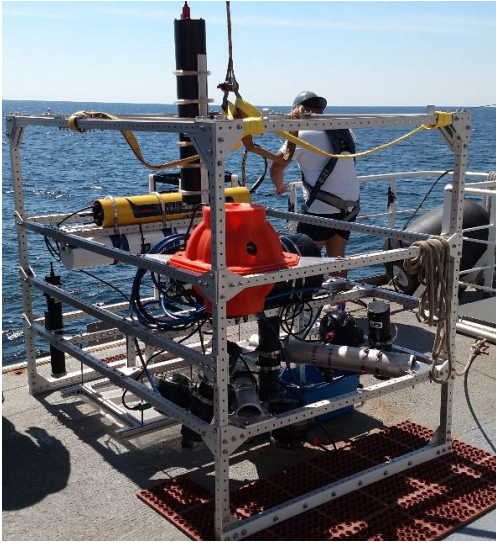


# NOAA Update DeSSC Meeting December 2018

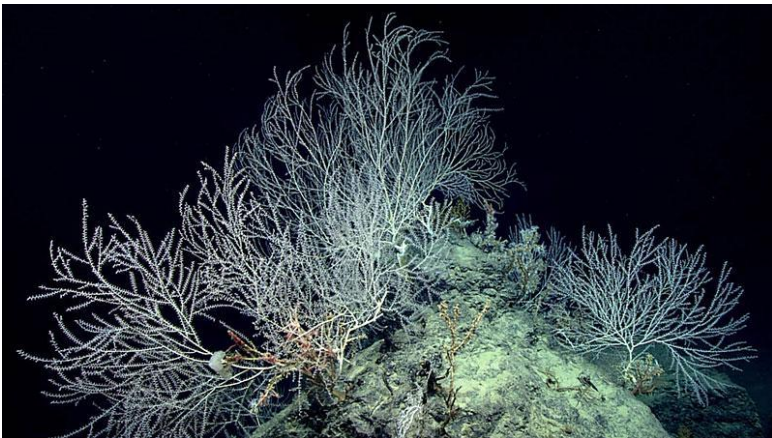
Dr. Alan Leonardi  
Director

NOAA Office of Ocean Exploration and Research

# Ocean Exploration in 2018



- **GOM Tech Demo (EX1802):** First technology demonstration expedition for NOAA Ship *Okeanos Explorer*. Worked with new technology partnerships in academia and the Navy to allow for new discoveries in the future. Hope to do more technology demonstrations on future expeditions.

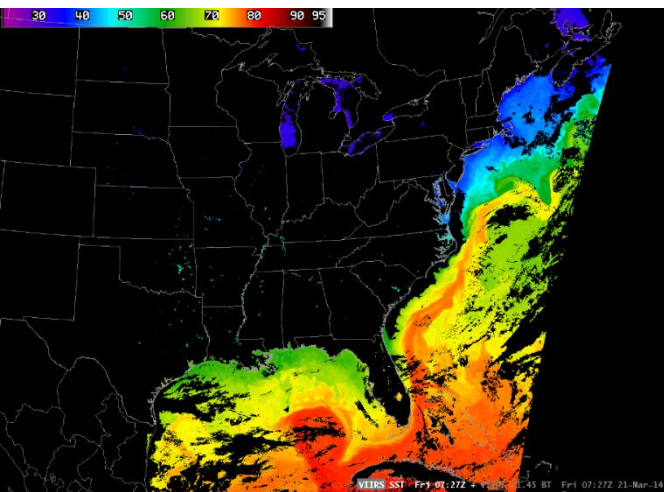


- **GOM 2018 (EX1803):** Found the deepest high-density communities of coral (2,600 meters) known from the Gulf of Mexico.

