



NOAA Fleet Update

**FOR
AUGUST 2013**

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 NOAA Commissioned Officer Corps ([NOAA Corps](#)), one of the seven Uniformed Services of the United States. 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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Many thanks to U.S. Representatives Bobby Scott (D VA-3) and Rob Wittman (R VA-1) for visiting the OMAO's Marine Operations Center-Atlantic in Norfolk, VA, on July 26. We also welcomed to MOC-A L'Allegro Smith from the office Representative Scott; Nick Barbash from the office of Senator Tim Kaine (D-VA); and Kathy Felger and Devin Braun from the Senate Committee on Commerce, Science, and Transportation. We very much appreciate their time and interest!

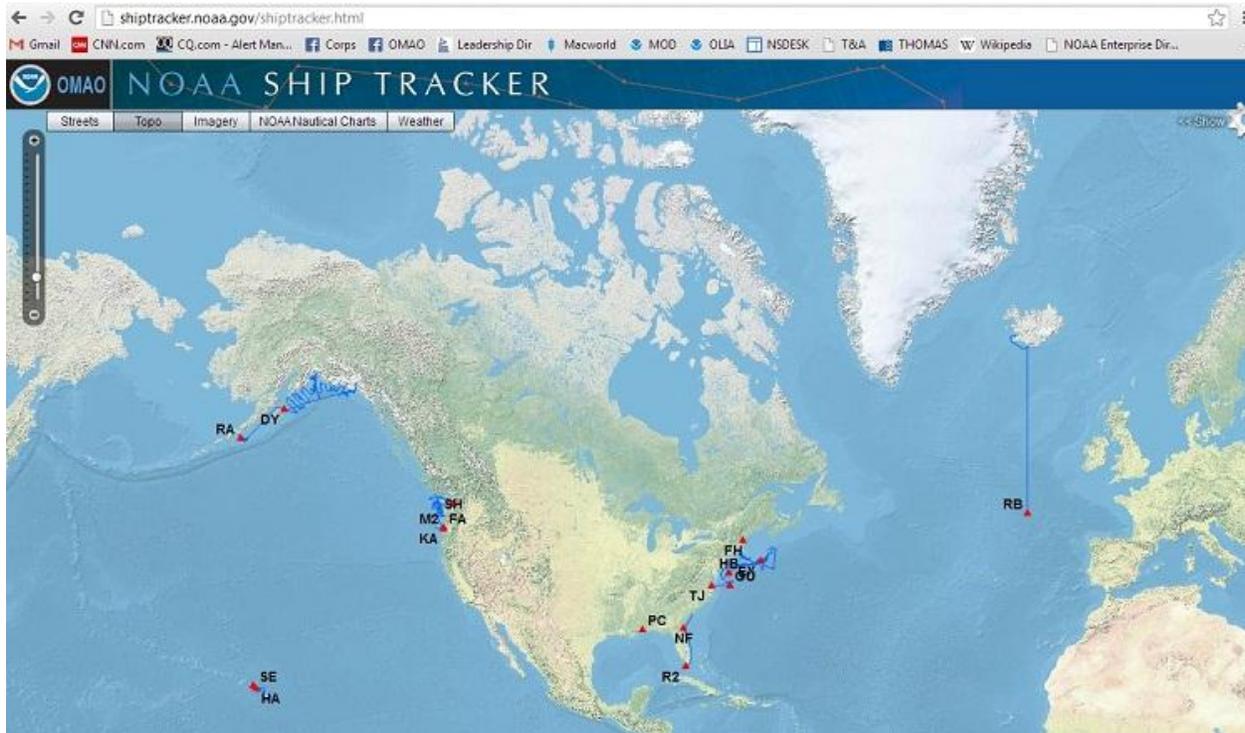
(Left to right: LT Sam Greenaway, U.S. Rep. Bobby Scott, RDML David Score, U.S. Rep. Rob Wittman, LT Megan Guberski, and CAPT Anita Lopez. Behind them is NOAA Ship *Thomas Jefferson*.)

Photo Credit: Greg Raymond

NOAA'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>



Ferdinand R. Hassler

Homeport and Commander: New Castle, NH – LCDR Ben Evans

Primary Mission Category: Hydrographic Surveys

Ship Status: Underway August 12 - 21, 2013 & August 26 - 30, 2013

DEPART: New Castle, NH **ARRIVE:** New Castle, NH

Project: Hydrographic Survey Operations in the Approaches to Portsmouth, NH

Objectives:

- 1) 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.
- 2) To test the new NOAA multibeam echosounder autonomous underwater vehicle (AUV) during ship operations. This will help determine next steps and operational constraints of hydrographic data acquisition using an AUV.

