NOAA Fleet Update

August 2017

The following update provides the status of NOAA's fleet of ships and aircraft, which play a critical role in the collection of oceanographic, atmospheric, hydrographic, and fisheries data. NOAA's current fleet of 16 ships – the largest civilian research and survey fleet in the world – and nine aircraft, are operated, managed, and maintained by NOAA's Office of Marine and Aviation Operations (OMAO). OMAO includes civilians, mariners, and officers of the United States NOAA Commissioned Officer Corps (NOAA Corps), one of the nation's seven Uniformed Services.

Find us on Facebook for the latest news and activities.

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OMAO and the NOAA Corps – In the News

NOAA ships locate missing fishing vessel
-KING 5 Seattle
Two ships heading to a scientific mission off the coast of Alaska helped locate the wreckage of a fishing vessel that's been missing since February. The NOAA ships found the Destination ship on Thursday morning. It went missing while fishing for snow crab northwest of St. George, AK, according to a news release from the U.S. Coast Guard.

Whale, dolphin survey underway - six month tour will cover Hawaiian Islands
-The Garden Island
LIHUE – Scientists and researchers kicked off the Hawaiian Islands Cetacean and Ecosystem Assessment Survey on Thursday. It's a six-month tour of nearly 1.8 million square nautical miles through the main and Northwestern Hawaiian Islands, with the goal of estimating the numbers of whales and dolphins in the waters.

Hurricane Hunters fly into danger to keep you safe
-WRPI
EAST PROVIDENCE, R.I. (WRPI) – The information gathered from inside and around a hurricane is critical to creating forecasts, which can save lives and property. The Hurricane Hunter aircraft were recently on Long Island and Eyewitness News got a personal tour of the planes.

Researchers find new way to monitor location and intensity of hurricanes
-Miami's Community Newspapers
Researchers believe they have found a new way to monitor the intensity and location of hurricanes from hundreds of miles away by detecting atmospheric waves radiating from the centers of these powerful storms. In a new study, scientists from the University of Miami's Rosenstiel School of Marine and Atmospheric Science and the Hurricane Research Division of the National Oceanic and Atmospheric Administration (NOAA) presented direct observations of the waves, obtained by NOAA aircraft flying in hurricanes and by a research buoy located in the Pacific Ocean. The waves, known as atmospheric gravity waves, are produced by strong thunderstorms near the eye and radiate outward in expanding spirals.

Gray's Reef awash with life off Savannah's coast
-Savannah Morning News
To the naked eye, there's not much to Gray's Reef National Marine Sanctuary. The 22-square-mile swatch of federally protected ocean looks, on the surface, like the rest of the deep blue sea off Georgia's coast — distinguishable only by a large, bright yellow buoy adorned with solar panels.

100th Anniversary of the NOAA Corps

Celebrating a Century of Service on May 22 (1917-2017)

Faced with tough national security and economic challenges and a natural world governed by powerful and mysterious forces that often threatened life, property, and commerce, President Thomas Jefferson signed a bill creating a new federal agency in 1807 that would support the nation's defense, promote the well-being of its citizens, and unlock nature's secrets. The new agency's mission was to chart the nation's coastal waters to ensure that ships could move civilians, troops, and materiel safely.

During the next 150 years, that agency, the Survey of the Coast (later the Coast & Geodetic Survey or C&GS), would prove itself in war as well as in peacetime. With America's entry into the World War I, a commissioned service of the C&GS was formed in 1917 to ensure the rapid assimilation of C&GS technical skills for defense purposes. During World War II, officers and civilians of the C&GS produced nautical and aeronautical charts, provided critical geospatial information to artillery units, and conducted reconnaissance surveys.

Today, the work of the C&GS—and more—is conducted by the National Oceanic and Atmospheric Administration (NOAA) and the NOAA Commissioned Officer Corps—one of the seven uniformed services of the United States. The direct descendants of the C&GS, NOAA and the NOAA Corps work every day to keep the nation secure and productive by providing products and services that support maritime domain awareness; help ensure safe passage of commercial and military traffic on our nation's waterways; warn mariners, aviators, and the public of severe weather; aid search and rescue efforts; and conserve and protect our natural resources.

Continuing in the tradition of their C&GS predecessors, NOAA Corps officers continue to play a vital role in the acquisition and analysis of environmental data that aid NOAA and other agencies in meeting the national security, economic, and environmental challenges of the 21st century. NOAA Corps officers command ships that scan the seafloor for potential hazards to shipping, monitor oceanographic and atmospheric conditions, and study ocean resources. They also operate highly specialized aircraft that collect environmental and geographic data necessary for weather and flood prediction, nautical and aeronautical charting, disaster response, and resource management.

NOAA Ships Locate Missing Fishing Vessel

Bering Sea, Alaska

Two NOAA ships, en route to scientific missions in Alaskan waters, helped locate the missing fishing vessel *Destination* at the request of the U.S. Coast Guard Marine Board of Investigation. The *Destination* and its six crew members were lost February 11, 2017, while fishing for snow crab northwest of St. George, Alaska.

NOAA Ship *Oscar Dyson*, a fisheries survey vessel, conducted the first survey from April 30 through May 1. The *Dyson* used its multibeam echo sounder to search the area around the last known position of the *Destination*. While the ship was not able to positively identify any contacts as the *Destination*, it did narrow the search area.

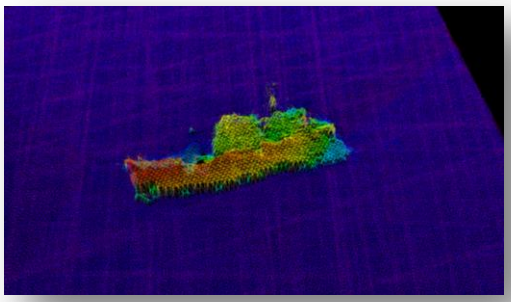
A second survey by NOAA Ship *Fairweather*, a hydrographic survey vessel, was conducted on July 8 and 9. The *Fairweather* used its multibeam sonar, designed for seafloor mapping and object detection, to locate the *Destination* in approximately 250 feet of water.

With the wreckage and debris field located by NOAA ships, a U.S. Coast Guard dive team aboard Coast Guard Cutter *Healy* will use a remotely operated vehicle to investigate the wreckage later this month. Imagery from the ROV will provide visual confirmation of the wreck site and become part of the Coast Guard's Marine Board of Investigation, which holds its public hearing August 7-18 in Seattle.

"The Marine Board appreciates NOAA's help in locating the wreckage of the F/V *Destination*," said Cmdr. Scott Muller, U.S. Coast Guard, chairman of the Marine Board of Investigation. "The vessel location is an instrumental piece of our investigation. We have a long partnership with NOAA to support the safety of those on the sea and appreciate their assistance in this and past investigations."

"The crew and officers of *Oscar Dyson* and *Fairweather* were honored to assist the Coast Guard in this investigation," said Capt. Keith Roberts, NOAA Corps, commanding officer of NOAA's Marine Operations Center - Pacific. "Our thoughts are with the families and loved ones of those lost aboard the Destination."

