



# NOAA Fleet Update

**FOR  
JUNE 2014**

The following update provides the status of the ships and aircraft in NOAA's fleet, including current location and planned mission(s). NOAA's ships and aircraft play a critical role in the collection of oceanographic, atmospheric, hydrographic, and fisheries data. NOAA's fleet of research aircraft and ships are operated, managed, and maintained by NOAA's Office of Marine and Aviation Operations ([OMAO](#)), which includes both civilians and the commissioned officers of the United States NOAA Commissioned Officer Corps ([NOAA Corps](#)), one of the nations' seven Uniformed Services. Please click on the Table of Contents entry to be taken directly to a specific ship or aircraft. The fleet is listed based on the geographical location of their homeport/base starting in the Northeast and ending in the Pacific.



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# OMAO's Ships

NOAA's Ship Tracker (screen shot below) shows information about the location, present and past, of NOAA's ships.

<http://shiptracker.noaa.gov>



The [NOAA Ship Pisces](#) is a state-of-the art research vessel. Even when in transit to a specific operational location, it is always recording data and making observations of the ocean and the atmosphere.

Teacher at Sea - Spencer Cody <http://teacheratsea.wordpress.com/2014/05/28/spencer-cody-a-sea-of-uncertainty-may-28-2014/>

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

Norfolk, VA – CAPT Anne Lynch, Commander 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 listed below. 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.



### ***Ferdinand R. Hassler***

**Homeport and Commanding Officer:** New Castle, NH – LCDR Marc Moser

**Primary Mission Category:** Hydrographic Surveys

**Ship Status:** Underway June 4 – 13, 2014 and June 17 – 26, 2014

**DEPART:** New Castle, NH

**ARRIVE:** New Castle, NH

**DEPART:** New Castle, NH

**ARRIVE:** New Castle, NH

**Project:** Hydrographic Survey Operations in the Approaches to Chesapeake Bay, VA

**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.



### ***Thomas Jefferson***

**Homeport and Commanding Officer:** Norfolk, VA – CDR James Crocker

**Primary Mission Category:** Hydrographic Surveys

**Ship Status:** Ship alongside New London, CT; Launches Underway May 27 – June 12, 2014

**DEPART:** New London, CT                      **ARRIVE:** Norfolk, VA

**Project:** Hydrographic Survey Operations of Essential Fish Habitats in the vicinity of Long Island Sound, NY and CT

**Objectives:** Collect seafloor mapping data in support of NOAA's National Ocean Service, National Centers for Coastal Ocean Science and the Long Island Sound Seafloor Mapping Initiative, in New York and Connecticut. This is in addition to supporting 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.

### ***Nancy Foster***

**Homeport and Commanding Officer:** Charleston, SC – LCDR Jeffrey Shoup

**Primary Mission Category:** Oceanographic Research, Environmental Assessment

**Ship Status:** Underway June 16 – 30, 2014

**DEPART:** Charleston, SC                      **ARRIVE:** Charleston, SC

**Project:** South Atlantic Marine Protected Areas (MPAs) Survey

**Objectives:** To gather additional data on habitat and fish assemblages in five of the South Atlantic MPAs as part of a long term sampling program to document changes in these areas before and after fishing restrictions are implemented. Visit sites north and south of the established MPAs as the South Atlantic Fishery Management Council is in the process of establishing additional MPAs to protect speckled hind and Warsaw grouper. The southernmost boundary of our work areas will be Port Canaveral, FL, while the northern-most boundary will be Cape Hatteras, NC. Efficacy testing of this management tool will aid fishery managers in future use of area restrictions for the protection of valuable habitat and fishery resources.

### ***Ronald H. Brown***

**Homeport and Commanding Officer:** Charleston, SC – CAPT Joseph Pica

**Primary Mission Category:** Oceanographic Research, Environmental Assessment

**Ship Status:** Dry-docked at Mare Island Dry Dock LLC in Vallejo, CA, for scheduled repairs.

## ***Oregon II***

**Homeport and Commanding Officer:** Pascagoula, MS – Master Dave Nelson

**Primary Mission Category:** Fisheries Research

**Ship Status:** Underway June 7 – 21, 2014 and June 23 – July 6, 2014

**DEPART:** Pascagoula, MS

**ARRIVE:** Galveston, TX

**DEPART:** Galveston, TX

**ARRIVE:** Pascagoula, MS

**Project:** Southeast Area Monitoring and Assessment Program (SEAMAP) Summer Groundfish Survey

### **Objectives:**

1. Sample the northern Gulf of Mexico with SEAMAP standard trawl sampling gear to determine the abundance and distribution of benthic fauna.
2. Collect size measurements to determine population size structures.
3. Record profiles through the water column of temperature, salinity, fluorescence, dissolved oxygen, and turbidity using a Conductivity/Temperature/Depth (CTD) unit at SEAMAP stations.
4. Collect at depth water samples daily and perform bench top dissolved oxygen tests using the Winkler Titration method on triplicate samples and handheld HACH DO meter. Transmit the data daily as time permits to NOAA National Coastal Data Development Center at Stennis Space Center, MS, and other researchers to map the hypoxic zone.
5. Collect water samples daily and perform bench top dissolved oxygen tests using an Orion 3 Star Portable D.O. meter.
6. Assess the occurrence, abundance, and geographical distribution of the early life stages of ichthyoplankton in the sampling using a bongo frame fitted with a 0.335 mm net and neuston frame fitted with a 0.950 mm net at selected SEAMAP stations.

