



NOAA's Office of Marine and Aviation Operations

Providing environmental intelligence for a dynamic world

NOAA's personnel, ships, and aircraft 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 its natural resources. NOAA's 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. 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's fleet ranges from large oceanographic ships capable of exploring and charting the world's deepest oceans 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 "Hurricane Hunter" aircraft are equipped with a variety of scientific instrumentation, radars, and recording systems for both *in situ* and remote sensing measurements of the atmosphere, the Earth, and its environment. Equipped with both C-band weather radar and X-band tail Doppler radar systems, the WP-3Ds have the unique ability to conduct tropical cyclone research in addition to storm reconnaissance. Together with NOAA's Gulfstream IV-SP hurricane surveillance jet, these aircraft greatly improve our physical understanding of hurricanes and enhance the accuracy of tropical cyclone forecasts. NOAA's light aircraft also play a vital role in monitoring our environment. Our King Air, Commander, and Twin Otter aircraft support marine mammal population studies, shoreline change assessments, oil spill investigations, and water resource/snowpack surveys for spring flood forecasts.

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



NOAA's Hurricane Hunters, the Gulfstream IV-SP jet (front) and Lockheed WP-3D Orion turboprop

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. We also continue to strengthen our partnership with 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 among the Federal family is critical to ensuring the long-term capability and success of the federal ocean infrastructure. Our partners' success is our success.



For more information, please visit: www.oma.noaa.gov





Recent Mission Highlights

NOAA Conducts El Niño Rapid Response Field Campaign

(Joint with NOAA's Office of Oceanic and Atmospheric Research)

When warm sea surface temperatures in the Tropical Pacific Ocean (the main input for the Oceanic Niño index) indicated a strong El Niño in early 2016, NOAA led the El Niño Rapid Response Field Campaign to improve observations and documentation of meteorological effects during El Niño events. Past El Niño events have caused flooding and landslides, which resulted in \$2.8 billion in property losses from 1997 to 1998. NOAA made observations from land, sea and sky, including collecting data on the NOAA G-IV aircraft and the NOAA ship *Ronald H. Brown*. This 2016 El Niño event has prolonged the longest coral die-off on record as well as extreme precipitation events on the west coast. This field campaign provided an unprecedented volume and variety of coordinated data, including intensive observations such as air temperature, pressure and rainfall estimates gathered in the tropical Pacific and California. Results from this field campaign will provide a foundation to better understand how El Niño influences U.S. weather and improve forecasting abilities.

NOAA Ship *Okeanos Explorer* Discovers B-29 Superfortress

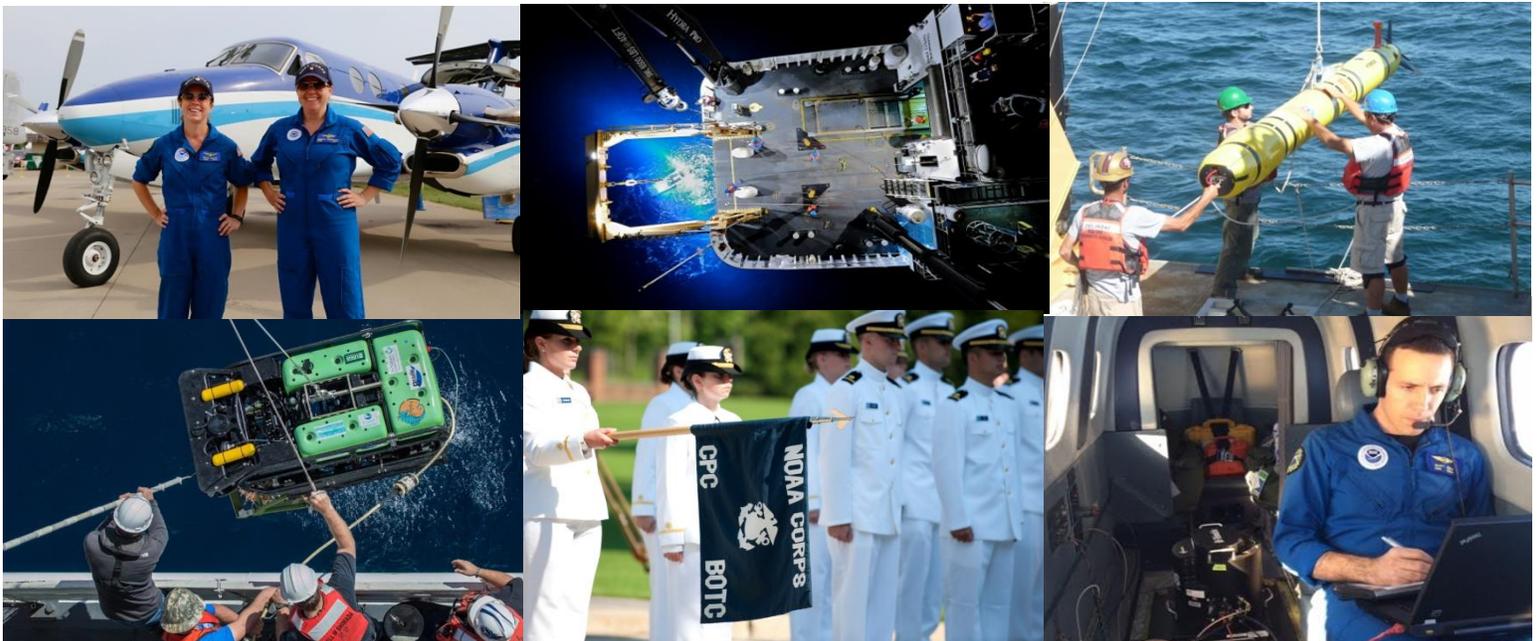
(Joint with NOAA's Office of Oceanic and Atmospheric Research)

In 2016, the NOAA ship *Okeanos Explorer*, NOAA's 224-foot-long ocean exploratory vessel, discovered the B-29 Superfortress on the seafloor-- the first B-29 crash site discovered of over a dozen American B-29s lost near Tianian and Saipan in the Northern Marianas Islands during World War II. The *Okeanos Explorer* discovered the Superfortress as part of three telepresence-enabled ocean exploration cruises which explored area around the Commonwealth of the Northern Marianas Islands, Guam and the Marianas Trench Marine National Monument. Live video feeds received a record-breaking 3.1 million views during the course of the expedition.

NOAA Ship *Ronald H. Brown* Conducts Ocean Acidification Research

(Joint with NOAA's Office of Oceanic and Atmospheric Research)

In 2016, NOAA ship *Ronald H. Brown* conducted Ocean Acidification research along the West Coast of the US. This important oceanographic data is part of a historical data set that monitors trends in the chemical and physical characteristics of ocean water. The *Ronald H. Brown* also serviced 35 moorings of the TAO Array in the equatorial Pacific.



NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

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