NOAA and the Coast Guard have a long history of collaboration, underscored by their shared mission to promote safety at sea. The unique capabilities of NOAA research and survey ships have been instrumental in assisting marine accident investigations, involving both vessels and aircraft.



A 3-D image from NOAA Ship *Fairweather*'s multi-beam sonar. The profile of the F/V *Destination* is clearly visible, including the bulbous bow, the forward house and mast, equipment (likely crab pots) stacked amidships, the deck crane aft, and the skeg and rudder.
[Photo: NOAA]

NOAA Basic Officer Training Class

Class 130

On July 24, eighteen officer candidates were sworn in to the NOAA Commissioned Officer Corps training program. All officer candidates must attend an initial 19-week Basic Officer Training Class (BOTC). The curriculum is challenging, with onboard shiphandling exercises, coupled with classroom instruction in leadership, officer bearing, NOAA mission and history, basic seamanship, firefighting, navigation, and first aid. BOTC is held at the U.S. Coast Guard Academy in New London, Connecticut, where new NOAA Corps officer candidates train alongside Coast Guard officer candidates before receiving their first operational assignments. The officer candiates represent the states of:

- **Alaska**
- **California**
- **Florida**
- **Georgia**
- **Illinois**
- **Maryland**
- **Massachusetts**
- **Michigan**
- **Nevada**
- **New Jersey**
- **North Carolina**

NOAA Corps officer candidates (foreground, khaki) train alongside their Coast Guard counterparts.

[Photo: NOAA]

FY 2018 Ship Fleet Budget Request

The President's Budget Request for NOAA includes $75 million in FY 2018 as part of an ongoing multi-year NOAA ship fleet recapitalization initiative. Since 2007, the NOAA fleet has declined from 19 ships to the current fleet of 16 ships. Without recapitalization, the fleet will decrease to eight ships by 2028. In FY 2018, funding will support construction of a second NOAA vessel (N/V) Class A. This vessel will be a variant of the Navy's existing Auxiliary General Oceanographic Research vessel, serving a primary mission of oceanographic monitoring, research, and modeling. NOAA will also continue planning for additional ships. New ship construction consists of four acquisition phases: requirements analysis, concept design, preliminary design, and detailed design and construction. Efforts will be made throughout the process to leverage design aspects of previous ship classes and to create standardization across the fleet to meet multiple core mission requirements.

We thank Congress for the fleet recapitalization support received in FY 16 ($80 million) and FY17 ($75 million).

Fleet Recapitalization Resources

OMAO Fleet Recapitalization - Building NOAA's 21st Century Fleet [March 2017 - PDF 2.1 MB]

OMAO Fleet Recapitalization Questions and Answers (Q&As) - [PDF]

NOAA Fleet Independent Review Team Final Report

The NOAA Fleet Plan: Building NOAA's 21st Century Fleet [PDF 7.5 MB]

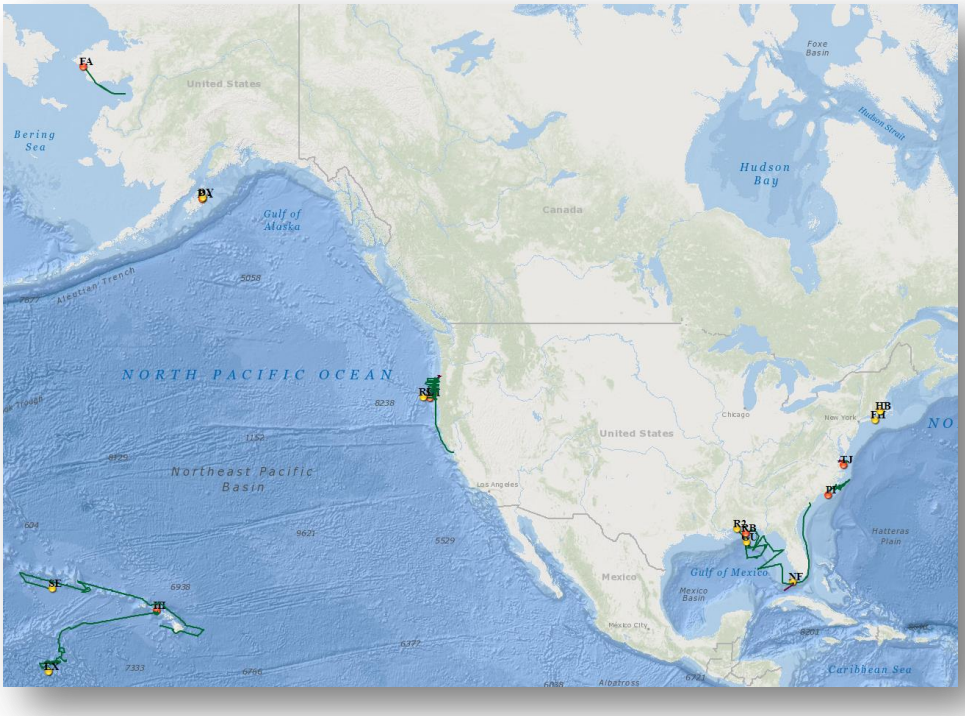
NOAA Budget Request Resources

FY 2018 NOAA Congressional Justification

FY 2018 Bluebook

OMAO’s Ships and Centers

OMAO’s Ship Tracker (screen shot below) shows information about the location - present and past - of our fleet of research and survey ships. Please note: To access Ship Tracker you must create an account with a **.gov** or **.mil** email address. All other access is restricted.



OMAO’s ships and related Marine Centers are listed below based on the geographical location of the vessels’ homeports starting in the Northeast and ending in the Pacific.

New Castle, NH

NOAA Ship *Ferdinand R. Hassler*

Commanding Officer: LCDR Matthew Jaskoski
Primary Mission Category: Hydrographic Surveys
Depart: Baltimore, Maryland **Arrive:** Norfolk, Virginia
Depart: Norfolk, Virginia **Arrive:** Charleston, South Carolina
Project: Approaches to Jacksonville
Objectives: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

Ship status: Vessel will be in the U.S. Coast Guard Yard in Baltimore, Maryland, for a maintenance period through mid-August. Through a Memorandum of Understanding with the Coast Guard Yard, repair work will address safety and performance items, including HVAC system modifications, cofferdam extensions, fast rescue boat davit wire rope renewal, and work boat boarding platform renewal.

Newport, RI

NOAA Ship *Henry B. Bigelow*

Commanding Officer: CDR Jeff Taylor
Primary Mission Category: Fisheries Research
Depart: Newport, Rhode Island **Arrive:** Newport, Rhode Island
Ship Status: Ship is undergoing emergency repairs to the main propulsion system with an estimated time of completion to be determined. Pending repairs, scheduled projects are:

Project 1: Cetacean and Turtle Biology
Objectives: To further understanding of sea turtle ecology, scientists will locate and capture loggerhead sea turtles to collect samples and apply passive integrated transponders and satellite linked data loggers to loggerhead turtles. Scientists will also locate and document occurrence of mesoplodon beaked whales and collect passive acoustic recordings, identification photographs, and biopsy samples. As possible, scientists will also opportunistically collect images for photo identification of North Atlantic right whales.

