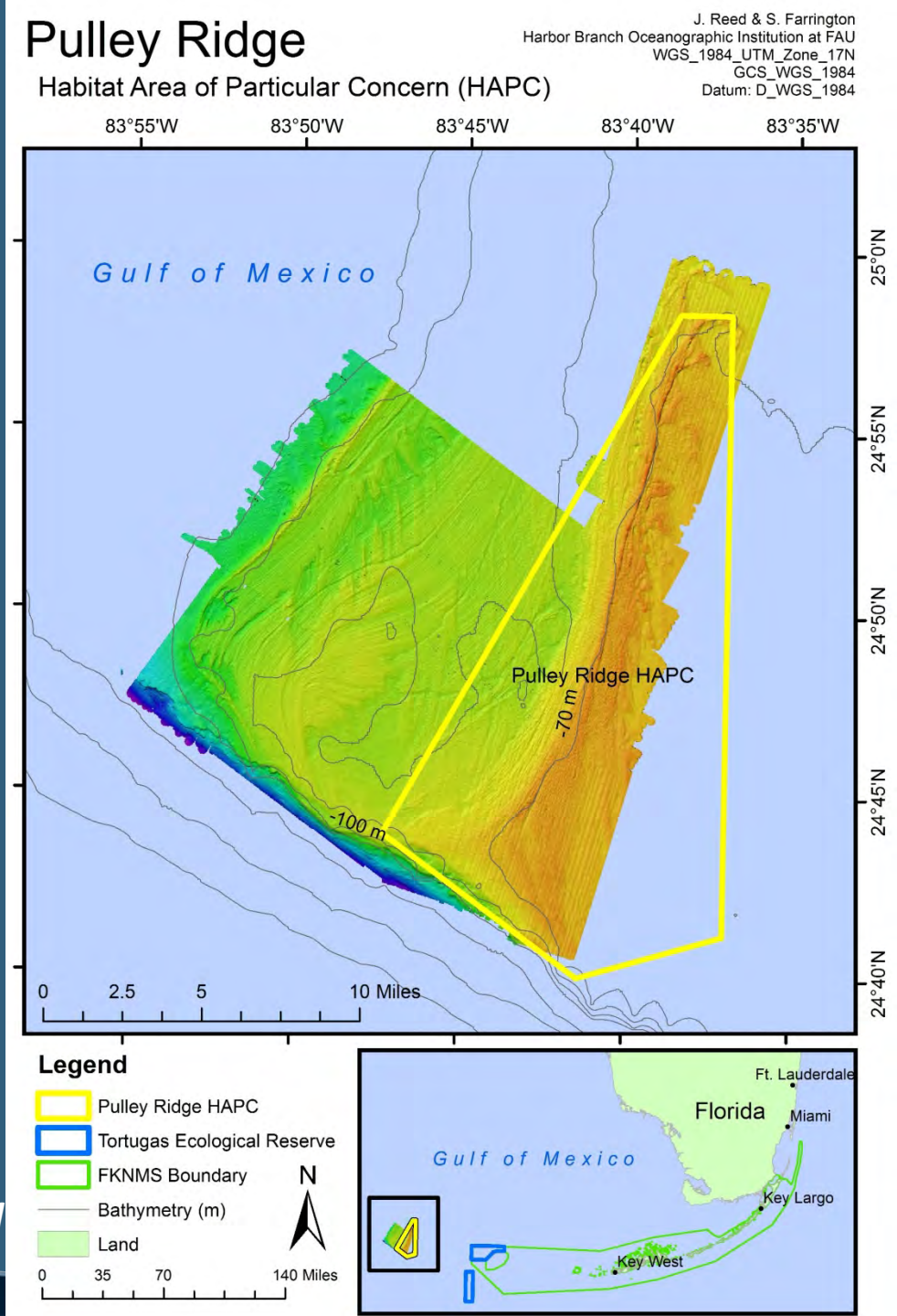
Objectives:

- Studied the benthic communities of Pulley Ridge, the deepest known photosynthetic coral reef off the continental U.S.
- Investigated whether mesophotic reefs serve as a refuge for impacted shallow reef species at nearby reefs of the Florida Keys and Dry Tortugas