Henry B. Bigelow

Homeport and Commander: Woods Hole, MA (currently docked in Newport, RI) – CDR Kurt Zegowitz

Primary Mission Category: Fisheries Research

Ship Status: Underway July 29 – August 19, 2013

DEPART: Newport, RI **ARRIVE:** Newport, RI

Project: Atlantic Marine Assessment Program for Protected Species (AMAPPS) – Cetacean and Turtle Abundance Survey

Objectives:

- 1) Determine the distribution and abundance of cetaceans, sea turtles and sea birds within the study area.
- 2) Collect vocalizations of cetaceans using passive acoustic arrays.
- 3) Determine the distribution and relative abundance of plankton using bongo nets with Conductivity, Temperature and Depth gauges (CTDs), the Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS), visual plankton recorder and EK-60 single beam echo sounder.
- 4) Collect hydrographic and meteorological data.
- 5) When possible, collect biopsy samples and photo-identification pictures of cetaceans.

Okeanos Explorer

Homeport and Commander: North Kingstown, RI – CDR Ricardo Ramos

Primary Mission Category: Oceanographic Exploration and Research

Ship Status: Underway July 31 – August 17, 2013 & August 23 – September 4, 2013

DEPART: New York, NY **ARRIVE:** North Kingstown, RI

DEPART: North Kingstown, RI **ARRIVE:** North Kingstown, RI

First Project: Northeast U.S. Canyons Explorations

First Project Objectives: Mapping the sea floor with an EM302, multibeam sonar and an EK60 single beam sonar, as well as ocean exploration with a remotely operated vehicle (ROV). The cruise will be shown in real time through live feeds on the oceanexplorer.noaa.gov website via telepresence capabilities. Operations will be focused on the eastern portion of the Northeast U.S. Canyons. The daily schedule will usually be split between daytime ROV operations (>500m) and evening/night Conductivity, Temperature and Depth (CTD) rosette and mapping operations.

Second Project: Summer Ecosystem Monitoring Survey (ECOMON)

Second Project Objectives: The cruise has numerous objectives to address research goals of several programs within the Ecosystem Process Division of the Northeast Fisheries Science Center (NEFSC) and outside collaborators including: Climate research program, Ocean acidification program, Ecosystem science in support of stock assessments program, Science in support of ecosystem assessments program, development of new technologies to support ecosystem studies, habitat mapping and NEFSC outreach and education objectives. The specific objectives include:

- 1) Assess changing biological and physical conditions which influence the sustainable productivity of the living marine resources of the northeast continental shelf ecosystem using CTD's and bongo nets at

stations located at predetermined randomly stratified locations. CTD will collect electronic data on temperature, salinity, density, and oxygen.

- 2) Trends in ocean acidification and nutrient levels will be determined by collecting water samples using a rosette sampler at predetermined fixed locations.
- 3) Detail incursion of Labrador Current water into the Gulf of Maine by conducting CTD casts in deep basin areas.
- 4) Collect samples for the Census of Marine Zooplankton Project by the use of 20-cm bongos piggybacked above the 61-cm bongos.
- 5) Analyze the size spectrum of water column particles using the Laser In-Situ Scattering and Transmissometry (LISST) instrument.
- 6) Determine the abundance and distribution of larval and juvenile yellowtail flounder (*Limanda ferruginea*) in the survey areas surveyed.
- 7) Report northern right whale and other marine mammal bird and turtle sightings.
- 8) Collect acoustic data using the EK60 single beam unit from along the cruise track, as well as SCS data.
- 9) Collect data with new optical plankton equipment, the ImagingFlowCytobot plumbed into the Scientific Seawater System
- 10) Conduct sea floor mapping in the Wilkinson and Georges Basin areas of the Gulf of Maine.
- 11) Conduct opportunistic Isaacs-Kidd midwater trawls near areas of puffin habitat that are near our planned cruise track in the Gulf of Maine.

Thomas Jefferson

Homeport and Commander: Norfolk, VA – CDR Lawrence Krepp

Primary Mission Category: Hydrographic Surveys

Ship Status: Underway August 12 – 29, 2013

DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA

Project: Hydrographic Survey Operations in the Delaware Bay and Approaches, DE

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.

Nancy Foster

Homeport and Commander: Charleston, SC – LCDR Nick Chrobak

Primary Mission Category: Oceanographic Research, Environmental Assessment

Ship Status: Underway August 9 – 15, 2013 & August 21 – 28, 2013

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

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

First Project: Fernandina Beach Ocean Dredged Material Disposal Sites (ODMDS) Habitat Assessment & Mayport Post Disposal Sediment Profile Imaging (SPI) Survey

First Project Objectives: The survey's objective is to sediment map the Jacksonville ODMDS to evaluate and verify the spatial extent of impact as a result of the Mayport deepening project. The survey will also identify and quantify the hard bottom habitat within the Fernandina Beach ODMDS.

