NOAA Fleet Update

FOR SEPTEMBER 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.

Find us on Facebook for the latest news and activities.

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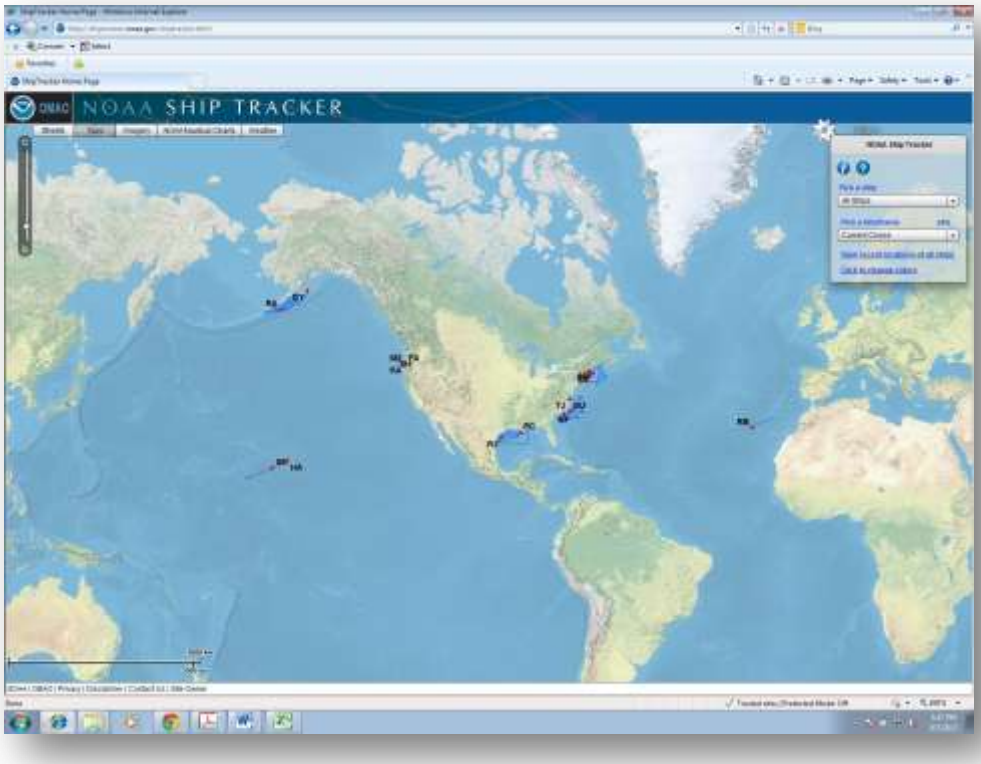
Many thanks to Acting Deputy Secretary of Commerce Dr. Patrick Gallagher for visiting the OMAO's Marine Operations Center-Atlantic (MOC-A) in Norfolk, Virginia, on August 29. We also welcomed to MOC-A NOAA's Deputy Under Secretary for Operations, Mr. David Kennedy; the National Weather Service's Deputy Assistant Administrator, Ms. Laura Furgione; and the National Ocean Service's Deputy Assistant Administrator, Mr. Russell Callender.
We very much appreciate their time and interest!

(Left to right: RDML David Score, DUS-O David Kennedy, CDR Larry Krepp, Acting Deputy Secretary Dr. Patrick Gallagher, CAPT Anita Lopez, LCDR Christiaan van Westendorp, NWS DAA Laura Furgione, and NOS DAA Russell Callender. Behind them is NOAA Ship *Thomas Jefferson.*)

Photo Credit: Dante Deangelis, NOAA

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 September 4 – September 13, 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
Change of Command occurs September 20th – CDR G. Mark Miller
Primary Mission Category: Fisheries Research
Ship Status: Underway September 3 – 30, 2013
DEPART: Newport, RI **ARRIVE:** Newport, RI

Project: Autumn Multispecies Bottom Trawl Survey

Objectives:

1) Determine the autumn distribution and relative abundance of fish and invertebrate species found on the continental shelf, including variable amounts of additional biological information obtained through intensive sampling effort.
2) Opportunistically test trawl gear, methods, or survey related equipment that may benefit the trawl survey in the future.
3) Collect oceanographic data including CTD casts and bongo tows at selected stations
4) Collect acoustic data along cruise tracks, as well as test and conduct preliminary survey operations with acoustic systems including the EK-60 and ME-70 sonars.

