

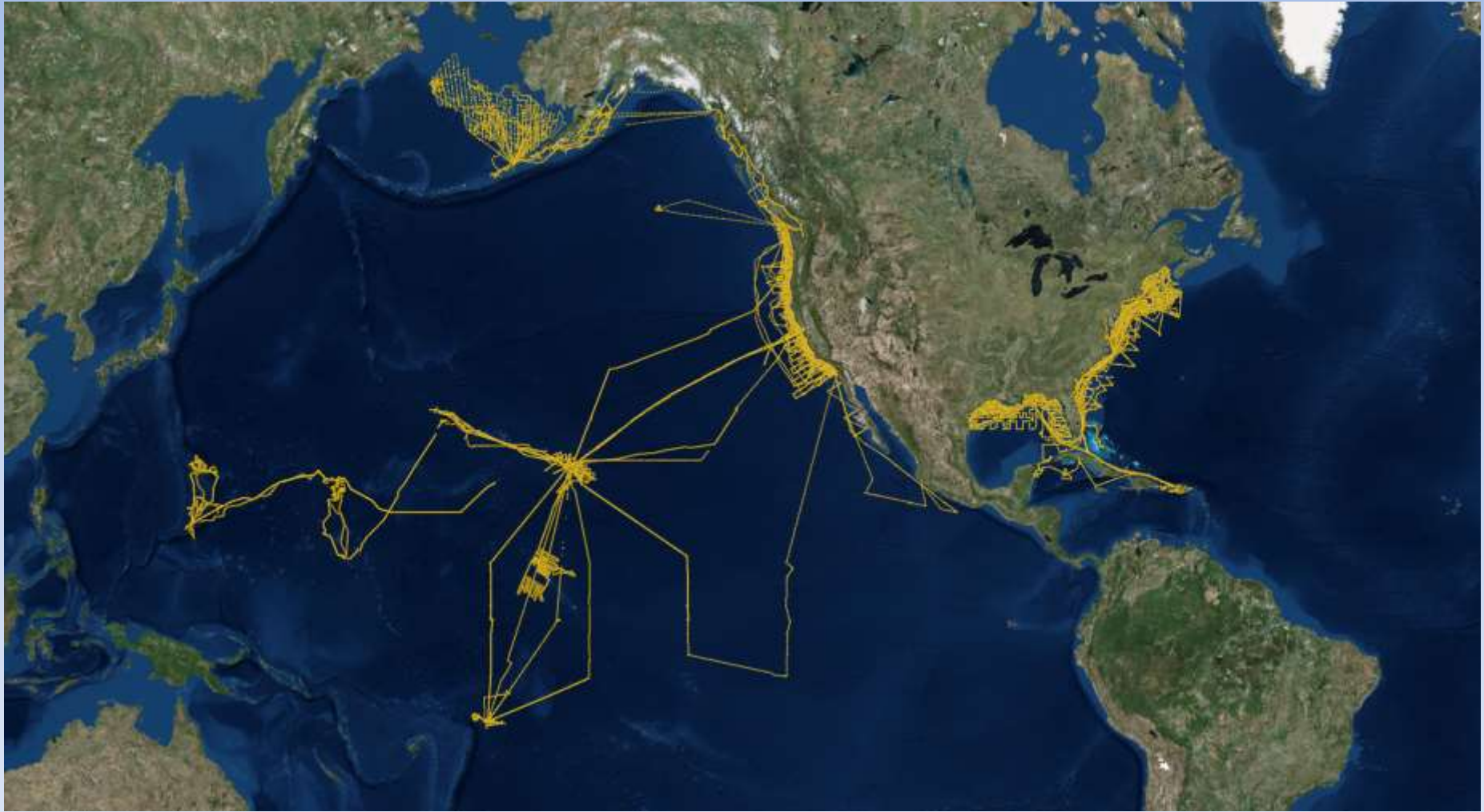
National Oceanic and Atmospheric Administration Fleet Update