## ***Gordon Gunter***

**Homeport and Commanding Officer:** Pascagoula, MS – Master Don Pratt

**Primary Mission Category:** Fisheries Research

**Ship Status:** Alongside Marine Operations Center – Atlantic, Norfolk, VA, for repairs. Awaiting dry dock contract award. Project will commence once repairs are completed. Underway dates shown are subject to change. Underway June 7 – 23, 2014, and June 25 – July 11, 2014

**DEPART:** Norfolk, VA

**ARRIVE:** Key West, FL

**DEPART:** Key West, FL

**ARRIVE:** Key West, FL

**Project:** Southeastern Gulf of Mexico (GOM) Sperm Whale Study

### **Objectives:**

1. Deploy satellite telemetry tags on suitable specimens of sperm whale and other species from the scientific small boat.
2. Collect tissue biopsy samples, detailed photographs, detailed video, fecal samples, and close range acoustic recordings of select marine animal species.
3. Collect visual and passive acoustic data to characterize sperm whale abundance and spatial distribution in the Southeastern GOM.
4. Collect biopsy samples from select cetaceans.
5. Collect acoustic recordings of marine mammal vocalizations for use in species identification.
6. Collect oceanographic and environmental data including hydrographic profiles, continuous surface water characteristics, and scientific echosounders data to quantify acoustic backscatter due to small fish and zooplankton.
7. Deploy a deep water passive acoustic mooring.

## ***Pisces***

**Homeport and Commanding Officer:** Pascagoula, MS – CDR Peter Fischel

**Primary Mission Category:** Fisheries Research

**Ship Status:** Underway May 27 – June 11, 2014 and June 13 – 25, 2014

**DEPART:** Pascagoula, MS

**ARRIVE:** Pascagoula, MS

**DEPART:** Pascagoula, MS

**ARRIVE:** Panama City, FL

**Project:** Southeast Area Monitoring and Assessment Program Reef Fish

**Objectives:** Conduct a survey of reef fish on the U.S. continental shelf of the Gulf of Mexico using a custom built stereo/video camera system and bandit reels. The ship's ME70 multibeam system and Simrad EK60 Echosounder will be used to map predetermined targeted areas on a nightly basis to improve or increase the reef fish sample universe.

## **OMAO'S MARINE OPERATIONS**

**Newport, OR – CAPT Eric Berkowitz, Director**

OMAO's Marine Operations oversees operations of the three regional Centers, including the Marine Operations Center-Pacific (MOC-P), Marine Operations Center-Atlantic (MOC-A), and Marine Operations Center-Pacific Islands (MOC-PI).



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

**Newport, OR – CAPT Douglas Baird, Commander**

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 listed below. 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.

### ***Reuben Lasker***

**Homeport and Commanding Officer:** San Diego, CA – CDR Keith Roberts

**Primary Mission Category:** Fisheries Research

**Ship Status:** Alongside San Diego, CA for scheduled repair period until July 2014.



**A bird's eye view of NOAA Ship *Reuben Lasker*! A local company called SciFly was flying over the coast of San Diego, CA, testing a new HD camera system when they happened upon the ship calibrating acoustic equipment at anchor.**

Photo: Eddie Kisfaludy – CEO, SciFly

### ***Rainier***

**Homeport and Commanding Officer:** Newport, OR – CDR Rick Brennan / CDR E.J. Van Den Ameele

**Primary Mission Category:** Hydrographic Surveys

**Ship Status:** Underway June 2 – 18, 2014 and June 23 – July 3, 2014

**DEPART:** Kodiak, AK                   **ARRIVE:** Homer, AK

**DEPART:** Homer, AK                   **ARRIVE:** Kodiak, AK

**Projects:** Hydrographic Survey Operations in the vicinity of Southern Alaska Peninsula and the North Coast of Kodiak Island, AK

**Objectives:** This project will provide contemporary hydrographic data in order to update the nautical charting products and reduce survey backlog in the area.

### ***Bell M. Shimada***

**Homeport and Commanding Officer:** Newport, OR – CDR Brian Parker

**Primary Mission Category:** Fisheries Research

**Ship Status:** Underway June 16 – July 3, 2014

**DEPART:** Newport, OR                   **ARRIVE:** Newport, OR

**Project:** 2014 California Current Ecosystem: Acoustic-Trawl Survey of Coastal Pelagic Fishes

**Objectives:** A NOAA National Marine Fisheries Service, South West Fisheries Science Center-led survey of coastal pelagic fishes, demersal fishes, zooplankton, and their oceanographic habitats within the California Current Ecosystem will be conducted. This acoustic-trawl method survey will assess biomasses, distributions, and biological compositions of multiple species and trophic levels within the adaptively sampled region spanning the northern subpopulation of Pacific sardine (*Sardinops sagax*).