# Ocean Exploration in 2018

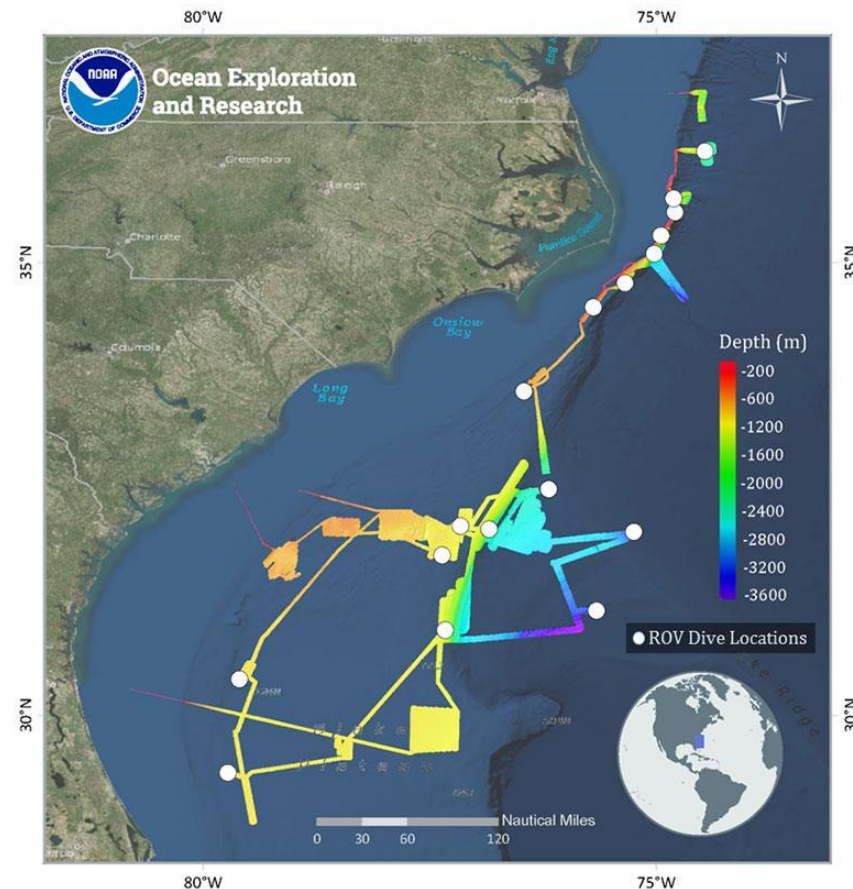


- **DeepCCZ (FFO):** Found two confirmed new species, including this worm, and potentially more in an area targeted for deep sea mining.
- **VIIRS (EX1804):** Ground-truthed JPSS Visible Infrared Imaging Radiometer Suite (VIIRS) satellites ocean color radiometry and derived products - validating an important tool for the ocean exploration community.



# Ocean Exploration in 2018

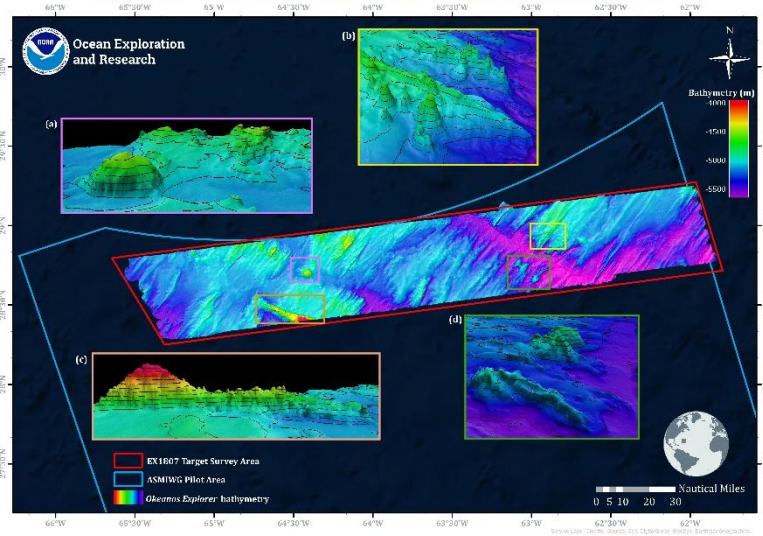
- **Windows to the Deep 2018 Mapping (EX1805):** First *Okeanos Explorer* expedition contributing to ASPIRE and mapping data led to the discovery of deep-sea coral and sponge habitat (EX1806 and DEEP SEARCH 2018 discoveries).
- **Windows to the Deep 2018 ROV (EX1806):** Revealed one of the largest areas of deep-sea coral habitat that has been discovered in U.S. waters to date along the numerous mounds on the Stetson Mesa offshore of Florida and Georgia.