Project 2: Summer Ecosystem Monitoring Survey
Objectives: This survey will assess the hydrographic, planktonic and pelagic components of the Northeast U.S. Continental Shelf Ecosystem. Specifically, scientists will quantify the spatial distribution of the following parameters: water currents, water properties, phytoplankton, microzooplankton, mesozooplankton, sea turtles and marine mammals, contributing to stock assessments, protected species assessments, ecosystem assessments, and climate assessments.

Davisville, RI

NOAA Ship *Okeanos Explorer*

Commanding Officer: CDR Eric Johnson
Primary Mission Category: Oceanographic Exploration and Research
Depart: Honolulu, Hawaii **Arrive:** Honolulu, Hawaii
Project: CAPSTONE 2017 Musician Seamounts Mapping
Objectives: This expedition will identify and characterize vulnerable marine habitats and characterize seamounts in and around the Prime Crust Zone (PCZ). The PCZ is the area of the Pacific with the highest concentration of commercially valuable deep-sea minerals. The ship will also analyze the seamount structure and shape to inform the type of formation environment of these seamounts.

Norfolk, VA

NOAA Ship *Thomas Jefferson*

Commanding Officer: CDR Christiaan van Westendorp
Primary Mission Category: Hydrographic Surveys
Depart: Norfolk, Virginia **Arrive:** Boston, Massachusetts
Depart: Boston, Massachusetts **Arrive:** Charleston, South Carolina
Project 1: Northeast Habitat Mapping
Objectives: The National Marine Fisheries Service (NMFS) Northeast Fisheries Science Center (NEFSC) will conduct hydroacoustic survey operations in the Gulf of Maine to support its regional Benthic Habitat Assessment (BHA) and Deep Sea Corals (DSC) projects. The ship will characterize offshore benthic habitats that are suspected to contain hard bottom habitats and support deep sea corals and sponges and develop benthic habitat maps, models, and other data products that can be used to improve NEFSC's analytical and decision-making capabilities with respect to improved essential fish habitat definition, and data in support of area management.

Project 2: Approaches to Savannah
Objectives: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

Sunrise off the coast of Knotts Island, North Carolina from *Thomas Jefferson*.
[Photo: NOAA]

OMAO'S MARINE OPERATIONS CENTER – ATLANTIC (MOC-A)

CAPT Scott Sirois, Commanding Officer MOC-A

MOC-A serves as a homeport for one NOAA ship, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the research and survey ships in NOAA's Atlantic fleet. Each year, these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.

Charleston, SC

NOAA Ship *Nancy Foster*

Commanding Officer: Master Donn Pratt
Primary Mission Category: Oceanographic Research, Environmental Assessment
Depart: Tampa, Florida **Arrive:** Tampa, Florida
Project: Southeast Deep Coral Initiative (SEDCI)
Objectives: This expedition will survey, map, and sample deep-sea coral ecosystems in federal waters of the eastern Gulf of Mexico and South Atlantic Bight, focusing on priority areas identified by the Gulf of Mexico Fishery Management Council and South Atlantic Fishery Management Council. The ship will conduct benthic surveys using a deep-water remotely operated vehicle and use the ship's fisheries acoustics and multibeam echosounders to conduct mapping operations.

NOAA Ship *Ronald H. Brown*

Commanding Officer: CAPT Kurt Zegowitz
Primary Mission Category: Oceanographic Research, Environmental Assessment
Depart: Key West, Florida **Arrive:** Fort Lauderdale, Florida
Project: Gulf of Mexico Ecosystems and Carbon Cycle Cruise (GOMECC)
Objectives: The GOMECC project is the third comprehensive survey of inorganic carbon, nutrients, and other biogeochemical parameters along the coastal waters of the Gulf of Mexico. The effort is in support of the NOAA Office of Oceanic and Atmospheric Research's Ocean Acidification Program that has a major objective to monitor changes in inorganic carbon dynamics due to anthropogenic carbon input and natural changes in coastal regions.

Pascagoula, MS

NOAA Ship *Pisces*

Commanding Officer: CDR Nicholas Chrobak
Primary Mission Category: Fisheries Research
Depart: Morehead City, North Carolina **Arrive:** Norfolk, Virginia
Project: Southeast Fisheries-Independent Survey
Objectives: The ship will conduct applied fishery-independent sampling focusing on assessment of spatial variability in distribution and abundance of species within the snapper-grouper complex; comparative analysis of fish traps, video cameras, and acoustics; and bathymetric and backscatter data collection for mapping of hard bottom habitats.

NOAA Ship *Oregon II*

Commanding Officer: Master Dave Nelson
Primary Mission Category: Fisheries Research
Depart: Pascagoula, Mississippi **Arrive:** Cape Canaveral, Florida
Depart: Cape Canaveral, Florida **Arrive:** Pascagoula, Mississippi
Project: Shark/Red Snapper Longline survey
Objectives: The objectives of this project are to sample the U.S. Atlantic and northern Gulf of Mexico to characterize the distribution and abundance of shark and red snapper populations to aid in stock assessments. Scientists will collect morphological measurements and biological samples to facilitate life history studies.

NOAA Ship *Gordon Gunter*

Commanding Officer: LCDR Lindsay Kurelja
Primary Mission Category: Fisheries Research
Depart: Pascagoula, Mississippi **Arrive:** Pascagoula, Mississippi
Project: Mammal and Seabird Assessment
Objectives: Scientists will conduct visual transect surveys and passive acoustic surveys to estimate the abundance and spatial distribution of cetacean stocks in the U.S. Gulf of Mexico waters. Scientists will also collect tissue samples of select cetaceans and collect data on the distribution and abundance of seabirds and other marine life.

NOAA Ship *Gordon Gunter* departs Pascagoula for the Southeast Marine Mammal survey.
[Photo: NOAA]

San Diego, CA

NOAA Ship *Reuben Lasker*

Commanding Officer: CDR Kurt Dreflak
Primary Mission Category: Fisheries Research
Depart: San Francisco, California **Arrive:** San Diego, California
Depart: San Diego, California **Arrive:** Honolulu, Hawaii
Project 1: West Coast Pelagic Fish Survey
Objectives: Survey the distributions and abundances of coastal pelagic fish species (CPS), their prey, and their biotic and abiotic environments in the California Current between San Diego, California and the northern extent of Vancouver Island, Canada.

Project 2: Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS)
Objectives: The HICEAS project is a marine mammal and seabird assessment survey of the waters of the Hawaiian island Chain extending offshore to the limits of the U.S. Exclusive Economic Zone. The overall objective of the HICEAS project is to estimate the abundance and understand the distribution of dolphins, whales, and seabirds found in the waters around the Hawaiian Islands. Biopsy data and aerial photography from unmanned aerial systems will help scientists better understand population demography and genetic structure, and biological and oceanographic data will be collected to better characterize the study area environment.