Okeanos Explorer

Homeport and Commander: North Kingstown, RI – CDR Ricardo Ramos
Primary Mission Category: Oceanographic Exploration and Research
Ship Status: Underway August 23 – September 4, 2013
DEPART: North Kingstown, RI **ARRIVE:** North Kingstown, RI
DEPART: North Kingstown, RI **ARRIVE:** North Kingstown, RI

Project: Summer Ecosystem Monitoring Survey (ECOMON)

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 September 4 – 20, 2013 & September 23 – 30, 2013
DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA
DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA

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

Objectives: To support safe navigation though 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 31 – September 7, 2013 & September 10 – 23, 2013
DEPART: Charleston, SC **ARRIVE:** Charleston, SC
DEPART: Charleston, SC - short inports in Tampa, FL **ARRIVE:** Charleston, SC

First Project: Mapping Essential Fish Habitat in the Southeast US to Support Fisheries Management and Spatial Planning

First Project Objectives: Scientists will collect high resolution sidescan, multibeam, and acoustic fisheries sonar data, in shallow depths approximately 20-55 meters, to characterize seafloor habitats within fishing grounds and proposed outer continental shelf (OCS) energy development regions. The objective of this project is to collect sidescan sonar for 110% seafloor ensonification. Simultaneous multibeam bathymetry and backscatter will be collected, but at less than 100% coverage, with selected areas covered in higher detail. Fishery acoustics data will be collected to characterize broad-scale fish abundance, biomass, and habitat utilization patterns, as well as to locate and document fish spawning aggregations. The strategies developed for each survey area will take into account the minimum depths, general bathymetry, and time allotment. The delineation and identification of seafloor habitats will be used to identify and delineate hard-bottom and shipwrecks in the study area. These targets will be revisited in future missions to conduct biological characterization and habitat groundtruthing.

Second Project: Pensacola and Tampa Florida Ocean Dredged Material Disposal Site (ODMDS)s – A Status and Trends Study

Second Project Objectives: Obtain samples allowing for a characterization of the benthos and water column within and surrounding the Tampa and Pensacola ODMDSs. The major questions asked by the survey are:

1) How does the sediment chemistry, sediment biology, grain size, and water column parameters compare between the areas used for ocean disposal and the areas left undisturbed?
2) How has the sediment chemistry, sediment biology, grain size, and water column parameters changed due to continual use of the ODMDS? A secondary question to be addressed by the survey will hopefully provide groundtruthing of the appropriate background water quality parameters to be used in water quality models (e.g. STFATE) for evaluation of dredged material proposed for ocean disposal in either of the ODMDSs.

Ronald H. Brown

Homeport and Commander: Charleston, SC – CAPT Mark Pickett
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway September 1 – October 1, 2013
DEPART: Madeira, Portugal **ARRIVE:** Natal, Brazil

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

Objectives: 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 28 – September 16, 2013
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: Underway August 30 – September 13, 2013 & September 15 – 29, 2013
DEPART: Pascagoula, MS **ARRIVE:** Galveston, TX
DEPART: Galveston, TX **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 & September 11 – 28, 2013
DEPART: Pascagoula, MS **ARRIVE:** Pascagoula, MS
DEPART: Pascagoula, MS **ARRIVE:** Pascagoula, MS

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).

Sunrise over Kodiak, AK as seen from the bridge of NOAA Ship *Oscar Dyson*.
August 2013 – Photo Credit: Kathryn Hough, NOAA

Rainier

Homeport and Commander: Newport, OR – CDR Rick Brennan
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway August 19 – September 5, 2013 & September 9 – 26, 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.

Bell M. Shimada

Homeport and Commander: Newport, OR – CDR Scott Sirois
Primary Mission Category: Fisheries Research
Ship Status: Underway September 9 – 19, 2013 & September 22 – 30, 2013
DEPART: Newport, OR **ARRIVE:** Newport, OR
DEPART: Newport, OR **ARRIVE:** Newport, OR

Project: Juvenile Salmon Ocean Ecology Survey

Objectives: Work closely with our partners in the NMFS Northwest Fisheries Science Center. This annual survey is part of a collaborative and ongoing coast-wide (California to Washington) study of junvenile slamonids and their ocean habitat.

1) Determine the inerannual and seasonal variability of growth, feeding, energy status, and spatial distribution of juvenile salmonids in the coastal ocean off northern California and southern Oregon; determine the migration pathways and spatial distributions of genetically distinct stocks (ESUs) of salmonids during their early ocean residence.
2) Characterize prominent biological and physical oceanographic features associated with juvenile salmon ocean habitat from shore to the continental shelf break; identify potential links between coastal geography, oceanographic features, and salmon distribution patterns, energy status, and diet; quantify and describe the coastal pelagic fish and invertebrate community associated with juvenile salmon.
3) Quantify seabird distribution, abundance, and foraging activity in the vicinity of salmon and other pelagic fish and invertebrates.