# Ocean Exploration in 2018

EX1807 Mapping Deepwater Areas Southeast of Bermuda in Support of the Galway Statement on Atlantic Ocean Cooperation



- **Mapping Deepwater Areas Southeast of Bermuda (EX1807):** First expedition contributing to Galway that leveraged international partnerships to conduct coordinated exploration and mapping of priority high-seas areas of the North Atlantic and hosted two international visiting scientists on NOAA Ship *Okeanos Explorer*.

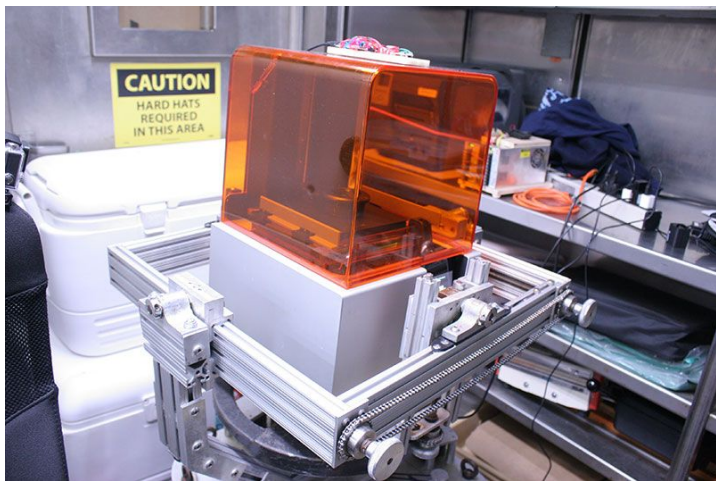


- **DEEP SEARCH 2018:** Discovered approximately 85 linear miles of discontinuous *Lophelia* coral reef approx. 160 miles off the coast of Charleston, SC with HOV *Alvin*.
- **SUBSEA:** Successful NASA-NOAA-OET partnership expedition.

# Ocean Exploration 2018

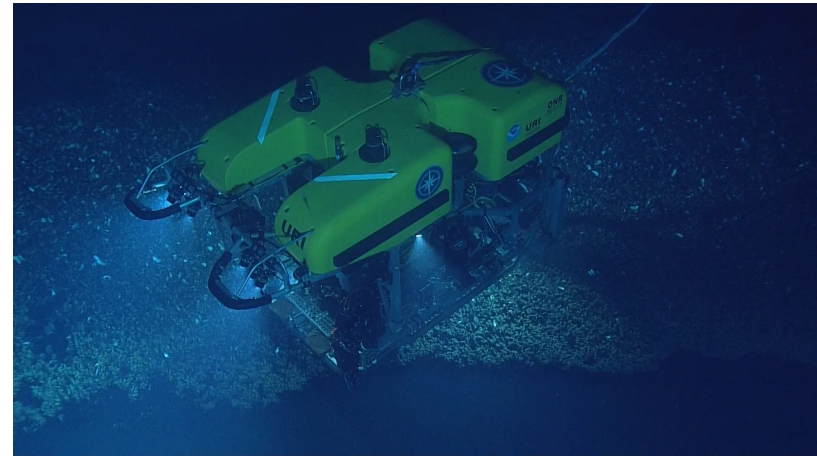


- **Océano Profundo 2018 (EX1811):** ROV cruise in waters of PR and USVI that captured new behaviors, such as this translucent egg case with a catshark embryo actively swimming inside seen at a depth of 250 meters.
- **Mapping Deepwater Areas in the Caribbean & South Atlantic Bight (EX1812):** Multi-objective mapping cruise underway. Successfully demonstrated 3D printing of pressure housings at sea and are characterizing the sound patterns of the EM302 multibeam echosounder in the AUTECH range.



