



NOAA Teacher at Sea
Megan Woodward
Onboard NOAA Ship *Oscar Dyson*
July 1 – 18, 2009

NOAA Teacher at Sea: Megan Woodward

NOAA Ship *Oscar Dyson*

Mission: Bering Sea Acoustic Trawl

Geographical Area: Bering Sea

Date: Sunday, July 12, 2009

Weather/Location

Position: N 60.35.172; W 174.08.187

Air Temp: 6.1 (deg C)

Water Temp: 5.24 (deg C)

Wind Speed: 25 knots

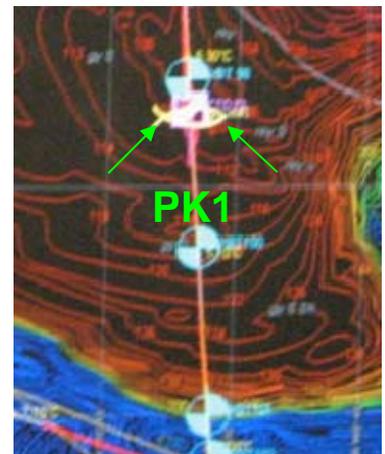
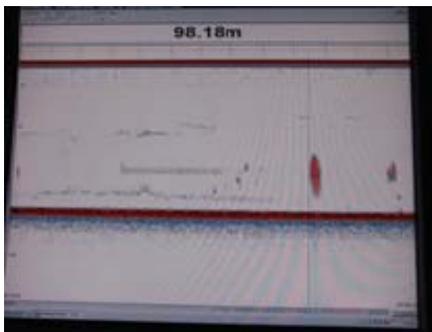
Weather: Overcast, rain

Science and Technology Log

How is all the data collected from a trawl and acoustic lab used? By collecting data about weight and length from a sample, scientists are able to connect the size of fish caught to the amount of return seen in the acoustic lab. The return is assigned a name (PK1, PK2, etc.) and all schools showing a similar acoustic pattern are given the same name. In the end, scientists can estimate the number of fish and their size for a given area based on the acoustic and fish lab data collected. This is repeated throughout the survey resulting in an estimate for the total number of fish in the survey area.



Any bycatch in a haul has to be measured and weighed if there are more than 25 of the same species caught.



1. Identify acoustic return → 2. Collect measurement → 3. Name

Both during and after the survey estimates of abundance in the same location over the past several years are compared. Scientists evaluate the data and determine if the pollock population in the survey area is increasing, declining or stable. Their conclusions are used to make a recommendation about pollock fishing limits for the upcoming year.

In the past few years the pollock population has been lower than in previous years. Due to the decline, the fishing quota has been reduced. However, the 2006 **year-class** is proving to be strong. At 4 years of age pollock are considered mature and fishable. Therefore, the fishing quota is predicted to rise in the next year or two.

Personal Log

While discussing the acoustic survey project with the scientists on board, I was quite surprised to hear the pollock survey had been going since 1979. Acoustic technology has changed and improved, but in essence the project has remained the same. Modern computer technology has allowed collection and analysis of enormous data sets and greatly reduced the amount of paper work needed for the project's success.

The concept of strong vs. weak year-class is also quite interesting. There doesn't seem to be a direct connection between a year-class' success and environmental factors. Environmental factors that are potentially influential are water temperature, available zooplankton, ice cover, storms and predators. The fish currently being caught by commercial fisherman are 5-7 years old. Can you figure out which year classes those fish are from?

Although we are out here working in the best interest of pollock, I have found it difficult to watch thousands of pollock come through the fish lab. I have to remind myself that sampling the fish is truly for the good of the order. In addition, after being measured the fish are sent back into the ocean where they become food for other organisms such as crab or birds. One of their natural predators is having a good meal, something that was likely to happen anyway.



We continue to spot plenty of seabirds and a few more minke whale pods. I was able to watch a group of Dall's porpoises play in the wake of the bow for half an hour yesterday. There haven't been any new animal sightings during the past few days.

Animal Sightings

- Seabirds
- Dall's porpoises

New Vocabulary

Bycatch - Anytime something is caught during a trawl other than pollock it is labeled bycatch. Jellyfish has been the most common form of bycatch.

Year-class - All the fish born in a given year are members of that year-class. We have caught a lot fish from the 2008 year-class (1 year old fish).