McArthur II

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

Fairweather

Homeport and Commander: Ketchikan, AK – CDR James Crocker
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway September 9 – 20, 2013 & September 23 – 30, 2013
DEPART: San Diego, CA **ARRIVE:** San Diego, CA
DEPART: San Diego, CA **ARRIVE:** San Diego, CA

Project: Hydrographic Survey Operations on approaches to Los Angeles Long Beach, CA

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. In addition, test two autonomous aircraft during the ship transit from San Luis Obispo Bay, CA to Newport, OR.

Oscar Dyson

Homeport and Commander: Kodiak, AK – CDR Mark Boland
Primary Mission Category: Fisheries Research
Ship Status: Underway September 4 – 19, 2013 & September 23 – 30, 2013
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK

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

Objectives: 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 September 3 – 19, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

Project: Northwestern Hawaiian Islands Reef Assessment and Monitoring Program (NWHI RAMP)

Objectives:

1) Support assessment and monitoring operations in the waters surrounding French Frigate Shoals, Lisianski Island, and Pearl and Hermes Atoll.
2) Deploy and/or service an array of Subsurface Temperature Recorders (STRs), Sea Surface Temperature buoys (SSTs), Ecological Acoustic Recorders (EARs), Acoustic Doppler Current Profilers (ADCPs), Autonomous Reef Monitoring Structures (ARMs), Calcification Accretion Units (CAUs), and Bioerosion Monitoring Units (BMUs), to facilitate remote, long-term, monitoring of oceanographic and environmental conditions affecting the coral reef ecosystems of the NWHI.
3) Measure surface and near reef water samples for parameters associated with ocean acidification and climate change, including analysis of seawater for salinity, total alkalinity (TA), and dissolved inorganic carbon (DIC). The water used to measure these parameters will be collected via niskin bottle grab samples, conductivity-temperature-depth (CTD) casts, and remotely operated water sampling devices.
4) Conduct shipboard CTD measurements to a depth of 500m, and shipboard ADCP surveys around reef ecosystems to examine physical and biological linkages supporting and maintain the island ecosystems.
5) Collect oceanographic data utilizing ship-based measurement systems (ADCP, ThermoSalinoGraph-TSG, and the Scientific Computer System-SCS), during all transits for the duration of the project.
6) Conduct investigations of marine microbial communities, including the collection of specimens via water sampling and plankton tows.
7) Determine the existence of threats to the health 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 August 18 – September 5, 2013 & September 11 – 30, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

First Project: Life History Survey – Johnston Atoll

First Project Objectives: Collect a sample size of n=50 adult individuals from each of the Deep-7 bottomfish species inhabiting Johnston Atoll. Pelagic stage larvae and juveniles of each of the Deep-7 bottomfish species will also be sampled using a midwater trawl. Pelagic stage sampling will include the offshore area adjacent to Johnston Atoll and in the intervening oceanic waters between Johnston Atoll and Hawai'i during the return leg of this project.

Second Project: Monk Seal Camp Recovery

Second Project Objectives:

1) Demobilize Hawaiian monk seal research program field camps at three sites. This includes recovering personnel, equipment, and supplies from field camps at French Frigate Shoals (FFS), Laysan Island, and Pearl and Hermes Reef (PHR).
2) Translocate juvenile Hawaiian monk seals from French Frigate Shoals to Laysan Island
3) Deploy and recover a short term NMFS monk seal field camp at Lisianski Island.
4) Deploy monk seal personnel for day surveys of Necker Island, Nihoa Island, Midway Atoll, and Kure Atoll.
5) Transfer personnel supplies at camps at Laysan Island for the U.S. Fish and Wildlife Service (USFWS) and to Kure Atoll for the State of Hawaii Department of Land and Natural Resources (DLNR), Department of Fish and Wildlife (DOFAW).
6) While transiting between islands, the project will conduct conductivity-temperature-depth (CTD) casts opportunistically.

Ka'imimoana

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

NOAA Ship *Rainier* deploying one of their launches near the Shumagin Islands, AK
August 2013 - Photo Credit: NOAA

NOAA's Aircraft

WP-3D aircraft on the tarmac at the NOAA Aircraft Operations Center in Tampa, FL, after a rainstorm.