Newport, OR

NOAA Ship *Rainier*

Commanding Officer: CDR Ben Evans
Primary Mission Category: Hydrographic Surveys
Depart: Kodiak, Alaska **Arrive:** Kodiak, Alaska
Depart: Kodiak, Alaska **Arrive:** Kodiak, Alaska
Project: Cold Bay and Deer Passage, Alaska Survey
Objectives: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

NOAA Ship *Bell M. Shimada*

Commanding Officer: CDR Paul Kunicki
Primary Mission Category: Fisheries Research
Depart: Newport, Oregon **Arrive:** Newport, Oregon
Depart: Newport, Oregon **Arrive:** Port Angeles, Washington
Project: Joint U.S. and Canada Pacific Hake Acoustic-Trawl Survey
Objectives: The primary goal of the joint survey is to estimate the biomass, distribution, and biological composition of Pacific hake using data from an integrated acoustic and trawl survey off the west coasts of the U.S. and Canada from approximately Point Conception, California to Dixon Entrance, Alaska. The goal of the US team will to cover the survey area from Point Conception to the north end of Vancouver Island, Canada.

OMAO'S MARINE OPERATIONS

CAPT Todd Bridgeman, Director of Marine Operations
OMAO's Marine Operations oversees operations of the three regional Centers, including the Marine Operations Center-Pacific, Marine Operations Center-Atlantic, and Marine Operations Center-Pacific Islands.

OMAO'S MARINE OPERATIONS CENTER – PACIFIC (MOC-P)

CAPT Keith Roberts, Commanding Officer MOC-P
MOC-P serves as a homeport for two NOAA ships, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the research and survey ships in NOAA's Pacific fleet. Each year these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.

Ketchikan, AK

NOAA Ship *Fairweather*

Commanding Officer: CDR Mark Van Waes
Primary Mission Category: Hydrographic Surveys
Depart: Nome, Alaska **Arrive:** Nome, Alaska
Project: Western Alaska – Arctic Survey
Objective: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

Kodiak, AK

NOAA Ship *Oscar Dyson*

Commanding Officer: CDR Michael Levine
Primary Mission Category: Fisheries Research
Depart: Kodiak, Alaska **Arrive:** Kodiak, Alaska
Depart: Kodiak, Alaska **Arrive:** Kodiak, Alaska
Project 1: Walleye Pollock Gulf of Alaska Summer Survey
Objectives: Collect acoustic-trawl data necessary to determine the distribution, biomass, and biological composition of walleye pollock and other midwater fishes and collect physical oceanographic data at selected sites.

Project 2: EMA/FOCI Groundfish and Salmon Recruitment Processes
Objectives: The ship will conduct midwater fish trawls and surface plankton tows to extend time series of abundance of age-zero Walleye Pollock and other select forage fishes in the western Gulf of Alaska and to measure environmental variables that potentially affect the ecology of these fishes.

Honolulu, HI

NOAA Ship *Hi'ialakai*

Commanding Officer: CAPT Elizabeth Kretovic
Primary Mission Category: Oceanographic Research, Environmental Assessment
Depart: Honolulu, Hawaii **Arrive:** Honolulu, Hawaii
Project: Hawaiian Monk Seal Population Assessment and Recovery Activities
Objectives: The ship will recover Hawaiian monk seal camps at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, and Kure Atoll; conduct monk seal beach surveys at Midway Atoll, Ni'ihua, Nihoa, and Mokumanamana Islands; and return two Hawaiian monk seals to Northwest Hawaiian Islands sites from a rehabilitation facility in Kona.

NOAA Ship *Oscar Elton Sette*

Commanding Officer: CDR Donald Beaucage
Primary Mission Category: Fisheries Research
Depart: Honolulu, Hawaii **Arrive:** Honolulu, Hawaii
Project: Hawaiian Islands Cetaceans
Objectives: The ship will conduct scientific operations in the waters surrounding the Hawaiian Island Chain, conducting visual surveys of cetacean distribution and composition, collect skin biopsies and satellite tagging for investigations of stock structure, and collect photographs for individual identification to document geographic variation in dolphin morphology and health. Scientists will also recover and deploy a High-Frequency Acoustic Recording Package at three offshore locations near Kona, Kauai, and Pearl and Hermes Atoll.

OMAO'S MARINE OPERATIONS CENTER – PACIFIC ISLANDS (MOC-PI)

CAPT Robert Kamphaus, Commanding Officer MOC-PI
MOC-PI serves as a homeport for two NOAA ships, and manages the day-to-day operations and provides administrative, engineering, maintenance, and logistical support for the ships in NOAA's Pacific Islands fleet.

OMAO's Aircraft

Lakeland, FL

WP-3D (N42RF) – "Hurricane Hunter"

Current Mission: Hurricane Season

As we enter the second month of the 2017 Hurricane Season, the NOAA Hurricane Hunter aircraft are ready to respond. Radar reconnaissance missions on the NOAA WP-3D aircraft will be conducted to support tropical cyclone forecasting and the Hurricane Forecast Improvement Project. These flights will use the WP-3D's tail Doppler radar system to obtain high-density, three-dimensional measurements of the inner core wind structure of each tropical cyclone, potentially throughout its full life cycle. The hurricane research missions will also use the WP-3D to support the calibration/validation of satellite measurements and instrumentation development for the tropical cyclone environment and sampling of other aspects of the tropical cyclone inner core. These measurements will be used to enhance the accuracy of track and intensity guidance generated by NOAA's numerical weather prediction models. They will also be used directly by NOAA's National Weather Service hurricane specialists with the ultimate outcome being improved accuracy of intensity and track forecasts, extended forecast/warning lead-times and improved confidence levels by decision makers.

WP-3D (N43RF) – "Hurricane Hunter"

Temporary Base: Jacksonville, Florida

Current Mission: Scheduled Maintenance

The aircraft was inducted into re-winging in March. No additional projects are planned on this airframe until re-wing is complete in fall 2018.

Gulfstream IV (N49RF) – "Hurricane Hunter"

Current Mission: Hurricane Season

NOAA's Gulfstream IV aircraft stands ready to support operational tropical cyclone forecasting and the Hurricane Forecast Improvement Project, based out of its new home in Lakeland, Florida. The G-IV is the primary aircraft for surveillance missions. The radar reconnaissance missions will use the G-IV's Tail Doppler Radar (TDR) system to obtain high-density, three-dimensional measurements of the inner core wind structure of tropical cyclones, potentially throughout its full life cycle. NOAA's National Weather Service is seeking to gather data on the performance of the TDR observation system and will work with the Hurricane Research Division to develop observing strategies for maximizing the utility of the TDR with the goal of improving hurricane track and intensity forecasts.

Jet Prop Commander (N45RF)

Temporary Base: Portland, Oregon

Current Mission: GRAV-D

The aircraft will be supporting NOAA's National Geodetic Survey (NGS) on the Gravity for the Redefinition of the American Vertical Datum (GRAV-D) project. This project launched in 2007 and will conclude in 2022. When complete, the National Spatial Reference System will have a new, more accurate, gravity-based vertical datum. Vertical heights will be known throughout the U.S. at a 2-cm accuracy, a vast improvement over the current vertical datum. Accurate height measurement is essential to accurate mapping and surveying, as well as floodplain mapping and management nationwide.