### ***McArthur II***

**Homeport:** Newport, OR

**Ship Status:** The ship is currently docked at the Marine Operations Center – Pacific, Newport, OR. NOAA has received congressional approval for disposal of the vessel and the decommissioning ceremony is tentatively scheduled for June 18.

### ***Fairweather***

**Homeport and Commanding Officer:** Ketchikan, AK – CDR David Zezula

**Primary Mission Category:** Hydrographic Surveys

**Ship Status:** Underway May 27 – June 6, 2014, June 11 – 20, 2014, and June 23 – July 3, 2014

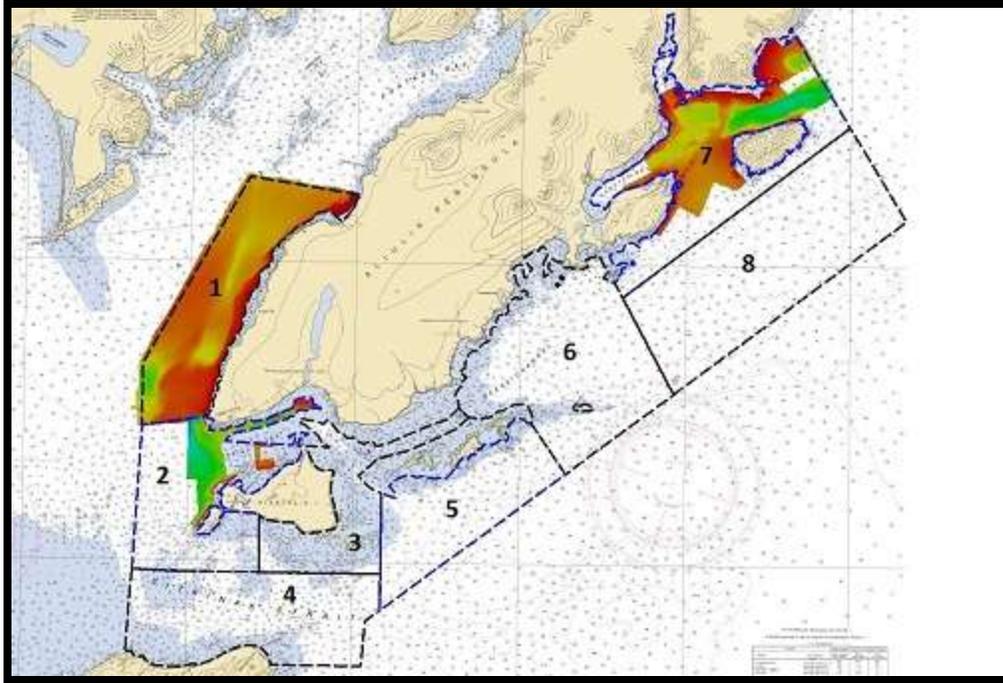
**DEPART:** Homer, AK                   **ARRIVE:** Kodiak, AK

**DEPART:** Kodiak, AK                   **ARRIVE:** Kodiak, AK

**DEPART:** Kodiak, AK                   **ARRIVE:** Seward, AK

**Project:** Hydrographic Survey Operations in the vicinity of the South Coast of Kodiak Island

**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. Service NOAA's Office of Oceanic and Atmospheric Research Chatham Strait surface moorings and the Chiniak mooring.



You've seen maritime charts that NOAA makes, but have you ever wondered what surveying looks like in-progress? Here's a great image showing the different areas on one [NOAA Ship Fairweather](#) survey "sheet." The colored areas are locations where data has been collected - the open spots inside the dashed lines are places where work still needs to be done!

### **Oscar Dyson**

**Homeport and Commanding Officer:** Kodiak, AK – CDR Jesse Stark

**Primary Mission Category:** Fisheries Research

**Ship Status:** Underway June 12 – 30, 2014

**DEPART:** Dutch Harbor, AK

**ARRIVE:** Dutch Harbor, AK

**DEPART:** Dutch Harbor, AK

**ARRIVE:** Dutch Harbor, AK

**Project One:** Ecosystems and Fisheries-Oceanography Coordinated Investigations (EcoFOCI) /Ecosystem Monitoring and Assessment Program (EMA) Spring Ichthyoplankton and Larval Walleye Pollock Assessment Survey – Bering Sea

**Objectives:** Conduct an assessment of eggs and larvae of Walleye Pollock (*Gadus chalcogrammus*) over the eastern Bering Sea shelf. We will also examine the interactions among climate, weather, and ichthyoplankton distribution and abundance. This work is needed to describe larval fish assemblages and determine how physical and biological factors affect the transport and survival of fish larvae. The project is a collaboration between two NOAA National Marine Fisheries Service, Alaska Fisheries Science Center Programs, Eco-FOCI and EMA.