Second Project: Atlantic Deep-Water Canyons

Second Project Objectives: This cruise is a collaborative effort between NOAA's Office of Ocean Exploration and Research (OER), the Bureau of Ocean Energy Management (BOEM), CSA Ocean Sciences, Inc. (CSA), the US Geological Survey (USGS), and academic partners. This interagency study focuses on the exploration and investigation of deep water hard bottom biological communities and shipwreck sites located in and around the deep sea canyons offshore Virginia and Maryland. All three agencies have a vested interest in the discovery and characterization of new ocean phenomena and dynamic processes that provide essential information and baseline characterizations to help better understand the Nation's ocean resources.

- 1) Retrieve one lander from the mouth and one lander from the head of Baltimore Canyon. (Landers are observational platforms that sit on the seabed or benthic zone to record physical, chemical or biological activity, and are usually autonomous.)
- 2) Retrieve one mooring from the center of Baltimore Canyon.
- 3) As time allows, conduct bottom trawling and/or CTD casts for hydrographic profiles in Baltimore Canyon. Water samples may be collected, but not on every cast.
- 4) Retrieve one lander from the mouth and one lander from the head of Norfolk Canyon.
- 5) Retrieve one mooring from the center of Norfolk Canyon.
- 6) As time allows, conduct bottom trawling, multibeam mapping, and/or CTD casts in the Norfolk Canyon area.
- 7) Conduct limited education and outreach activities (internet postings, essays).

Ronald H. Brown

Homeport and Commander: Charleston, SC – CAPT Mark Pickett

Primary Mission Category: Oceanographic Research, Environmental Assessment

Ship Status: Underway August 1 – 23, 2013 & August 28 – September 25, 2013

DEPART: Reykjavik, Iceland **ARRIVE:** Madeira, Portugal

DEPART: Madeira, Portugal **ARRIVE:** Natal, Brazil

Project for both cruises: Global Ocean Ship-based Hydrographic Investigations Program (GO-SHIP)
Repeat hydrography cruise A16 North

Objectives for both cruises: The GO-SHIP Repeat Hydrography Program provides a robust observational framework to monitor long-term trends of physical chemical and biological parameters in the ocean. The goal of the effort is to occupy a set of hydrographic transects with full water column measurements over the global ocean to study physical and hydrographic changes over time. These measurements are in support of:

- 1) Model calibration and validation
- 2) Carbon system studies
- 3) Heat and freshwater storage and flux studies
- 4) Deep and shallow water mass and ventilation studies
- 5) Calibration of autonomous sensors

Participating Institutions

Primary: United States Department of Commerce and National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory (NOAA/AOML)

Additional: Rosenstiel School of Marine and Atmospheric Science/University of Miami (RSMAS), Pacific Marine Environmental Laboratory (PMEL), Florida State University (FSU), Scripps Institution of

Oceanography/University of California at San Diego (SIO), University of Hawaii at Manoa (U Hawaii), University of California, Santa Barbara (UCSB), University of Washington at Seattle (U Washington), Texas A&M University (TAMU), Woods Hole Oceanographic Institution (WHOI), Princeton University (Princeton), Lamont-Doherty Earth Observatory/ Columbia University (LDEO), University of California Irvine (UCI), National Aeronautics and Space Administration (NASA).

Gordon Gunter

Homeport and Commander: Pascagoula, MS – CDR Hancock

Primary Mission Category: Fisheries Research

Ship Status: Underway August 5 – 24, 2013 & August 28 – September 16, 2013

DEPART: Norfolk, VA **ARRIVE:** Charleston, SC

DEPART: Charleston, SC **ARRIVE:** Pascagoula, MS

Project: Atlantic Marine Mammal Assessment Survey

Objectives: Conduct visual line-transect surveys to estimate the abundance and spatial distribution of cetaceans in U.S. Atlantic waters.

- 1) Conduct passive acoustic surveys simultaneous with visual surveys to provide supplemental information on cetacean abundance and spatial distribution.
- 2) Collect tissue samples (biopsies) of select cetaceans from the bow of the *Gordon Gunter*.
- 3) Collect data on distribution and abundance of sea turtles, seabirds, and other marine life.
- 4) Collect oceanographic and environmental data including scientific echosounders (EK60) and acoustic Doppler current profiler (ADCP) data to quantify acoustic backscatter due to small fish and zooplankton.
- 5) Collect vertical profiles of hydrographic parameters (e.g., temperature, salinity, oxygen concentration) using CTD and XBTs.

Oregon II

Homeport and Commander: Pascagoula, MS – Master Dave Nelson

Primary Mission Category: Fisheries Research

Ship Status: July 26 – August 8, 2013 & August 10 -25, 2013

DEPART: Pascagoula, MS **ARRIVE:** Mayport, FL

DEPART: Mayport, FL **ARRIVE:** Pascagoula, MS

Project: 2013 Shark / Red Snapper Bottom Longline Survey

Objectives:

- 1) Sample the U.S. Atlantic and northern Gulf of Mexico for data concerning the distribution and abundance of shark and red snapper populations in order to aid in stock assessments.
- 2) Collect morphological measurements and biological samples to facilitate life history studies.
- 3) Provide tagging opportunities for coastal teleosts and sharks.
- 4) Conduct CTD casts to profile water column temperature, salinity, conductivity, transmissivity, dissolved oxygen concentrations and fluorometry.

