NOAA Fleet Update

FOR JUNE 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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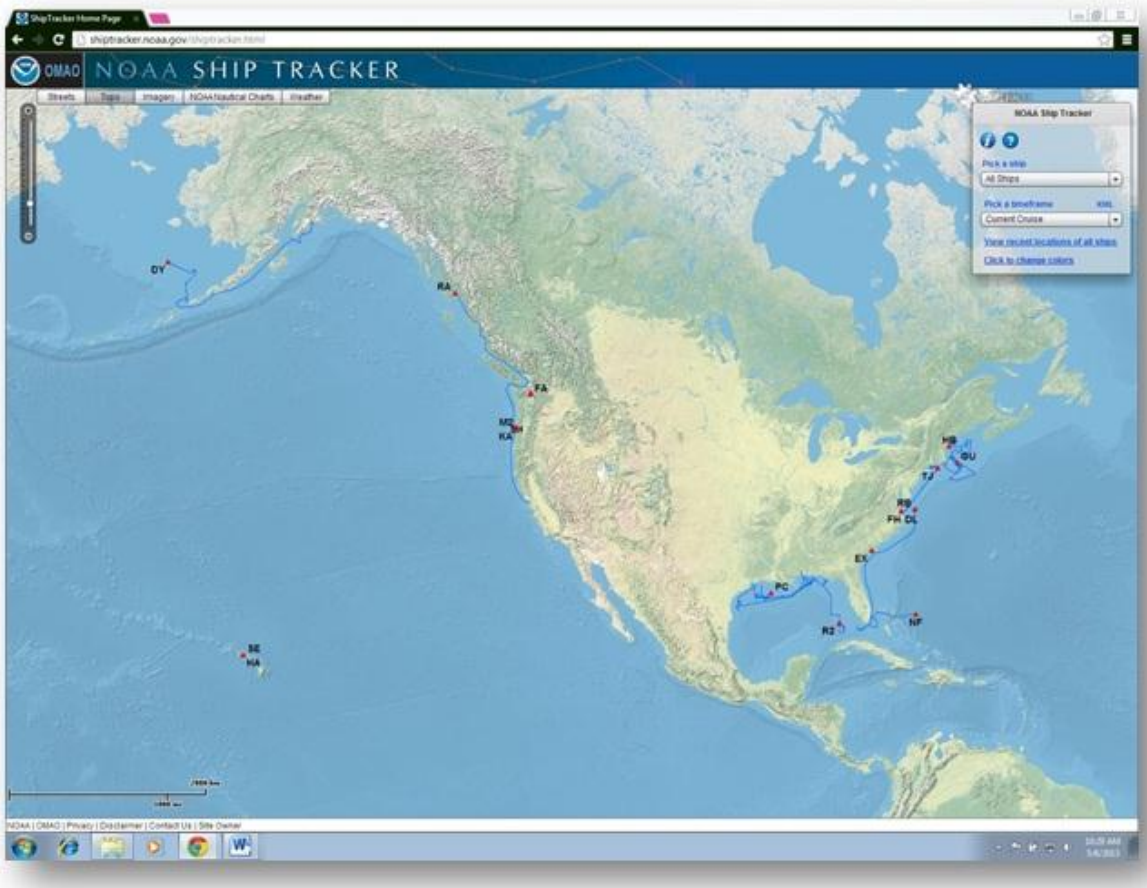
NOAA Corps Basic Officer Training Class (BOTC) 121 Graduation occurred on May 31, 2013. Dr. Sullivan and Rear Admiral Devany are trooping the line (reviewing the newest members of the Corps).

Photo Credit: PO3 Cory J. Mendenall, USCG

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: In port in Norfolk, VA, finishing the Post-Availability Drydock (PAD) period, which involves equipment upgrades and dockside repairs. Shakedown is scheduled for June 20.