RADM David Score, NOAA

Director, Office of Marine and Aviation Operations

2015 – 2016 Field Season



Mission Highlights

NOAA Ship *Ronald H. Brown*

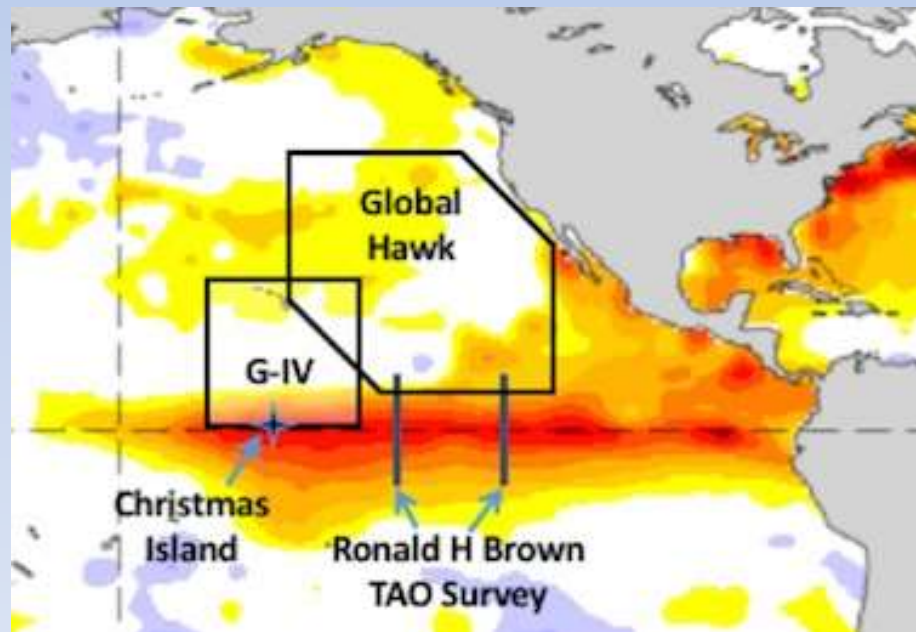
- Continued work in the Pacific, will complete missions in both Pacific and Atlantic in 2017
- Tropical Atmosphere Ocean Array
- West Coast Ocean Acidification



Mission Highlights

NOAA Ship *Ronald H. Brown*

- El Niño Rapid Response Field Campaign
- A strong El Niño can produce intense rainstorms causing flooding, landslides, and property damage
- Improving forecast models will produce more robust forecast models

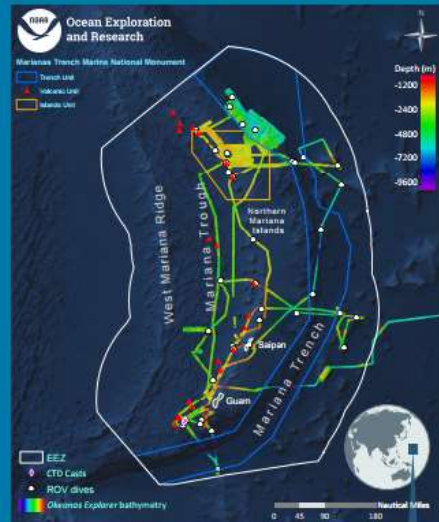


Mission Highlights

NOAA Ship *Okeanos Explorer*

2016 Deepwater Exploration of the Marianas

NOAA Ship *Okeanos Explorer*, April 20 – July 10, 2016 <http://oceanexplorer.noaa.gov/okeanos/explorations/ex1605/welcome.html>



Expedition Operating Area: Marianas Trench Marine National Monument and Commonwealth of the Northern Mariana Islands

This expedition is part of the three-year Campaign to Address the Pacific monument Science, Technology, and Ocean Needs (CAPSTONE), an initiative to collect deepwater baseline information to support science and management decisions in and around U.S. marine protected areas in the central and western Pacific. Highlights include:



Discovered and documented three new hydrothermal vent sites at Eifuku and Chamorro Seamounts, and a new active high-temperature "black smoker" vent field composed of multiple chimneys (one over 30 meters tall!) on the Mariana Back-Arc spreading center.



Conducted the first effort to discover and document deep-sea coral and sponge communities in the deep waters of the Marianas. Documented 10 "high-density" communities and a rare "high-density" community of basket stars and crinoids.



