NOAA Fleet Update

May 2016

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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Office of Marine and Aviation Operations (OMAO) and the NOAA Commissioned Officer Corps

- In the News -

Aircraft at MacDill helps track Earth's shrinking ice a world away

-Tampa Tribune

Miss Piggy, famous for flying into hurricanes to gather information about storm tracks, now is being pressed into service for NASA because of what can only be described as a perfect storm. The mission is part of Operation IceBridge, a $15-million-a-year NASA program to investigate Earth's polar ice in the greatest detail ever to better understand processes that connect the polar regions with the global climate system...To do that, NASA needs a plane. But the agency's own Orion P-3, which has been helping bridge the gap, is getting new wings now like Miss Piggy. So is fellow NOAA's other P-3, Kermit. And several other NASA aircraft used for this project are busy with other missions. So in November, NASA officials, mindful of the lull between June-to-November hurricane seasons, reached out to the NOAA Aircraft Operations Center at MacDill, which has shipped off its P-3s for other science missions in the past...

These researchers don't just track the weather, they fly right into it

-PBS NewsHour (Video)

When weather events like El Niño impose themselves, everybody on the planet feels it. Scientists are getting better at predicting El Niño, but there is still a lot they don't know amid an absence of data. Science correspondent Miles O'Brien follows along as weather scientists gather information in Hawaii by air and by sea.

NOAA ship docks near San Francisco's Exploratorium

-ABC7 San Franciso

It's far out in the ocean most of the time. But this Sunday, one very high-tech ship will be open to the public at the Exploratorium. Jonathan Bloom got to climb onboard the shiny new vessel that's on a fish-finding mission. Watch the video player above for his full report and click here to learn more about the NOAA Ship Reuben Lasker...

What's Happening: Ice-associated Seal Ecology Research Survey 2016

-Alaska Fisheries Science Center blog

The Alaska Fisheries Science Center's Marine Mammal Laboratory is conducting an ice-associated seal research survey in the central Bering Sea from April 2-29, 2016 aboard the **NOAA Ship Oscar Dyson**. The species being studied are ribbon, spotted, bearded and ringed seals.A key objective is to attach satellite-linked tags on ribbon and spotted seals, which spend time either on or in the proximity of sea-ice during this time of year. Scientists plan to use data collected from the satellite-linked tags, together with information collected during similar surveys since 2005, to learn more about the timing of when these seals "haul out," that is come out of the water onto the ice...

UnderWater World now serving as command center for NOAA ship

-Guam Daily Post

UnderWater World is serving as Guam's command center for the Marianas Trench Exploration expedition, launched today by the National Atmospheric and Ocean Administration Ship research vessel, the **Okeanos Explorer**, Wednesday, April 20. The aquarium in Tamuning, Guam, hosted a kickoff event on April 18 to unveil the command center...

Operation IceBridge returns to the Arctic

- Cosmos

Operation IceBridge, NASA’s airborne survey of polar ice, has launched its eighth spring Arctic campaign. After a research flight over Greenland, it will continue surveying Arctic sea and land ice until 21 May. Over the past seven years, IceBridge data have helped scientists improve forecasts for the summer melt season. This year's flights will be conducted aboard one of the National Oceanic and Atmospheric Administration’s (NOAA) hurricane hunter planes, a P-3 Orion...

Senate subcommittee approves funding for research vessels

- Workboat

The Senate Commerce-Justice-Science (CJS) Appropriations Subcommittee has approved the fiscal year 2017 CJS Appropriations Bill, which includes funding for the National Oceanic and Atmospheric Administration (NOAA) and the National Science Foundation (NSF). The bill provides $5.7 billion for NOAA, a $33.5 million increase above the FY2016 enacted level, and $7.5 billion for NSF, maintaining the FY2016 enacted level. The bill provides $75 million to complete a new survey vessel for the National Oceanic and Atmospheric Administration (NOAA). NOAA currently has 16 ships in its aging fleet, but that number will dwindle to eight vessels by 2028. To maintain its current oceanographic capacity, NOAA needs to build not one but eight additional vessels in the next two to four years, as construction takes eight to 10 years per ship — 8-10 years is the typical timeline associated with the shipbuilding process, including requirements development, analysis of alternatives, concept design, preliminary design, and detailed design and construction. These vessels enable NOAA to map the ocean floor, support weather forecasts, conduct oceanographic and climate research and improve ecosystem and fisheries management..

