The following update provides the status of NOAA’s fleet of ships and aircraft, which play a critical role in the collection of oceanographic, atmospheric, hydrographic, and fisheries data. NOAA’s current fleet of 16 ships – the largest civilian research and survey fleet in the world – and nine aircraft, are operated, managed, and maintained by NOAA’s Office of Marine and Aviation Operations (OMAO). OMAO includes civilians, mariners, and officers of the United States NOAA Commissioned Officer Corps (NOAA Corps), one of the nation’s seven Uniformed Services.
Table of Contents

OMAO in the News ................................................................. 5

NOAA Commissioned Officer Corps ............................................. 6

Basic Officer Training Class 133 ................................................ 7

OMAO’s Ships and Centers ______________________________________ 9

National .................................................................................. 9

OMAO’S MARINE OPERATIONS .......................................... 9

New Castle, New Hampshire ...................................................... 11

NOAA Ship Ferdinand R. Hassler ............................................... 11

Newport, Rhode Island ............................................................ 11

NOAA Ship Henry B. Bigelow ................................................... 11

Davisville, Rhode Island .......................................................... 11

NOAA Ship Okeanos Explorer .................................................. 11

Norfolk, Virginia ..................................................................... 11

NOAA Ship Thomas Jefferson ................................................... 11

OMAO’S MARINE OPERATIONS CENTER – ATLANTIC (MOC-A) ......................................................... 11

Charleston, South Carolina ....................................................... 11

NOAA Ship Nancy Foster ......................................................... 11

NOAA Ship Ronald H. Brown .................................................. 12

Pascagoula, Mississippi ............................................................ 12

NOAA Ship Pisces ................................................................ 12

NOAA Ship Oregon II .............................................................. 13

NOAA Ship Gordon Gunter ...................................................... 13

San Diego, California ............................................................... 14

NOAA Ship Reuben Lasker ....................................................... 14

Newport, Oregon .................................................................... 14

NOAA Ship Rainier ................................................................ 14

NOAA Ship Bell M. Shimada ................................................... 15

OMAO’S MARINE OPERATIONS CENTER – PACIFIC (MOC-P) ............................................................... 15

Ketchikan, Alaska .................................................................. 16

NOAA Ship Fairweather .......................................................... 16
Kodiak, Alaska
NOAA Ship Oscar Dyson
Honolulu, Hawaii
NOAA Ship Hi’ialakai
NOAA Ship Oscar Elton Sette
OMAO’S MARINE OPERATIONS CENTER – PACIFIC ISLANDS (MOC-PI)
OMAO’s Aircraft
Lakeland, Florida
P3 “Hurricane Hunter” [Tail ID# N42RF]
P3 “Hurricane Hunter” [Tail ID# N43RF]
G-IV “Hurricane Hunter” [Tail ID# N49RF]
King Air [Tail ID# N68RF]
Jet Prop Commander [Tail ID# N45RF]
Twin Otter [Tail ID# N46RF]
Twin Otter [Tail ID# N48RF]
Twin Otter [Tail ID# N56RF]
Twin Otter [Tail ID# N57RF]
Unmanned Aerial System (UAS) Section
OMAO’S AIRCRAFT OPERATIONS CENTER (AOC)
Unmanned Systems Support
Nationwide
OMAO Partnerships
United States House of Representatives
National Science Foundation
Department of Defense – U.S. Pacific Command
Department of Defense – U.S. Northern Command
Department of Homeland Security – U.S. Coast Guard
Department of Defense – U.S. Navy
Teacher at Sea Program
OMAO - NOAA Diving Program
NOAA Diving Center and Program
NOAA Small Boat Program

Office of Marine & Aviation Operations

NOAA Commissioned Officer Corps

OMAO/NOAA Corps Resources

OMAO Sites

Two Pagers, Reports, and Informational Slide Decks

Other Web Resources
HUNGER: The decline of salmon adds to the struggle of Puget Sound’s orcas – The Seattle Times; February 24, 2019.
The crew of the Bell M. Shimada is highlighted in the article regarding chinook salmon research.

Scene on the Sound: Bell M. Shimada Spends this gray day working off the shoreline coast – Shoreline Area News; February 20, 2019. NOAA Ship Bell M. Shimada conducts both acoustic and trawl surveys.
OMAO and the NOAA Corps are an integral part of NOAA and our officers operate OMAO’s research and survey fleet of 16 ships and nine aircraft. Mission areas can range from launching a weather balloon at the South Pole, conducting hydrographic or fishery surveys in Alaska, maintaining buoys in the tropical Pacific, flying snow surveys over the Midwest, or flying our “Hurricane Hunter” aircraft into, or above, hurricanes.

**Basic Officer Training Class (BOTC) 133**
Twelve new officers began BOTC 133 on January 7, 2019 at the United States Coast Guard Academy. These officers represent nine different states with various personal and academic backgrounds.

**Applications Being Accepted**
The NOAA Corps is no longer accepting applications for BOTC 134. A selection board will convene March 2019. Additional information may be found on the [NOAA Corps website](#). Applications are now being accepted for BOTC 135.

