



**NOAA Teacher at Sea  
Marilyn Frydrych  
Onboard NOAA Ship *Delaware II*  
September 15 – 25, 2008**

**NOAA Teacher at Sea: Marilyn Frydrych**

NOAA Ship *Delaware II*

Mission: Atlantic Herring Hydroacoustic Survey

Geographical area of cruise: New England Coastal Waters

Date: Wednesday, September 17, 2008

**Weather Data from the Bridge**

41.27 degrees N, 70.19 degrees W

Partly Cloudy Wind out of the W at 19 knots

Dry Bulb Temperature: 26.0 degrees Celsius

Wet Bulb Temperature: 20.9 degrees Celsius

Waves: 2 feet

Visibility: 10 miles

Sea Surface Temperature: 21.6 degrees Celsius

**Science and Technology Log**

The third day out was much like the second day.

Our first job was to fish with the big net. This time the chief scientist wanted to know what some small vertical echoes on the echogram were. He guessed that they were shrimp or krill. The acoustic echogram used three frequencies: 18 kHz, 38 kHz, and 120 kHz. If dots appeared in all three then he was pretty sure it was fish and most likely herring. These particular vertical dots appeared only in the 18 kHz echogram. He guessed they were very small fish, but wanted to determine if the signature belonged to krill or shrimp.

Krill are like a skinny, short, uncurled shrimp, about 2 inches long.



**A fisherman dumping the catch  
(Photo courtesy Jacquie Ostram)**

The net was small as fishing nets go. Its rectangular opening measured about 100 feet by 50 feet. Attached to either side of the



**Deploying the fishing net (Photo courtesy Jacquie Ostram)**



**The net. Notice how fine the mesh is.**



**The portside door**

opening were huge metal doors. They looked like doors, but in fact never closed. They were actually more like the front edge of an airplane wing. Their purpose was to stay parallel to each other and keep the net open. The net was rolled up on a large roller, which sat at the center back of the fantail. It was about 250 ft long. When it was time to deploy, the fishermen used a winch to unwind the net. The person at the helm had to be extremely careful that the boat kept at a steady headway of about 3 to 4 knots. The doors were stored at the very end of the



**The starboard door**

stern. With the help of their own hydraulic winches they were lifted to a spot where they could be attached to the net. There was a place on each side of the net where the side wire changed to a chain link. The metal doors were clasped on these links and then dragged into the sea. Another link in the wire was for heavy chains. Their weight of about 400 pounds each held the sides of the net down.

The night crew, on from 6:00 pm to 6:00 am were busy Wednesday night and on into the morning. They did two CTD's

and three net deployments. They left us about 50 herring and silver hake to observe in the morning. Richie Logan, one of the fishermen, used these to write a birthday note to his daughter. Here's his picture.



**Fishermen setting up the recorder which is sent out with the net. (Photo courtesy Jacquie Ostram)**



**Richie Logan making a Happy Birthday email for his daughter. (Photo courtesy Jacquie Ostram)**

Each time we sent out a net we were hoping for about half a clothes basketful of fish. Last night they filled 30 baskets. Only about 1/3 of a basket is ever measured and weighed. The rest are tossed back. Our chief scientist said he can remember processing enough to fill 60 baskets. So far most of the biomass in the basket has been krill. Mixed in with the krill are small anthropoids maybe a half inch square, jelly fish about twice that size, Illex squid from

2 to 6 inches long, baby silver hake, butterfish, or red hake. These last three are all in the neighborhood of 1 inch long.

This morning we pulled up a lamprey eel about 2 feet long and a couple two inch lumpfish in the evening. Most of the fish were dead when we got to them. We had to wait until the fishermen were totally finished with winding the net and had dumped the net's contents onto the deck before we were allowed on the fantail. Then we sorted the large fish into clothes baskets and the smaller ones into small trays. Wednesday Jacquie Ostrom, another volunteer from Colorado Springs, noticed that two 3-inch lumpfish were moving.

She added some water to our rectangular sorting pan and a piece of clear hard plastic we had



**The piece of "plastic" turned out to be the larva of a spiny lobster. (Photo courtesy Jacquie Ostrom)**

thought was some molt or litter also started to move. No one seemed to know what the "plastic" was. After a quick reference to the Internet we learned it was the larva of the spiny lobster.



**Seven basketsful of herring from a haul in the deep waters near Georges Bank. (Photo courtesy Jacquie Ostrom)**

### **Personal Log**

We must have passed by the north-south migration path of the whales. We didn't spot any today. The work load is really light compared with teaching. We work two or three hours cataloguing the catch after each trawl, clean up with the saltwater deck hose, and then wait for the next trawl maybe three or four hours later. A 20 minute CTD deployment every now and then is the only other work we are expected to do. The cruise is turning out to