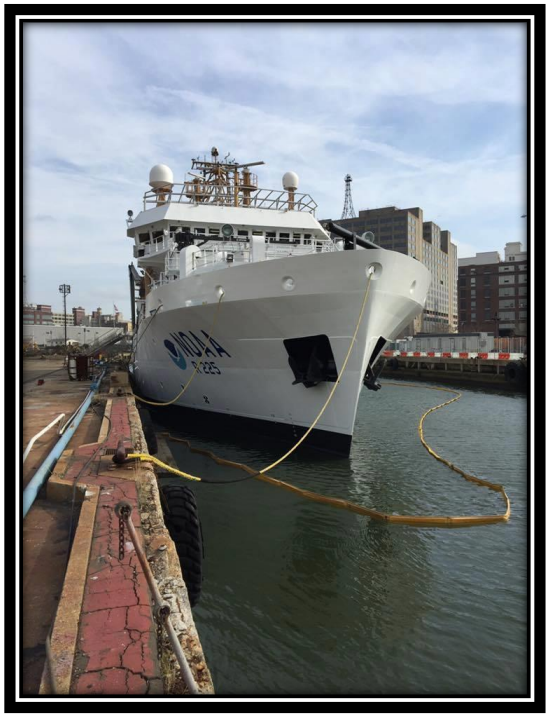
NOAA Ship *Henry B. Bigelow*

Homeport Change

NOAA Ship *Henry B. Bigelow* Homeport Change

Senator Jack Reed (D-RI), in partnership with NOAA, announced that effective April 12, 2016, the NOAA Ship *Henry. B Bigelow* will now be officially homeported in Newport, RI, where the vessel has docked for the last several years. The administrative change of official homeport designation from Woods Hole, MA, to Newport, will allow NOAA to leverage funding, cooperation, and relationships with federal partners in the Northeast, including the U.S. Navy and U.S. Coast Guard at Naval Station (NAVSTA) Newport. This administrative change will have no impact on ship operations and will align the homeport's historical physical location with the future operational reality. We remain committed to supporting our NOAA Fisheries and other partners in the New England region with this highly capable platform and her skilled crew.

A copy of the Senator's press release may be found at http://www.reed.senate.gov/news/releases/reed-announces-noaa-fisheries-research-vessel-henry-b-bigelow-to-be-permanently-homeported-in-newport



NOAA Ship *Henry B. Bigelow* alongside at GMD Shipyard in Brooklyn, NY
[Photo Credit: Curtis Cobble/NOAA]

Rear Admiral David Score

- New Presidential Appointment -

President Obama Announces More Key Administration Posts
-White House News Release – April 19
President Barack Obama announced his intent to nominate and appoint officials to several Administration posts, including Rear Admiral David A. Score to the Board of Visitors of the United States Merchant Marine Academy.

Rear Admiral (RADM) David A. Score (two star) serves as the Director of the National Oceanic and Atmospheric Administration's Commissioned Officer Corps (NOAA Corps) and Director of NOAA's Office of Marine and Aviation Operations (OMAO), the operational arm of NOAA. As Director of NOAA Corps and OMAO, RADM Score is responsible for the safe, efficient and effective operation of the agency's fleet of research and survey ships and aircraft, as well as guiding the 321 commissioned NOAA officers and approximately 1,000 civilian personnel assigned to OMAO.

Dr. Jim McFadden

- Service to America Medal Finalist -

Samuel J. Heyman Service to America Medals 2016 Finalist Career Achievement- Dr. James McFadden
For nearly 50 years, Dr. McFadden has been the bedrock of the nation's hurricane hunter program, flying airplanes into hundreds of violent tropical storms to gather information for more accurate weather forecasts. As the government's longest-serving hurricane hunter, McFadden is the heart and soul of the National Oceanic and Atmospheric Administration's Aircraft Operations Center that sends aircraft into the harshest weather to gather real-time, life-saving specifics on the formation and progress of earth's deadliest storms.

Dr. Jim McFadden
[Photo Credit: NOAA]

NOAA Basic Officer Training Class (BOTC) 127

Excitement is building as the last few weeks of the 127th BOTC draws to a finale. It is the perfect time for the NOAA Corps' newest members to reflect on the past three and a half months of training; both to appreciate the arduous struggles they have overcome and the lasting friendships and priceless memories that only shipmates can create. The Officer Candidates (OCs) voyaged aboard the *USCGC Barque Eagle* from Little Creek, VA, to Savannah, GA.

Upon returning from their *Eagle* cruise BOTC members attended the highly emotional reveal, billet night! Along with Coast Guard shipmates, NOAA OC's received their first sea assignments:

OC Mason Carroll--- NOAA Ship *Fairweather*
OC Nikki Chappelle--- NOAA Ship *Hi'ialakai*
OC Sarah Donohoe--- NOAA Ship *Reuben Lasker*
OC Josh Fredrick--- NOAA Ship *Oscar Elton Sette*
OC Dale Gump--- NOAA Ship *Thomas Jefferson*
OC Michelle Levano--- NOAA Ship *Rainier*
OC Bethany McAcy--- NOAA Ship *Rainier*
OC Alyssa Thompson--- NOAA Ship *Gordon Gunter*

BOTC 127 and Officer Candidate School Class 2-16 aboard the USCG Cutter *Barque Eagle.*
[Photo: ENS DeCastro/NOAA]

Independent Review Team

In January 2016, OMAO convened an Independent Review Team (IRT) to conduct a review of our ship fleet and:

- The IRT will assess the health of the NOAA Fleet of research vessels, requirements for recapitalization, and analysis of operational, maintenance practices and technology infusion, as well as:
  - Utilization of alternatives to the NOAA Fleet (commercial contracting, Academic Research Fleet, other public-funded vessels) to meet requirements;
  - Analysis of current operational systems (crewing, scheduling) and current maintenance practices; and
  - Technology readiness and infusion (instrumentation and mechanical).
- The IRT will deliver a final report in September 2016.
- The guidance from the IRT will inform modernization plans of the NOAA fleet in alignment with the Federal Oceanographic fleet, charter options, as well as operation and maintenance strategies of the current fleet.
- The IRT process & report is independent of any larger Administration planning efforts related to the federal fleet.
- The IRT consists of twelve persons from across Federal government, Academia, and private sector to include expertise in science, ship-based data collection requirements, vessel operation, vessel design and building, and ship-based technological advancements

Independent Review Team

Co-Chairs:

Dick West
RADM, US Navy (ret)

Robert Winokur
Senior Advisor
Michigan Tech Research Institute / Michigan Tech Univ.