**Recruiting Events**
The recruiting team will be attending career fairs again in the spring of 2019.
On Monday, January 7, 2019, the NOAA Corps Oath of office was administered to the twelve new officers of Basic Officer Training Class 133. Congratulations to the following men and women on their Commission:

Kennieth L. Brewer  
Lakeland, FL

Kaitlyn O. Brogan  
Virginia Beach, VA

Iris Z. Ekmanis  
Kailua Kona, HI

Patrick T. Faha  
Morganville, NJ

Kyler W. Johnson  
Sonora, CA

Collin O. McMillan  
Wilmington, NC

Danielle M. Koushel  
Port Saint Lucie, FL

Timothy V. Montera  
Bellmore, WA

Adam W. Rand  
East Falmouth, MA

Jane D. Saunders  
Greenville, SC

Brandon Z. Schleiger  
Bremerton, WA

Kevin A. Tarazona  
Miami, FL

BOTC 133/OCS 2-19 recently finished up the "Indoctrination" phase of training and is now fully into "Junior Status." Indoctrination week is the first phase and employs stress, physical motivation, and remedial motivation techniques to jump start the "forming" stage of group development. Life during Junior Status means starting the academic curriculum
and puts increasing demands on the officer candidates' time management, teamwork, attention to detail, and task prioritization.

RDML Nancy Hann, Deputy Director NOAA Corps, is the class's flag officer co-sponsor along with RADM Keith Smith, Fifth District Commander USCG. Flag sponsors meet with the class at key moments in their training to offer mentorship and guidance to the future leaders of the NOAA Corps and Coast Guard. RDML Hann spoke about officership, gave career advice, and answered questions from the BOTC class, presided over drill competition, and addressed the entire company in the barracks and at lunch. Co-sponsoring BOTC/OCS builds upon the strong NOAA/USCG partnership. Admirals Smith and Hann plan to return to New London, Connecticut several times before graduation.
OMAO’s Ships and Centers

OMAO’s Ship Tracker (screen shot below) shows information about the location - present and past - of our fleet of research and survey ships. Please note: To access Ship Tracker you must have an account with a .gov or .mil email address. All other access is restricted.

OMAO’s ships and related Marine Centers are listed below based on the geographical location of the vessels’ homeports starting in the Northeast and ending in the Pacific.

Due to the 35 day lapse in appropriations ship schedules, ship maintenance, and required crew training have been affected to varying degrees. OMAO is working diligently to revise ship schedules, reschedule training and get growth and maintenance contracts awarded in an effort to minimize the impacts from the lapse in appropriations.

National

OMAO’S MARINE OPERATIONS

Director of Marine Operations: Mr. Troy Frost

OMAO’s Marine Operations oversees the operations of OMAO’s ships and the three regional Centers, including the Marine Operations Center-Pacific, Marine Operations Center-Atlantic, and Marine Operations Center-Pacific Islands. Employees of Marine Operations are stationed nationwide to provide strategic, administrative, engineering, maintenance, electronic, budgetary, and personnel support to the OMAO fleet. Each year these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.
New Castle, New Hampshire

**NOAA Ship Ferdinand R. Hassler**

**Commanding Officer:** Lieutenant Commander Mark Blankenship  
**Primary Mission Category:** Hydrographic Surveys  
**In Port:** Brooklyn, New York  
**Ship Status:** Alongside shipyard in Brooklyn, New York, planned departure in April.

Newport, Rhode Island

**NOAA Ship Henry B. Bigelow**

**Commanding Officer:** Captain William Mowitt  
**Primary Mission Category:** Fisheries Research  
**Depart:** Newport, Rhode Island  
**Arrive:** Newport, Rhode Island  
**Ship Status:** Alongside in Newport, Rhode Island for dockside repairs, planned departure in March.

Davisville, Rhode Island

**NOAA Ship Okeanos Explorer**

**Commanding Officer:** Commander Eric Johnson  
**Primary Mission Category:** Oceanographic Exploration and Research  
**In Port:** Pascagoula, Mississippi  
**Ship Status:** Alongside shipyard in Pascagoula, Mississippi. Planned departure in May.
Norfolk, Virginia

NOAA Ship Thomas Jefferson
Commanding Officer: Captain Christiaan van Westendorp
Primary Mission Category: Hydrographic Surveys
In Port: Brooklyn, New York
Ship Status: Alongside shipyard in Brooklyn, New York, planned departure in June.

OMAO’S MARINE OPERATIONS CENTER – ATLANTIC (MOC-A)
Commanding Officer: Captain David Zezula
MOC-A serves as a homeport for one NOAA ship. Its personnel provide administrative and logistical support, and manage the day-to-day operations, for the research and survey ships in NOAA’s Atlantic fleet. Each year, these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.

OMAO’s Marine Operations Center – Atlantic in Norfolk, Virginia.
[Photo Credit: Lieutenant Commander Meghan McGovern, NOAA]

Charleston, South Carolina

NOAA Ship Nancy Foster
Acting Commanding Officer: Lieutenant Commander Matthew Forney
Primary Mission Category: Oceanographic Research, Environmental Assessment
In Port: Charleston, South Carolina
Ship Status: Alongside for dockside period, planned departure in May. The ship will be conducting a command pass-down in April.
NOAA Ship Nancy Foster departs from Charleston, South Carolina on training evolution

[Photo Credit: Keith Martin, NOAA]

**NOAA Ship Ronald H. Brown**

**Commanding Officer:** Captain Daniel Simon  
**Primary Mission Category:** Oceanographic Research, Environmental Assessment  
**Depart:** Charleston, South Carolina  
**Arrive:** Charleston, South Carolina  
**Ship Status:** The ship is underway for Prediction and Research Moored Array in the Atlantic (PIRATA) Northeast Extension project.

---

**Pascagoula, Mississippi**

**NOAA Ship Pisces**

**Commanding Officer:** Commander Nicholas Chrobak/Commander Patrick Murphy  
**Primary Mission Category:** Fisheries Research  
**In Port:** Pascagoula, Mississippi  
**Ship Status:** The ship is currently alongside in homeport for a scheduled repair period. A change of command will take place in late March where Commander Patrick Murphy will take command from Commander Nicholas Chrobak. The ship will be getting underway at the end of March.
NOAA Ship Pisces in dry dock

[Photo Credit: NOAA]

**NOAA Ship Oregon II**
Commanding Officer: Master David Nelson
Primary Mission Category: Fisheries Research
In Port: Pascagoula, Mississippi
Ship Status: The ship is currently alongside in homeport for dockside repairs. Planned departure in April.