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 June 10 – 24, 2013
DEPART: Newport, RI **ARRIVE:** Newport, RI

Project: Deep-Sea Corals and Benthic Habitat: Ground-truthing and exploration in deepwater canyons off the Northeast

Objective: With the overall goal of surveying and ground-truthing known or suspected deep-sea coral habitats associated with deepwater canyons off the coast of the northeastern US, a team of biological oceanographers, taxonomists, modelers, and physical scientists will conduct a program having the following objectives:
1. Survey canyon area and intercanyon slope habitats using TowCam; with concurrent sampling of environmental factors (i.e. depth, hydrography) to characterize benthic habitats and identify areas of coral presence;
2. Ground-truth areas predicted to be coral hotspots based on data provided from a habitat suitability model;
3. Ground-truth newly collected multibeam data;
4. Ground-truth historical coral records;
5. Conduct multibeam mapping in areas where data are missing or incomplete;
6. Assemble a database of photographs, species identification, species abundances/distributions;
7. Assemble maps of geo-referenced coral locations and associated data;
8. Provide research opportunities for teachers and professional researchers;

Okeanos Explorer

Homeport and Commander: North Kingstown, RI – CDR Ricardo Ramos
Primary Mission Category: Oceanographic Exploration and Research
Ship Status: Underway June 11 – 29, 2013
DEPART: North Kingstown, RI **ARRIVE:** North Kingstown, RI

Project: New England Seamount Chain Exploration
Objective: EX-13-03 will be focused on mapping the western extent of the New England Seamount Chain. Transit mapping operations will collect bathymetric, water column backscatter, and seafloor backscatter data over Balanus, Bear, Buell, Mytilus, Physalia, Panulirus, Picket, and Retriever Seamounts in accordance with request from the scientific community. Survey mapping operations will collect continuous bathymetric, water column backscatter, and seafloor backscatter data over Asterias, Atlantis II, Gosnold, Kelvin, Kiwi, and Sheldrake also in accordance with request from the scientific community. Additionally, survey mapping will complement existing data collected as part of the US Extended continental shelf program, and was designed in consultation with ECS scientists.

Thomas Jefferson

Homeport and Commander: Norfolk, VA – CDR Lawrence Krepp
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway June 3 – 14, 2013 & June 17 – July 3, 2013
DEPART: Norfolk, VA **ARRIVE:** Baltimore, MD
DEPART: Baltimore, MD **ARRIVE:** Norfolk, VA

Project: Hydrographic Survey Operations in the Approaches to New York, NY and Delaware Bay, DE

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

Nancy Foster

Homeport and Commander: Charleston, SC – LCDR Nick Chroback
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway June 2 -15, 2013 & June 19 – 30, 2013
DEPART: Savannah, GA **ARRIVE:** Charleston, SC
DEPART: Charleston, SC **ARRIVE:** Charleston, SC

First Project: Gray's Reef National Marine Sanctuary Regional Development and Assessment Cruise

First Project Objectives: 1. Ship based mapping and characterization of benthic habitats in the water around Gray's Reef National Marine Sanctuary (GRNMS). Collected data will need to include backscatter. 2. Continuation of invertebrate recruitment investigation in Gray's Reef. This project will include diving to assess the colonization and succession of invertebrates to areas of natural substrate. 3. Continue investigations to quantify variation in space and time of the abundance of schooling prey and mid-water predators at mid-shelf reefs: this involves conducting survey lines using the EK-60 survey system. 4. Continue collecting data on the abundance, diversity and distribution of both fishes and invertebrates both inside and outside the proposed Research Area in Gray's Reef. This will require divers to conduct visual fish censuses along transects and take pictures of quadrats to assess invertebrate fauna. 5. Continue ecological characterizations of the condition of benthic fauna and concentrations of chemical contaminants in sediments and biota at GRNMS.

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

Second 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.

Ronald H. Brown

Homeport and Commander: Charleston, SC – CAPT Mark Pickett
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Alongside Charleston, SC preparing for an extended field season in the North and South Atlantic Oceans.