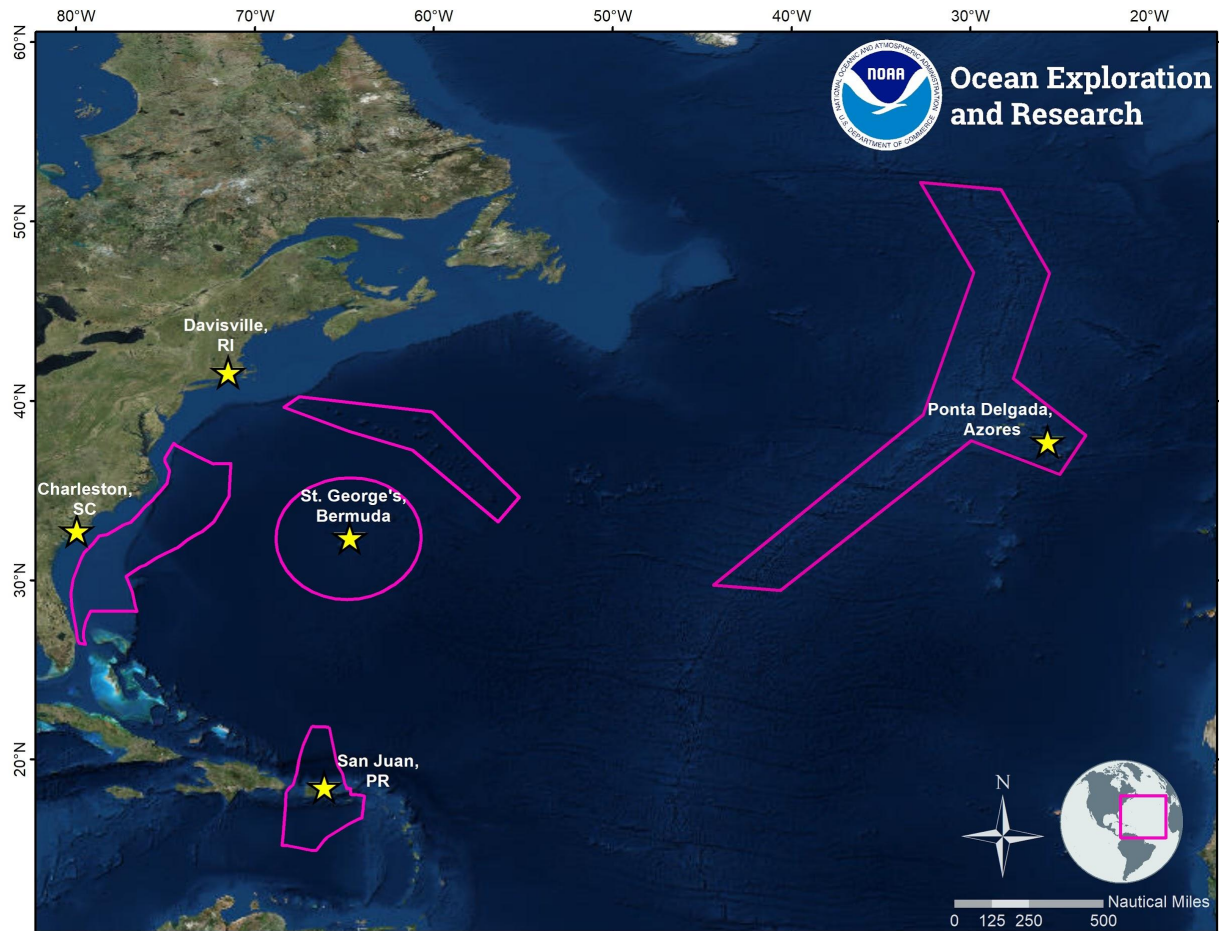
# Technology investments

- **FFO grants:** Multiple FFO grants currently in progress to improve deep-sea exploration capabilities (AUV mission management, navigation, soft robotics sampling).
- **NOPP:** Invested in methane sensor development with industry and partners at OSU, UW, PMEL and NASA/JPL.
- **Fly-away systems:** Supporting advancements in fly-away ROV and telepresence capability for Ocean Exploration Trust with NDSF as partner.