Twin Otter (N46RF)

Temporary Base: Various Locations
Current Missions: Soil Moisture/Snow Survey

N46RF will use specialized detection equipment to make accurate, real-time measurements of soil moisture content across the country. This information is critical for managers and others to make optimal decisions supporting river, flood, and water supply forecasting, agriculture and forest management, recreation and winter tourism, and the commerce, industry, and transportation sectors of the Nation's economy. The benefits of accurate soil moisture measurements are immense and NOAA aircraft are uniquely capable to provide this information.

Twin Otter (N48RF)

Temporary Base: Various Locations
Current Mission: Snow Survey

N48RF aircraft use specialized detection equipment to make accurate, real-time measurements of soil moisture content across the country. This information is critical for managers and others to make optimal decisions supporting river, flood, and water supply forecasting, agriculture and forest management, recreation and winter tourism, and the commerce, industry, and transportation sectors of the Nation's economy. The benefits of accurate soil moisture measurements are immense and NOAA aircraft are uniquely capable to provide this information.

Twin Otter (N56RF)

Temporary Base: Various locations in Alaska
Current Missions: Alaska Harbor Seals

The National Marine Fisheries Service is charged with monitoring the abundance of Harbor seal pups, juveniles, and adults in the North Pacific Ocean. Prioritized survey areas are surveyed with GPS-linked high resolution digital cameras. This project supports the mandate of the Marine Mammal Protection Act (MMPA) to monitor the recovery of pinniped (seal) populations and define their role in the ecosystem. These surveys enable NMFS to publish Stock Assessment Reports critical for monitoring and managing these protected species.

Twin Otter (N57RF)

Temporary Base: Various locations in Gulf of Mexico
Current Mission: Gulf of Mexico Marine Assessment Program for Protected Species (GOMAPPS)

The aircraft will be supporting the NMFS GOMAPPS project in the gulf coast of the US. This survey helps to develop models and tools to provide seasonal density estimates incorporating habitat characteristics of marine mammals, turtles, and seabirds in the Gulf of Mexico. The project will provide data essential to supporting conservation initiatives mandated under the National Environmental Policy Act (NEPA), MMPA, MBTA, and ESA.

King Air (N68RF)

Temporary Base: Various locations
Current Mission: Continuous Coastal Mapping

Coastal mapping is an on-going mission of NOAA's National Geodetic Survey to survey approximately 95,000 miles of U.S. coastline, and to provide the Nation with an accurate, up-to-date and seamless database of the national shoreline. This data is used as the baseline for defining America's marine territorial limits, including its Exclusive Economic Zone, and for the geographic reference needed to manage coastal resources and support marine navigation. Stereo photogrammetry and LiDAR are used to produce a digital database. In addition, the Coastal Mapping Program supports NOAA's homeland security and emergency response requirements by rapidly acquiring and disseminating a variety of datasets to federal, state, and local government agencies as well as the general public.

OMAO'S AIRCRAFT OPERATIONS CENTER (AOC)

CAPT Michael Silah, Commanding Officer AOC

The AOC, located at Lakeland Linder Regional Airport in Lakeland, Florida, serves as the main base for OMAO's fleet of nine aircraft and provides capable, mission-ready aircraft and professional crews to the scientific community. Whether studying global climate change or acid rain, assessing marine mammal populations, surveying coastal erosion, investigating oil spills, flight checking aeronautical charts, or improving hurricane prediction models, the AOC flight crews continue to operate in some of the world's most demanding flight regimes.

NOAA Lockheed WP-3D Orion N43RF, also known as "Miss Piggy," making progress on re-winging and overhaul, which will include major avionics upgrades, paint, and updated science systems.
[Photo: Victor Pitts/Fleet Readiness Center Southeast]

Unmanned Systems Support

NASA Global Hawk

Location: Edwards Airforce Base
Mission: Scheduled Inspection and Maintenance

Integration of new equipment in the Global Hawk aircraft and Ground Control Stations has been accomplished to allow the project to communicate with the I4 INMARSAT satellite constellation since the decommissioning of the I3 INMARSAT satellite constellation in December 2016. INMARSAT serves as a command and control link for Global Hawk flight operations. Testing of this recently implemented system is in progress. NASA's 872 Global Hawk is being prepared to support science missions this summer as part of a NASA project to train new engineers through preparing and executing flights against cyclonic storms in the Pacific, Gulf, Caribbean, and Atlantic regions. The instrument upload includes NOAA's SO2, O3, and NCAR's AVAPS instruments. Six 24 hour mission flights have been planned this August with NOAA as a key science and flight operations participant.

NASA 874 is currently in refurbishment. System tests have progressed well and the aircraft is being prepared for engine run tests next. A Functional Check Flight is planned for the beginning of 2018. Through the summer months, NASA 874 will serve as a ground test vehicle for the integration and test of a DOD system planned to be flown on NASA 872 this fall. Mission plans and FAA COAs are in process to support the fall 2017 missions as well as groundwork for potential flights to the Arctic for a joint NOAA/NASA project (Arctic Domain) proposed for 2018. Global ARCHER planning is being conducted on a weekly basis as a result of the NOAA Arctic Domain meetings that occurred in early February. A Transport Canada SFOC application is in work to support a NASA mission being planned for January to operate from NASA Armstrong and overfly the Arctic region north of Western Canada and Alaska to assess a new instrument's performance for measuring snow on sea ice. The FAA recently approved a COA allowing Global Hawk to operate out of Air Force Plant 42 in Palmdale, CA.

APH-22 Hexacopter

Location: Bellows Air Force Station, Hawaii
Mission: APH-22 Training

Pacific Islands Fisheries Science Center (PIFSC) utilizes the airfield at Bellows Air Force Station on the island of Oahu to conduct training and proficiency flights. This allows APH-22 operators to maintain proficiency for future operations at a reduced cost.

Location: Atlantic Northeast
Mission: Emergency Response, Turtles, and Seals

The North East Fisheries Science Center seeks to use the APH-22 hexacopter to respond to entanglements and other unplanned situations involving marine mammals. Photographs will be collected for the purpose of aiding emergency stranding response, event documentation, and photo ID. Unmanned Aerial System (UAS) technologies will also be used to conduct surveys for marine turtles. The intent is to assess the feasibility of using small unmanned rotorcraft to search for turtles in their marine environment both at surface and subsurface. Turtles that are discovered either by the APH-22 or by on-vessel observers will be photographed by the APH-22 and then tagged and or sampled as part of an ongoing study. Turtles may be photographed post-release with the APH-22 to document post-release behavior. NEFSC will also use the APH-22 to conduct surveys of seal haul out sites. Photographs will be collected for the purpose of obtaining local population numbers, documenting seals with evidence of fishery interactions, and collecting photo ID data of seals with brands, wounds, and other distinguishing marks.

Location: Seattle, Washington
Mission: Sand Point APH-22 Training

The Marine Mammal Laboratory (MML) intends to begin training flights in the Sand Point area in Seattle, WA. MML has several objectives for the use of the APH-22 hexacopter UAS throughout Alaska. These trips tend to occur in the summer and sometimes fall seasons. In between surveys in the field, it is important that pilots maintain. The Sand Point location will significantly reduce the travel time required and provide more opportunities to meet training requirements.