Gordon Gunter

Homeport and Commander: Pascagoula, MS – LCDR Jeff Taylor
Primary Mission Category: Fisheries Research
Ship Status: Underway June 5 – 24, 2013
DEPART: Newport, RI **ARRIVE:** Norfolk, VA

Project: Late Spring Ecosystem Monitoring Survey

Objective: The principal objective of the survey is to assess the various components of the Northeast U.S. Continental Shelf Ecosystem from water currents to plankton, juvenile fishes, marine mammals, sea turtles, and seabirds. Specifically we will quantify the spatial distribution of the following parameters: water currents, water properties, phytoplankton, microzooplankton, mesozooplankton, juvenile fish and invertebrates, sea turtles, marine mammals, and sea birds. Operational objectives are to: (1) collect underway data using TSG, SCS, EK-60 Scientific Sounder and ADCP; (2) complete CTD and bongo operations at stations throughout area, (3) collect marine mammal and seabird observations

Oregon II

Homeport and Commander: Pascagoula, MS – Master Dave Nelson
Primary Mission Category: Fisheries Research
Ship Status: Underway June 7 – 21, 2013 & June 23 – July 7, 2013
DEPART: Pascagoula, MS **ARRIVE:** Galveston, TX
DEPART: Galveston, TX **ARRIVE:** Pascagoula, MS

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

Objective: Sample the northern Gulf with Southeast Area Monitoring and Assessment Program (SEAMAP) standard trawl sampling gear to determine the abundance and distribution of benthic fauna. Transmit information weekly, via email, for real time reports of catch rates of penaeid species. Collect size measurements to determine population size structures. Record profiles through the water column of temperature, salinity, fluorescence, dissolved oxygen, and turbidity using a Conductivity/Temperature/Depth (CTD) unit at SEAMAP stations. Transmit data every 3 days to the NOAA National Coastal Data Development Center at Stennis Space Center, Mississippi and other researchers to map the hypoxic zone. Collect water samples daily and perform dissolved oxygen tests using benchtop Winkler titrations and an Orion 3 Star Portable D.O. meter. Assess the occurrence, abundance and geographical distribution of the early life stages of ichthyoplankton using a bongo frame fitted with a 0.335 mm net and a neuston frame fitted with a 0.950 mm net at selected SEAMAP stations.

Pisces

Homeport and Commander: Pascagoula, MS – CDR Peter Fischel
Primary Mission Category: Fisheries Research
Ship Status: Underway May 27 – June 7, 2013 & June 12 – 27, 2013
DEPART: Tampa, FL **ARRIVE:** Mayport, FL
DEPART: Mayport, FL **ARRIVE:** Mayport, FL

First Project: Southeast Area Monitoring and Assessment Programs (SEAMAP) Reef Fish Survey &

First Project Objective: Survey 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 blocks 93, 94, 128, and 129W in the western Gulf of Mexico as well as blocks 51, 69, 87, 163, 179, 180, and 196 in the eastern Gulf. Additional areas will be selected for mapping while at sea.

Second Project: SouthEast Fishery Independent Survey (SEFIS)

Second Project Objective: Conduct applied fishery-independent sampling research focusing on (1) the assessment of spatial variability in distribution and abundance of species within the snapper-grouper complex, (2) comparative analysis of fish traps, video cameras, and acoustics, and (3) bathymetric data collection (for subsequent habitat mapping) over hard bottom habitats.

Bell M. Shimada

Homeport and Commander: Newport, OR – CDR Scott Sirois
Primary Mission Category: Fisheries Research
Ship Status: Underway June 6 – 28, 2013
DEPART: Newport, OR **ARRIVE:** San Francisco, CA

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

Objective: 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 (lat 32°48.0174'N) to the north end of Vancouver Island, Canada (lat 50°45.65'N).

Rainier

Homeport and Commander: Newport, OR – CDR Rick Brennan
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway June 15 – July 3, 2013
DEPART: Juneau, AK **ARRIVE:** Kodiak, AK

Project: Hydrographic Survey Operations in Chatham Strait, AK

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

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: Dry Dock in Seattle, WA, at Lake Union Drydock having new davits installed
ANTICIPATED DEPARTURE: July 12, 2013

Oscar Dyson

Homeport and Commander: Kodiak, AK – CDR Mark Boland
Primary Mission Category: Fisheries Research
Ship Status: Underway June 5 – 26, 2013
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK

Project: Gulf of Alaska Summer Pollock Survey

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 sterio-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.