Pisces

Homeport and Commander: Pascagoula, MS – CDR Peter Fischel

Primary Mission Category: Fisheries Research

Ship Status: Underway August 21 – September 7, 2013

DEPART: Pascagoula, MS **ARRIVE:** Pascagoula, MS

First Project: Southeast Area Monitoring and Assessment Program (SEAMAP) Fall Ichthyoplankton

Objectives:

- 1) Assess the occurrence, abundance, and distribution of the early life stages of fall spawning fishes (especially king and spanish mackerel, red drum, and snappers), during the SEAMAP fall plankton survey of U.S. continental shelf waters in the Gulf of Mexico.
- 2) Describe the pelagic habitat of fish larvae through measurements of various physical and biological parameters.
- 3) Map the distribution of fish eggs and invertebrate zooplankton along the cruise track using a Continuous Underway Fish Egg Samples (CUFES).
- 4) Collect detailed observations of net-caught jellyfish and ctenophores.
- 5) Measure the vertical distribution of fish larvae by sampling at discrete depths in the water column at selected locations along the SEAMAP plankton survey grid using a 1m Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS).



NOAA Ship *Ferdinand R. Hassler* underway – departing NOAA Marine Operations Center-Atlantic in Norfolk, VA, for her homeport of New Castle, NH.

July 2013 – Photo Credit: CDR Keith Roberts, NOAA

Bell M. Shimada

Homeport and Commander: Newport, OR – CDR Scott Sirois

Primary Mission Category: Fisheries Research

Ship Status: Underway July 23 – August 10, 2013 & August 13 – 30, 2013

DEPART: Newport, OR **ARRIVE:** Port Angeles, WA

DEPART: Port Angeles, WA **ARRIVE:** Newport, OR

Project: 2013 Joint U.S.-Canada Integrated Acoustic and Trawl Survey of Pacific Hake and Pacific Sardine (SaKe 2013)

Objectives: The primary goal of the survey is to estimate the biomasses, distributions, and biological compositions of Pacific hake and Pacific sardine populations using data from an integrated acoustic and trawl survey off the west coast of the U.S. and Canada from approximately San Diego, California (Latitude 32°48.0174'N) to the north end of Vancouver Island, Canada (Latitude 50°45.65'N).

McArthur II

Homeport: Newport, OR

Ship Status: The ship is currently docked in Newport, OR, in layup status.

Rainier

Homeport and Commander: Newport, OR – CDR Rick Brennan

Primary Mission Category: Hydrographic Surveys

Ship Status: Underway July 29 – August 15, 2013 & August 19 – September 5, 2013

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

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

Project: Hydrographic Survey Operations around South Alaska Peninsula and Shumagin Islands, AK

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.

Fairweather

Homeport and Commander: Ketchikan, AK – CDR James Crocker

Primary Mission Category: Hydrographic Surveys

Ship Status: Underway July 30 – August 13, 2013 & August 15 – August 29, 2013

DEPART: Seattle, WA **ARRIVE:** San Francisco, CA

DEPART: San Francisco, CA **ARRIVE:** San Diego, CA

Project: West Coast Ocean Acidification Survey

Objectives:

- 1) To characterize ocean acidification (OA) conditions on the U.S. west coast;
- 2) To conduct inter-calibration measurements near other OA observing assets in the study area, such as moorings, allowing inter-calibration of these autonomous assets with high-quality, ship-based measurements;

- 3) To provide calibration data needed to develop predictive models for aragonite saturation state, pH, and other important OA indicators in the California Current System, based on widely measured parameters such as salinity, temperature, and oxygen concentration;
- 4) To provide quantitative assessment of phytoplankton, zooplankton, and harmful algal bloom activity in conjunction with OA measurements; and
- 5) To provide scientific information on OA conditions and trends for resource management and decision support.

Oscar Dyson

Homeport and Commander: Kodiak, AK – CDR Mark Boland

Primary Mission Category: Fisheries Research

Ship Status: Underway July 22 – August 9, 2013 & August 14 – 30, 2013

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

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

First Project: Gulf of Alaska Summer Pollock Survey

First Project Objectives:

- 1) Collect acoustic trawl (AT) data necessary to determine the distribution, biomass, and biological composition of walleye Pollock and other midwater fishes.
- 2) Collect target strength data using hull-mounted or lowered transducers for use in scaling acoustic data to estimates of absolute abundance.
- 3) Calibrate the ER60 acoustic systems using standard sphere calibration techniques.
- 4) Conduct trawl hauls to ground truth multi-frequency acoustic data classification of fish and other organisms.
- 5) Deploy a stereo-camera system (Cam-Trawl) in the midwater trawl to optically sample fish.
- 6) Deploy a drop-camera system to identify echosign in situations where trawls cannot occur.
- 7) Collect physical oceanographic data (temperature, salinity, and oxygen profiles) at selected sites, and continuously collect sea surface temperatures and salinity data.
- 8) Collect sea floor data at selected sites using the ME70 multi-beam echosounder.
- 9) Evaluate the use of an optically-triggered stereo camera system to sample fish and other organisms near the seafloor.