Chief Sci: John Reed, Bob Cowen

PI's: Many

Funding: NOAA (NCCOS, OER, ONMS, Gulf of Mexico Regional Office), NMFS SE,



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Axial Seamount Expedition

Ship: R/V Thompson

Dates: Aug 14-29, 2015

Vehicles: ROVs Jason/Medea & AUV Sentry

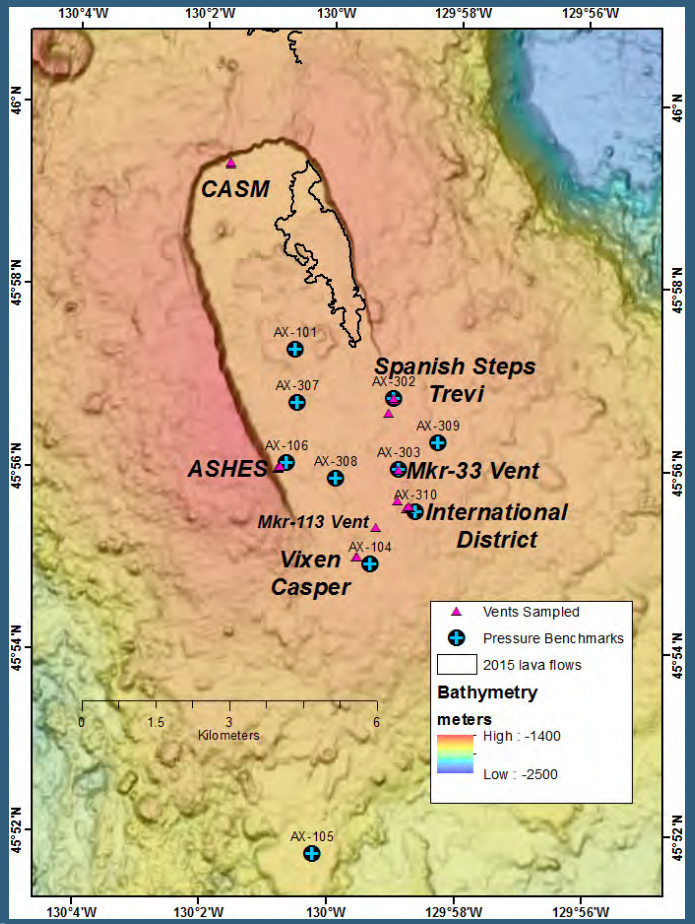
Objectives:

- Conduct event response activities related to the April-May eruption
- Measure seafloor pressure for volcanic inflation/ deflation
- Sample and incubate vent fluids for chemical & microbial analysis

Chief Sci: Bill Chadwick

PI's: Dave Butterfield, Bill Chadwick, Jim Holden, Julie Huber, Scott Nooner

Funding: NSF, NOAA, Gordon & Betty Moore Foundation



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Axial2015.blogspot.com

Bioluminescence and Vision on the Deep Seafloor

Ship: R/V Pelican

Dates: July 15 - 28

Image courtesy of Sönke Johnsen and Katie Thomas.

Vehicles: ROV Global Explorer

Initial results:

- Determined that bioluminescent species were more common on Gulf of Mexico abyssal flats than patch reef habitats
- Identified potential dual visual pigments in several species of crustaceans associated with corals

Chief Sci: Tamara Frank

Funding: NOAA, Duke University, Nova Southeastern University, Florida International University