Members:

Fred Byus
RDML, US Navy (ret)
Vice President & General Manager
Battelle Mission and Defense Technologies

Dr. John Hughes-Clarke
Professor
University of New Hampshire

John Crowley
RADM, US Coast Guard (ret)
Executive Director
National Association of Waterfront Employers

Bauke (Bob) Houtman
Head, Integrative Programs Section
National Science Foundation, Ocean Sciences Division

Dr. Steve Murawski
Professor
University of South Florida

Blake Powell
President
JMS Naval Architects

Nancy Rabalais, Ph.D.
Executive Director and Professor
Louisiana Universities Marine Consortium
National Defense University, Penn State University

Dr. Steve Ramberg
Distinguished Research Fellow
Center for Technology and National Security Policy,

Robert (Tim) Schnoor
Ocean Research Facilities Manager
Office of Naval Research

Dick Vortmann
President and CEO (retired)
National Steel and Shipbuilding Company (NASSCO)

NOAA Liaisons:

Nancy Hann, CDR/NOAA
Chief of Staff
NOAA Office of Marine and Aviation Operations

Richard J. Park, LT/NOAA
Flag Aide to Director, NOAA Corps and OMAO
NOAA Office of Marine and Aviation Operations

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 Briana Welton
Primary Mission Category: Hydrographic Surveys

Ship Status: Dry Dock Repair Period, ship will be alongside for scheduled maintenance, repairs, scientific data processing, crew rest, and training.

Newport, RI

NOAA Ship *Henry B. Bigelow*

Commanding Officer: CDR G. Mark Miller
Primary Mission Category: Fisheries Research
DEPART: Newport, Rhode Island **ARRIVE:** Boston, Massachusetts
DEPART: Boston, Massachusetts **ARRIVE:** Newport, Rhode Island

Project 1: Spring Bottom Trawl Survey
Objectives: Determine the spring distribution and relative abundance of fish and invertebrate species found on the continental shelf and upper slope, including the collection of additional biological information following the pre-established sampling plan at the direction of the Chief Scientist. Opportunistically evaluate survey gear efficiency, methods, and survey related equipment that may benefit the trawl survey and fish stock assessments. Collect oceanographic data including Conductivity, Temperature, Depth (CTD) casts and bongo tows at selected stations; and opportunistically collect acoustic data along cruise tracks with the EK-60 and ME-70 acoustic systems.

Davisville, RI

NOAA Ship *Okeanos Explorer*

Commanding Officer: CDR Mark Wetzler
Primary Mission Category: Oceanographic Exploration and Research
Depart: Apra Harbor, Guam **Arrive:** Saipan, Northern Mariana Islands (NMI)
Depart: Saipan, NMI **Arrive:** Apra Harbor, Guam

Project 1: CAPSTONE
Objectives: CAPSTONE is a three year initiative to collect critical baseline NOAA science and management needs in largely unknown areas of U.S. waters in the Pacific. Operations conducted during this campaign support NOAA missions to understand and predict changes in climate, weather, oceans and coasts, and share that knowledge and information with others. Much of this work associated with CAPSTONE will contribute to and complement Deep Sea Coral Research and Technology Program's three-year Pacific Islands Regional Initiative.

Norfolk, VA

NOAA Ship *Thomas Jefferson*

Commanding Officer: CAPT Shepard Smith
Primary Mission Category: Hydrographic Surveys

Ship Status: Alongside US Coast Guard Yard Curtis Bay - Baltimore, Maryland, for scheduled maintenance, winter repairs, scientific data processing, crew rest, and training.

NOAA Ship *Thomas Jefferson's* view of Curtis Creek from U.S. Coast Guard Yard Curtis Bay in Baltimore, Maryland
[Photo: ENS Seberger/NOAA]

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

CAPT Anne Lynch, 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: LCDR Jeffrey Shoup
Primary Mission Category: Oceanographic Research, Environmental Assessment
Depart: Miami, Florida **Arrive:** Havana, Cuba
Depart: Havana, Cuba **Arrive:** Cozumel, Mexico
Depart: Cozumel, Mexico **Arrive:** Cienfuegos, Cuba

Project 1: Bluefin Tuna Ecology and Coral Reef Ecosystem Research
Objectives: Southeast Fisheries Science Center and the Atlantic Oceanographic and Meteorological Laboratory will be collaborating on two joint projects focused on Bluefin Tuna Ecology and Coral Reef Ecosystem research. This project will allow NOAA to gain a better understanding of the importance of alternative spawning sites and to improve management of the western Atlantic stock, as well as continue a multi-year, interdisciplinary research project to conduct biological and physical oceanographic surveys of the Virgin Islands bank ecosystems and surrounding regional waters.