Second Project: Ecosystem Monitoring and Assessment (EMA) - Ecosystems & Fisheries-Oceanography Coordinated Investigations (EcoFOCI) Juvenile Walleye Pollock and Forage Fish Survey

Second Project Objectives: The overall goal is to improve and reduce uncertainty in stock assessment models of commercially important fish species through the collection of observations of fish and oceanography. Observations for fish include abundance, size, distribution, diet and energetic status. Oceanographic observations include conductivity-temperature at depth, and nutrient levels. These fish and oceanographic observations are used to connect climate change and variability in large marine ecosystems to early marine survival of commercially important fish species in the Gulf of Alaska, Bering Sea, and Arctic.

Hi'ialakai

Homeport and Commander: Honolulu, HI – CDR Mike Ellis

Primary Mission Category: Oceanographic Research, Environmental Assessment

Ship Status: Underway August 1 – 23, 2013

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

Project: Main Hawaiian Islands Reef Assessment and Monitoring Program (MHI RAMP)

Objectives:

- 1) Support assessment and monitoring operations in the waters surrounding Hawai'i, Maui County, Kaua'i County, and O'ahu.
- 2) Conduct ecosystem monitoring of the species composition, abundance, percent cover, size distribution, recruitment, and general health of the fishes, corals, other invertebrates, and algae of the shallow water coral reef ecosystems of the MHI.
- 3) Deploy and/or service an array of Subsurface Temperature Recorders (STRs), Ecological Acoustic Recorders (EARs), Acoustic Doppler Current Profilers (ADCPs), Autonomous Reef Monitoring Structures (ARMs), Calcification Accretion Units (CAUs), and Bioerosion Monitoring Units (BMUs), to allow remote long-term monitoring of oceanographic and environmental conditions affecting the coral reef ecosystem of the MHI. This effort is in support of the Coral Reef Ecosystem Integrated Observing Systems (CREIOS).
- 4) Monitor near shore physical and ecological factors associated with ocean acidification and general water quality, including analysis of seawater for nutrients, chlorophyll concentration, salinity, temperature, dissolved oxygen, transmissivity, total alkalinity and dissolved inorganic carbon.
- 5) Collect shallow water coral cores to examine calcification/growth rates in recent decades and assess potential early impacts of ocean acidification.
- 6) Conduct investigations of marine microbial communities, examine physical and biological linkages supporting and maintain the island ecosystems, and determine the existence of threats of these coral reef resources from anthropogenic sources, including marine debris.

Oscar Elton Sette

Homeport and Commander: Honolulu, HI – LCDR Stephanie Koes

Primary Mission Category: Fisheries Research

Ship Status: Underway July 30 – August 11, 2013 & August 18 – September 5, 2013

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

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

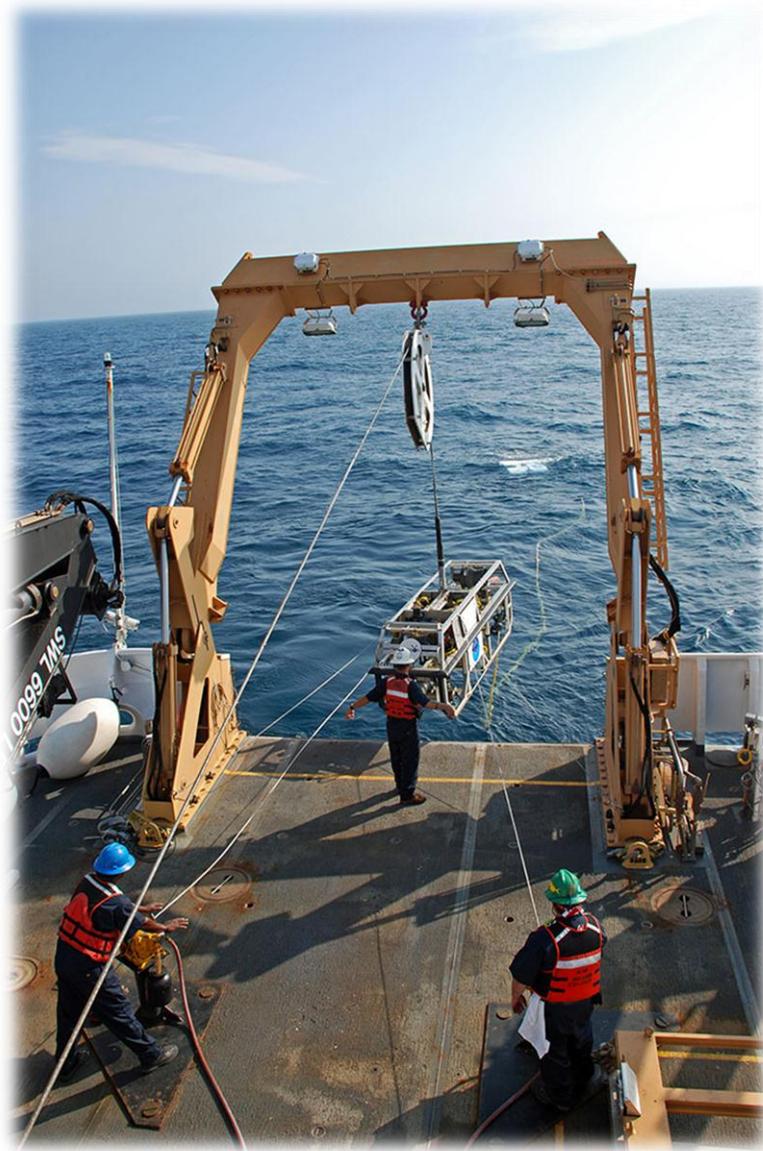
First Project: Comparison of Fishery-Independent Sampling Methods for Main Hawaiian Islands Bottomfish