Hi'ialakai

Homeport and Commander: Honolulu, HI – CDR Mike Ellis
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway May 14 – June 8, 2013 & June 25 – July 2, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

First Project: Papahānaumokuākea Marine National Monument (PMNM) Biogeography

First Project Objective: The ship will support SCUBA and snorkeler collections of reef fish, corals, other invertebrates, and algae for population genetics analysis; surveying and monitoring reefs and associated reef fish, as well as searching for invasive/alien species of coral and algae. The ship may also support a SCUBA-based maritime archaeological survey. These studies allow Federal and State resource managers to better understand the resources under their jurisdictions.

Second Project: Site monitoring of U.S. Environmental Protection Agency (EPA) – designated ocean dredged material disposal sites in Hawaiian Islands (South Oahu and Hilo sites).

Second Project Objective: The South Oahu and Hilo ocean dredged material disposal sites (ODMDS) were designated by EPA Region 9 and actively used beginning in the 1980s. The South Oahu site has received the highest volume of dredged material, generated from construction and maintenance dredging

by the U.S. Navy in Pearl Harbor. The primary objective of site monitoring is to assess performance and site conditions relative to disposal operations, including: determination of the horizontal extent of the dredged material deposit footprint relative to site boundaries; no adverse impacts of disposal of dredged material (i.e., no impacts on benthic fauna); and confirmation of pre-disposal sediment testing (i.e., no adverse chemical contamination issues, relative to ambient conditions). Site monitoring activities are expected to include: multi-beam bathymetry, sediment profile imaging (SPI) with plan view camera, and sediment sampling (grain size, chemistry, and benthic community).

Oscar Elton Sette

Homeport and Commander: Honolulu, HI – CDR Stephanie Koes
Primary Mission Category: Fisheries Research
Ship Status: Underway May 7 – June 5, 2013 & June 12 – 26, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

First Project: Cetaceans Population Assessment

First Project Objective: The 2013 Papahānaumokuākea Associated Cetacean Ecology Survey (PACES) is a cetacean assessment survey of the waters surrounding the Northwestern Hawaiian Islands, from the islands and atolls out to the Papahānaumokuākea Marine National Monument (PMNM) boundary (50 nm from shore). The overall objective of PACES is to evaluate the distribution, abundance, and population structure of cetaceans in the waters around the Northwestern Hawaiian Islands, collecting data needed to refine stock structure and estimate abundance for cetacean species in this region. The study will include collection of biopsy samples, identification photographs, telemetry data, and acoustic recordings of individual cetaceans and cetacean groups.

Second Project: Kona Integrated Ecosystem Assessment Survey

Second Project Objective: Collect information to describe the physical, chemical, and biological oceanographic environment as well as to observe cetacean activity along the west coast of Hawaii as support for the monitoring component of the NOAA Kona Region Integrated Ecosystem Assessment (IEA) program. The proposed survey grid will allow comparison of oceanographic features between the Kohala shelf region to the north and the deeper offshore region to the south as well as near-shore and offshore. This research is also in support of Pacific Island Fisheries Science Center (PIFSC) and National Marine Fisheries Service (NMFS).