**Project Two:** Acoustic-trawl survey of the eastern Bering Sea shelf and Cape Navarin area of Russia

**Objectives:**

1. Collect acoustic-trawl data necessary to determine the distribution, biomass, and biological composition of walleye pollock, including regularly deploying a stereo-camera system in the midwater trawl to optically sample fish.

2. Collect target strength data using hull-mounted transducers for use in scaling acoustic data to estimates of absolute abundance.
3. Calibrate the ER-60 and ME70 acoustic system using standard sphere calibration techniques.
4. Collect physical oceanographic data (temperature, salinity, fluorescence and oxygen profiles with associated water samples) at selected sites, and continuously collect sea surface temperature, salinity, fluorescence and oxygen data.
5. Conduct trawl hauls to ground truth multi-frequency acoustic data collection.
6. Deploy Marinovich trawl to test the effect of using different weights to increase the vertical opening.
7. Collect data on fish distributions and school characteristics using ME70 multi-beam echosounder.
8. Test a Trigger camera system.
9. Collect light intensity and penetration data.
10. During leg 1 calibration, troubleshoot high noise levels on 200 kHz echosounder.

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

**NOAA Daniel K. Inouye Regional Center, Ford Island, HI– CDR Robert Kamphaus, Commander**  
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 listed below.



## ***Hi'ialakai***

**Homeport and Commanding Officer:** Honolulu, HI – LCDR Daniel Simon

**Primary Mission Category:** Oceanographic Research, Environmental Assessment

**Ship Status:** Underway June 16 – July 11, 2014

**DEPART:** Pearl Harbor, HI      **ARRIVE:** Pearl Harbor, HI

**Project:** Hawaiian Monk Seal Population Assessment

### **Objectives:**

1. Deploy Hawaiian monk seal camps at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, and Kure Atoll.
2. Conduct monk seal beach surveys at Ni'ihau, Nihoa, and Necker Islands.
3. Translocate Hawaiian monk seals from North West Hawaiian Islands (NWHI) populations to a rehabilitation facility in Kona on the island of Hawaii.
4. Deploy an American Bird Conservancy Nihoa Miller Bird camp on Laysan Island.
5. Conduct trials of Unmanned Aircraft Systems (UAS; Puma) at French Frigate Shoals, Nihoa Island, Necker Island, and Ni'ihau Island.
6. Deliver supplies and/or personnel to Kure Atoll for the Department of Forestry and Wildlife, Department of Land and Natural Resources, State of Hawaii.

## ***Oscar Elton Sette***

**Homeport and Commanding Officer:** Honolulu, HI – LCDR Stephanie Koes

**Primary Mission Category:** Fisheries Research

**Ship Status:** Underway May 31 – June 19, 2014 and June 23 – 16, 2014 (Dates are approximate)

**DEPART:** Pearl Harbor, HI      **ARRIVE:** Saipan

**DEPART:** Saipan      **ARRIVE:** Saipan

**Project One:** Fisheries Oceanography – Commonwealth of the Northern Mariana Islands (CNMI) and Mariana Trench Marine National Monument

### **Objectives:**

1. Survey and sample cetacean species near each island area to understand connectivity of cetacean populations within the Mariana Archipelago. Visual survey will occur from small boat and sampling will consist of behavioral observations, photographs, biopsy sampling, and satellite tagging. Acoustic monitoring will be conducted from the ship.
2. Survey and tagging of green sea turtles to understand foraging and movements of turtles among the Northern Islands. Turtle sampling will occur from a small boat and will include in-water turtle handling on snorkel. This work supports CNMI Division of Fish and Wildlife research needs.
3. Archeological survey of Alamagan or Guguan for cultural and historical sites. The ship will drop off and retrieve the archeologists at the island during Leg II.
4. The ship will collect oceanographic data from routine conductivity-temperature-depth and Expendable Bathythermograph casts, and thermosalinograph and echosounder measurements throughout the project.

**Project Two:** Insular Reef Fish & Bottomfish Bio-Sampling

### **Objectives:**

1. Conduct daylight bottomfish bio-sampling in the 50-400 m depth zone around Uracas, Maug, and Asuncion within the MTMNM and Pagan, Guguan, Sarigan, and Anatahan. Heads, gonads, and tissue samples will be extracted and stored in support of CNMI Division of Fish and Wildlife research.

2. Document shark depredation or other interactions that occur during the conduct of bottomfish bio-sampling operations in support of a Northern Marianas College research proposal.
3. Conduct daylight reef-fish snorkel/free-dive bio-sampling in <20 m depth zone around Uracas, Maug, and Asuncion within the MTMNM and Pagan, Guguan, Sarigan, and Anatahan.
4. Conduct daylight snorkel surveys to document the benthic community within the shallow water ( $\leq 3\text{m}$ ) habitat and also to conduct water sample collections around Uracas, Maug, and Asuncion within the MTMNM and Pagan, Guguan, Sarigan, and Anatahan.
5. Collect oceanographic data from routine conductivity-temperature-depth casts, continuous acoustic Doppler current profiler, and thermosalinograph measurements throughout the cruise.
6. Collect midwater larval and juvenile stages of pelagic and reef fish species.
7. Drifting night-light dip-netting operations conducted in the late evening to collect surface occurring larval and juvenile stages of pelagic and reef fish species.