First Project Objectives: This research project will target areas (grid cells) where density of Deep-7 bottomfish is expected to be high. Target areas will be selected based on spatial surveys conducted during prior research projects and in-situ sampling. Areas with high bottomfish density will be resampled. Areas found to have low bottomfish density will not be resampled. This is a departure from the traditional stratified-random sampling protocol, and is being adopted to ensure that adequate data density to compare the selected sampling methods is achieved as quickly as possible. Once comparison is complete, a subset of sampling methods will be selected for the full stratified-random survey.

Ka'imimoana

Homeport: Honolulu, HI

Ship Status: The ship is currently in a layup status in Newport, OR.



**NOAA Ship *Okeanos Explorer* launching camera sled *Seirios* in Northeast U.S. Canyons region.
ROV *Deep Discoverer* can be seen floating aft of the ship.**

July 2013 - Photo Credit: NOAA *Okeanos Explorer* Program

NOAA's Aircraft



WP-3D (N42RF) while flying in close proximity with the National Science Foundation aircraft, NCAR C-130.

July 2013 - Photo Credit: Lynne Gratz of UW Bothell

WP-3D (N42RF)

Home Base:	OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander:	TBD
Current Mission:	2013 Hurricane Reconnaissance and Research – Western Atlantic and Gulf of Mexico until November 30, 2013

Radar reconnaissance missions on 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 NWS hurricane specialists with the ultimate outcome being improved accuracy of intensity and track forecasts, extended forecast/warning lead-times and improved confidence levels by decision makers.

WP-3D (N43RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: TBD
Current Mission: 2013 Hurricane Reconnaissance and Research – Western Atlantic and Gulf of Mexico until November 30, 2013

Aircraft will also be supporting Hurricane Reconnaissance and Research flights.

Twin Otter (N46RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Atlantic City, NJ
Aircraft Commander: LT Chris Daniels
Current Mission: Coastal Mapping equipment evaluation from August 15 – September 30, 2013.

NGS Remote Sensing Division (RSD) is evaluating a new bathymetric LIDAR system which is designed to support and enhance the coastal mapping mission. Mission flights will be initially based out of Atlantic City, NJ. The project Areas of Interest (AOI) will be over areas affected by Sandy, these include: Little Egg/ Beach Haven inlet and Barnegat Inlet; Great Egg Harbor Inlet and Bay; and the Barnegat Bay Intracoastal Waterway. Additional priority areas in New Jersey and New York may be developed.

Twin Otter (N48RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Eden Prairie, MN
Aircraft Commander: TBD
Current Mission: Snow Survey / Water Resources until late August.

Aircraft will operate throughout mountainous portions of the US and the Midwest to collect soil moisture measurements and to establish new survey lines. The National Operational Hydrologic Remote Sensing Center (NOHRSC) has developed, and currently maintains, an operational Airborne Gamma radiation Snow Survey Program to make airborne Snow Water Equivalent (SWE) and soil moisture measurements. These measurements are used by NWS Weather Forecast Offices (WFO) and NWS River Forecast Centers (RFC) when issuing river and flood forecasts and water supply forecasts.

Twin Otter (N57RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: West Hampton, NY
Aircraft Commander: ENS Kevin Doremus
Current Mission: Riverhead survey - Atlantic waters off of NY, NJ until August 8, 2013

The aircraft is conducting a riverhead marine mammal survey. The project will collect abundance data on marine mammals and sea turtles in the Mid-Atlantic region. These surveys will help NOAA and BOEM fill gaps in survey coverage throughout the year.