**NOAA Ship Gordon Gunter**
Commanding Officer: Lieutenant Commander Christopher Skapin
Primary Mission Category: Fisheries Research
In Port: Pascagoula, Mississippi
Ship Status: The ship is currently alongside in homeport for dockside repairs. Planned departure in April.
San Diego, California

**NOAA Ship Reuben Lasker**

Commanding Officer: Commander Chad Cary  
Primary Mission Category: Fisheries Research  
In Port: San Diego, California  
Ship Status: The ship is currently alongside in homeport for dockside repairs. Planned departure in late March.

Newport, Oregon

**NOAA Ship Rainier**

Commanding Officer: Commander Benjamin Evans  
Primary Mission Category: Hydrographic Surveys  
In Port: Newport, Oregon  
Ship Status: The ship will be alongside in Newport, Oregon for a scheduled extended dockside repair period. Planned departure in early April.
**NOAA Ship Bell M. Shimada**

**Commanding Officer:** Captain Arthur Stark  
**Primary Mission Category:** Fisheries Research  
**Depart:** Seattle, Washington  
**Arrive:** Kodiak, Alaska  
**Ship Status:** Underway conducting the Walleye Pollock survey in the vicinity of Kodiak, Alaska. The data should provide an index of Walleye Pollock abundance in the waters surrounding Kodiak, Alaska. Pollock is the focus of one of the world’s largest fisheries, and the data is of primary value for annual Pollock stock assessments and to brief stakeholders on stock distribution and trends. They will arrive in Newport, Oregon in late March to begin mid-season dockside repairs.

**OMAO’S MARINE OPERATIONS CENTER – PACIFIC (MOC-P)**

**Commanding Officer:** Captain Michael Hopkins  
MOC-P serves as a homeport for two NOAA ships. Its personnel provide administrative and logistical support, and manage the day-to-day operations, for the research and survey ships in NOAA's Pacific fleet. Each year, these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean. MOC-P also serves as the home of OMAO’s Marine Operations.
NOAA Ship *Rainier* in homeport with visiting Scripps research vessel *Roger Revelle*

[Photo Credit: Lieutenant Commander Carl Rhodes, NOAA]

**Ketchikan, Alaska**

**NOAA Ship Fairweather**

**Commanding Officer:** Commander Marc Moser  
**Primary Mission Category:** Hydrographic Surveys  
**In port:** Seattle, Washington  
**Ship Status:** The ship is in a scheduled dry dock repair period in Seattle, Washington through March.

**Kodiak, Alaska**

**NOAA Ship Oscar Dyson**

**Commanding Officer:** Commander Sarah Duncan  
**Primary Mission Category:** Fisheries Research  
**In port:** Seattle, Washington  
**Ship Status:** The ship is currently alongside at the shipyard in Seattle, Washington. The ship’s departure from the shipyard is scheduled for late March. Upon departure the ship will commence with sea trials followed by Operational Readiness Training (ORT). The ship will then begin its field season.
Honolulu, Hawaii

**NOAA Ship Hi’ialakai**
*Commanding Officer:* Commander Colin Little  
*Primary Mission Category:* Oceanographic Research, Environmental Assessment  
*In port:* Vallejo, California  
*Ship Status:* The ship currently alongside at the shipyard in Vallejo, California. Due to the current condition of the ship, it will be towed to MOC-P in mid-March 2019. The ship will remain alongside at MOC-P indefinitely while assessments of the ship’s material condition continue and a determination can be made on the future plans for the vessel.

**NOAA Ship Oscar Elton Sette**
*Commanding Officer:* Commander Héctor Casanova  
*Primary Mission Category:* Fisheries Research  
*In port:* Pearl Harbor, Hawaii  
*Ship Status:* Ship will be alongside in Honolulu, Hawaii for dockside repairs. The ship’s departure for ORT is scheduled for mid to late March. Following completion of ORT, *Oscar Elton Sette* will depart to start its field season.
OMAO'S MARINE OPERATIONS CENTER – PACIFIC ISLANDS (MOC-PI)

Commanding Officer: Commander Jeffrey Shoup

MOC-PI serves as a homeport for two NOAA ships. Its personnel provide administrative and logistical support, and manage the day-to-day operations for the ships in NOAA's Pacific Islands' fleet and for ships operating in the Western Pacific. Each year, these ships conduct dozens of missions to assess fish and marine mammal stocks, conduct coral reef research, collect seafloor data to update nautical charts, and explore the ocean.
Lakeland, Florida

NOAA’s fleet of nine manned aircraft is based at OMAO’s Aircraft Operations Center (AOC). Located at Lakeland Linder Regional Airport in Lakeland, Florida, the officers, crew, and scientists from AOC provide capable, mission-ready aircraft and professional crews to the scientific community. AOC is committed to the safe, efficient and economical use of NOAA aircraft and has more than four decades of experience developing, coordinating and successfully and safely conducting airborne environmental data gathering missions.

P3 “Hurricane Hunter” [Tail ID# N42RF]
Aircraft is undergoing maintenance and scientific instrumentation flights.

P3 “Hurricane Hunter” [Tail ID# N43RF]
Instrumentation and outfitting will continue at AOC until mission-ready on June 30, 2019.