Ka'imimoana

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

NOAA's Aircraft

Twin Otter N56RF recently completed a research mission over the Bering Sea, looking for endangered ice seals

Photo credit – ENS Kevin Doremus, NOAA

WP-3D (N42RF)

Home Base:	OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander:	LCDR Justin Kibbey / CDR Mark Sweeney
Current Mission:	Southeastern Nexus (SENEX) Project, Southeastern U.S., June 1 - July 15, 2013

This will be a joint use of the NOAA WP-3D aircraft by the Climate Research & Modeling Program and Air Quality Program. This intensive measurement period in the Southeast U.S. region will support the objectives of both Programs while maximizing the use of the aircraft and minimizing the costs to NOAA. The climate change study will focus on the sources and processes that are responsible for the formation and transformation of climate forcing agents, including ozone and aerosols, in the atmosphere and their influence on the earth's balance. The Air Quality component of the regional study is leveraged by the multi-agency Secondary Ozone and Aerosol Study (SOAS) and will build on the Southern Oxidants Study conducted by NOAA and partners in this region in the 1990s. The aircraft will be used to diagnose the factors responsible for emissions of ozone and aerosol precursors and their formation mechanisms.

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, June 1 – 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.

Twin Otter (N46RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Current Mission: None

The aircraft will be undergoing scheduled maintenance and then utilized for flight training and proficiency flights.

Twin Otter (N48RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Eden Prairie, MN
Aircraft Commander: LTJG John Rossi
Current Mission: Snow Survey / Water Resources Calibration – Upper Midwest. May – Mid- June, 2013

Aircraft will conduct calibration flights in conjunction with N45RF in order to have a second Twin Otter aircraft capable of performing Snow Water Equivalent and Soil Moisture measurements.

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 Robert Mitchell
Current Mission: Steller Sea Lion Survey, June 16 – July 10, 2013

The National Marine Fisheries Service / National Marine Mammal Laboratory will conduct aerial surveys of endangered and threatened Steller sea lions to estimate abundance of pups, juveniles and adults on land during the summer breeding season. Steller sea lions are listed under the Endangered Species Act and the information obtained during these surveys is critical for monitoring recovery of the species and for management of commercial fisheries in federal waters of the North Pacific Ocean. Three cameras will be

installed in a specialized motion-compensating mount that is controlled by a computer. Photos will be taken of the Sea Lion rookeries and then later analyzed to get accurate counts of the animals.

Twin Otter (N57RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: LT Francisco Fuenmayor / CDR Jeff Hagan
Current Mission: Gulf of Maine and New England waters. North Atlantic Right Whale Surveys – until July 31, 2013

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 in the winter, spring, summer and fall seasons, 5) provide sightings of dead Whales, 6) provide information on the distribution of shipping and fishing gear, and 7) census seal populations along the New England coast.

Jet Prop Commander (N45RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Base (winter months): Eden Prairie, MN
Aircraft Commander: LT Paul Hemmick
Current Mission: Snow Survey/Water Resources Calibration – Upper Midwest - until Mid-June, 2013

Aircraft will conduct calibration flights in conjunction with N48RF.

Gulfstream IV (N49RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Current Location: Savannah, GA
Current Mission: None

Aircraft undergoing scheduled and unscheduled maintenance work. Will be outfitted for Hurricane Surveillance operations once complete. Approximate date of completion: early July.

King Air (N68RF)

Home Base: Manassas, VA
Aircraft Commander: CDR Mark Sweeney / CDR Al Girimonte
Current Mission: Florida, North Carolina, Virginia, and New Jersey. Testing/Coastal Mapping. Continuous operations.

At the beginning of the month, the aircraft will have the standard Coastal Mapping dual cameras re-installed following a scheduled maintenance period, along with three Riegl LiDAR sensors: the LMS-Q680i, LMS-780Q and the bathymetric VQ-820G. The first two to three weeks of June will be dedicated to testing theses sensors. Flights will be conducted in four locations: Fort de Soto, FL, Duck, NC, Corbin, VA, and Barnegat Bay, NJ. During the tests we will have a Riegl representative on board. Once the tests

are complete, the aircraft will return to MacDill AFB to deinstall the LiDARs. The dual cameras will remain in the aircraft for Coastal Mapping projects at the end of June.

NASA Partnerships – C-23 Sherpa

NASA C-23 Sherpa - Fairbanks, AK. Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), Arctic region in Alaska. June 2-16, 2013

A NOAA Corps pilot, LT Rebecca Waddington, 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 unprecedented experimental insights into Arctic carbon cycling. CARVE will use the Arctic-proven C-23 Sherpa aircraft to fly an innovative airborne remote sensing payload. Deployments will occur during the spring, 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

teacheratsea.noaa.gov

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.