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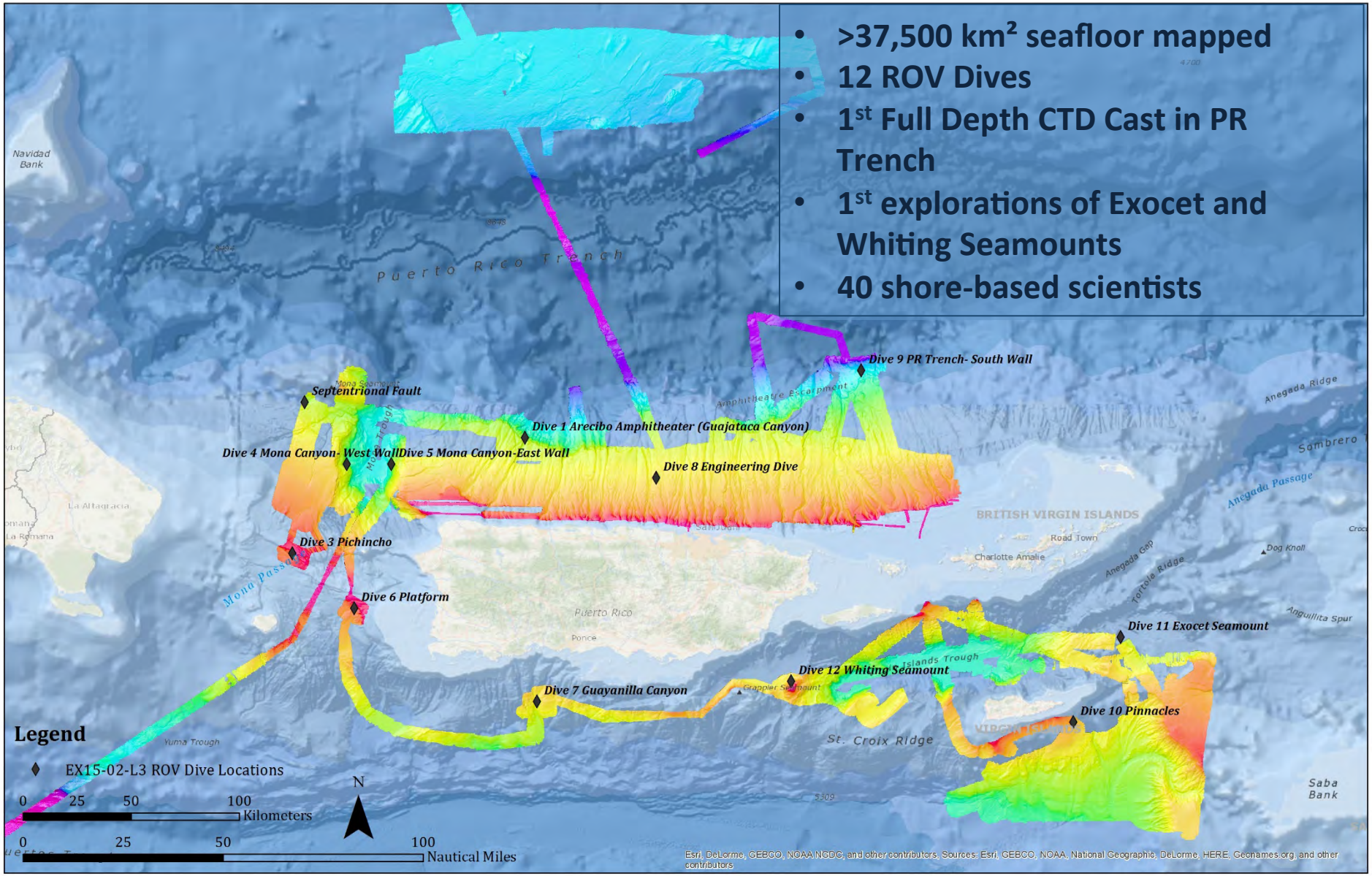
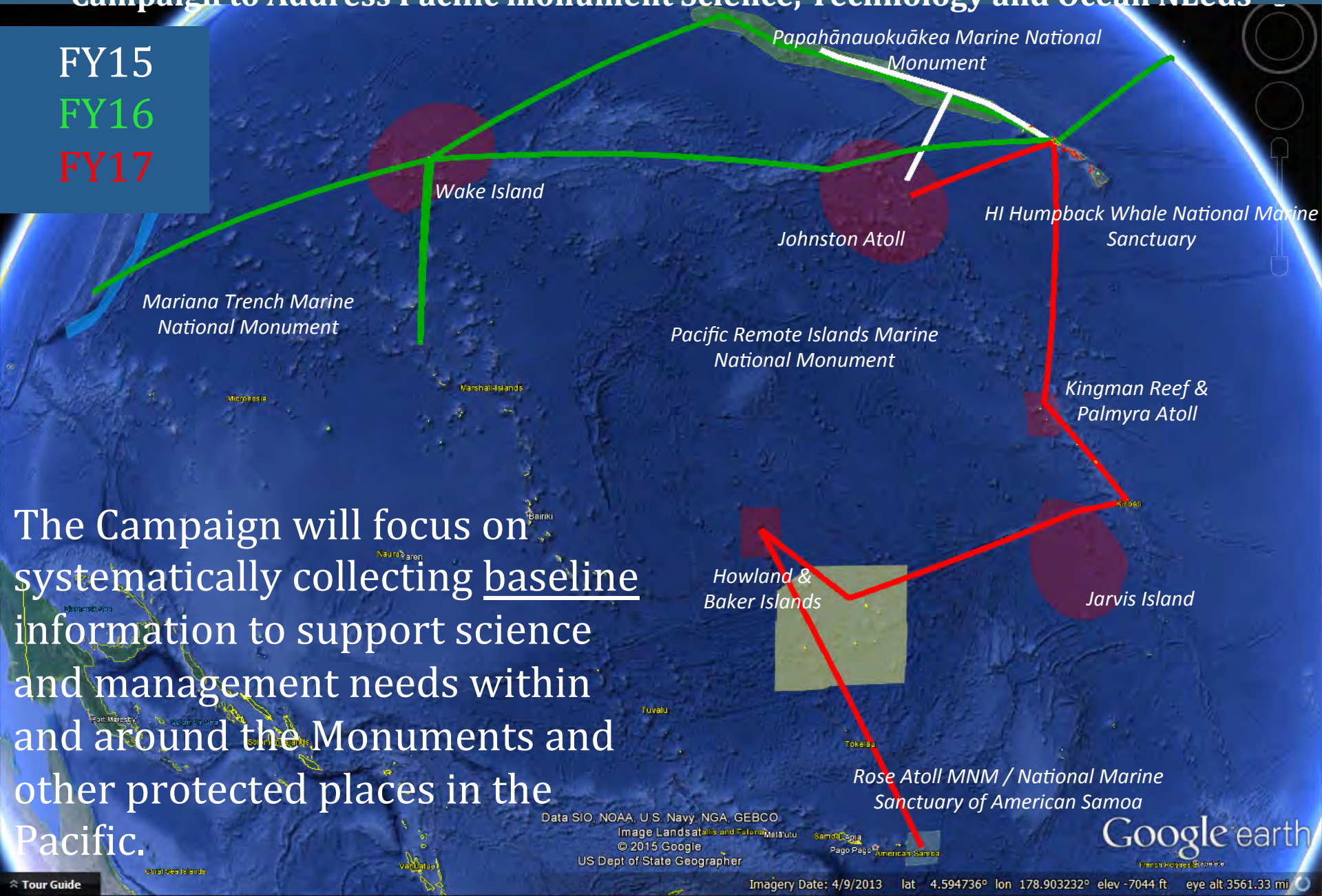
Okeanos Explorer
Oceano Profundo Expedition: Exploring Puerto Rico's Seamounts, Trenches, and Troughs