### ***Ka'imimoana***

**Homeport:** Honolulu, HI

**Ship Status:** The ship is currently docked at the Marine Operations Center – Pacific, Newport, OR. NOAA has received congressional approval for disposal of the vessel and the decommissioning ceremony is tentatively scheduled for June 18.



**During the 2014 Spring Plankton mission, the neuston, shown above, is deployed off the NOAA Ship *Oregon II*, and is adjusted so the top half of the frame remains above water. This allows scientist to examine species specifically located within the first half meter of surface waters.**

Photo: ENS Rachel Pryor, NOAA

# OMAO's Aircraft

## OMAO's Aircraft Operations Center (AOC)

### MacDill Air Force Base, Tampa, FL – CAPT Harris Halverson, Commander AOC

The AOC provides capable, mission-ready aircraft and professional crews to the scientific community wherever and whenever they are required. 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.

### ***WP-3D (N42RF) and WP-3D (N43RF) – “Hurricane Hunters”***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – TBD

**Current Mission:** Hurricane Reconnaissance and Research. Western Atlantic and Gulf of Mexico

**Dates of Operations:** June 1 – November 30, 2014

June 1 marked the beginning of the 2014 Hurricane Season and the NOAA Hurricane Hunter aircraft are ready to respond. Radar reconnaissance missions on both 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.

### ***NEWS UPDATE - Flight Tests completed on WP-3D 'Hurricane Hunter' engine upgrade***

Teams from OMAO/AOC, Rolls-Royce and Lockheed Martin have successfully completed flight and ground tests of an upgraded P-3 engine. If the upgrade meets contract requirements, OMAO will purchase 10 engine upgrade kits from Rolls-Royce for NOAA P-3s N42RF and N43RF. Previous tests have shown that the upgrades reduce fuel consumption by at least 7.9 percent, decrease maintenance costs by up to 22 percent and improve engine reliability.

[http://www.rolls-royce.com/northamerica/na/news/2014/190514\\_noaa.jsp](http://www.rolls-royce.com/northamerica/na/news/2014/190514_noaa.jsp)

### ***Gulfstream IV (N49RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL - TBD  
**Current Mission:** Hurricane Surveillance and Research. Western Atlantic and Gulf of Mexico  
**Dates of Operation:** June 1 – November 30, 2014

NOAA's Gulfstream IV aircraft will support operational tropical cyclone forecasting and the Hurricane Forecast Improvement Project. The G-IV will be the primary aircraft for surveillance missions with the Air Force's WC-130J and NOAA's WP-3D aircraft serving as backup platforms. 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.



**NOAA's Gulfstream IV at OMAO's Aircraft Operations Center in Tampa, FL.**

Photo: LCDR Jason Mansour, NOAA

### ***Twin Otter (N46RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – LCDR Chris Kerns and LT John Rossi  
**Current Mission:** Water Resource Survey Operations  
**Dates of Operation:** June

The aircraft is conducting Water Resource Survey operations for NOAA's National Weather Service (NWS), National Operational Hydrologic Remote Sensing Center (NOHRSC). Operations will also be in support of establishing new flight lines for soil moisture surveys.

### ***Twin Otter (N57RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – CDR Jeff Hagan and LCDR Phil Eastman  
**Temporary Base:** Hyannis, MA  
**Current Mission:** Northeast Right Whale Survey. Atlantic waters off of ME and MA.  
**Dates of Operation:** Until June 30, 2014

This survey will serve multiple objectives with respect to marine mammal conservation:

1. Provide locations of Right whales to mariners.
2. Provide description of right whale distribution to support the implementation of seasonal and dynamic area management.
3. Provide annual photo-identification records on Right whales, as well as detailed vertical photogrammetry in selected periods.
4. Provide information on the distribution and abundance of marine mammals and marine turtles.
5. Provide sightings of dead whales.
6. Provide information on the distribution of shipping and fishing gear.
7. Census seal populations along the New England coast.

### ***Twin Otter (N56RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – LCDR Nick Toth  
**Temporary Base:** Newport News, VA  
**Current Mission:** Light Detecting and Ranging (LIDAR) Evaluation for Coastal Mapping  
**Dates of Operation:** Until mid-June

The aircraft is conducting an evaluation of a topometric-bathymetric Light Detecting and Ranging (LIDAR) system for the Remote Sensing Division of the National Geodetic Survey. The system can scan coastlines and simultaneously measure ground heights above the surface as well as the depths below, near the shoreline. The data could potentially be used to update nautical charts.

### ***Twin Otter (N48RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – LT Francisco Fuenmayor  
**Current Mission:** Fugitive Emissions  
**Dates of Operation:** Until mid-June

Aircraft will be conducting a survey over the major shale gas and oil fields in the western U.S to measure the resulting emissions of greenhouse gases emitted from the extraction activities. Coal and oil combustion produces more greenhouse gases per BTU than the combustion of natural gas. However, since methane is a very powerful greenhouse gas, if more than 4% of methane is lost to the atmosphere due to leakage between the well head and combustion, the advantage of using methane is lost. It is critical that these numbers are verified to inform U.S. climate and energy policy, specifically on shale gas development. The flight operations would be over the Denver-Julesburg Basin, CO; Uintah Basin, UT; Upper Green River Basin, WY; and the Bakken Field, ND. This project will be for the Global Monitoring Division of NOAA's Office of Oceanic and Atmospheric Research.

