



**NOAA Teacher at Sea
Methea Sapp-Cassanego
Onboard NOAA Ship DELAWARE II
July 19 – August 8, 2007**

NOAA Teacher at Sea: Methea Sapp-Cassanego

NOAA Ship: DELAWARE II

Mission: Marine Mammal Survey

Day 1: July 19th

Getting to know the DELAWARE II

Ship Specifications

Length: 155ft

Breadth: 30ft

Draft 16.6 ft

Hull: Welded steel

Displacement: 891 tons

Cruising Speed: 10 knots

Range: 5,300 nm

Endurance: 24 days

Commissioned Officers: 4

Licensed Engineers: 3

Crew: 10

Scientists: 14 (Max)

Launched: December 1967

Commissioned: March 12th 1975

Builder: South Portland

Engineering, S. Portland Maine



NOAA Ship DELAWARE II

I arrived in Woods Hole Massachusetts at 10:30 pm and rolled my luggage up and down the main street trying to find the DELAWARE II. Following a not so encouraging conversation with a bus station security officer who said to me “The DELAWARE II never docks here”, I managed to indeed find the ship that would be home for the next 3 weeks.

Over the course of a calendar year the DELAWARE II will be at sea for ~200 days during which a crew of 17 will attend to her maintenance and operation. Most of its crew members are hired via the National Oceanic and Atmospheric Administration NOAA; 6 of which work on deck, 4 others serve as engineers, 2 work in the galley, 1 serves as an electronic technician, and 4 more are NOAA Corp officers. These officers are in charge of ship operations and manage all other operations which are carried out on board. The DELAWARE II conducts a variety of fishery and marine resource research in support of NOAA. The ship has also been utilized to carry out research conducted by private entities, such as the Woods Hole Oceanographic Institution, and the US

Geological Survey in addition to other government agencies and universities. Typically DELAWARE specializes in 5 different survey projects which are as follows:

The Northeast Ecosystems Monitoring Survey monitors the Northeast continental shelf by assessing both its physical and biological aspects. For example, one of the methodologies employed during this survey uses a set of Bongo tows which are designed to catch plankton, small fish fry, larvae, and other small invertebrates. These minuscule creatures are the foundations for most of the ocean's food webs and therefore their populations are used to indicate and predict the overall health of the ecosystem. The Northwest survey is conducted on a repetitive basis so that these populations may be monitored over time, thus enabling researchers to monitor changes over time.

Apex Predator Survey is conducted every three years and is designed to assess the relative abundance, distribution, population structure, species composition, and to tag sharks so that migration patterns may be studied. Sharks are captured via longlining and then released after tagging and biological samples have been gathered.



A large tiger shark awaits examination and tagging (left). A more manageably sized tiger shark will receive a tag before being released (right). Both animals are part of the ongoing Apex predator survey and will contribute to a greater understanding of shark biology. (Photo courtesy of the crew and scientists of the DELAWARE II)

Atlantic Herring Hydroacoustic Survey combines a variety of advanced technologies including multi-frequency echo integration, omni-directional sonar, and underwater video to assess herring populations. The stability of herring populations is central to the sustainability of many commercial fisheries as well as the ecosystem as a whole.

Ocean Quahog and Surf Clam Survey conducts dredges through the silty and/or sandy portions of the ocean floor where these filter feeding bivalves dwell. Such dredges enable researchers to calculate relative abundances and thus derive sustainability yields. Since both the ocean quahog and surf clam are edible bivalves, they are of commercial value and contribute to the economic stability of the Atlantic fisheries. The surf clam is

especially coveted in the restaurant and other food industries for making clam strips and chowders. The ocean quahog has a stronger flavor and is used in recipes where the clam is used in conjunction with other strong flavored ingredients like pasta dishes. (who knew you would get a cooking lesson here) Also of significance is the reproductive biology of the quahog: This bivalve is extremely slow growing and long lived, it does not reach maturity for 20 years and will live up to 200 years. Those that are eaten are typically between 40-100 years old.

<http://www.virginiaseafood.org/consumers/factsheets/oceanquahog.htm>

Marine Mammal, Large Whale Biology aims to examine the relative abundance and distribution of the Atlantic's large whales. A variety of data gathering methodology is used, ranging from visual and photographic recording to biopsy sampling for genetic studies. Studies which focus on the whales' food abundance are also included in this survey.

So who's in charge of all this nautical navigation and science?

As one can imagine there is allot going on aboard the DELAWARE II at any given time. Of course, numerous highly trained personnel insure that the engines work, that everyone gets three meals a day, that the toilets flush, that scientific protocols are being met, and that we are on course. But one individual is ultimately responsible for the coordination of these individual efforts.

During my tenure aboard the DELAWARE II that role was fulfilled by the Commanding Officer (CDR) Richard Wingrove. CDR Wingrove has spent a lifetime working in, and studying marine environments. After earning a degree in Marine Science from the University of Miami, the Commander joined the Peace Corp and was stationed on the Caribbean island of Antigua. As a fisheries officer for the Peace Corp, his job was to monitor fishing practices

while helping fishermen develop and implement techniques that would improve their catches. Following his service in the Peace Corp, CDR Wingrove went to work as a Satellite Oceanographer for the private sector; it was during this job that he happened to attend a conference and met a NOAA officer: Soon after, it was on to officer training school in Fort Eustis, Virginia where after 5 months of training, officers emerge with the foundational knowledge to navigate the seas and drive a ship.



Commanding Officer (CDR) Richard Wingrove (photo courtesy of CDR Wingrove)

Following completion of officer training, CDR Wingrove was appointed to the NOAA Ship MILLER FREEMAN which is stationed in Alaska. After enjoying the northern latitudes for two years, NOAA then sent him back to his home state of Florida where he worked in the Looe Key National Marine Sanctuary. Following two years in the sanctuary he returned to the Western Seaboard and set to work on the NOAA Ship JOHN N. COBB which is stationed out of Seattle. Again, after two years of surveying salmon, killer whales and other marine mammals CDR Wingrove was headed back to the Eastern Seaboard. This time he would spend three years based in Miami where his job was to oversee oil spill responses for South Carolina, the Gulf of Mexico, and the Caribbean. As he explained to me, working to clean up such an event is a rather delicate job since each of the involved entities including the company who spilt the oil, state agencies, federal agencies, and community leaders are each represented by their own biologists, ecologists, scientists, and researchers which then assess the spill, evaluate its impacts, and determine how the clean up should be executed. CDR Wingrove's job was to take all the data and information presented to him by each of the involved parties, and then coordinate their findings in order to determine a course of action for clean-up, as well as monitor the clean-up process.

After three years of cleaning up other peoples' messes CDR Wingrove was appointed as Executive Officer aboard the NOAA Ship DELAWARE II. He worked aboard the DELAWARE for two years before being sent to the Great Lakes area where he spent another three years coordinating the clean-up oil spills. Then once again he was headed back to the DELAWARE II this time as the ships Commanding Officer. CDR Wingrove will finish his service aboard the DELAWARE II in May yet he does not know where NOAA will send him next. Regardless of the locale I have little doubt that CDR Wingrove will continue his legacy of service to the natural world and to all whom benefit from healthy seas.