NOAA Ship *Ronald H. Brown*

Commanding Officer: CAPT Robert Kamphaus
Primary Mission Category: Oceanographic Research, Environmental Assessment
DEPART: San Diego, California **ARRIVE:** San Francisco, California
DEPART: San Francisco, California **ARRIVE:** Seattle, Washington

Project 1: West Coast Ocean Acidification
Objectives: Multiple deployments and recoveries of a CTD and 24-position Niskin bottle rosette in support of ocean acidification research, along transect lines and at moored sensor locations. There will be additional ancillary projects, including deployment of smaller sensor packages by hand and by winch, continuous underway pCO2 monitoring via the ship's scientific uncontaminated seawater line, deployment of Argo floats, collection of phytoplankton and zooplankton by net tows with winch, and onboard incubations of phytoplankton and zooplankton.

Pascagoula, MS

NOAA Ship *Oregon II*

Commanding Officer: Master Dave Nelson
Primary Mission Category: Fisheries Research
DEPART: Pascagoula, Mississippi **ARRIVE:** Pascagoula, Mississippi
DEPART: Pascagoula, Mississippi **ARRIVE:** Pascagoula, Mississippi

Project 1: SEAMAP Spring Plankton Survey
Objectives: The SEAMAP Spring Plankton survey is a State/Federal cooperative program to provide fishery-independent indices (SEAMAP Larval Indices) of spawning stock abundance for select resource species throughout their range in the Gulf of Mexico based on the abundance and occurrence of their larvae. The SEAMAP program is a line item under the NMFS Southeast Region's budget that provides support for state/federal cooperative surveys under the auspices of the Gulf States Marine Fisheries Commission. This survey is an essential component of the NOAA Southeast Fisheries Science Center's programs in ecosystem observations. This time series (begun in 1977) of biological and physical observations and fishery-independent data taken over the entire extent of the Gulf of Mexico Large Marine Ecosystem are the primary basis for assessment and management of the Atlantic Bluefin Tuna (ABFT) by ICCAT (International Commission for the Conservation of Atlantic Tuna). Now these data along with satellite imagery inform models describing the ABFT spawning habitat which is believed to be located exclusively to the Gulf of Mexico.

NOAA Ship *Pisces*

Commanding Officer: CDR William Mowitt
Primary Mission Category: Fisheries Research
DEPART: Pascagoula, Mississippi **ARRIVE:** Pascagoula, Mississippi
DEPART: Pascagoula, Mississippi **ARRIVE:** Mayport, Florida

Project 1: SEAMAP Reef Fish Video Survey
Objectives: Conduct a survey of reef fish on the U.S. continental shelf of the GOM using a custom built stereo/video camera system and bandit reels. The ship's ME-70 multi-beam system and Simrad EK60 echo-sounder will be used to map predetermined targeted areas on a nightly basis to improve or increase the reef fish sample universe.

NOAA Ship *Gordon Gunter*

Commanding Officer: Master Donn Pratt
Primary Mission Category: Fisheries Research
DEPART: Woods Hole, Massachusetts **ARRIVE:** Newport, Rhode Island
DEPART: Newport, Rhode Island **ARRIVE:** Newport, Rhode Island

Project 1: Northern Right Whale Biology
Objectives: Collect photo ID and biopsy samples of baleen whales. Primary target species is North Atlantic right whales. Apply dermal tags to right and sei whales. Conduct oceanographic sampling, zooplankton sampling in proximity to tagged whales. Collect right and sei whale fecal and blow samples for hormone analysis, and deploy sonobuoys near aggregations of whales.

Project 2: Spring Ecosystem Monitoring Survey
Objectives: Assess the hydrographic, planktonic and pelagic components of the Northeast U.S. Continental Shelf Ecosystem. Specifically we will quantify the spatial distribution of the following parameters: water currents, water properties, phytoplankton, microzooplankton, mesozooplankton, sea turtles and marine mammals. Traditional and novel techniques and instruments will be used, and a broad array of measurements of the pelagic ecosystem collected.

NOAA Ship *Gordon Gunter* alongside in Pascagoula, Mississippi
[Photo: NOAA]

San Diego, CA

NOAA Ship *Reuben Lasker*

Commanding Officer: CDR John Crofts
Primary Mission Category: Fisheries Research
DEPART: San Diego, California **ARRIVE:** San Francisco, California
DEPART: San Francisco, California **ARRIVE:** San Diego, California

Project 1: Rockfish Recruitment and Ecosystem Assessment
Objectives: This project will sample for pelagic juvenile rockfish (*Sebastes* spp.) and other epi-pelagic micronekton. Characterize prevailing ocean conditions and examine prominent hydrographic features as well as harmful algal blooms. Map the distribution and abundance of krill (Euphausiacea). Observe seabird and marine mammal distribution and abundance. Finally collect Humboldt squid (*Dosidicus gigas*), and sample for juvenile salmon (*Oncorhynchus* spp.).