### ***Jet Prop Commander (N45RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – LCDR Patrick Didier  
**Current Mission:** Water Resource Surveys in various locations  
**Dates of Operation:** Timing TBD

The aircraft is conducting Snow Survey operations for NOAA's National Weather Service (NWS), National Operational Hydrologic Remote Sensing Center (NOHRSC), utilizing an Airborne Gamma Radiation detector to make airborne Snow Water Equivalent (SWE) and soil moisture measurements in the Midwest. Airborne SWE measurements are used by NWS Weather Forecast Offices and NWS River Forecast Centers when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks. Survey locations will be determined based on NOHRSC tasking. Operations in June will primarily be focused on establishing new flight lines for soil moisture surveys.

### ***King Air (N68RF)***

**Base and Aircraft Commander:** MacDill Air Force Base, Tampa, FL – CDR Mark Sweeney  
**Current Mission:** Various locations for coastal mapping  
**Dates of Operation:** Continuous operations

The King Air's conducting Coastal Mapping mission flights in the New England area and will likely conduct operations over Southeast Texas, the Oregon coast, and Puget Sound, WA, throughout the month. This on-going mission, run by the Remote Sensing Division of NOAA's National Ocean Service, National Geodetic Survey (NGS), which works to provide a regularly-updated national shoreline for supporting marine navigation, defining territorial limits, and managing coastal resources. Stereo photogrammetry and Light Detecting and Ranging (LIDAR) systems are used to produce a digital database for a national shoreline.



**Hurricane Awareness tour, pre-flight briefing held aboard one of our P-3's with LT James Brinkley.**

Photo: NOAA

# Unmanned Systems Support

OMAO is rapidly becoming a leader in utilizing Unmanned Aircraft Systems (UAS) for the collection of environmental intelligence. The OMAO UAS Program Manager and Aircraft Operations Center have deployed the RQ-20A Puma, the P-3 launched Coyote, and the APH-22 Hexacopter. OMAO supported UAS operations have increased substantially as UAS are used to support a variety of agency objectives including marine debris detection, marine mammal surveys, and seabird surveys.

## **RQ-20A Puma**

**Location:** Olympic Coast National Marine Sanctuary  
**Dates:** June 7 – 20, 2014  
**Mission:** Nesting and on-water bird surveys

Nesting and on-water bird surveys will be deployed from aboard the NOAA research vessel Tatoosh. As part of NOAA's National Ocean Service, Office of National Marine Sanctuaries (ONMS) Center of Excellence for UAS Marine Monitoring, the Olympic Coast National Marine Sanctuary is partnering with the U.S. Fish and Wildlife Service to further the development of small UAS procedures and protocols for a variety of resource management requirements.



### **LT Nick Morgan prepares to launch a Puma drone into the wind on the stern of the NOAA Research Vessel Tatoosh.**

Photo: John Lok, The Seattle Times

**Location:** Northwest Hawaiian Islands  
**Dates:** June 15 – 25, 2014  
**Mission:** Species surveys, seabird census, and marine debris

NOAA's National Marine Fisheries Service, Pacific Islands Fisheries Science Center will utilize the Puma UAS for a variety of fisheries and Papahānaumokuākea Marine National Monument management and research requirements including protected species surveys, marine debris mapping, and seabird censusing. UAS operations will extend to the northwestern Hawaiian Islands in the coastal waters off Niihau, Nihoa, Mokumanamana, and islets within French Frigate Shoals.

### **MD4-1000 Quadcopter**

**Location:** Olympic Coast National Marine Sanctuary  
**Dates:** June 8 – 15, 2014  
**Mission:** Nesting and on-water bird surveys

Nesting and on-water bird surveys will be deployed from various shore locations. As part of NOAA's National Ocean Service, Office of National Marine Sanctuaries (ONMS) Center of Excellence for UAS Marine Monitoring, the Olympic Coast National Marine Sanctuary is partnering with the US Fish and Wildlife Service to further the development of small UAS procedures and protocols for a variety of resource management requirements.



### **APH-22 Hexacopter**

**Location:** Aleutian Islands, AK  
**Dates:** June 20 – July 10, 2014  
**Mission:** Stellar Sea Lion Imagery and Monitoring

NOAA's National Marine Fisheries Service, Alaska Fisheries Science Center, National Marine Mammal Laboratories is operating the APH-22 hexacopter unmanned aircraft system equipped with a high resolution camera to survey and photograph up to 40 Steller sea lion rookeries and haul outs between 177 E and 178 W in the Aleutian Islands. These images will provide index counts of the Steller sea lions. Operations will deploy to shore locations from aboard the United States Fish and Wildlife Service research vessel *Tiglâx*.