Shared live video feeds of the expedition with the public worldwide via the Internet, with the live video receiving a record-breaking 3.1 million views!



73,800 square kilometers of seafloor mapped



news & media coverage by 110+ outlets



41 remotely operated vehicle dives at a depth range of 240 - 6,000 meters



160 biological & 73 geological samples collected



80 - 100 undescribed species observed or collected



100 participating scientists, students, & managers



Mission Highlights

NOAA Ship *Okeanos Explorer*

- Ongoing CAPSTONE Project
- Exploration in the Western Pacific around Tinian Island
- Discovery of a B-29 wreck using NOAA's ROV Deep Discoverer



Mission Highlights

NOAA Ship *Reuben Lasker*

- Completed first full year of scientific operations
- Projects included California Current Ecosystem Survey, Juvenile Rockfish Survey, West Coast cetacean research
- Study of harmful algal bloom



Mission Highlights

NOAA Ship *Henry B. Bigelow*

- Completed the Atlantic Marine Assessment Program for Protected Species
 - Worked with NOAA aircraft to optimize marine mammal survey efforts
 - Project highlights included the first sighting-verified acoustic signature of a True's beaked whale
- Fall and Spring Bottom Trawl/Acoustic Survey



Mission Highlights

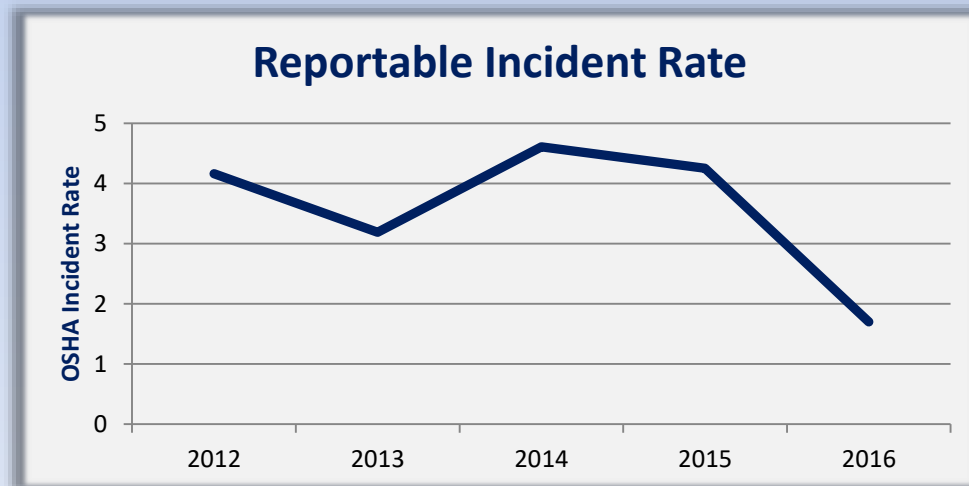
Hydrographic Fleet

- Surveyed over 1,435 square nautical miles in 2016
- Updated critical navigation charts for
 - Growing ports of Savannah, GA and Wilmington, NC
 - SE Alaska and Kodiak, high-traffic navigable waterways
 - Continuing work in Arctic, including high-priority areas that have not been surveyed in >100 years



Fleet Safety Summary – FY 2016

- Approximately 30% of reportable incidents across OMAO were caused by improper focus of attention and/or complacency.
- Over 40% of NOAA total reportable incidents occurred on ships and small boats



