



NOAA Teacher at Sea
Michele Brustolon
Onboard NOAA *Oscar Dyson*
June 28 – July, 2010

NOAA Teacher at Sea: Michele

NOAA Ship *Oscar Dyson*

Mission: Pollock Survey

Geographical area of cruise: Eastern Bering Sea (Dutch Harbor)

Date: July 1, 2010

Weather Data from the Bridge

Time: 1400

Latitude: 58.19 N

Longitude: 170.01 W

Cloud Cover: 100%, dense fog

Wind: 11.49 knots

Air Temperature: 3.80⁰ C/ 38.84⁰ F

Water Temperature: 3.96⁰ C/ 39.128⁰ F

Barometric Pressure: 1003.10 mb

Science and Technology Log

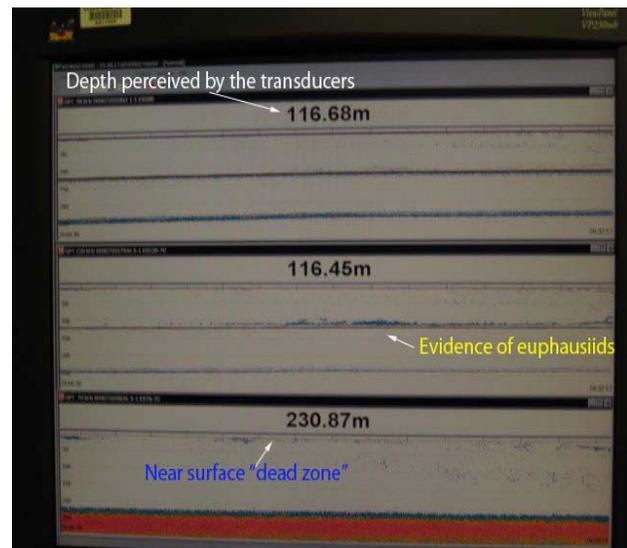
Here fishy fishy!

July 1st began by spending time in the Acoustics Lab learning about the equipment used to analyze the data. The *Oscar Dyson* has 5

transducers on its center board and 1 temporary transducer on the side of the center board that looks horizontally. The transducers allow us to see where the fish are. Because of where the transducers are placed, we can only see the pollock from 16m to the bottom. This means that if there are any fish between the surface and 16m they will not be detected.

This is the near surface “dead zone”. *Why this happens?* The transducers are mounted on the bottom of the centerboard about 9 m below the water line, and near the transducer face (first 7 m), no good data are collected. *Why it's okay?* Pollock tend to hang out in mid-water. Although a few baby pollock might be in the near surface “dead zone,” the majority of pollock will be in the area we are watching. There is also a bit of a “dead zone” at the

other end near the ocean floor. Yesterday the bottom was around 69.35m.



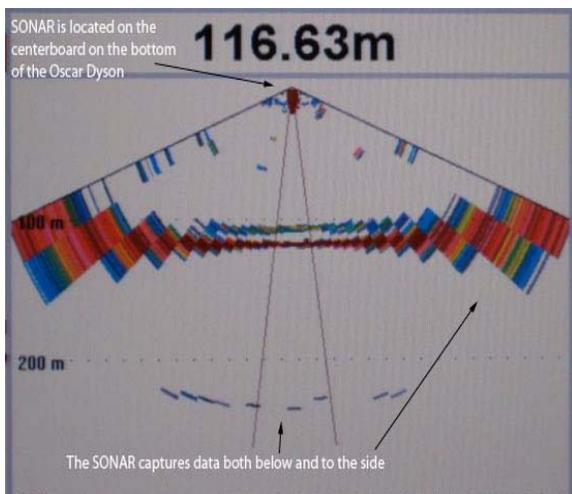
Transducer data

Why acoustics?