Location: Vancouver, BC, Canada
Mission: Northern Vancouver Whale Survey

The objective of this study is to assess the body condition and nutritional status of Northern Resident killer whales off Northern Vancouver Island, Canada, based on measurements of length and width from vertical aerial photographs collected using a UAS. Estimates of length will inform long-term growth trends and widths will be used to infer current nutritional status; both will be related to trends in returning Chinook salmon (their principal prey) in past decades. These metrics will be compared to those for the endangered Southern Resident killer whale population that aggregates in adjacent U.S. and Canada boundary waters off southern Vancouver Island, to provide a comparative assessment of nutritional status to guide management of these two protected populations. This objective is a key element of ensuring an adequate food supply to allow recovery of Resident killer whales as mandated by the federal Species-At-Risk Act in Canada and the Endangered Species Act in the United States.

Location: Hawaii
Mission: Cetacean Research Program (HICEAS)

The Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS) is a PIFSC survey for cetaceans that will involve seven legs on two ships to collect high resolution vertical aerial photographs of cetaceans. These images will be used to evaluate reproductive output, by quantifying the proportion of adult females with calves in a group, and individual size and body condition, by taking photogrammetric measurements of individual length and width. Target species for UAS operations include false killer whales, short-finned pilot whales, sperm whales, and Bryde's whales, although flights may be made during sightings of rare and high profile species, such as killer whales, blue whales, and North Pacific right whales, in order to maximize the information gained from such unique opportunities.

APO-32 Octocopter

Location: Descanso Ranch, California
Mission: APO-32 Test Flights and Training

SWFSC will be conducting test flights and training flights for the APO-32 Octocopter. Initial flight testing will be conducted under Part 107 and will consist of flight maneuvers, operating in all the control modes, emergency procedures, takeoffs, landings and photogrammetry. The APO-32 is a variant of the APH-22 hexacopter, and this testing and training will build upon proven technology to produce a platform that is highly reliable, capable, and safe.

MD4-1000/DJI -S1000

Location: Corryton, Tennessee
Mission: Training and Operational Development

NOAA's Air Resources Laboratory, Atmospheric Turbulence and Diffusion Division (ATDD) seeks to utilize the NOAA National Marine Fisheries Center for Cooperative Unmanned Technologies (CCUT) MD4-1000 and DJI S-1000 airframes to perform instrument testing to verify its performance prior to the upcoming VORTEX-SE 2017 field study. Two iMet-XQ temperature/pressure/relative humidity sensors will be flown on the MD4-1000 for inter-comparison with the existing DJI S1000 platform.

MD4-100/DJI-S1000

Location: Lamont, Oklahoma

Mission: Land-Atmosphere Feedback Experiment (LAFE)

The Atmospheric and Turbulence Diffusion Division (ATDD) will measure the dynamics of land-atmosphere interactions in the lower boundary layer. The goal is to measure the scale and extent of the temperature and moisture fields in the lower boundary layer adjacent to fixed towers on the surface using both vertical profiles in the early morning and late afternoon to 1200 feet above ground level (AGL) and horizontal transects at 700 feet and 1200 feet AGL in the mid-day.

MD4-1000/ SenseFly eBee RTK

Location: Camarillo, California – California State University Channel Islands

Mission: Training and Operational Development

California State University Channel Islands and NOAA's CCUT have signed a Memorandum of Agreement to partner on the use of UAS for research and monitoring of the Channel Islands, and have agreed to provide access to a training field and support facilities.

SenseFly eBee RTK

Location: York River Basin NERR, Virginia and Hatteras Area, North Carolina

Mission: Coastal Mapping and National Estuarine Research Reserve Survey

The Remote Sensing Division is continuing to develop operational procedures related to coastal mapping and living marine resource surveys. The project will focus on York River Basin estuary in Virginia as well as three possible areas in North Carolina.

SenseFly eBee RTK

Location: Avon Park, Florida

Mission: eBee Dual Operations

Demonstration flights in Avon Park, Florida to determine the viability of simultaneous flights of the eBee within the confines of approved airspaces. Project will focus on testing and developing procedures for future operations that may benefit from this additional capability.

Coyote

Location: Avon Park, Florida

Mission: Coyote Test Flights

The Coyote, built by Raytheon (formerly Sensintel), is a small electric-powered unmanned aircraft with 1-3 hour endurance and capable of carrying a 1-2 pound payload. The Coyote can be launched from a P-3 sonobuoy tube in flight, and terrain-permitting, is capable of autonomous landing and recovery. The Coyote, when deployed from NOAA's P-3s within a hurricane environment, will prove to be a unique observation platform from which the low level atmosphere and boundary layer environment can be studied in great detail. Further clear air flights anticipated in Arizona successful flights will result in follow on flights at Avon Park, Florida.

OMAO Partnerships

United States Senate Committee on Commerce, Science, and Transportation

Location: Washington, District of Columbia

Detail: LCDR Wendy Lewis, NOAA Commissioned Officer Corps

LCDR Lewis is currently on detail to the Committee with the staff of the Chair, Senator John Thune (R-SD), where she is assisting on activities pertaining to oceans, atmosphere, and fisheries policy, as well as other matters within the Committee's jurisdiction.

National Science Foundation

Location: South Pole, Antarctica

Mission: LTJG Gavin Chensue, NOAA Commissioned Officer Corps

Members of the NOAA Commissioned Officer Corps carry out NOAA's mission in remote locations across the globe. LTJG Chensue is assigned to Antarctica where he serves as the Station Chief for NOAA's Atmospheric Research Observatory (ARO) at the Amundsen-Scott South Pole Station. The ARO at the Amundsen-Scott South Pole Station is a National Science Foundation facility used in support of scientific research related to atmospheric phenomena.

Department of Defense - U.S. Pacific Command

Location: Honolulu, Hawaii

Embedded Liaison: CAPT Barry Choy, NOAA Commissioned Officer Corps

The U.S. Pacific Command (USPACOM) area of responsibility encompasses approximately half the earth's surface and more than half of its population. The 36 nations that comprise the Asia-Pacific include: two of the three largest economies and nine of the ten smallest; the most populous nation; the largest democracy; the largest Muslim-majority nation; and the smallest republic in the world. The region is a vital driver of the global economy and includes the world's busiest international sea lanes and nine of the ten largest ports. By any meaningful measure, the Asia-Pacific is also the most militarized region in the world, with seven of the world's ten largest standing militaries and five of the world's declared nuclear nations. Under these circumstances, the strategic complexity facing the region is unique. CAPT Choy is linked closely with the activities within the region allowing for identification of opportunities and cooperation between USPACOM and NOAA, and better overall government function situational awareness in the region.