<http://storms.ngs.noaa.gov/storms/matthew/index.html>

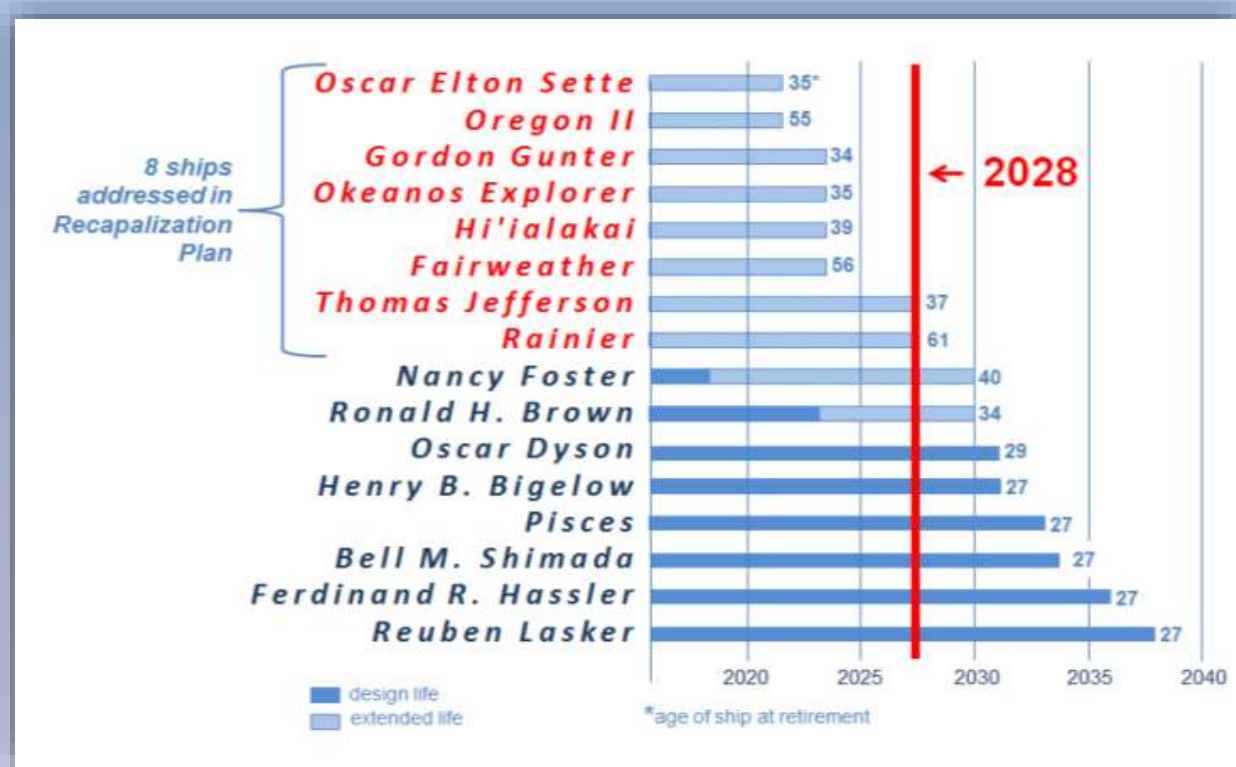


Summary Stats and Observations

- 2015 -2016, the fleet accomplished 85% of planned sea days.
 - 3 of our oldest ships account for 80% of lost time
- 50% lost time due to unscheduled maintenance.
 - Extended repairs (growth work) 40%
- Old ships and new ships have different challenges
 - Regulatory environment driving design, modifications, and operating constraints
 - Growth of unmanned systems
 - Cyber security, IT, Communications requirements ↑



NOAA Fleet of the Future?



NOAA Fleet Independent Review Team

- Diverse team of senior-level subject matter experts worked to assess:
 - Current fleet composition and capabilities
 - Long-term recapitalization planning based on NOAA's at sea data collection requirements



Independent Review Team Recommendations

1. Develop and implement a recapitalization plan that provides core mission capacity and capabilities.
2. Initiate actions to procure a general purpose oceanographic vessel as the first step in a recapitalization plan leveraging the Navy's AGOR specifications.
3. Conduct independent benchmarking of maintenance and crewing processes against industry best practices.
4. Senior NOAA leadership must commit to a stable, multi-year funded capital acquisition plan and funding to fully utilize and maintain the fleet as stewards of this national capability.



Fleet Force Architecture

- Objective: to develop a quantitative, objective, analytically robust, and repeatable process to develop defensible insights into viable Fleet Architecture capabilities and alternatives to meet NOAA's mission requirements.

