



**NOAA Teacher at Sea
Miriam Hlawatsch
Onboard NOAA Ship NANCY FOSTER
July 29 – August 10, 2007**

NOAA Teacher at Sea: Miriam Hlawatsch

NOAA ship NANCY FOSTER
Mission: Lionfish Survey
Day 7: Sunday, August 5, 2007
Location: 67 nm southwest of
Cape Lookout

Weather Data from the Bridge

Visibility: 10 miles
Wind Direction: 0°
Wind Speed: 0
Sea Wave Height: 0 ft.
Swell Wave Height: 2-3 ft.
Seawater Temperature: 29°C
Sea Level pressure: 1015.5 mb
(millibars)
Cloud Cover: 0-1 oktas



Crew of the NOAA ship NANCY FOSTER deploys a small boat at a pre-marked dive site.

Personal Log



A team of NOAA divers leaves the NANCY FOSTER. Small boats are used to transport the scientists and their equipment to and from the actual dive sites.

The weather continues to be extremely favorable for dive operations and I look forward to assisting as dive tender again tomorrow morning. For the past week, I've observed as the NOAA divers and crew of the NANCY FOSTER work together to facilitate the study of lionfish in their watery habitat. Also, I've watched with great interest as the divers prepared themselves for their underwater excursions. Having purchased a wet suit in preparation for my *Teacher at Sea* adventure I thought I had an appreciation for these preparatory activities. Imagine my surprise when Coxswain Leslie Abramson informed me my wetsuit was too big (I couldn't imagine squeezing into anything smaller). NOAA diver Roger Mays clarified the issue noting, tongue in cheek, that the proper fitting wetsuit should take at least five minutes to put on

and the experience should *hurt*. Obviously there is more to diving than the wetsuit “experience,” so I asked Doug Kesling from NOAA’s Undersea Research Center (NURC) for specific information regarding diver training and specialized equipment.

Science Log

Doug Kesling addressed three key components--training, equipment and dive operation procedure.

All divers on the NOAA Ship NANCY FOSTER are certified to dive with standard open water SCUBA (Self Contained Underwater Breathing Apparatus) techniques. Additional training in scientific diving research methods is provided by the NOAA Diving Program and the NOAA Undersea Research Program at the University of North Carolina Wilmington.

Divers use standard dive equipment that consists of dive mask, fins, snorkel, cylinder, buoyancy compensator, scuba regulator, dive computer and wet suit. Additional tools--tape measures, quadrates, goody bags, video and still photographic equipment--also must be transported by the divers to the sea floor.



NOAA diver Roger Mays conducts a safety stop to decompress before surfacing.



Dive Team A: NOAA divers, Brian Degan, Paula Whitfield, Doug Kesling, and Wilson Freshwater

To conduct their underwater research, the scientists dive to depths of 100 to 120 feet. Prior to each dive, the divers fill their Scuba cylinders with an enriched air nitrox (EANx) mixture to 3500 psig. Each mix must be analyzed to ensure a safe breathing mix for the targeted depth. Compared to tanks of compressed air (21 % oxygen), the enriched mixture enables the scientists to double the amount of time they can spend underwater.

In preparation for their dive, divers don wet suits and load their equipment onto the small boats. The boats are lowered from the mother

ship onto pre-marked dive sites. Working in buddy teams of two or three, the divers’ underwater work times range from 25 to 30 minutes. To return to the surface divers first

ascend to a depth of 20 feet. At this point they conduct a safety stop of three to five minutes to allow off gassing of nitrogen (inert gas) from the body before surfacing. Divers then surface and are recovered by the small boats. The boats return to the mother ship where they are hoisted back on deck and off loaded.



Dive team B: NOAA Divers Jenny Vander Pluym, Thor Dunmire, and Roldan Muñoz



Dive team C: NOAA divers Brad Teer, Roger Mays, and Tom Potts