CAPSTONE

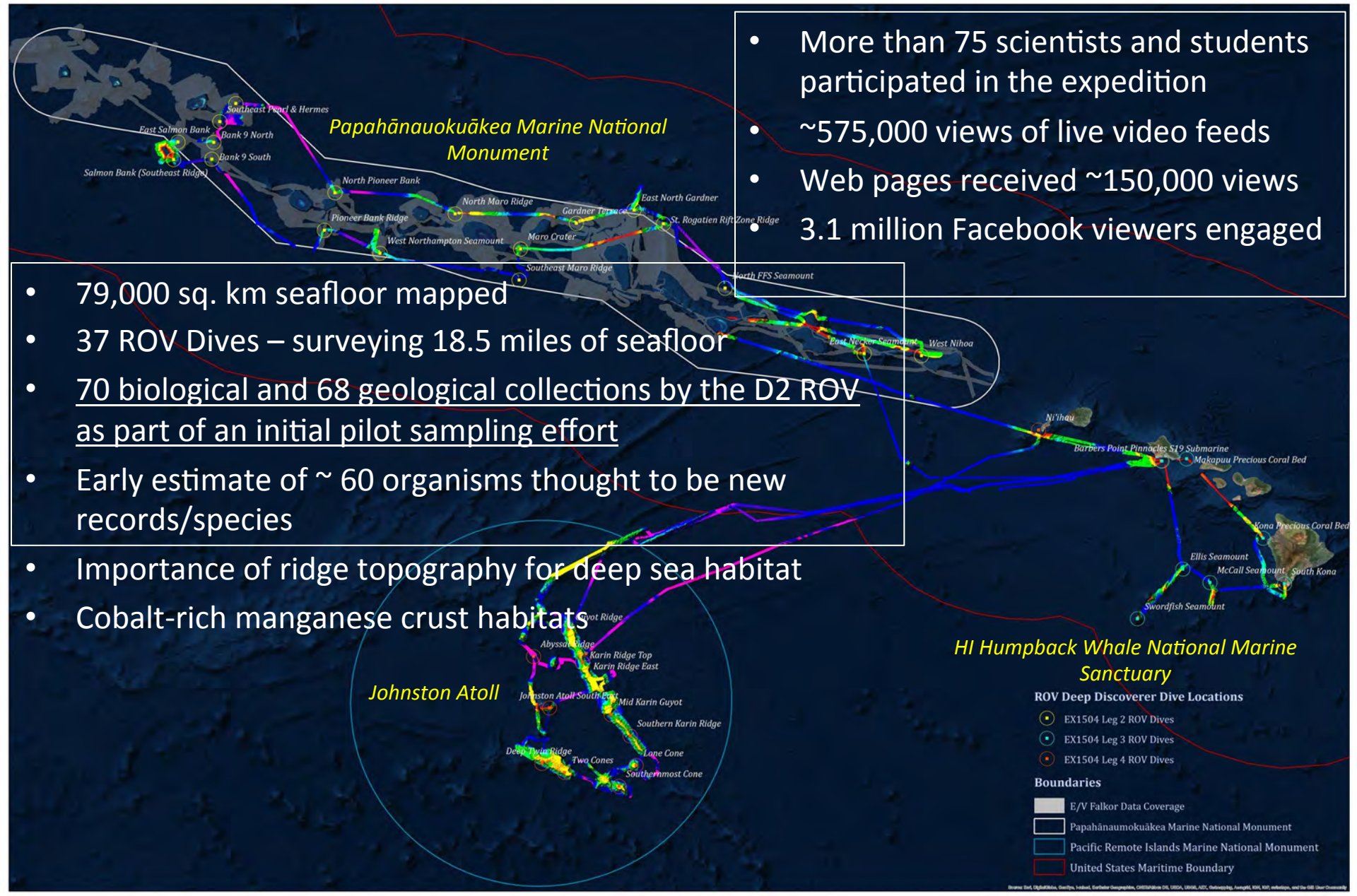
Campaign to Address Pacific monument Science, Technology and Ocean NEeds

