



**NOAA Teacher at Sea  
Tiffany Risch  
Onboard NOAA Ship DELAWARE II  
July 28 – August 8, 2008**

**NOAA Teacher at Sea: Tiffany Risch**

NOAA Ship: DELAWARE II

Mission: Surf clam/Quahog survey

Geographical area: Southeast of Long Island, NY

Date: Wednesday, July 30, 2008

**Weather Data from the Bridge**

- Hazy in the morning with less than 6 miles visibility
- Calm seas with little cloud cover
- Wind speed = 5 knots
- Waves = Wind drives waves < 1 foot
- Water temperature: 23° Celsius

**Science and Technology Log**

Today started with an early morning shift, working from 12:00 am to 12:00 pm. As my watch took over, the DELAWARE II began steaming towards the first station of the day to conduct a survey of the surf clam and quahog size and abundance inhabiting this specific area.

In order to complete a survey of the area, a dredge is used to capture any surf clams or quahogs



**NOAA Teacher at Sea, Tiffany Risch, sorts through the catch brought up by the dredge.**

that are pushed out of the bottom sediment. On the top of the dredge are hoses that push pressurized water onto the bottom to loosen up any bivalves. A bivalve is an organism that has shells consisting of two halves, such as in a clam or a scallop. The dredge is towed behind the DELAWARE II for five minutes at a speed of 1.5 nautical miles per hour. Attached to the dredge are sensors which transmit dredge performance information back to scientists in the dry lab to record and analyze. The accuracy of the survey depends greatly on the credibility of the sensor data, and therefore, scientists must monitor variability of the dredge. After the dredge is brought back to the surface, the load must be sorted, measured, and then discarded.

After listening to a presentation by Larry Jacobson, I learned a lot of new facts about both Atlantic surfclams (*Spissula solidissima*) and Ocean quahogs. Surf clams live only about 15 years, grow very fast, and can inhabit ocean waters stretching from Cape Hatteras in North Carolina to Newfoundland. These bivalves are found in waters less than 50 meters of water.

Ocean quahogs on the other hand can live for greater than 100 years, are very slow growing, and are found in ocean waters between 50 and 100 meters deep from Cape Hatteras, around the North Atlantic to the Mediterranean.

Scientists on this cruise are also interested in studying other aspects of the clam populations, such as a condition called Paralytic Shellfish Poisoning.



**Tiffany gives the power to the pressure pump on the dredge.**

Because bivalves are filter feeders, they eat by filtering food out of the waters around them. Sometimes, algae can contaminate clams using a toxin that is harmful to humans. When this happens and humans eat the shellfish, they themselves can become quite sick. Samples of clam meats are being taken during this research cruise to be studied back at a lab and determine what exactly is happening in regards to Paralytic Shellfish Poisoning.

### **Personal Log**

Today has been quite interesting, as I moved through the many stations that are involved with conducting this survey. I was trained on how to measure clams in the wet lab, how to apply the power to the dredge in the dry lab, and even how to shuck a clam to retrieve the meat which is also measured. I was also quite amazed regarding how efficient everyone is on the ship, as we all have a job to do, and it all gets done before we arrive at the next station.

One of my highlights today was overcoming my sea sickness and finally getting my sea legs! Everyone is so supportive, from the officers, to the scientists, and to the volunteers who are all so nice and helpful. I'm looking forward to my next eight days at sea and learning more about the research being conducted.