Twin Otter (N56RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Southeastern/South Central/Southwestern Alaska
Aircraft Commander: LTJG David Cowan
Current Mission: Harbor Seal Survey, August 1 - 14, 2013

The National Marine Fisheries Service / National Marine Mammal Laboratory will conduct a Harbor Seals survey beginning August 1st. Project will photograph harbor seals hauled out on the Alaska coastline during the molt season, which takes place in August. Also, a related freshwater population of Harbor Seals exists in Lake Iliamna and will be surveyed as well. All seals haul outs are photographed with a GPS linked digital camera then later counted from the digital images.

Jet Prop Commander (N45RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Fort Wayne, IN
Aircraft Commander: LT Paul Hemmick
Current Mission: Gravity for the Redefinition of the American Vertical Datum (GRAV-D). Upper Midwest/South Central Canada from August 1 – 31, 2013.

Aircraft will be supporting the GRAV-D mission which will acquire gravity data of interior areas of the U.S. and Canada to upgrade the vertical datum. Project is also planning to partner with the USGS to collect magnetic data while collecting gravity data. This data will help to correct up to 2 meter height errors in the current reference system (NAVD88) and support navigation, surveying, mapping, construction of buildings, bridges, roads, and a host of other economic sectors dependent upon accurate positioning. It will also improve hydrologic information on the flow of water, important for flood plain mapping and evacuation routing.

Gulfstream IV (N49RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: TBD
Current Mission: Hurricane Surveillance. Western Atlantic and Gulf of Mexico until November 30, 2013.

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. The 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.

King Air (N68RF)

Home Base: Manassas, VA
Aircraft Commander: LCDR Jon Neuhaus / LT Rebecca Waddington
Current Mission: Various locations for coastal mapping. Continuous operations.

For August, the King Air will be supporting Coastal mapping in the Northeast. Aircraft will be undergoing an engine swap in early to mid-August. Following installation the King Air will transit to the west coast for coastal mapping projects. The aircraft will be on stand-by for redeployment if post hurricane damage assessment flights are needed.



NOAA Twin Otter N56RF - NOAA uses this versatile aircraft for a variety of missions, including marine mammal and sea turtle observation, snow surveys, and shoreline change monitoring.

Photo: Kip Evans

Unmanned Systems Support

Puma

Training flights were conducted August 8. At the end of August, one of the NOAA Puma pilots, along with a NOAA civilian operator, will be flying an Army Puma system in the Channel Islands National Marine Sanctuary. They will be surveying for Blue Whales and assessing marine activities in the sanctuary.



NASA Global Hawk

**NASA Global Hawk UAS - Dryden Flight Facility, Edwards AFB, CA.
Hurricane and Severe Storm Sentinel Program
Crew: LCDR Jon Neuhaus/CAPT Phil Hall**

The Hurricane and Severe Storm Sentinel (HS3) is a five-year mission specifically targeted to investigate the processes that underlie hurricane formation and intensity change in the Atlantic Ocean basin. HS3 will utilize two Global Hawks, one with an instrument suite geared toward measurement of the environment and the other with instruments suited to inner-core structure and processes.

<http://www.espo.nasa.gov/hs3/>

A new ground based Global Hawk Operations Center (ground control room) that consists of an operations element and a payload element has been built at the NASA Wallops Flight Facility. HS3 will be the first campaign to utilize this new, state of the art facility.

NASA C-23 Sherpa

Fairbanks, AK. Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), Arctic region in Alaska. August 2-16

A NOAA Corps pilot, LCDR Phil Eastman, will be flying as Second In Command on the NASA Sherpa aircraft for the CARVE project. The project will collect detailed measurements of important greenhouse gases on local to regional scales in the Alaskan Arctic and demonstrate new remote sensing and improved modeling capabilities to quantify Arctic carbon fluxes and carbon cycle-climate processes. Ultimately, CARVE will provide an integrated set of data that will provide experimental insights into Arctic carbon cycling. Deployments will occur during the summer and early fall when Arctic carbon fluxes are large and change rapidly. Other NOAA Corps pilots will supplement NASA pilots periodically during the project.

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's Office of Marine and Aviation Operations' research and survey ships to work under the tutelage of scientists and crew, including officers of the NOAA Commissioned Officer Corps. 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.

The following NOAA Ships will have Teachers At Sea onboard in the month of **August** and you may find their blogs and other information at <http://teacheratsea.noaa.gov/2013/index.html>.