Ideally, the acoustic data collection would allow us to track aggregations of pollock without actually having to fish them out of the water. All parties involved (scientists, fish, bank accounts) would benefit from this change but scientists are still in the process of perfecting this process. The *Oscar Dyson* is part of a fleet of five boats that was specifically designed for acoustics. Specifically, it is considered a “quiet boat” where the engine noise is decreased to prevent scaring the fish. Other Acoustic projects include: Pacific hake off the coast from California to Vancouver Island (run as a joint project with Canada), herring in the northwest Atlantic, and krill in the Antarctic. Acoustics are used throughout the globe and many countries depend on acoustics for their fish surveys.

A little help from UNH!

Along with the transducers, there is also a multibeam SONAR that produces the same



information as the transducers but with a wider angle range. The multibeam ME70 sends its signal out after the transducers information is sent and returned. They alternate about 1.5 seconds apart. The University of New Hampshire (UNH) is helping to use the tool and also to analyze the data. To analyze the transducer data collected, a program is in place from Tasmania to help determine what the boat is seeing. The scientists use the program to help separate species in the water column. Scientists utilize the multibeam ME 70 along with the transducers and fish trawling to ensure they are capturing an accurate picture of the mid-waters.

Multibeam ME70 data

How the survey data we collect are used.

The data we collect on the *Oscar Dyson* during the summer pollock surveys are used by scientists and policy makers to determine the fishing quota (the "take") of pollock for the next season. Quotas are important for maintaining the population of pollock (and other species) for this generation and generations to come. The data we collect on the *Oscar Dyson* help ensure that maximum stock can be taken without negatively impacting the Eastern Bering Sea pollock population.

Personal Log

Although there was no fishing yesterday, I certainly was able to be involved. I launched the XBT off the Hero Deck just as we began our fire drill. Once that was completed I returned to the Acoustics Lab until we were



Here I am deploying the XBT (eXpendable bathymetric thermograph)

cleared from the drill. We then had our abandon ship drill where we get our survival suits and head to our assigned position. My meeting location is at life raft 3 and 4. Once we learned how to deploy our life raft, we headed inside to the conference/lounge to practice donning our suits. While this is very serious, it is also worth a laugh or two watching people struggle and become orange gumbies! The goal is to be able to don your suit in under 60 seconds!

Yesterday I had the opportunity to head into St. Paul's Island; the largest of the Pribilof Islands. St. Paul's is also called the Galápagos of the north. The Zodiac was driven by Joel Kellogg and



Zodiac ride into the cove of St. Paul's Island

Amber Payne, and our CO (Commanding Officer Mike Hoshlyk) allowed Katie, Rebecca, and I the opportunity to take the trip inland. Our mission while on land was to bring science equipment (ice-flow detector) to the airport that needed to be sent to Anchorage. Stepping foot onto St. Paul's Island seemed eerie and mysterious. There was the lurking fog along with a very industrial feel to the island. Because most of the island consists of coalescing small volcanoes, the sediment's dark color is due to lava flow which didn't brighten the land at all. We did not see many people other than those working on dredging the new causeway or the people in the airport. Our taxi driver said that they hadn't gotten mail since Monday and it was Thursday which explained why the people

waiting for flights at the airport seemed a bit anxious. On our way back to the boat, we were able to see sea lions and some puffins hanging out in the water and around the break wall. As we approached the boat, it was like an apparition appearing before us. Just another once in a lifetime chance that I have had this cruise!

Want more information about the Pribilofs?

Check out <http://www.amiq.org/aleuts.html>

Animals Seen

Auklets

Murre (2 different types differentiated by bill type)

Fox

Puffins

Sea lions

(but no fur seals...everyone told me I would see them but they were missing. It seems to be a question everyone is asking (see

http://response.restoration.noaa.gov/book_shelf/147_puzzle_in_pribilof.pdf)



Oscar Dyson coming back from Pribilofs

Word of the day

Desmadre: troublemaker

New Vocabulary

Transducer: instrument used to send out signals that return and show where fish are located

Ground fishing: trawling on the ocean floor