Newport, OR

NOAA Ship *Rainier*

Commanding Officer: CDR E.J. Van Den Ameele
Primary Mission Category: Hydrographic Surveys

Ship Status: In drydock at Mare Island Drydock, in Vallejo, California, for scheduled maintenance, winter repairs, scientific data processing, crew rest, and training.

NOAA Ship *Bell M. Shimada*

Commanding Officer: CDR Paul Kunicki
Primary Mission Category: Fisheries Research
DEPART: San Francisco, California **ARRIVE:** San Francisco, California
DEPART: San Francisco, California **ARRIVE:** Newport, Oregon

Project 1: Patterns in Deep Sea Coral and Sponge Communities
Objectives: To-date over 50% of the Channel Islands National Marine Sanctuary remains uncharacterized, yet anecdotal evidence suggests that these areas are home to large populations of commercially important species including fish and lobster as well as fragile ecosystem components such as deep sea corals. With a mandate to preserve and maintain this special place, sanctuary management requires a detailed understanding of the distribution, abundance and condition of the resources at the site. During this mission *Bell M. Shimada* will simultaneously acquire fish and seafloor data with the use of the vessel's ME-70 and EK-60 sonars together with the Office of Coast Survey's REMUS-600 mapping Autonomous Underwater Vehicle. This information will help inform resource protection issues and will provide valuable input into the next revision of the sanctuary management plan.

Project 2: Sanctuary Ecosystem Assessment-Applied California Current Ecosystems Assessments Surveys
Objectives: This project contributes to a regional characterization and monitoring of the physical and biological components of the pelagic ecosystems of northern Monterey Bay (MBNMS), Cordell Bank (CBNMS) and Greater Farallones (GFNMS) National Marine Sanctuaries. Data will be used to relate the spatial patterns of bird and mammal distribution with oceanographic and prey patterns and to understand seasonal and interannual changes in the pelagic ecosystem. NOAA and other regulatory agencies to protect resources in the sanctuaries use this information in management decisions. This assessment and monitoring of the pelagic system specifically meets the sanctuary's mandate to conduct long-term monitoring of the resources within the sanctuaries and provides important information for resource protection, management, and education/outreach.

The NOAA Ship *Bell M. Shimada* underway preparing to deploy a CTD rosette.
[Photo: CalCOFI/NOAA]

OMAO'S MARINE OPERATIONS

CAPT Todd Bridgeman, Director of Marine Operations

OMAO's Marine Operations over-sees 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)

CDR Brian Parker, 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 David Zezula
Primary Mission Category:	Hydrographic Surveys
Depart: Ketchikan, Alaska	**Arrive:** Petersburg, Alaska
Depart: Petersburg, Alaska	**Arrive:** Juneau, Alaska

Project 1: Southeast Alaska 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 Arthur "Jesse" Stark
Primary Mission Category:	Fisheries Research
Depart: Dutch Harbor, Alaska	**Arrive:** Dutch Harbor, Alaska
Depart: Dutch Harbor, Alaska	**Arrive:** Dutch Harbor, Alaska

Project 1: EcoFOCI Spring Moorings
Objective: Perform hydrographic and zooplankton studies in the Bering Sea; recover 2 subsurface moorings and redeploy one subsurface and two surface moorings at the same location. An additional project will be to test the operation of a towed hydrographic instrument.

Project 2: FOCI/EMA Spring Ichthyoplankton
Objective: Conduct an assessment of eggs and larvae of walleye pollock (*Gadus chalcogrammus*) over the eastern Bering shelf. Examine the interaction among climate, weather, and ichthyoplankton distribution and abundance. This work is intended to describe larval fish assemblages and determine how physical and biological factors affect the transport and survival of fish larvae.

Honolulu, HI

NOAA Ship *Hi'ialakai*

Commanding Officer: CDR Elizabeth Kretovic
Primary Mission Category: Oceanographic Research, Environmental Assessment
Depart: Pearl Harbor, Hawaii **Arrive:** Pearl Harbor, Hawaii
Depart: Pearl Harbor, Hawaii **Arrive:** Pearl Harbor, Hawaii

Project 1: Hawaiian Monk Seal Population Assessment
Objective: This project will deploy Hawaiian monk seal camps at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef and Kure Atoll. Conduct monk seal surveys at Ni'ihau, Midway Atoll, and opportunistically at Nihoa and Necker Islands. Perform opportunistic health assessment and sampling of seals at all sites visited. Translocate injured Hawaiian monk seals from Northwestern Hawaiian Islands' populations for rehabilitation at a facility in Kona, Hawaii. Deliver supplies to Kure Atoll for the Department of Forestry and Wildlife, Department of Land and Natural Resources, State of Hawaii. Finally, set up a collaborative project with Sustainable Coastlines Hawaii for marine debris cleanup and monitoring during the field season.

Project 2: Biogeography Northwest Hawaiian Islands
Objective: Support for a Papahānaumokuākea Marine National Monument, National Ocean Service , NOAA project at Ni'ihau, French Frigate Shoals, Laysan, Lisianski, Pearl and Hermes Atoll, Midway Atoll, and Kure Atoll. The project will support open-circuit SCUBA dives, closed-circuit re-breather dives, and snorkeler collections of reef fish, corals, other invertebrates, and algae for population genetics analysis; surveying and monitoring reefs and associated reef fish, as well as searching for invasive/alien species of coral and algae. These studies allow federal and state resource managers to better understand the resources under their jurisdictions.