G-IV “Hurricane Hunter” [Tail ID# N49RF]
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Ocean Service, National Geodetic Survey GRAV-D Program.
What: Gravity for the Redefinition of the American Vertical Datum (GRAV-D)
When: Present - March 27
Where: Based in Hawaii and American Samoa. The aircraft will conduct flights over U.S. Pacific Island territories.
Why: Grid pattern flight lines will be flown at 20,000 feet over Hawaii and U.S. Pacific Island territories while collecting GPS and inertial data to update the U.S. vertical datum. A vertical datum is a base measurement point (or set of points) from which all elevations are determined.
King Air [Tail ID# N68RF]
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Ocean Service, National Geodetic Survey’s Coastal Mapping Program
What: Coastal mapping flights
When: Present - July 1
Where: TBD based on weather and tide stages.
Why: These flights provide critical baseline data to help accurately map the U.S. shoreline. The data are important for national security, maritime shipping, and navigation.

Jet Prop Commander [Tail ID# N45RF]
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Weather Service (NWS), National Operational Hydrologic Remote Sensing Center
What: Water Resource Surveys (Snow Survey)
When: Present - May 11
Where: Surveys will be conducted over Minnesota, North Dakota, South Dakota, Montana, Maine, New Hampshire, and Vermont.
Why: The aircraft will conduct low level (500 feet) surveys to collect Snow Water Equivalent data for NWS River Forecast Centers. NWS Weather Forecast Offices and NWS River Forecast Centers use these data when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks.
Twin Otter [Tail ID# N46RF]
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Weather Service (NWS), National Operational Hydrologic Remote Sensing Center
What: Water Resource Surveys (Snow Survey)
When: Present - May 1
Where: Surveys will be conducted over Minnesota, North Dakota, South Dakota, Montana, Maine, New Hampshire, and Vermont.
Why: The aircraft will conduct low level (500 feet) surveys to collect Snow Water Equivalent data for NWS River Forecast Centers. NWS Weather Forecast Offices and NWS River Forecast Centers use these data when issuing river and flood forecasts, water supply forecasts, and spring flood outlooks.

Twin Otter [Tail ID# N48RF]
Aircraft is used for training and scientific instrumentation until March 10.
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Ocean Service, National Geodetic Survey’s Coastal Mapping Program
What: Coastal mapping flights
When: March 11 - July 15
Where: TBD based on weather and tide stages
Why: These flights provide critical baseline data to help accurately map the U.S. shoreline. The data are important for national security, maritime shipping, and navigation.

Twin Otter [Tail ID# N56RF]
Aircraft is in scheduled maintenance until March 15.
Who: Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Marine Fisheries Service (NMFS), Northeast Fisheries Science Center (NEFSC).
What: Northeast North Atlantic Right Whale Surveys
When: March 18 - April 1
Where: Based out of Cape Cod, Massachusetts
Why: The objectives of this project are to provide real time whale sighting information to commercial shipping interests in an effort to reduce ship collisions, to better understand the distribution and abundance, and to collect photographic images of the critically endangered North Atlantic right whales. With as few as 400 remaining, surveillance flights to track their migration patterns are important for conservation and recovery efforts.
**Twin Otter [Tail ID# N57RF]**

**Who:** Officers and crew of OMAO/NOAA Corps along with scientists from NOAA’s National Marine Fisheries Service (NMFS), Northeast Fisheries Science Center (NEFSC).

**What:** Southeast North Atlantic Right Whale Surveys

**When:** Present - March 31

**Where:** Based out of St. Simons, Georgia

**Why:** The objectives of this project are to provide real time sighting information to commercial shipping interests in an effort to reduce ship collisions, to better understand the distribution and abundance, and to collect photographic images of the critically endangered North Atlantic right whales. With as few as 400 remaining, surveillance flights to track their migration patterns are important for conservation and recovery efforts.

---

**Unmanned Aerial System (UAS) Section**

The UAS Section provides nationwide policy input, oversight, and guidance for all of NOAA’s UAS operations. The UAS Section of AOC is staffed by a team of aviation professionals who specialize in operational UAS implementation. The UAS Section tracks all small UAS (sUAS) operations for NOAA to include aircraft hours, types, pilot qualifications, and pilot training. The UAS Section also coordinates airspace approvals for operations within the United States National Airspace System, special use airspace, and foreign airspace. AOC conducts a thorough review of all projects by applying established risk management procedures to UAS missions, including an airworthiness review of all aircraft. This support is provided to NOAA Line Offices and partners to further develop and refine the use of sUAS for NOAA’s research and data collection.

---

**OMAO’S AIRCRAFT OPERATIONS CENTER (AOC)**

**Commanding Officer:** Captain Timothy Gallagher

The AOC, located at Lakeland Linder Regional Airport in Lakeland, Florida, serves as the main base for OMAO’s fleet of nine aircraft and provides capable, mission-ready aircraft and professional crews to the scientific community. Whether studying global climate change or acid rain, assessing marine mammal populations, surveying coastal erosion, investigating oil spills, flight checking aeronautical charts, or improving hurricane prediction models, the AOC flight crews continue to operate in some of the world’s most demanding flight regimes.
AOC personnel and aircraft in the hangar at the NOAA Aircraft Operations Center in Lakeland, Florida

[Photo Credit: NOAA]
Unmanned Systems Support

Nationwide

APH-22 Hexacopter

Location: Muskeget Island, Massachusetts
Mission: NEFSC Muskeget Grey Seal Pupping Survey
The Northeast Fisheries Science Center has been approved to conduct survey flights over Grey Seal colonies. Images collected will be used to assess Grey Seal health and population.