FY15
FY16
FY17



The Campaign will focus on systematically collecting <u>baseline</u> information to support science and management needs within and around the Monuments and other protected places in the Pacific.

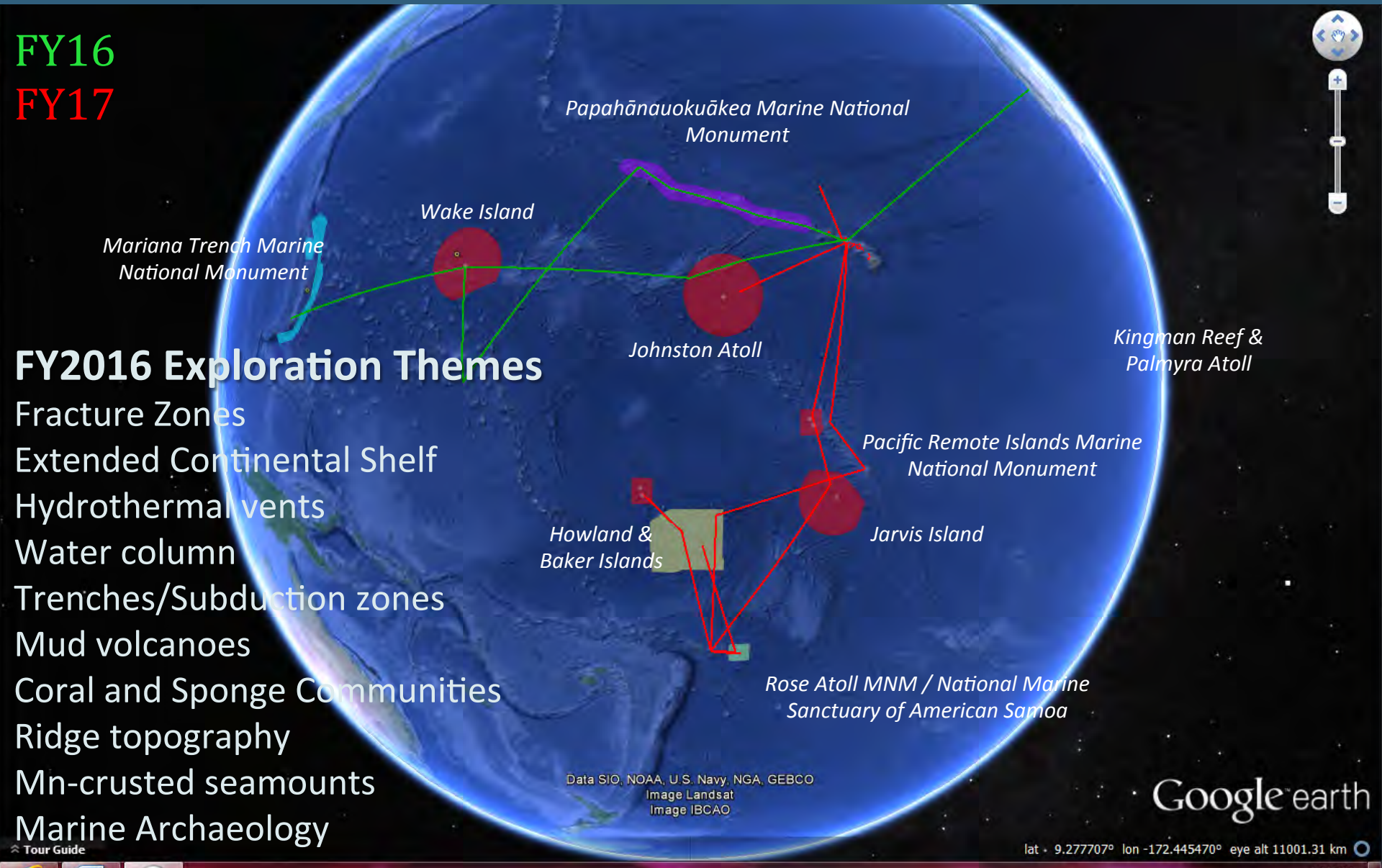
Okeanos Explorer
2015 Hohonu Moana: Exploring Deep Waters off Hawai'i