The NOAA Ship *Hi'ialakai* as seen from Midway Atoll.
[Photo: NOAA]

NOAA Ship *Oscar Elton Sette*

Commanding Officer: LCDR Keith Golden
Primary Mission Category: Fisheries Research
DEPART: Pago Pago, American Samoa **ARRIVE:** Pearl Harbor, Hawaii

Project 1: Samoan Archipelago Fisheries Life History
Objectives: Support deep-slope and shallow-water bottom fish, coastal pelagic fishes, and coral reef fishes bio sampling, collection of larval and juvenile stage pelagic and bottom fish species, surveys of coral reef ecosystems, and exploration of seamount benthic species, through collection of adult deep-slope bottom fish, coral reef fish, and coastal pelagic fishes. Collection of pelagic stage (larvae and juveniles) eteline snappers and tuna, as well as fishes and invertebrates at offshore seamounts using strings of Fathoms Plus traps. Oceanographic data from routine conductivity, temperature, depth casts, continuous acoustic doppler current profiler, and thermosalinograph measurements and daylight coral reefs snorkel surveys.

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

CDR Matthew Wingate, 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

Tampa, Florida

WP-3D (N42RF) – "Hurricane Hunter"

Aircraft Commander: N/A
Temporary Base: Naval Air Station Jacksonville, FL
Current Mission: Scheduled Maintenance - Until July 2016

The aircraft is at the Naval Air Station Jacksonville, Florida undergoing an extensive refurbishment period which will include replacing the wings and upgrading various components. This effort will extend the useful life of the aircraft for another 15-20 years.

WP-3D (N43RF) – "Hurricane Hunter"

Aircraft Commander: CDR Price/ LCDR Kerns
Temporary Base: Alaska and Greenland
Current Mission: NASA Ice Bridge

NASA's Operation IceBridge images Earth's polar ice in unprecedented detail to better understand processes that connect the Polar Regions with the global climate system. Utilizing NOAA's highly specialized research aircraft, IceBridge employs the most sophisticated suite of science instruments ever assembled to characterize annual changes in thickness of sea ice, glaciers, and ice sheets. In addition, IceBridge collects critical data used to predict the response of Earth's polar ice to climate change and resulting sea-level rise. IceBridge also helps bridge the gap in polar observations between NASA's ICESat satellite missions.

Jet Prop Commander (N45RF)

Aircraft Commander: LT Salling/ LTJG Doremus
Temporary Base: Various locations
Current Mission: Soil Moisture Surveys

NOAA aircraft use specialized detection equipment to make accurate, real-time measurements of snowpack characteristics and soil moisture 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. A single snowmelt flood can cause billions of dollars in damage and in the western areas of the country spring snowmelt provides over 70% of the annual water supply. The benefits of accurate snow and soil moisture measurements are immense and NOAA aircraft are uniquely capable to provide this information.

Gulfstream IV (N49RF)

Aircraft Commander: TBD
Current Mission: 2016 Hurricane Awareness Tour

As part of its efforts to build a weather-ready nation, NOAA and its hurricane experts will tour Gulf Coast cities to raise awareness about the importance of preparing for the upcoming hurricane season. The public and media are invited to see the aircraft and meet the team. The aircraft will visit the cities of San Antonio, TX; Galveston, TX; New Orleans, LA; Mobile, LA; and Naples, FL May 15 – 20.

NOAA's highly specialized G-IV aircraft will also participate in the Governors' Hurricane Conference in Orlando, FL on May 12.

Twin Otter (N46RF)

Aircraft Commander: LT Marino/LTJG Norman
Temporary Base: Various locations
Current Mission: Soil Moisture Surveys

NOAA aircraft use specialized detection equipment to make accurate, real-time measurements of snowpack characteristics and soil moisture 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. A single snowmelt flood can cause billions of dollars in damage and in the western areas of the country spring snowmelt provides over 70% of the annual water supply. The benefits of accurate snow and soil moisture measurements are immense and NOAA aircraft are uniquely capable to provide this information.

King Air (N68RF)

Aircraft Commander: LCDR Waddington
Temporary Base: Various locations
Current Mission: Continuous Coastal Mapping

Coastal Mapping is an on-going mission of NOAA's National Geodetic Survey (NGS) to survey approximately 95,000 miles of United States coastline providing 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 Light Detection and Ranging (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

Twin Otter (N48RF)

Aircraft Commander: CDR Fritzler/LT Cowan
Temporary base: Various locations
Current Mission: North Atlantic Right Whale

North Atlantic right whales are critically endangered and listed under the Marine Mammal Protection Act. Aerial surveys serve multiple objectives with regard to conservation including providing locations and distribution of right whales to mariners to avoid collisions with ships, photo identification records on right whales, information on distribution and abundance of marine mammals and turtles, and provide sightings of dead whales for monitoring mortality.