Location: Oahu, Hawaii
Mission: PIFSC APH-22 Training
The Pacific Islands Fisheries Science Center utilizes the location at the Kawainui Model Airplane Field to conduct training and proficiency flights. This allows APH-22 operators to maintain proficiency for future operations at a reduced cost. Training flights are also approved from NOAA small boats.

Location: Hawaiian Archipelagos, Hawaii
Mission: PIFSC Hawaiian Monk Seal Research Program
Population assessment of Hawaiian monk seals at Nihoa and Mokumanamana. If conditions allow, the APH-22 will be launched and controlled from a small boat and flown to the island to photograph and document Hawaiian monk seals on shore. The APH-22 has the potential to greatly increase our ability to assess the population of monk seals at these sites when swell conditions do not allow small boats to land people on shore.

Location: Oahu Beaches and Islets, Hawaii
Mission: PIFSC Hawaiian Monk Seal Research Program
Aerial images collected during flight are used for population assessments, individual identification, and emergency response reconnaissance. Images collected within 24 hours of a capture can be used for comparison with manual measurements.

Location: Leeward Oahu, Hawaii
Mission: PIFSC Cetacean Research Program
Monthly surveys are conducted to collect photogrammetry measurements and population estimates of cetaceans. APH-22 flights are conducted from a 19’ small boat. Operations are completed by a team consisting of a coxswain, pilot in charge, ground station control operator, and visual observer.

Location: Sea Life Park Oahu, Hawaii
Mission: PIFSC Cetacean Research Program
Images taken by the APH-22 are used to collect photogrammetric measurements of captive cetaceans. Photogrammetric measurements are compared with the known manual measurements to determine accuracy. Consistent trade winds can make image collection difficult. Practices found to improve image quality and accuracy can be used to improve operations over wild populations.

APH-22 Hexacopter/APH-28 Hexacopter

Location: Antarctica
Mission: SWFSC Wildlife Mapping
The Southwest Fisheries Science Center Antarctic team is collecting aerial images to estimate the size, body condition and nutritional status of marine wildlife along the Cape Shirreff coastline. The team will utilize the APH-22 alongside the new APH-28. This will be the first operational deployment of the new APH-28.

**Location**: Atlantic Northeast  
**Mission**: NEFSC Training Areas  
The Northeast Fisheries Science Center has been approved to conduct proficiency training and manufacturer training at the following locations: Woods Hole Pier, Massachusetts; Griswold Point, Connecticut and Waquoit Bay National Estuarine Research Reserve, Massachusetts. These locations will allow the pilots within NEFSC to remain proficient with the APH-22/APH-28 and to fine tune flight operations to increase their success for future operations.

**APO-42 Octocopter/APH-28 Hexacopter/APH-22 Hexacopter**

**Location**: San Diego County, California  
**Mission**: SWFSC Marine Mammal Photogrammetry  
The Southwest Fisheries Science Center continually collects aerial images to estimate the size, body condition and nutritional status of marine mammals along the California coast. UAS photogrammetry will be conducted opportunistically on species, including whales, pinnipeds, or turtles.

**SenseFly eBee RTK**

**Location**: Muskeget Island, Massachusetts  
**Mission**: NMFS/RSD Grey Seal Habitat  
Sensefly Ebee will be used to conduct Grey Seal habitat mapping and population assessment flights over Muskeget Island.

**FireFLY6 PRO**

**Location**: Oahu, Hawaii  
**Mission**: PIFSC Proficiency Training  
The Kawaiinui model airplane field will be used monthly to perform proficiency flights for PIFSC operators. The main objective will be to practice hand launches, recoveries and locating targets. These flights are essential in providing the necessary skills needed for successful operations.

**Location**: Oahu, Hawaii  
**Mission**: PIFSC Habitat Mapping  
The PIFSC began habitat mapping flights on the North Shore of Oahu in September and will continue flights in the area of MCAS Kaneohe. The main objective for the first flights is to establish data collection and airspace procedures. Flights will continue monthly around Oahu. The FAA Waiver for continued and expanded operations in MCAS Kaneohe Bay’s Class D airspace has been approved.

**3DR Solo**

**Location**: Coastal Waters from South Carolina boarder to St. Augustine, Florida  
**Mission**: SERO/GDNR Right Whales  
The Southeast Regional Office in collaboration with Georgia Department of Natural Resources will be conducting flights to identify North Atlantic Right Whales and assess whale entanglements. Two FAA waivers have been granted to provide access to class D airspace.
**HQ-55 Latitude**

**Location:** Lakeland, Florida  
**Mission:** Research

The HQ-55 Latitude is a new vehicle currently in development for NOAA. Sea trials will be conducted from the NOAA Ship *Ronald H. Brown* in May 2019. The aircraft is currently being proposed for use for the ‘Atomic 2020’ project in January-February 2020.

**Blackswift S-2/Meteodrone SSE**

**Location:** Oak Ridge, TN  
**Mission:** Research

These platforms are to be used in boundary layer research. An FAA Certificate of Authorization has been submitted for higher altitude flight operations. Sensor test flights are expected in the first few months of 2019. Test flights are scheduled to be conducted at Avon Park, Florida during the first week of March.
OMAO Partnerships

OMAO and the NOAA Commissioned Officer Corps provide key services and leadership to a number of federal agencies and external partners to help them meet their mission – and ours – and to better leverage federal resources.

United States House of Representatives - Natural Resource Committee

Location: Washington, District of Columbia
Detail: Lieutenant Commander Zachary Cress
Lieutenant Commander Cress is currently on detail with the staff to the Committee Chair, Representative Raúl M. Grijalva (D-AZ), where he is assisting on activities pertaining to the Committee’s work on oversight and authorization of NOAA programs, as well as other matters within the Committee’s jurisdiction.