**Hexacopter before shipment to Alaska for the Stellar Sea Lion Imagery and Monitoring Project.**

Photo: NOAA

## ***NASA Global Hawk***

**Location:** Dryden Flight Facility, CA  
**Dates:** Ongoing  
**Mission:** Integration and Testing of the Tropospheric Wind Lidar Technology Experiment (TWiLiTE)

NASA is continuing the process of integration and testing of the Tropospheric Wind Lidar Technology Experiment (TWiLiTE) airborne Doppler radar on N872NA (AV-6). The TWiLiTE package is an orbital category instrument designed for autonomous operation on a satellite. The TWiLiTE mission on Global Hawk will calibrate and validate the data collection prior sending the instrument into space. In addition to TWiLiTE, the Global Hawk will carry the Advanced Vertical Atmospheric Profiling System (AVAPS), which is the dropsonde system for the Global Hawk. A range flight is scheduled for June 25 followed by a 18hr mission over the North Pacific Ocean on July 1-2.

The Global Hawk Team is also preparing for the Hurricane Severe Storm Sentinel project, better known as HS3, to be flown from Wallops Flight Facility, VA, starting mid-August. The HS3 project will include two deployed Global Hawks configured for hurricane surveillance and research. Flight crews and engineers are currently negotiating airspace/international clearances, flight logistics, and making minor payload improvements. NOAA Pilots will be involved with flying and coordinating these operations.

# OMAO Partnerships

## ***United States Senate Committee on Commerce, Science, and Transportation – Office of Ranking Member, Senator John Thune (R-SD)***

**Location:** Washington, DC

**Detail:** Lt. Wendy Lewis, U.S. NOAA Commissioned Officer Corps

Lt. Lewis is currently on detail to the Committee and the office of Ranking Member Thune where she will be 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:** LT Joe Phillips, U.S. NOAA Commissioned Officer Corps

Members of the [NOAA Commissioned Officer Corps](#) carry out NOAA's mission in remote locations across the globe. LT Phillips 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, HI

**Embedded Liaison:** CAPT Barry Choy, U.S. 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. Northern Command (USNORTHCOM)

**Location:** Boulder, CO

**Embedded Liaison:** CAPT Mark Moran, U.S. NOAA Commissioned Officer Corp  
U.S. Northern Command (USNORTHCOM) partners to conduct homeland defense, civil support, and security cooperation to defend and secure the United States and its interests. NORTHCOM's area of responsibility includes air, land, and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico, and the surrounding water out to approximately 500 nautical miles. It also includes the Gulf of Mexico, the Straits of Florida, and portions of the Caribbean region that include The Bahamas, Puerto Rico, and the U.S. Virgin Islands. CAPT Moran serves as the liaison for the NOAA Corps, helping to plan, organize, and execute homeland defense and civil support missions.

## Department of Defense – U.S. Navy

**Location:** Washington, DC

**Embedded Liaison:** CDR Christiaan Van Westendorp, U.S. NOAA Commissioned Officer Corps  
The NOAA liaison to the Oceanographer of the Navy 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. Starting in July, CDR Van Westendorp will serve as the interface for the Oceanographer of the Navy between Navy and U.S. Federal Agencies including NOAA.

## Department of Defense and NOAA's Office of Coast Survey

**Location:** Silver Spring, MD

**Embedded Liaison:** LCDR Matthew Wingate, U.S. NOAA Commissioned Officer Corps  
NOAA's National Ocean Service Office of Coast Survey (OCS) is the lead federal provider of nautical charts and hydrographic survey data of the U.S. Exclusive Economic Zone. Meeting this responsibility requires active cooperation and coordination with federal partners in the Departments of Defense and Homeland Security with which NOAA shares responsibility for U.S. navigational products and services. LCDR Wingate tracks, coordinates, and adds value to existing activities involving OCS subject matter experts and partners, seeks and develops additional opportunities for collaboration, and increases visibility and access to these activities and partnerships for OCS leadership.

## Department of Homeland Security – U.S. Coast Guard

**Location:** Washington, DC

**Embedded Liaison:** CDR Jeremy Adams, U.S. NOAA Commissioned Officer  
As the NOAA liaison to the United States Coast Guard (USCG), CDR Adams maintains a current and comprehensive knowledge of interagency activities and policies related to the USCG and NOAA. He identifies potential conflict or benefit issues for analysis and evaluation, conducts appropriate assessments and studies, and serves as the interface between NOAA and the USCG. CDR Adams 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 National Oceanic and Atmospheric Administration's (NOAA) 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 2014 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. More info: <http://teacheratsea.noaa.gov/>