NOAA Ship *Oregon II*

Name: Ms. Julie Karre

School: Armistead Gardens Elementary and Middle School, Baltimore, MD

Subjects: English and Language Arts

Cruise: Shark / Red Snapper Bottom Long Line

<http://teacheratsea.noaa.gov/2013/karre.html>

Name: Ms. Elizabeth Harrington

School: Essex High School, Essex Junction, VT

Subjects: Earth Science, Physical Science and Forensics

Cruise: Shark/Red Snapper Bottom Long Line

<http://teacheratsea.noaa.gov/2013/harrington.html>

NOAA Ship *Oscar Dyson*

Name: Ms. Julia Harvey

School: Eugene SD 4J, Eugene, OR

Subjects: Biology and Environmental Science

Cruise: Alaska Pollock Survey

<http://teacheratsea.noaa.gov/2013/harvey.html>

Name: Ms. Melissa George

School: Lafayette Tecumseh Junior High School, Lafayette, IN

Subjects: General Science, gifted and ELL

Cruise: Alaska Pollock Survey

<http://teacheratsea.noaa.gov/2013/george.html>

NOAA Ship *Rainier*

Name: Ms. Katie Sard

School: Isaac Newton Magnet School, Newport, OR

Subjects: Science

Cruise: Hydrographic Survey

<http://teacheratsea.noaa.gov/2013/sard.html>



On July 17, Christina Peters, a 4th grade teacher from Maryland, set sail on the NOAA Ship *Oregon* // to help scientists survey groundfish in the Gulf of Mexico! You can follow her blog here:

<http://teacheratsea.noaa.gov/2013/peters.html>

About OMAO

NOAA's Office of Marine and Aviation Operations operates a wide variety of specialized aircraft and ships to complete NOAA's environmental and scientific missions. OMAO is also responsible for the administration and implementation of the [NOAA Diving Program](#), [Small Boat Program](#) and [Aviation Safety Program](#), to ensure safe and efficient operations in NOAA-sponsored underwater activities and aviation and small boat operations. The Director of OMAO and the [NOAA Corps](#) is Rear Admiral Michael S. Devany (two star). Rear Admiral (lower half or one star) David A. Score is the director of the Marine and Aviation Operations Centers. Captain Anne Lynch is the director of the NOAA Commissioned Personnel Center.

NOAA's [Aircraft Operations Center](#) (AOC), located at the MacDill Air Force Base in Tampa, Florida, is home to NOAA's fleet of aircraft. These fixed-wing aircraft operate in some of the world's most remote and demanding flight regimes--over open ocean, mountains, coastal wetlands, Arctic pack ice, and in and around hurricanes and other severe weather--with an exemplary safety record. There are no comparable aircraft in the commercial fleet to support NOAA's atmospheric and hurricane surveillance/research programs. AOC provides unique specialized platforms to NOAA's scientists. The hard-working versatile aircraft collect the environmental and geographic data essential to NOAA [hurricane](#) and other [weather and atmospheric research](#); provide aerial support for [coastal](#) and [aeronautical](#) charting and [remote sensing](#) projects; conduct aerial surveys for [hydrologic](#) research to help predict flooding potential from snow melt, and provide support to NOAA's [fishery](#) research and marine mammal assessment programs.

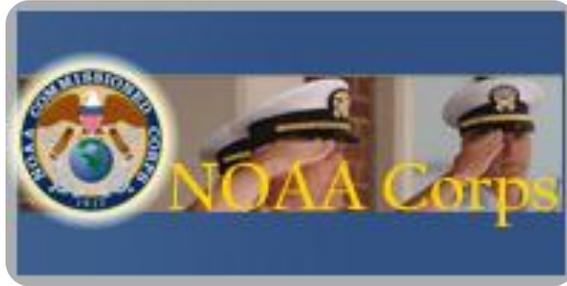


NOAA's ship fleet provides [hydrographic survey](#), [oceanographic](#) and [atmospheric](#) research, and [fisheries](#) research vessels to support NOAA's strategic plan elements and mission. The vessels are located in various locations around the United States. The ships are managed by the [Marine Operations Center](#), which has offices in [Norfolk](#), Virginia, [Newport](#), Oregon, and Honolulu, Hawai'i. Logistic support for these vessels is provided by the Marine Operations Center offices or, for vessels in Woods Hole, Massachusetts; Charleston, South Carolina; Pascagoula, Mississippi; San Diego, California; Kodiak and Ketchikan, Alaska; and Honolulu, Hawaii; by Port Captains located in those ports.



NOAA's aircraft and ship fleet is operated and managed by a combination of NOAA Corps Officers, wage marine and civilian employees. NOAA Corps pilots are the only pilots in the world who are trained and qualified to fly into hurricanes at dangerously low altitudes (below 10,000 feet). Officers and OMAO civilians also frequently serve as chief scientists on program missions. The wage marine and civilian personnel include licensed engineers, mechanics, navigators, technicians, and members of the engine, steward, and deck departments. Administrative duties and navigation of the vessels are performed by the commissioned officers. The aircraft and ship's officers and crew provide mission support and assistance to embarked scientists from various NOAA laboratories as well as the academic community.

In addition to NOAA's research fleet, OMAO is fulfilling NOAA's ship and aircraft support needs with contracts for ship and aircraft time with other sources, such as the private sector and the university fleet.



The NOAA Commissioned Officer Corps

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

The NOAA Commissioned Officer Corps (NOAA Corps) is one of the seven uniformed services of the United States 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 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 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.
- 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.
- 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.

Find out more about the Corps, its mission and history at <http://www.noaacorps.noaa.gov/>.