National Science Foundation

Location: South Pole, Antarctica
Embedded Liaison: Lieutenant (junior grade) Timothy Holland
Members of the NOAA Commissioned Officer Corps carry out NOAA’s mission in remote locations across the globe. LT Friedlander is assigned to Antarctica where she serves as the Station Chief for NOAA’s Atmospheric Research Observatory (ARO) at the Amundsen-Scott South Pole Station. The ARO at the Amundsen-Scott South Pole Station is a National Science Foundation facility used in support of scientific research related to atmospheric phenomena.

Department of Defense – U.S. Pacific Command

Location: Honolulu, Hawaii
Embedded Liaison: Captain Barry Choy
The U.S. Pacific Command (USPACOM) area of responsibility encompasses approximately half the earth’s surface and more than half of its population. The 36 nations that comprise the Asia-Pacific include: two of the three largest economies and nine of the ten smallest; the most populous nation; the largest democracy; the largest Muslim-majority nation; and the smallest republic in the world. The region is a vital driver of the global economy and includes the world’s busiest international sea lanes and nine of the ten largest ports. By any meaningful measure, the Asia-Pacific is also the most militarized region in the world, with seven of the world’s ten largest standing militaries and five of the world’s declared nuclear nations. Under these circumstances, the strategic complexity facing the region is unique. CAPT Choy is linked closely with the activities within the region allowing for identification of opportunities and cooperation between USPACOM and NOAA, and better overall government function situational awareness in the region.

Department of Defense – U.S. Northern Command

Location: Boulder, Colorado
Embedded Liaison: Captain Catherine Martin
The U.S. Northern Command (USNORTHCOM) area of responsibility includes air, land and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico and the surrounding water out to approximately 500 nautical miles. It also includes the Gulf of Mexico, the Straits of Florida, and portions of the Caribbean region to
include The Bahamas, Puerto Rico, and the U.S. Virgin Islands. The commander of USNORTHCOM is responsible for theater security cooperation with Canada, Mexico, and The Bahamas. The embedded NOAA liaison is linked closely with the activities within the region allowing for identification of opportunities and cooperation between USNORTHCOM and NOAA, and serves as a liaison between fostering greater situational awareness of NOAA response activities to natural disasters and Arctic activities.

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

**Location:** Washington, DC  
**Embedded Liaison:** Captain Kurt Zegowitz  
As the NOAA liaison to the United States Coast Guard (USCG), Captain Zegowitz maintains a current and comprehensive knowledge of interagency activities and policies related to the USCG and NOAA. He identifies potential conflicts or benefits issues for analysis and evaluation, conducts appropriate assessments and studies, and serves as the interface between NOAA and the USCG. Captain Zegowitz initiates, designs, and implements strategies through federal agency liaison and coordination that results in cooperative arrangements for maritime security, oceanographic research, hazardous materials spill response, and many other activities.

**Department of Defense – U.S. Navy**

**Location:** Washington, District of Columbia  
**Embedded Liaison:** Commander Jason Mansour  
Commander Jason Mansour serves as NOAA liaison to the Oceanographer of the Navy and is an important interface between the U.S. Navy and other U.S. federal agencies, including NOAA. As NOAA Liaison, Commander Jason Mansour serves as the Head of the Interagency Policy Branch of the International and Interagency Policy Division, Office of the Oceanographer of the Navy, located at the U.S. Naval Observatory. The mission of this Division is to coordinate and execute the Oceanographer of the Navy functions related to policy and programs involving international and/or interagency oceanography. Oceanography includes meteorology, oceanography, mapping, charting and geodesy, astronomy, and precise time, and time interval.

**Location:** Stennis Space Center, Mississippi  
**Embedded Liaison:** Lieutenant Laura Dwyer  
Embedded in the Navy’s Naval Oceanography Mine Warfare Center, LT Laura Dwyer works side by side with Navy officers operating Unmanned Underwater Vehicles worldwide and is currently stationed at Stennis Space Center. This collaboration will provide knowledge and experience that will keep NOAA on the cutting edge of this emerging technology as well as strengthen the partnership between NOAA and the Navy.
Teacher at Sea Program

The mission of NOAA’s Teacher at Sea Program (TAS) is to provide teachers hands-on, real-world research experience working at sea with world-renowned NOAA scientists, thereby giving them unique insight into oceanic and atmospheric research crucial to the nation. The program provides a unique opportunity for kindergarten through college-level teachers to sail aboard NOAA research ships to work under the tutelage of scientists and crew.

Since its inception in 1990, the program has enabled more than 800 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. Please access former teacher at sea blogs which document their missions at sea and offer a wealth of information about the research being conducted as well as personal stories.

New England TAS Alumni in Woods Hole, Massachusetts

[Photo Credit: Ryan Hawk, TAS]
OMAO - NOAA Diving Program

Seattle, Washington

NOAA Diving Center and Program
OMAO manages and implements NOAA’s Diving Program (NDP), which trains and certifies scientists, engineers, and technicians from federal, state, tribal governments, and the private sector to perform the variety of tasks carried out underwater to support NOAA’s mission. NDP also has cooperative diving agreements with over 100 government agencies and academic institutions. NOAA has approximately 350 divers who perform over 8,000 dives per year and leverages its cooperative agreements to accomplish twice that number of dives contributing to scientific research. The NDP is headquartered at the NOAA Diving Center (NDC), which is located at the NOAA Western Regional Center in Seattle, Washington.