- More than 75 scientists and students participated in the expedition
- ~575,000 views of live video feeds
- Web pages received ~150,000 views
- 3.1 million Facebook viewers engaged

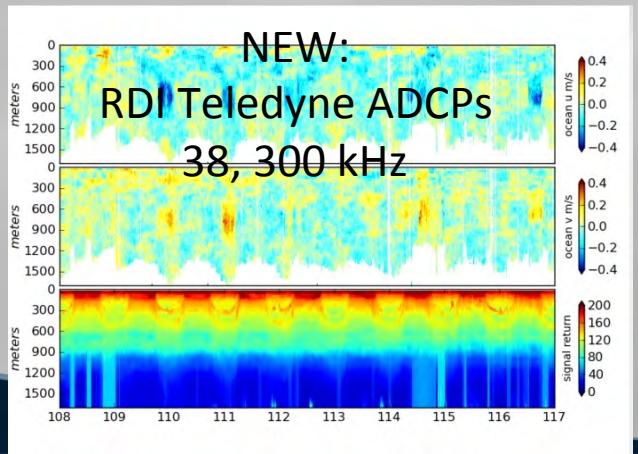
- 79,000 sq. km seafloor mapped
- 37 ROV Dives – surveying 18.5 miles of seafloor
- 70 biological and 68 geological collections by the D2 ROV as part of an initial pilot sampling effort
- Early estimate of ~ 60 organisms thought to be new records/species
- Importance of ridge topography for deep sea habitat
- Cobalt-rich manganese crust habitats

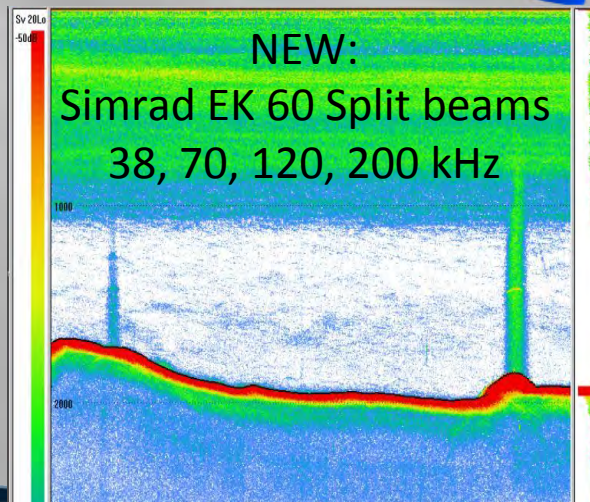
OKEANOS FY 2016/2017
Continuing CAPSTONE



Exploring the Cube

- New sonar installations complete (Alameda)
  - 2016 Shakedowns
- ROVs D2 & Serios
- Existing sonars