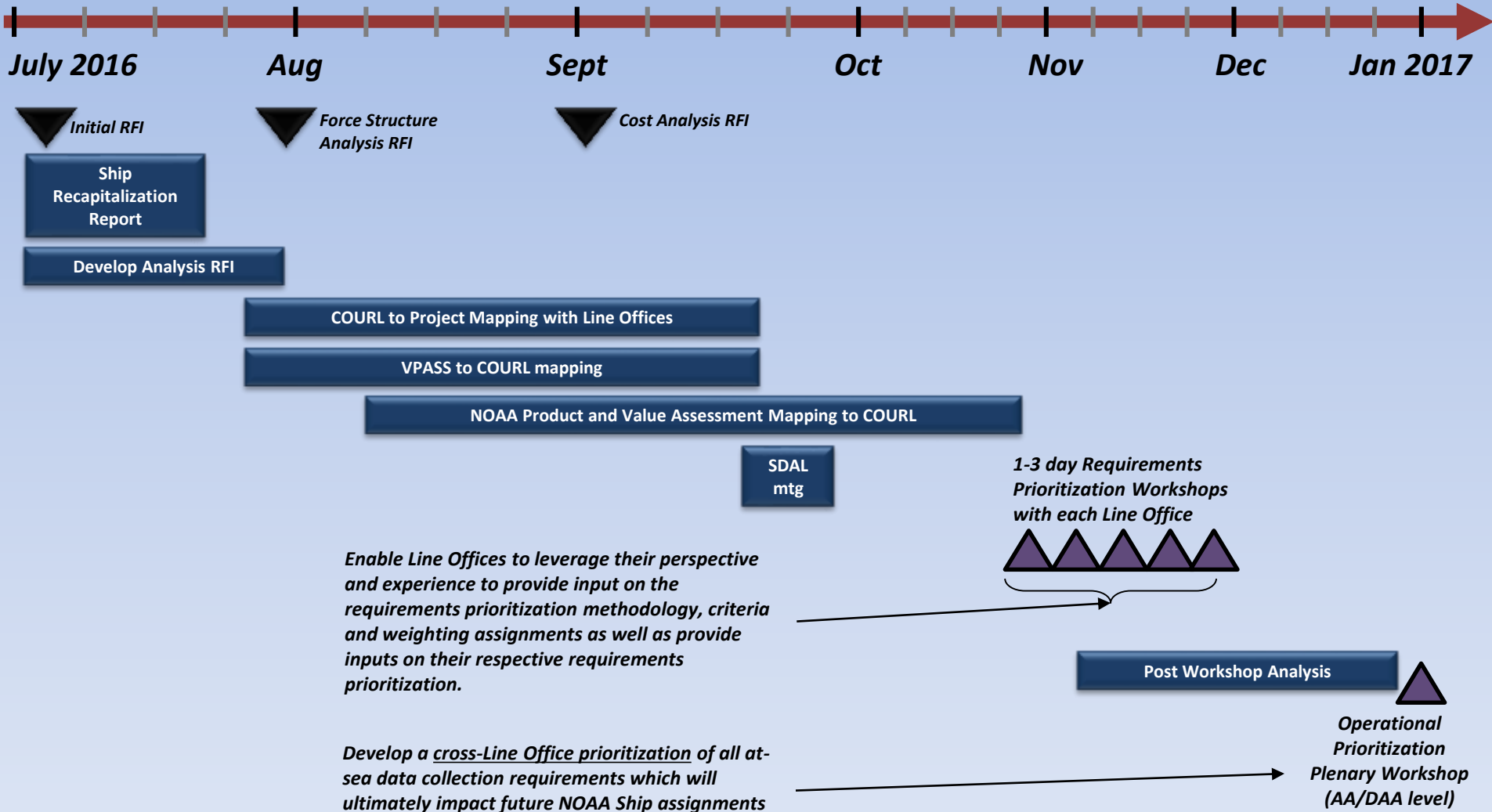
Phase I: Requirements Prioritization and Force Architecture Modeling and Simulation

Phase II: Force Architecture / Fleet Recapitalization Roadmap Development

Phase III: NOAA Ship Recapitalization Plan Development



Fleet Force Architecture: Operational Requirements Prioritization Timeline



Thank You

