

NOAA Ship *McArthur II*



The ship is named after Lieutenant William P. McArthur, a naval officer who conducted the first hydrographic survey of the Pacific coast of the United States in 1848 for the U.S. Coast Survey while overcoming extremely difficult circumstances.

The NOAA Ship *McArthur II* is a highly capable, multipurpose oceanographic research ship. Acquired from the U.S. Navy in 2002, it was converted by NOAA from a T-AGOS surveillance vessel to a flexible platform capable of missions ranging from manned submersible deployments to whale observations. Commissioned in May 2003, this 224-foot vessel conducts coastal oceanographic research, marine mammal population studies and environmental assessments throughout much of the eastern Pacific, including the U.S. West Coast, Central and South America.

A diverse complement of small boats and specialized oceanographic equipment allows *McArthur II* to conduct a wide variety of marine research disciplines. The ship is outfitted with sophisticated data acquisition equipment used to monitor the atmospheric and oceanic environment wherever it travels. These instruments include a thermosalinograph, conductivity-temperature-depth instrument (CTD), and Scientific Computer System (SCS). The SCS is a valuable tool used by scientists as they conduct their research, providing them with required background data sets and the ability to make immediate decisions based on visualization of real-time data and the way the data relate to each other. Whether *McArthur II* is searching for whales on a warm-water core boundary, towing a CTD across a

volcanic vent, or collecting plankton in a bongo tow, SCS will provide immediate data to make decisions about the progress and quality of the operation.

McArthur II continues the work of its predecessor, *McArthur*, which was involved in a variety of operations, including CTD casts, water clarity observations, acoustic Doppler current profiler transects, sound velocity profiling, weather balloon launches, acoustic surveys, scuba diving, plankton tows using several types of nets, and detailed observations of marine mammal and bird activity. An acoustically quieted research vessel with generous laboratory space and large weather decks, it is an excellent platform for the study and observation of marine mammals.

During marine mammal assessment cruises, observers visually survey areas for population density and distribution of marine mammals. The study areas include the eastern Pacific, from Alaska to South America and as far west as Hawaii. Basic habitat and oceanographic data are also collected.

McArthur II conducts environmental assessments for national marine sanctuaries and estuarine reserves. Environmental assessment cruises include the collection of physical and biological data in the South Slough National Estuarine Research Reserve, multidisciplinary studies in the Monterey Bay, Gulf of the Farallones, and Cordell Bank National Marine Sanctuaries off northern California, an ecosystem-wide study in the Olympic Coast National Marine Sanctuary in Washington, and salmon studies in and around the San Francisco Bay area.

McArthur II will conduct operations in the Channel Islands National Marine Sanctuary, where it will deploy manned and unmanned submersible vehicles and high-resolution habitat mapping sonar. The primary goal of these cruises is to collect data that will enhance the resource management of these pristine "set-aside" environments, ensuring their health for future generations.



Dive operations support the project mission

Ship Specifications

Length: 224 ft.
Breadth: 43 ft.
Draft: 15 ft.
Displacement: 1,914 tons
Cruising Speed: 11 knots
Range: 8,000 nmi
Endurance: 45 days
Officers: 4
Licensed Engineers: 4
Crew: 23
Scientists: 15 (max.)
Hull Number: R330
Call Letters: WTEJ
Designer: Maritime Administration
Builder: Tacoma Boatbuilding Company, Tacoma, WA
Delivered to Military Sealift Command: December 1985
Transferred to NOAA: December 2002
Commissioned: May 20, 2003



Retrieving the CTD which collects information on water conductivity and temperature at different depths



Deploying a remotely operated vehicle (ROV)

Office of Marine and Aviation Operations

Since NOAA's beginning, NOAA ships and aircraft have played a critical role in the collection of its oceanographic, atmospheric, hydrographic, fisheries and coastal data. This fleet of platforms is managed and operated by NOAA's Office of Marine and Aviation Operations (OMAO), an office composed of civilians and officers of the NOAA Commissioned Officer Corps, one of the Nation's seven uniformed services.

NOAA's fleet of research and survey ships is the largest fleet of federal research ships in the Nation. The fleet ranges from large oceanographic research vessels capable of exploring the world's deepest ocean, to smaller ships responsible for charting the shallow bays and inlets of the United States. The fleet supports a wide range of marine activities, including fisheries research, nautical charting and mapping, and ocean and climate studies. Many of NOAA's research vessels are unique in their ability to conduct scientific research.

NOAA's fleet of aircraft operates throughout the world providing a wide range of capabilities including hurricane prediction research, marine mammal and fisheries assessment, and coastal mapping. NOAA aircraft are modified to carry scientists and specialized instrument packages to conduct research for NOAA's missions.

In addition to research and monitoring activities critical to NOAA's mission, NOAA ships and aircraft provide immediate response capabilities for unpredictable events. NOAA survey ships found the wreckage of EgyptAir Flight 990, TWA Flight 800 and John F. Kennedy Jr.'s aircraft. Our ships, aircraft and personnel have also conducted damage assessments after major oil spills, such as the Exxon Valdez and Persian Gulf War, and after land-falling hurricanes. Following Hurricanes Katrina and Rita, NOAA ships conducted emergency surveys for navigation hazards that helped Gulf ports reopen quickly, and tested the waters for contamination to ensure seafood safety. Aerial images of disaster-torn areas taken by a NOAA aircraft were posted on the Web with a Google interface, enabling residents and emergency workers to see if houses, bridges and roads were still standing.

NOAA Commissioned Officer Corps

The NOAA Corps is one of the seven uniformed services of the United States. It is composed of commissioned officers who provide NOAA with an important blend of operational, management, and technical skills that support the agency's science and surveying programs at sea, in the air, and ashore. NOAA Corps officers, in addition to managing and operating ships and aircraft, are also scientists and engineers. Corps officers serve in NOAA's research laboratories and program offices throughout the Nation and in remote locations around the world. For example, an officer serves as station chief at the South Pole, Antarctica.

About NOAA

NOAA conducts research and gathers data about the global oceans, atmosphere, space, and sun, and applies this knowledge to science and service that touch the lives of all Americans.

NOAA warns of dangerous weather, charts our seas and skies, guides our use and protection of ocean and coastal resources, and conducts research to improve our understanding and stewardship of the environment that sustains us all.

A Commerce Department agency, NOAA provides these services through five major divisions: the National Weather Service, the National Ocean Service, the National Marine Fisheries Service, the National Environmental Satellite, Data and Information Service, and Office of Oceanic and Atmospheric Research; and numerous special program offices. More information about NOAA can be found at <http://www.noaa.gov>.

Visit the ship's Web site at www.moc.noaa.gov/mt/
For more information, contact OMAO at 301-713-1045
or visit our Web site at www.oma.noaa.gov