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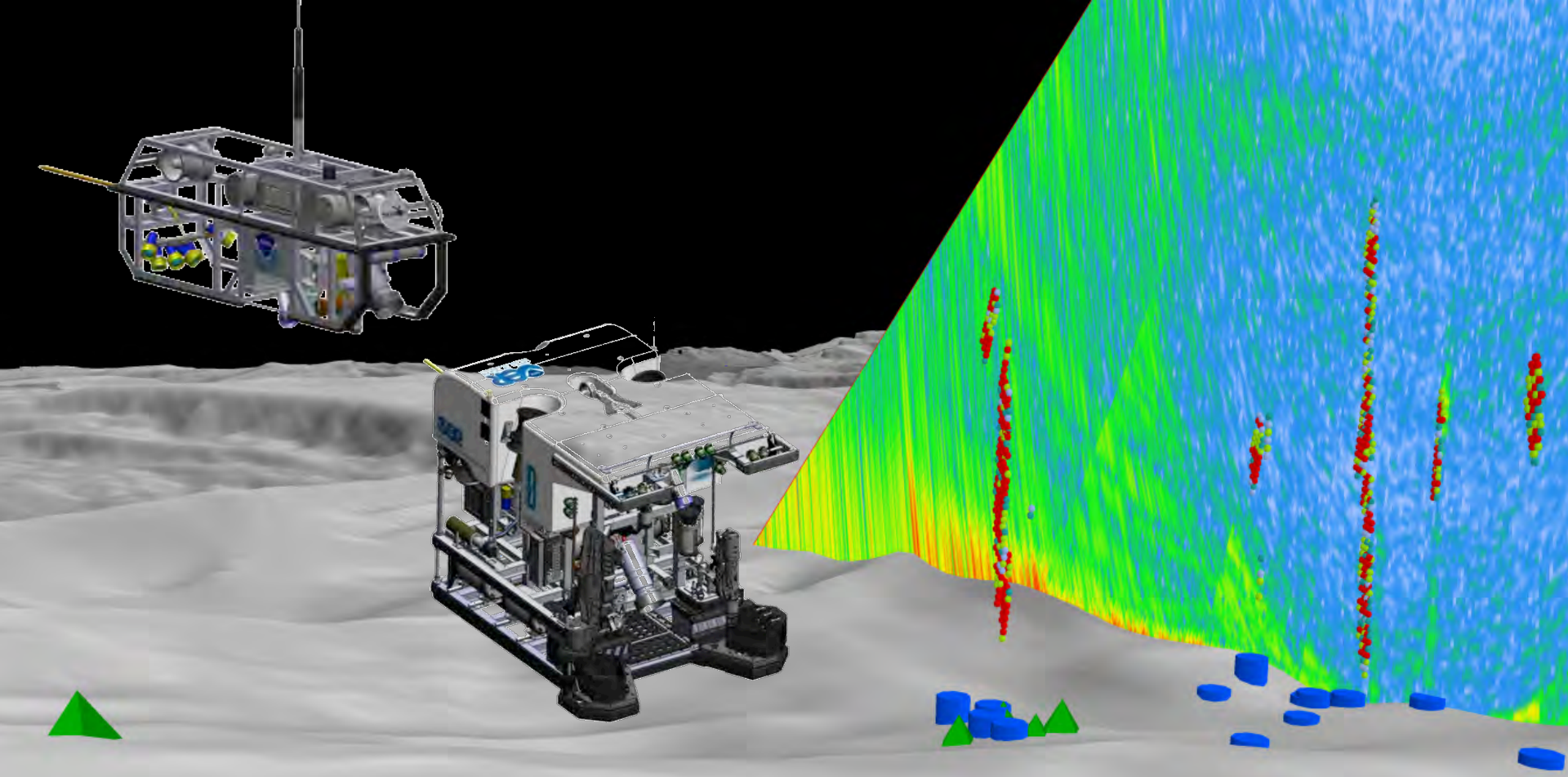
From Jules Hummon

Other NOAA Activities

- Federal Funding Opportunity (FFO) 2016
  - Preproposals received
  - Full proposal deadline: January 8
- Third Ocean Exploration National Forum
  - Held in Nov at Nat'l Aquarium, Baltimore, MD
  - Well > 100 people in attendance
  - Summary report forthcoming
- OER Strategic Plan FY2016-2020 forthcoming



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