Twin Otter (N56RF)

Aircraft Commander: TBD
Current Mission: Installation and calibration for Arctic Heat

The complex interaction between the atmosphere, ice, and ocean drives the seasonal cycle of ice melting and freezing in the Arctic as well as the biological activity related to it. The goal of the Arctic Heat project is to collect data necessary to better understand these processes while also improving weather and sea-ice hazard forecasts. This project will also quantify and map the movement of heat through the Arctic surface environment on a variety of scales.

Twin Otter (N57RF)

Aircraft Commander: LT Mitchell/ ENS Blaauboer
Temporary base: Various Locations
Current Mission: TopoBathy LiDAR

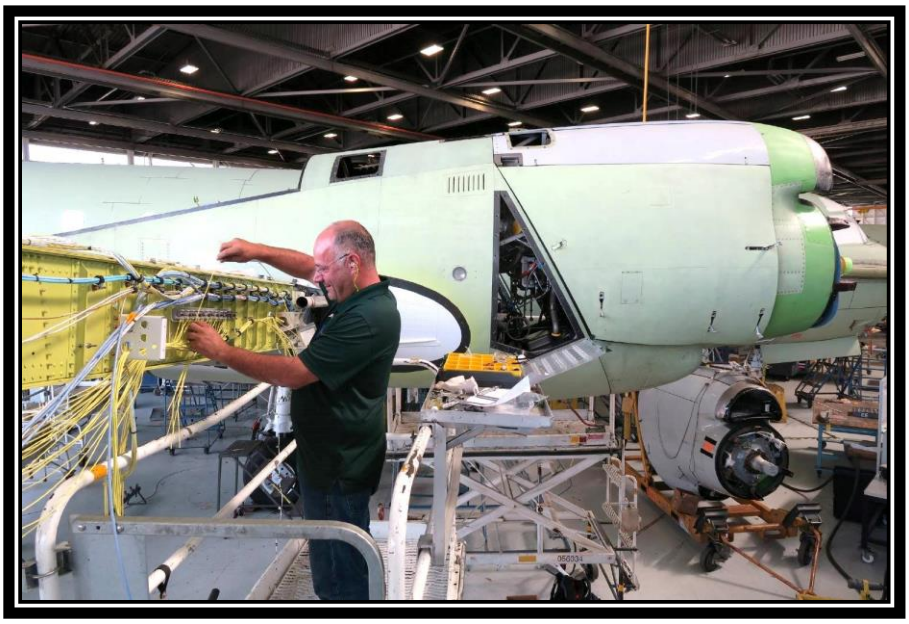
The TopoBathy LIDAR mission will collect data in the coastal zone used to produce the most up-to-date- and accurate marine navigation charts, FEMA flood plain and inundation maps, and other Integrated Ocean and Coastal Mapping (IOCM) applications. Data gathered will help ensure safe and efficient marine transportation and benefit coastal communities with accurate resource management and aid emergency response efforts.

BioLIDAR will investigate the prevalence of bioaerosol in the atmosphere and its relation to air chemistry, microbial ecology, and climate. These particles can act as effective condensation nuclei with significant potential impacts on cloud formation and global climate. NOAA will employ two new sensors, a wide-band integrated bioaerosol sensor and a micro-doppler LIDAR, to increase understanding where few reported observations exist.

OMAO'S AIRCRAFT OPERATIONS CENTER (AOC)

CAPT Michael Silah, Commanding Officer AOC

The AOC, located at MacDill Air Force Base in Tampa, 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.



Lead Technician, Mike Mascaro, installs upgraded mission system wiring in the leading edge of NOAA P3 recently-installed new wing-set at the Navy's Fleet Readiness Center Southeast depot at Naval Air Station Jacksonville. This is one of many upgrades AOC personnel are engaged in while the plane is undergoing depot level work and being prepared for this summer's hurricane season.
[Photo: Terry Lynch/NOAA]

Unmanned Systems Support

NASA Global Hawk

Location: Edwards Air Force Base (AFB), California/ NASA Wallops Flight facility
Mission: Maintenance
Project Manager: LCDR Neuhaus

The NASA Global Hawk project is conducting routine maintenance for the month of May 2016. A second Global Hawk acquired from the USAF is being refurbished and configured for entry into NASA service in 2017. For the 2016 Hurricane Season, NOAA will fund a hurricane surveillance campaign called SHOUT (Sensing Hazards Operationally using Unmanned Technology). SHOUT officially begins in early July with payload integration followed by a lengthy deployment to Virginia in August 2016. Flight operations for SHOUT will base out Wallops, VA, to expand the Global Hawk's operational area in the Atlantic, Caribbean, and Gulf of Mexico.

APH-22 Hexacopter

Location: Everett, Washington
Mission: Levee Setback Environmental Condition Monitoring

The NOAA Northwest Restoration Center seeks to add another layer of information to the monitoring effort on levees in the Snohomish River estuary in Puget Sound by utilizing data collected by the APH-22 UAS. The broad goals of the project are to transform the site into a vegetated, self-sustaining wetland that will maximize the modern, natural ecological potential of the site; minimize adverse effects on, and add socio-economic value to the surrounding community; and advance the science and practice of restoration.