## **NOAA Ship *Pisces***

**Name:** Mr. Spencer Cody

**School:** High school teacher from Hoven High School in Hoven, SD

**Cruise:** SEAMAP Reef Fish Survey, May 28 – June 11, 2014

**Blog:** <http://teacheratsea.noaa.gov/2014/cody.html>

## **NOAA Ship *Oregon II***

**Name:** Ms. Carol Schnaiter

**School:** Amboy Central School in Amboy, IL

**Cruise:** SEAMAP Summer Groundfish Survey, June 7 – 21, 2014

**Blog:** <http://teacheratsea.noaa.gov/2014/schnaiter.html>

## **NOAA Ship *Nancy Foster***

**Name:** Mr. John Bilotta

**School:** University of Minnesota in Minneapolis, MN

**Cruise:** South Atlantic MPA Survey, June 18 – 29, 2014

**Blog:** <http://teacheratsea.noaa.gov/2014/bilotta.html>

## **NOAA Ship *Fairweather***

**Name:** Ms. Dana Clark

**School:** Irma Rangel Young Women's Leadership School

**Cruise:** Hydrographic Survey, June 23 – July 3, 2014

**Blog:** <http://teacheratsea.noaa.gov/2014/clark.html>

# OMAO - NOAA Dive Program

OMAO manages and implements the 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, WA. More info: [http://www.ndc.noaa.gov/gi\\_program.html](http://www.ndc.noaa.gov/gi_program.html)



**The technical dive team often receives visitors during decompression stops. This time a silky shark comes in close to pose with the group.**

Photo: Robbie Christian – University of Miami

# OMAO - NOAA Small Boat Program

OMAO 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. More info: <http://www.sbp.noaa.gov/>



**NOAA Ship *Oscar Elton Sette*'s small boat making a personnel run out of Lahaina, HI.**

Photo: ENS M. Ball, 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 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 9 specialized aircraft. Together, OMAO and the NOAA Corps support nearly all of NOAA's missions.

NOAA has the largest fleet of federal 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 turboprop "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 snowpack surveys for spring flood forecasts.

The NOAA fleet provides immediate response capabilities for unpredictable events. For example, after Hurricane Sandy, NOAA ships *Thomas Jefferson* and the newly commissioned *Ferdinand R. Hassler* conducted emergency bathymetric 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 2011, OMAO's Aero Commander and Jetprop Commander aircraft conducted snow surveys, which increased the accuracy of National Weather Service's flood forecasting during a record year of snow and floods. In 2010, the NOAA fleet and the NOAA Corps played a major role in the response to the BP Deepwater Horizon oil spill, conducting extensive studies in the Gulf of Mexico to monitor the health of the ecosystem. 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. As NOAA's fleet continues to age, maintenance costs steadily increase. Operational costs have increased as well, driven largely by rising fuel costs. We are working to address these challenges by increasing operating efficiencies while maintaining our commitment to safety. 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 are also continuing our effort 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. We transitioned our basic NOAA Corps officer training class to 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.

Finally, we continue to expand our partnerships with other federal agencies. We are proud of our longstanding and fruitful working relationships with the U.S. Air Force, U.S. Coast Guard, U.S. Navy, and U.S. Public Health Service and through the Interagency Working Group on Facilities and Infrastructure, continue facilitating cross-agency cooperation for the federal fleet of research and survey ships. 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.



# United States



# NOAA Commissioned Officer Corps

– Supporting NOAA’s Science, Service, and Stewardship –

The United States 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 2012 after Hurricane Sandy, seafloor sonar surveys completed by NOAA ships and small boats helped reopen Baltimore and Virginia ports, quickly restarting commerce and allowing Navy ships to return to port. New York and New Jersey ports were reopened, enabling emergency supplies to reach some of the hardest-hit areas. Maritime traffic resumed more quickly because NOAA embedded regional navigation managers within command centers.
- Hours after Sandy, NOAA planes and scientists conducted aerial surveys of the affected coastlines and immediately published the photos online, allowing emergency managers and residents to examine the damage even before ground inspections were permitted. These surveys are also vital to FEMA assessment teams and other on-the-ground responders and those managing oil spill clean-up and damage assessment. Over 3,000 miles of coastline have been surveyed, and over 10,000 images processed to document coastal damage and impacts to navigation.
- In 2011, OMAO’s Aero Commander and Jetprop Commander aircraft conducted snow surveys, which increased the accuracy of National Weather Service’s River Forecast Centers flood forecasting during a record year of snow and floods.

- 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 3 days after the storm.
  - More than 80 officers, or a quarter of the NOAA Corps' total strength, were re-assigned and/or deployed to support the Deepwater Horizon disaster response in the Gulf in 2010.
    - Eight NOAA-owned vessels, or the entire Atlantic fleet, were also deployed to the Gulf of Mexico for spill response, as well as several aircraft.
  - NOAA Corps officers who run NOAA's Ships support fish stock and marine mammal assessments, marine ecosystem studies, ocean exploration, coral reef preservation and protection, and mapping and charting around the United States and the Arctic, and more.
  - NOAA Corps officers who run NOAA's Aircraft collect environmental and geographic data essential to studying climate change, assess marine mammal populations, survey coastal erosion, investigate oil spills, and improve hurricane and winter storm forecasts as they pilot the WP-3D Orion hurricane hunters and other aircraft that fly through, and above the storms to obtain critical forecasting data.
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Find out more about the NOAA Corps, its mission and history at <http://www.noaacorps.noaa.gov/>.