Department of Defense - U.S. Navy

Location: Washington, DC

Embedded Liaison: LCDR Jason Mansour, NOAA Commissioned Officer Corps

LCDR Jason Mansour serves as NOAA liaison to the Oceanographer of the Navy and is an important interface between the U.S. Navy and other U.S. federal agencies, including NOAA. As NOAA Liaison, LCDR Jason Mansour serves as the Head of the Interagency Policy Branch of the International and Interagency Policy Division, Office of the Oceanographer of the Navy, located at the U.S. Naval Observatory. The mission of this Division is to coordinate and execute the Oceanographer of the Navy functions related to policy and programs involving international and/or interagency oceanography. Oceanography includes meteorology, oceanography, mapping, charting and geodesy, astronomy, and precise time, and time interval.

Location: Stennis Space Center, Mississippi

Embedded Liaison: LTJG Laura Dwyer, NOAA Commissioned Officer Corps

Embedded in the Navy's Naval Oceanography Mine Warfare Center, LTJG Laura Dwyer works side by side with Navy officers operating Unmanned Underwater Vehicles worldwide and is currently stationed at Stennis Space Center. This collaboration will provide knowledge and experience that will keep NOAA on the cutting edge of this emerging technology as well as strengthen the partnership between NOAA and the Navy.

Department of Homeland Security - U.S. Coast Guard

Location: Washington, DC

Embedded Liaison: CDR G. Mark Miller, NOAA Commissioned Officer Corps

As the NOAA liaison to the United States Coast Guard (USCG), CDR Miller maintains a current and comprehensive knowledge of interagency activities and policies related to the USCG and NOAA. He identifies potential conflicts or benefits issues for analysis and evaluation, conducts appropriate assessments and studies, and serves as the interface between NOAA and the USCG. CDR Miller initiates, designs, and implements strategies through federal agency liaison and coordination that results in cooperative arrangements for maritime security, oceanographic research, hazardous materials spill response, and many other activities.

Teacher at Sea Program

The mission of the Teacher at Sea (TAS) program is to give teachers a clearer insight into our ocean planet, a greater understanding of maritime work and studies, and to increase their level of environmental literacy by fostering an interdisciplinary research experience. The program provides a unique environment for learning and teaching by sending kindergarten through college-level teachers to sea aboard NOAA research and survey ships to work under the tutelage of scientists and crew. Then, armed with new understanding and experience, teachers bring this knowledge back to their classrooms. Since its inception in 1990, the program has enabled more than 800 teachers to gain first-hand experience of science and life at sea. By participating in this program, teachers enrich their classroom curricula with knowledge that can only be gained by living and working side-by-side, day and night, with those who contribute to the world's body of oceanic and atmospheric scientific knowledge. Please access former teacher at sea blogs which document their missions at sea and offer a wealth of information about the research being conducted as well as personal stories.

- Amanda Dice (Connections Education, Baltimore, MD) will sail on the first leg of the FOCI Juvenile Pollock survey in and out of Kodiak, AK on NOAA Ship *Oscar Dyson*.
- Lisa Battig (Fountain Valley high School, Fountain Valley, CA) will sail on the fourth leg of the Western Alaska – Arctic hydrographic survey from Nome, AK to Kodiak, AK on NOAA Ship *Fairweather*.
- Chelsea O'Connell-Barlow (City Schools of Decatur, Decatur, GA) will sail on the fifth leg of the Summer Hake survey from Port Angeles, WA to Seattle, WA on NOAA Ship *Bell M. Shimada*.

The **2017 Field Season** is underway with 31 teachers currently scheduled to go to sea. To learn about the teachers, read their blogs, and more, please visit http://teacheratsea.noaa.gov/#/2017/.

Teacher at Sea Anna Levy from Colorado measures fish from the summer groundfish survey aboard NOAA Ship *Oregon II*.
[Photo: NOAA]

OMAO - NOAA Diving Program

OMAO manages and implements NOAA's Diving Program (NDP), which trains and certifies scientists, engineers, and technicians from federal, state, tribal governments, and the private sector to perform the variety of tasks carried out underwater to support NOAA's mission. NDP also has cooperative diving agreements with over 100 government agencies and academic institutions. NOAA has more than 400 divers who perform over 14,000 dives per year. The NDP is headquartered at the NOAA Diving Center at the NOAA Western Regional Center in Seattle, Washington.

NOAA diver Zach Hileman talks to a student via a diving communication system at NOAA Science Camp at the NOAA Western Regional Center in Seattle, Washington.

[Photo: Aitana de la Jara/NOAA]

OMAO Small Boat Program

OMAO manages NOAA's Small Boat Program and sets policy and provides safety inspections for almost 400 small boats operated by the various Line and program offices throughout NOAA, which support fisheries laboratories, dive support, nautical charting, ocean and Great Lakes research, and more.

NOAA small boats support many diverse operations across the country.
[Photos: NOAA]

Office of Marine and Aviation Operations

Providing Environmental Intelligence for a Dynamic World

The personnel, ships, and aircraft of NOAA play a critical role in gathering environmental data vital to the nation's economic security, the safety of its citizens, and the understanding, protection, and management of our natural resources. The NOAA fleet of ships and aircraft is managed and operated by the Office of Marine and Aviation Operations (OMAO), an office comprising civilians, mariners, and officers of the NOAA Commissioned Officer Corps, one of the seven uniformed services of the United States. NOAA's roots trace back to 1807, when President Thomas Jefferson ordered the first comprehensive coastal surveys. Those early surveys ensured safe passage of ship-borne cargo for a young nation. As the needs of the nation have grown, so too have OMAO's responsibilities. Today, OMAO civilians and NOAA Corps officers operate, manage, and maintain NOAA's active fleet of 16 research and survey ships and nine specialized aircraft. Together, OMAO and the NOAA Corps support nearly all of NOAA's missions.

NOAA has the largest fleet of federal research and survey ships in the nation. The fleet ranges from large oceanographic ships capable of exploring and charting the world's deepest ocean, to smaller vessels responsible for surveying the shallow bays and inlets of the United States. The fleet supports a wide range of marine activities including fisheries surveys, nautical charting, and ocean and climate studies. Based throughout the continental United States, Alaska, and Hawaii, the ships operate in all regions of the nation and around the world.

NOAA's aircraft provide a wide range of airborne capabilities. Our highly specialized Lockheed WP-3D aircraft are equipped with an unprecedented variety of scientific instrumentation, radars, and recording systems for both in situ and remote sensing measurements of the atmosphere, the Earth, and its environment. Equipped with both C-band weather radar and X-band tail Doppler radar systems, the WP-3Ds have the unique ability to conduct tropical cyclone research in addition to storm reconnaissance. Together with NOAA's Gulfstream IV-SP jet, these ‘hurricane hunter’ aircraft greatly improve our physical understanding of hurricanes and enhance the accuracy of tropical cyclone forecasts. NOAA's light aircraft also play a vital role in monitoring our environment. Our King Air, Turbo Prop Commander, and Twin Otter aircraft support marine mammal population studies, shoreline change assessments, oil spill investigations, and water resource/snowpack surveys for spring flood forecasts.