# *Okeanos Explorer* in 2019



- **Winter 2018:**  
Caribbean and Blake Plateau, ROV and mapping
- **Spring 2019:** SW Atlantic ROV cruise
- **Summer 2019:**  
Mid-Atlantic Ridge mapping and ROV
- **Summer/Fall 2019:**  
NE Seamounts and NW Atlantic ROV



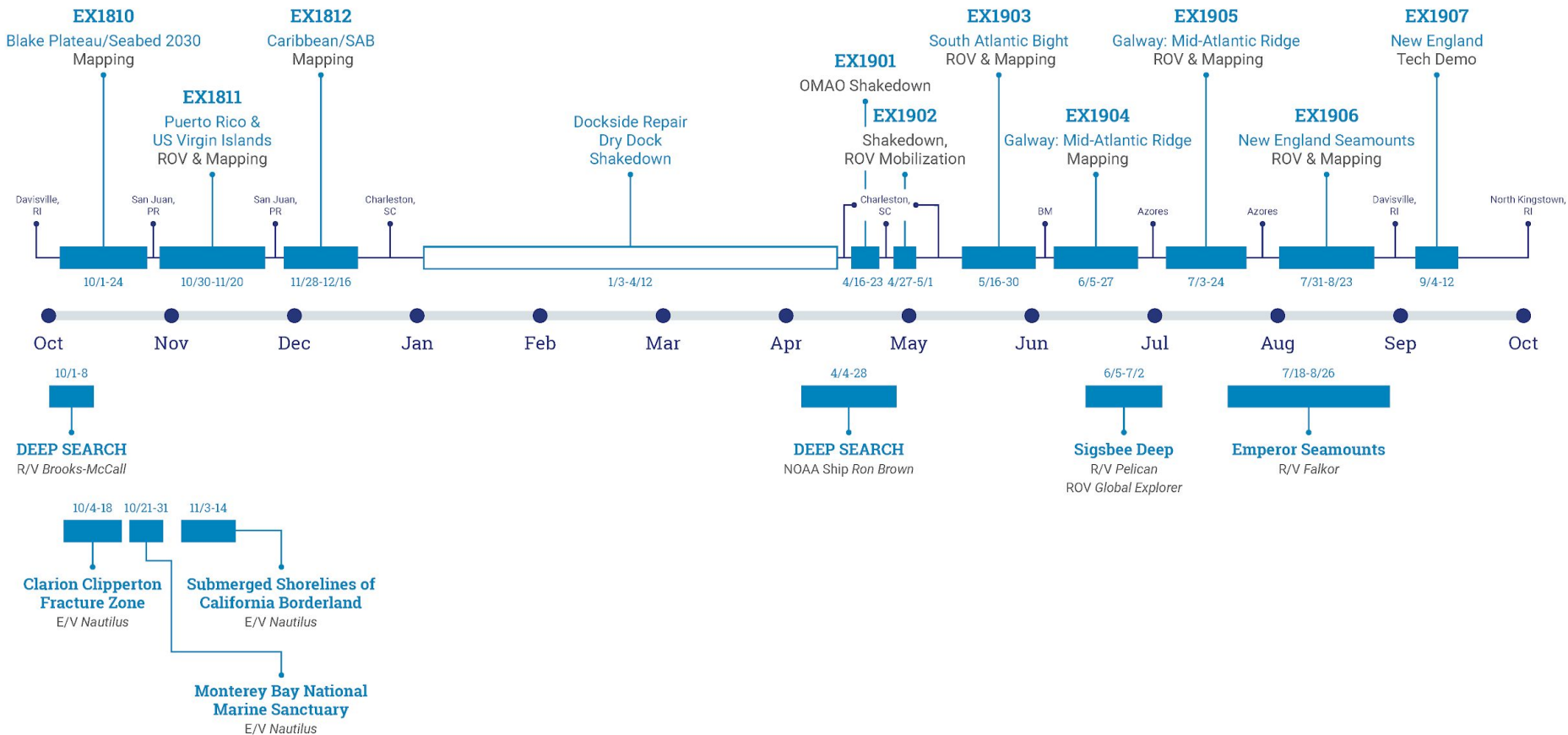


[OceanExplorer.NOAA.gov](https://oceanexplorer.noaa.gov)



**Ocean Exploration  
and Research**

# 2018-2019 Expeditions (DRAFT)



Last Updated: 12/4/18

# 2017-2018 Expeditions

Last Updated: 9/20/18