In the past few months, the NOAA Diving Center in Seattle, Washington welcomed aboard three new employees. Lieutenant Aras Zygas assumed the role of Executive Officer from Lieutenant Commander Faith Knighton. Ensign Sean Digre, a former Army diver, has become the Center’s first Operations Officer. The NOAA Diving Center is also proud to announce that a new instructor, Jessica Keller, has joined the team. Jessica comes to NDC from the National Park Service with a long resume of dive experience including a variety of technical and instructor certifications.

In January, NDC hosted the U.S Coast Guard Cold Water Ice Diving class in Seattle, Washington. Twenty-eight aspiring Coast Guard divers utilized NDC's basin and tower to conduct the "warm water" portion of their training prior to travelling to British Columbia where they would begin their true ice diving. NDC is proud to support this Coast Guard training annually.

NDC has taken advantage of NOAA Ships Oscar Dyson and Fairweather being in Seattle for the winter by offering shipboard personnel a Visual Cylinder Inspection course as well as hosting a hyperbaric chamber dive to 130 feet. In addition, ships have been completing their annual training in NDC’s basin on Lake Washington to practice operational and rescue skills.

Upcoming events include NOAA Diver and Divemaster training in Key West, Florida from March 11- March 30. Following the March training there will also be a tethered communications training the first week in April.

Surface supplied diving in the Superlite 17 Helmet with a standby diver on open circuit SCUBA in NDC’s training tower
[Photo Credit: NOAA Dive Center]
Oversight of the NOAA Small Boat Fleet is a collaboration across OMAO, NMFS, NOS, OAR and NWS. The Small Boat Program (SBP) was established in 2004 to create policies and procedures to ensure safety in support of NOAA’s field operations. Direction, technical and administrative support is provided by OMAO through the NOAA Small Boat Program Office. NOAA Line and Program Offices are responsible for acquisitions, operational funding and mission support. The NOAA Small Boat Safety Board is comprised of line offices, SBP, and SECO representatives and is charged with initiating policies and training, program metrics, and compliance.

In addition to its ships and aircraft, NOAA relies on hundreds of small boats located throughout the country to complete the organization’s complex and varied scientific missions. The NOAA Small Boat Program is committed to supporting the safe operation of these small boats through the principles of risk management.

The NOAA Small Boat Program manages a fleet of more than 400 small boats that perform various data collection missions for NOAA throughout the United States and its territories including hydrographic surveys, fishing, diving, scientific instrument deployment/recovery, water and air quality monitoring, law enforcement and marine mammal surveys. Vessels vary in size from a simple 10-ft. kayak to a complex 85-ft. research vessel. The majority of small boats fall within the range of 16-26 feet in length and operate in near-shore environments, but extended missions in deep water environments are common among the larger vessels.

R/V Shearwater located at NOAA’s Channel Islands National Marine Sanctuary
[Photo Credit: Robert Schwemmer/NOAA]
The personnel, ships, and aircraft of NOAA play a critical role in gathering environmental data vital to the nation's economic security, the safety of its citizens, and the understanding, protection, and management of our natural resources. The NOAA fleet of ships and aircraft is managed and operated by the Office of Marine and Aviation Operations (OMAO), an office comprising civilians, mariners, and officers of the NOAA Commissioned Officer Corps, one of the seven uniformed services of the United States. NOAA's roots trace back to 1807 when President Thomas Jefferson ordered the first comprehensive coastal survey. Those early surveys ensured safe passage of ship-borne cargo for a young nation. As the needs of the nation have grown, so too have OMAO's responsibilities. Today, OMAO civilians and NOAA Corps officers operate, manage, and maintain NOAA's active fleet of 16 research and survey ships and nine specialized aircraft. Together, OMAO and the NOAA Corps support nearly all of NOAA's missions.

NOAA has the largest fleet of federal research and survey ships in the nation. The fleet ranges from large oceanographic ships capable of exploring and charting the world's deepest ocean, to smaller vessels responsible for surveying the shallow bays and inlets of the United States. The fleet supports a wide range of marine activities including fisheries surveys, nautical charting, and ocean and climate studies. Based throughout the continental United States, Alaska, and Hawaii, the ships operate in all regions of the nation and around the world.

NOAA's aircraft provide a wide range of airborne capabilities. Our highly specialized Lockheed WP-3D aircraft are equipped with an unprecedented variety of scientific instrumentation, radars, and recording systems for both in situ and remote sensing measurements of the atmosphere, the Earth, and its environment. Equipped with both C-band weather radar and X-band tail Doppler radar systems, the WP-3Ds have the unique ability to conduct tropical cyclone research in addition to storm reconnaissance. Together with NOAA's Gulfstream IV-SP jet, these ‘hurricane hunter’ aircraft greatly improve our physical understanding of hurricanes and enhance the accuracy of tropical cyclone forecasts. NOAA's light aircraft also play a vital role in monitoring our environment. Our King Air, Turbo Prop Commander, and Twin Otter aircraft support marine mammal population studies, shoreline change assessments, oil spill investigations, and water resource/snowpack surveys for spring flood forecasts.
The NOAA fleet provides immediate response capabilities for unpredictable events. For example, during the 2018 Hurricane season NOAA flight crews and scientists flew a combined 556.8 hours for hurricane surveillance, research, reconnaissance, and emergency response. NOAA’s Lockheed WP-3D and Gulfstream IV-SP collected and provided vital data used by NOAA scientists for improved modeling, forecasting, and ensuring accurate forecasts provided to the public. NOAA’s Beechcraft King Air 350 rapidly responded to demand from emergency managers, using state-of-the-art equipment to collect thousands of aerial images from Cape Henry, Virginia to Charleston, South Carolina of damaged communities following Hurricane Florence. This imagery provided a cost-effective way to better understand the damage sustained to both property and the environment. NOAA Ship Ferdinand R. Hassler surveyed eastern North Carolina for multiple days in order to ensure vessels could safely navigate the area. This year NOAA Ship Thomas Jefferson conducted 66 days of post Hurricane Maria survey operations around Puerto Rico and the U.S Virgin Islands to support the area’s recovery efforts following the destructive 2017 storm.