The NOAA fleet provides immediate response capabilities for unpredictable events. For example, in October 2016, NOAA's WP-3D (N43RF) and G-IV (N49RF) conducted 21 operational missions in seven days into Hurricane Matthew gathering vital data used to improve hurricane track and intensity forecasts. Rapid response by NOAA Ship *Ferdinand R. Hassler* to survey for underwater debris and shoaling that could prove dangerous to deeper draft vessels expedited the opening of the Ports of Charleston and Savannah by the U.S. Coast Guard following the passage of Hurricane Matthew. After the storm, NOAA's King Air (N68RF) flew 14 missions to collect post-storm damage and flooding imagery from Florida to Virginia in coordination with FEMA.

While manned aircraft and sea-going vessels have been, and will continue to be, a primary source of environmental data, new technology will have a significant role to play in the future NOAA fleet. OMAO, in coordination with other NOAA offices and federal agencies, is evaluating and deploying remotely piloted underwater and aircraft systems that could significantly contribute to environmental observations. OMAO's ongoing challenge is to meet the growing demand for in situ scientific data while providing the highest level of service. To better serve the needs of the Nation, NOAA is examining the composition of the fleet through an exhaustive and critical review of at-sea science and observation requirements. Our objective is to develop a clear, cost-efficient path forward to ensure that the NOAA fleet can continue to conduct at-sea surveys and research vital to fisheries management, updating nautical charts, responding to natural and manmade disasters, and understanding coastal and marine systems more fully. Meeting these requirements is essential to developing sustainable, science-based management and conservation plans that protect the health and resiliency of these resources over the long-term.

We continue our efforts to build a civilian and NOAA Corps officer work force that is uniquely qualified to gather critical environmental intelligence and be adaptive and responsive to a changing world and work to expand our partnerships with other federal agencies. For example, NOAA Corps officers are currently assigned to work in the Department of Defense, National Science Foundation, and the U.S. Senate among others where they lend their expertise and service. We also continue to strengthen our partnership with the U.S. Coast Guard. Our basic NOAA Corps officer training class is held at the U.S. Coast Guard Academy, where newly commissioned officers train alongside Coast Guard officer candidates, developing skills and professional relationships that will benefit both services, especially during challenging times. Active collaboration the Federal family is critical to ensuring the long-term capability and success of the federal ocean infrastructure. Our partners' success is our success. The men and women of OMAO and the NOAA Corps provide environmental intelligence for a dynamic world as they serve our nation every day from the farthest seas to the highest skies.

NOAA Commissioned Officer Corps

– Honor, Respect, Commitment –

The NOAA Commissioned Officer Corps (NOAA Corps) is one of the United States' seven Uniformed Services and as commissioned officers serve with the 'special trust and confidence' of the President. NOAA Corps officers are an integral part of the National Oceanic and Atmospheric Administration (NOAA), an agency of the U.S. Department of Commerce. With an authorized strength of 321 officers, the NOAA Corps serves throughout the agency's Line and Staff Offices to support nearly all of NOAA's programs and missions. The combination of commissioned service and scientific expertise makes these officers uniquely capable of leading some of NOAA's most important initiatives. The NOAA Corps is part of NOAA's Office of Marine and Aviation Operations (OMAO) and traces its roots back to the former U.S. Coast and Geodetic Survey, which dates back to 1807 and President Thomas Jefferson. The U.S. Coast and Geodetic Survey Corps was founded in 1917 to provide officers to command U.S. coastal survey ships and field survey parties locally and abroad. In 1970, NOAA was created to develop a coordinated approach to oceanographic and atmospheric research and subsequent legislation converted the commissioned officer corps to the NOAA Corps. The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Corps officers operate NOAA's ships, fly aircraft, manage research projects, conduct diving operations, and serve in staff positions throughout NOAA. The NOAA Corps celebrates its Centennial year in 2017.

Benefits of the NOAA Corps to the Nation

The combination of commissioned service with scientific and operational expertise, allows the NOAA Corps to provide a unique and indispensable service to the nation. Discipline and flexibility are inherent in the NOAA Corps personnel system. Officers are trained for positions of leadership and command in the operation of ships and aircraft; in the conduct of field projects on land, at and under the sea, and in the air; in the management of NOAA observational and support facilities; as members or leaders of research efforts; and in the management of various organizational elements throughout NOAA. NOAA Corps officers must be technically competent to assume positions of leadership and command in NOAA and Department of Commerce programs and in the Armed Forces during times of war or national emergency. NOAA Corps officers enable NOAA to fulfill mission requirements, meet changing environmental concerns, take advantage of emerging technologies, and serve as environmental first responders. For example:

- In 2016, NOAA aircraft conducted research and reconnaissance missions into Hurricane Matthew, and post-storm flooding reconnaissance missions from Florida to Virginia with FEMA. NOAA Ship *Ferdinand Hassler* conducted post-storm surveys within of the ports of Charleston and Savannah within 48 hours to re-open the ports to maritime commerce, worth more than $5M per hour.
- In 2015, NOAA aircraft conducted research and surveillance missions into some of the planet's most extreme weather, ranging from Hurricane Patricia, the strongest on record in the Western hemisphere, to severe storms over the U.S. Great Plains region. In addition, NOAA aircraft responded to unprecedented flooding in South Carolina using advanced sensors and imaging technology to provide emergency response managers with critical real-time information needed to respond to this disaster.
- After Hurricane Sandy in 2012, NOAA Ships *Thomas Jefferson* and *Ferdinand R. Hassler* conducted emergency bathometric surveys to locate possible submerged navigational hazards in the ports of New York and Virginia. These surveys enabled the ports to reopen quickly. Aerial images of storm-stricken regions, taken by NOAA aircraft, helped residents and emergency workers to quickly assess the condition of houses, bridges, and vital infrastructure.
- In 2010, the NOAA fleet and the NOAA Corps played a major role in the response to the BP *Deepwater Horizon* oil spill in the Gulf of Mexico. NOAA's entire Atlantic fleet and over a quarter of the total strength of the NOAA Corps were deployed to the Gulf following the spill, developing mission plans and assisting response efforts.

Resources

Please find more information at the following links:

OMAO – http://www.omao.noaa.gov
NOAA Corps - http://www.omao.noaa.gov/learn/noaa-commissioned-officer-corps
OMAO 101 - http://www.legislative.noaa.gov/policybriefs/OMAO%20101%20052317.pdf
NOAA Fleet Update – Find the latest at - http://www.legislative.noaa.gov/policybriefs.html

Reports and Informational Slide Decks:
OMAO Fleet Recapitalization Slide Deck – Building NOAA's 21st Century Fleet
OMAO Fleet Recapitalization Questions and Answers (Q&As)
NOAA Fleet Independent Review Team Final Report
The NOAA Fleet Plan: Building NOAA's 21st Century Fleet

Other OMAO Sites:
OMAO Marine Operations – http://www.omao.noaa.gov/learn/marine-operations
OMAO Aircraft Operations – http://www.noaacorps.noaa.gov/
NOAA Diving Program – http://www.noaacorps.noaa.gov/
OMAO on Facebook - https://www.facebook.com/NOAAOMAO
OMAO on Twitter - http://www.twitter.com/NOAA_OMAO
NOAA Ship Tracker - https://shiptracker.noaa.gov/ (restricted to only .gov or .mil users)