The following NOAA Ships will have Teachers At Sea onboard in the month of June:

NOAA Ship *Pisces*
Name: Ms. Elizabeth Nyman
School: University of Louisiana at Lafayette, Lafayette, LA
Subjects: Political Science
Cruise: SEAMAP Reef Fish Survey

NOAA Ship *Gordon Gunter*
Name: Ms. Sue Cullumber
School: Howard Gray School, Scottdale, AZ
Subjects: Science – all areas
Cruise: Ecosystems Monitoring Survey

NOAA Ship *Oscar Dyson*
Name: Ms. Maria Crouch
School: Maywood MS/Issaquah, Renton, WA
Subjects: Science – Earth and Space; Robotics
Cruise: Alaska Pollock Survey

Name: Ms. Amie Ell
School: White Salmon Valley S.D., White Salmon, WA
Subjects: Science – Earth and Space
Cruise: Alaska Pollock Survey

NOAA Ship *Henry B. Bigelow*
Name: Ms. Beverly Owens
School: Middle School, Greensville, NC
Subjects: Science
Cruise: Deepwater Coral Habitat

NOAA Ship *Oscar Elton Sette*
Name: Mr. Adam Renick
School: Health Sciences High School, San Diego, CA
Subjects: Science – Earth and Planetary
Cruise: Kona Integrated Ecosystem Assessment Survey

NOAA Ship *Rainier*
Name: Mr. Robert Ulmer
School: Lake Butler Middle School, Lake Butler, FL
Subjects: Science – Physical, Biological, and Earth Sciences
Cruise: Hydrographic Survey

NOAA Ship *Thomas Jefferson*
Name: Ms. Yaara Crane
School: Fairfax County Public Schools – Annandale High School, Annandale, VA
Subjects: Science – General Chemistry, IB Chemistry
Cruise: Hydrographic Survey

NOAA Ship *Oregon II*
Name: Ms. Sarah Boehm
School: Community Day Charter Public School, Lawrence, MA
Subjects: Science
Cruise: SEAMAP Summer Groundfish Survey

Unmanned Systems Support

NOAA – Puma and Quadrocopter

Puma and Quadracopter MD4-1000 UAS - Washington state coast. Olympic Coast National Marine Sanctuary (OCNMS) survey. June 17-30.
Pilots in Command: LCDR Jason Mansour (Quadracopter)/LTJG Tanner Sims (Puma)
NOAA is employing specialized Unmanned Aerial Systems to conduct scientific research and surveys along the OCNMS, operated by NOAA Corps officers from NOAA's Aircraft Operations Center. NOAA's Office of National Marine Sanctuaries will utilize the PUMA AE DDL platform to conduct living marine resource surveys and marine debris detection. The MD4-1000 Quadrocopter will utilize it's high resolution camera and vertical takeoff and landing capability to photograph sea bird colonies that are difficult to access along the rugged coastline.

NASA Global Hawk

NASA Global Hawk UAS - Dryden Flight Faciliy, Edwards AFB, CA. Flight Tests.
Crew: LCDR Jon Neuhaus/CAPT Phil Hall
NOAA Corps Pilots will supplement NASA pilots on three Global Hawk flights planned during the month. Two new instruments are being installed on one of the NASA Global Hawk aircraft (NASA 871); the UAV Synthetic Aperture Radar (UAVSAR) and Land Vegetation and Ice Sensor (LVIS). Test flights will be conducted within the Edwards Air Force Base restricted air space. These flights will clear the instruments for flights outside of the restricted area. After the checkout flights are completed, the science team has requested to conduct one operational flight to the Arctic in late June. This mission will collect Sea Ice, Permafrost, and Terrain Data at locations with high scientific value in order to demonstrate the UAVSAR and LVIS capabilities.

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 and Newport, Oregon. 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/.