While manned aircraft and sea-going vessels have been, and will continue to be, a primary source of environmental data, new technology will have a significant role to play in the future NOAA fleet. OMAO, in coordination with other NOAA offices and federal agencies, is evaluating and deploying unmanned aerial and underwater systems that could significantly contribute to environmental observations. To better serve the needs of the Nation, NOAA is examining the composition of the fleet through an exhaustive and critical review of at-sea science and observation requirements. Our objective is to develop a clear, cost-efficient path forward to ensure that the NOAA fleet can continue to conduct at-sea surveys and research vital to fisheries management, updating nautical charts, responding to natural and manmade disasters, and understanding coastal and marine systems more fully. Meeting these requirements is essential to the development of sustainable, science-based management and conservation plans that protect the health and resiliency of these resources over the long-term.

We continue our efforts to build a civilian and NOAA Corps officer workforce that is uniquely qualified to gather critical environmental intelligence and be adaptive and responsive to a changing world and work to expand our partnerships with other federal agencies. For example, NOAA Corps officers are currently assigned to work in the Department of Defense, National Science Foundation, and the U.S. House Representatives among others where they lend their leadership, expertise and service. We also continue to strengthen our partnership with the Department of Homeland Security through the U.S. Coast Guard. Our basic NOAA Corps officer training class is held at the U.S. Coast Guard Academy, where newly commissioned officers train alongside Coast Guard officer candidates, developing skills and professional relationships that will benefit both services, especially during challenging times. Active collaboration the Federal family is critical to ensuring the long-term capability and success of the federal ocean infrastructure. Our partners’ success is our success.
The NOAA Commissioned Officer Corps is one of the United States’ seven Uniformed Services and commissioned officers serve with the ‘special trust and confidence’ of the President. NOAA Corps officers are an integral part of the National Oceanic and Atmospheric Administration, an agency of the U.S. Department of Commerce. With an authorized strength of 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. The U.S. Coast and Geodetic Survey Corps was founded in 1917 to provide officers to command U.S. coastal survey ships and field survey parties locally and abroad. 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. The NOAA Corps celebrated its Centennial year in 2017.

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. Discipline and flexibility are inherent in the NOAA Corps personnel system. Officers are trained for positions of leadership and command in the operation of ships and aircraft; in the conduct of field projects on land, at and under the sea, and in the air; in the management of NOAA observational and support facilities; as members or leaders of research efforts; and in the management of various organizational elements throughout NOAA. NOAA Corps officers must be technically competent to assume positions of leadership and command in NOAA and Department of Commerce programs and in the Armed Forces during times of war or national emergency. 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 2018, NOAA aircraft flew over 556 hours in support of storm reconnaissance, surveillance, research and emergency response. NOAA assets were deployed to the Central Pacific for Hurricanes Hector, Lane and Norman and performed multiple operations in the Gulf of Mexico, North Atlantic and the Caribbean for Hurricanes Chris, Florence, Gordon, Isaac, and Michael. In response to Hurricane Florence, NOAA Ship Ferdinand R. Hassler surveyed eastern North Carolina for multiple days in order to ensure vessels could safely navigate the area. NOAA Ship Thomas Jefferson conducted 66 days of post-Hurricane Maria surveys in and around Puerto Rico to support the island’s recovery efforts.

- In 2017, NOAA aircraft flew over 600 hours in support of storm reconnaissance, surveillance, research, and emergency response for Hurricanes Harvey, Irma, Jose, Maria, and Nate. NOAA Ship Thomas Jefferson conducted post-storm surveys of waterways of Puerto Rico following Hurricane Maria to help re-open the ports for maritime delivery of critical supplies to the island.

- The BP Deepwater Horizon oil spill was the worst oil disaster in U.S. history. The NOAA fleet and the NOAA Corps played a major role in the response to the Deepwater Horizon oil spill. NOAA’s entire Atlantic fleet and over a quarter of the total strength of the NOAA Corps were deployed to the Gulf of Mexico following this devastating event.
OMAO/NOAA Corps Resources

OMAO Sites

- OMAO
- NOAA Corps

Two Pagers, Reports, and Informational Slide Decks

- Monthly NOAA Fleet Update - The latest version may always be found on the [Office of Legislative and Intergovernmental Affairs website](http://www.legislative.noaa.gov/policybriefs.html).
- Monthly Aircraft Flights and Mission Info Summary - The latest version may always be found on the [Office of Legislative and Intergovernmental Affairs website](http://www.legislative.noaa.gov/policybriefs.html).
- Tornado Formation, Intensity, and Path for the Southeast United States: Research Flight and Mission Info Recap - 2018
- Hurricane Irma Flight and Mission Info Recap - 2017
- Hurricane Maria Flight and Mission Info Recap - 2017
- OMAO two pager with Recent Mission Highlights – 2018
- OMAO Fleet Recapitalization Slide Deck – Building NOAA’s 21st Century Fleet
- OMAO Fleet Recapitalization Questions and Answers (Q&As)
- NOAA Fleet Independent Review Team Final Report
- The NOAA Fleet Plan: Building NOAA’s 21st Century Fleet

Other Web Resources

- OMAO Marine Operations
- OMAO Aircraft Operations
- OMAO on Facebook
- Hurricane Hunters on Facebook
- OMAO on Twitter
- Hurricane Hunters on Twitter
- OMAO Ship Tracker - (restricted to only .gov or .mil users)