Location: Piedras Blancas, California
Mission: Grey Whale Photogrammetry

The Southwest Fisheries Science Center (SWFSC) plans to survey gray whales from Piedras Blancas Lighthouse near San Simeon, CA, during the period of April to May. The plan is to assess the body condition and nutritional status of reproductive female gray whales based on measurements of length and width from vertical aerial photographs. Estimates of length will inform long-term growth trends and minimum size at sexual maturity for this population. Widths will be used to infer current nutritional status and to establish a baseline of conditions for reproductive females within this population. These metrics will be compared to samples collected from manned platforms in previous years and data collected during scientific whaling operations in the late 1950's and 1960's. The data will be used to inform us on how changes in the Arctic are impacting the population of large whales.

Location: Cape Cod, Massachusetts
Mission: Cape Cod Whale Photogrammetry

The Northeast Fisheries Science Center (NEFSC) plans to survey North Atlantic right whales in Cape Cod Bay, MA during the period of April to May. Photographs will be collected for the purpose of cataloging individuals, obtaining measurements for body length, documenting entanglements and quantifying wildlife response to UAV's. The operation will be conducted utilizing two scientists and will be operating from a NOAA vessel. All surveys will be in coordination with other agency vessels and a non-NOAA survey plane operated by the Center for Coastal Studies.

Location: Strait of Juan de Fuca, Washington
Mission: Orca Whale Photogrammetry

The Southwest Fisheries Science Center (SWFSC) plans to survey Orca Whales from a small boat in the marine waters of Washington State. Aerial photographs will be used to assess the body condition and nutritional status of Southern Resident killer whales. Specifically, measurements 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 existing and planned for the northern resident killer whale population that aggregates in adjacent Canadian waters off Northern Vancouver Island, to provide a comparative assessment of nutritional status to guide management of these two protected populations.

Puma UAS

Location: Santa Barbara Channel, California
Mission: Puma Net Capture

This is a multiple sortie mission for AeroVironment in collaboration with NOAA to validate the improvements to the Puma Autonomous Net Capture System. Development of an autonomous shipboard recovery system has benefits to the NOAA and USCG by increasing safety and efficiency while operating Puma aboard ships at sea. Operations will take place in the Santa Barbara Channel on board the NOAA R/V Shearwater.

OMAO Partnerships

United States Senate Committee on Commerce, Science, and Transportation

Location: Washington, DC

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: Antarctica

Mission: LTJG Rafael Klein, NOAA Commissioned Officer Corps

Members of the NOAA Commissioned Officer Corps carry out NOAA's mission in remote locations across the globe. LT Milton 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 (USPACOM)

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: CDR Christiaan van Westendorp, NOAA Commissioned Officer Corps

CDR van Westendorp 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, CDR van Westendorp 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: CAPT Scott Sirois, NOAA Commissioned Officer Corps

As the NOAA liaison to the United States Coast Guard (USCG), CAPT Sirois 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. CAPT Sirois 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 600 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. Below is a list of the NOAA Teachers at Sea for the current monthly update for the 2016 Field Season. Once they have embarked on their cruise, you can gain access to their blogs which document their missions at sea and offer a wealth of information about the research being conducted as well as personal stories.

- Teacher at Sea Nichia Huxtable from Fillmore High School, Fillmore, California sailing out of San Francisco, California on NOAA Ship *Bell M. Shimada* during the Channel Islands National Marine Sanctuary survey.
- Teacher at Sea Denise Harrington from South Prairie Elementary, Tillamook, Oregon sailing out of Pascagoula, Mississippi on the NOAA Ship *Pisces* on a reef fish survey
- Teacher at Sea Dana Chu from Florin High School, Sacramento, California sailing out of San Francisco, California on NOAA Ship *Bell M. Shimada* during the Cordell Bank National Marine Sanctuary survey.

Teacher-At-Sea, Virginia Warren underway aboard NOAA Ship *Oscar Dyson*.
[Photo: NOAA]

OMAO - NOAA Dive Program

OMAO manages and implements NOAA's Dive 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 Divers are trained to deploy and retrieve all types of scientific equipment, some of which is designed in-house at NOAA. One of these devices are the Autonomous Reef Monitoring Structures.
[Photo: 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 "Hurricane Hunter" 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 hurricane surveillance jet, these 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, 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 November 2014, our aircraft flew missions over upstate New York after the record snow falls of up to seven feet and conducted airborne Snow Water Equivalent (SWE) and soil moisture measurements. Airborne SWE measurements are used by NOAA's National Weather Service when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks.

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. 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.

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 among 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 nation's seven uniformed services and 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 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. 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.

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. 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 November 2014, our aircraft flew missions over upstate New York after the record snow falls of up to seven feet and conducted airborne Snow Water Equivalent (SWE) and soil moisture measurements. Airborne SWE measurements are used by NOAA's National Weather Service when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks.

- 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.

- After Hurricane Irene in 2011, the NOAA Ship *Ferdinand Hassler* and team completed 300 lineal nautical miles of survey work in less than 48 hours providing a Damage Assessment that enabled the U.S. Coast Guard to re-open ports and restore more than $5M per hour in maritime commerce less than three days after the storm.

- In 2010, the NOAA fleet and the NOAA Corps played a major role in the response to the BP Deepwater Horizon oil spill. 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.