Photo Credit: Chris Urso, Tampa Tribune

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: LTJG Sandor Silagi
Current Mission: Coastal Mapping equipment evaluation from September 4 – 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 (N57RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: West Hampton, NY
Aircraft Commander: ENS Michael Hirsch
Current Mission: Riverhead survey - Atlantic waters off of NY, NJ and Delaware. September 27 – October 7, 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: West Coast
Aircraft Commander: LT John Rossi
Current Mission: Leatherback Turtle Survey. September 3 – October 5, 2013

Aircraft will conduct a leatherback turtle survey along the West Coast. The survey will investigate distribution and abundance of endangered leatherbacks relative to seasonal oceanographic features, and support capture and sampling of free-swimming leatherbacks by an in-water team.

Twin Otter (N48RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: TBD
Current Mission: Training

Aircraft will be utilized for training.

Jet Prop Commander (N45RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Current Mission: Scheduled Maintenance. Expected completion is mid November.

Aircraft will be undergoing scheduled maintenance and an avionics upgrade.

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: LT Rebecca Waddington
Current Mission: Various locations for coastal mapping. Continuous operations.

For September, the King Air will be supporting Coastal mapping on the east and west coasts. The aircraft will be on stand-by for redeployment if post hurricane damage assessment flights are needed.

NOAA WP-3D Orion and National Science Foundation C-1300Q take a break during flights at Tennessee's Smyrna Airport, from which the sensor-packed planes are supporting a multi-organization mission to study air quality in the Southeastern U.S.

Photo: Unknown

Unmanned Systems Support

Puma

Location: Beaufort/Chuckchi Sea
Dates: September 8 – 15, 2013
Pilot in Command: ENS Kevin Doremus

The Puma Unmanned Aerial System will be operated from the United States Coast Guard Cutter (USCGC) HEALY, a polar icebreaker, in the waters north of Barrow, AK. The Puma will be used to search, detect, and map the ice flow from above, with the goal to assess its capability to assist oil recovery crews with navigational support. A major goal outside of the oil spill demonstration includes demonstrating the Puma capabilities to the USCG so that they can assess the value of utilizing a UAS onboard.

Location: Florida Keys, FL – Florida Keys National Marine Sanctuary Survey
Dates: September 13 – 23, 2013
Pilot in Command: LTJG Tanner Sims

NOAA's Office of National Marine Sanctuaries will utilize the Puma Unmanned Aerial Systems to conduct living marine resource surveys in the Florida Keys National Marine Sanctuary.

Bird's eye view of a seabird colony off Pt. Greenville, WA as seen from a Quadrocopter unmanned aircraft NOAA is using to study marine life in Olympic Coast National Marine Sanctuary.
Photo: LCDR Jason Mansour, NOAA

NASA Global Hawk UAS

Location: Wallops Flight Facility, VA
Mission: Hurricane and Sever Storm Sentinel Program – Until September 23, 2013
Crew: LCDR Jon Neuhaus/CAPT Phil Hall (NOAA Pilots)

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 (picture below), one with an instrument suite geared toward measurement of the environment and the other with instruments suited to inner-core structure and processes. More information on this program may be viewed at 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

Location: Fairbanks, AK
Mission: Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), Arctic region in Alaska. September 2-16
Pilot in Command: LT David Gothan

A NOAA Corps pilot 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 **September** and you may find their blogs and other information at http://teacheratsea.noaa.gov/2013/index.html.

NOAA Ship *Oregon II*
Name: Ms. Louise Todd
School: Audobon Aquarium of the Americas, New Orleans, LA
Subjects: Science and customer service and presentation skills
Cruise: Shark / Red Snapper Bottom Long Line
http://teacheratsea.noaa.gov/2013/todd.html

NOAA Ship *Oscar Dyson*
Name: Ms. Britta Culbertson
School: Oed – Einstein Fellow, Washington, DC
Subjects: Science
Cruise: FOCI EMA YOY Pollock
http://teacheratsea.noaa.gov/2013/culbertson.html

NOAA Ship *Rainier*
Name: Ms. Susy Ellison
School: Yampah Mountain High School, Glenwood Springs, CO
Subjects: Earth Science and Life Science
Cruise: Hydrographic Survey
http://teacheratsea.noaa.gov/2013/ellison.html

NOAA Ship *Henry B. Bigelow*
Name: Mr. John Clark
School: Deltona High School, Deltona, FL
Subjects: Chemistry and Physics
Cruise: Autumn Bottom Trawl Survey
http://teacheratsea.noaa.gov/2013/clark.html

Did you know you can find lots of interesting facts about the ocean on the NEW NOAA Teacher at Sea webpage called "Did You Know-Tweets from Sea?" Our teachers not only participate in hands-on research, they also take amazing photos. So we've combined these fun facts and high-resolution photos into one spot so you can share them with your students and friends.

http://teacheratsea.noaa.gov/dyk/#box20_text

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.

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 Unites 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/.