



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

NOAA Teacher at Sea: Michele Brustolon

NOAA Ship *Oscar Dyson*

Mission: Pollock Survey

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

Date: July 10, 2010

Weather Data from the Bridge

Time: 1400

Latitude: 59.12N

Longitude: 174.02W

Cloud Cover: 5/8

Wind: 17 knots

Air Temperature: 8.0⁰ C/ 46⁰ F

Water Temperature: 7.0⁰ C/ 45⁰ F

Barometric Pressure: 1006.9 mb

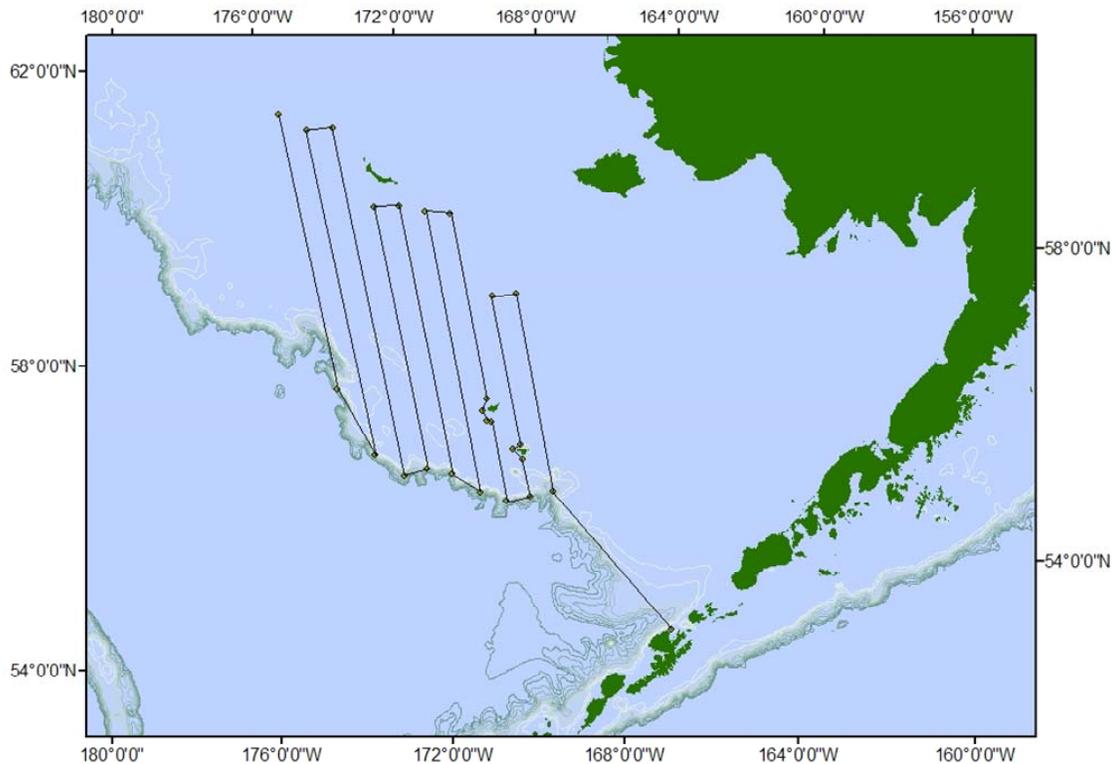
Science and Technology Log

Weather, weather everywhere!

Aside from weather helping you decide what to wear for the day, weather is critical on board a research vessel. Each hour the bridge collects the same data that is then input into the AMVER Sea system and sent to NOAA Weather. Some of the information included is: time, latitude, longitude, cloud cover, air and water temperatures, wind, barometric pressure, visibility, and swell height. This helps determine our exact location (check out shiptracker.noaa.gov) as well as the weather at sea and also weather inland. It is not uncommon for marine weather systems to move inland. This information also helps us understand long term climate changes, precipitation, and ocean currents.

Exactly where are we?

The latitude and longitude help determine the position of the ship and the time is recorded to understand how the ship is moving and in what direction. This allows the scientists to follow the transects to conduct their research. If I told you at 1500 hours (3pm) our mark was 58.00N and 171.48W, you would be able to pinpoint our location on a map. Our latitude so far on this trip (July 7th) has been in the range of 56.12N-58.69N depending on the transect that we are following and the longitudes' range is between 170.01W-171.48W.



Transect lines for Leg II onboard *Oscar Dyson*

It's cloudy again?

It tends to be quite cloudy and foggy here in the Bering Sea and cloud cover is measured in eighths of the sky. For example, on July 6th the cloud cover at 1500 hours was 7/8 which means that 87.5% of the sky was filled with clouds. Cloud type and location can help predict the type of weather. The majority of our days have been 8/8 or 100% cloud cover with stratus clouds and lots of moisture in the air.

This is definitely not the heat wave they are getting back home!

This brings us to air temperature and wind. The temperature is always taken on the windward side of the ship because this is the side of the ship in the stream of air fresh from the sea that has not been in contact with or passed over the ship. There are two types of thermometers in



Stratus Clouds



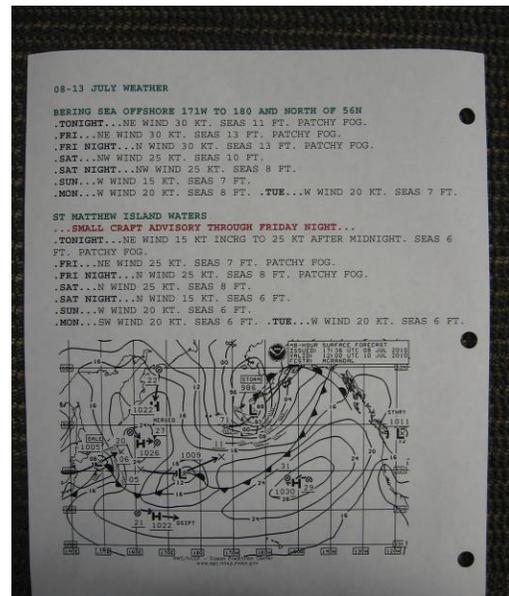
Wet and dry bulb thermometers

each case on the deck in front of the bridge. The dry bulb measures the air temperature and the wet bulb has a muslin wick which absorbs heat from the thermometer. The temperature difference between the two, called the depression of the wet bulb, can help determine what the percent humidity is by referring to the humidity chart. Wind can affect these readings which is why there are thermometers on either side of the bridge. The wind direction is logged as the same direction from which the sea waves are coming. Average temperature through July 7th for Leg II has been 5.68⁰C/42⁰F with winds averaging 10.29 knots.

The weather mentioned has been the trend for Leg II; however, this could be changing by the end of the week...stay tuned!

Hold on tight!

It's July 10 and we are still waiting for the big seas to hit us. (not that I am complaining about calm weather!) The swells have gotten larger and the wind definitely picked up yesterday. The strongest wind recorded yesterday was 26 knots while on my shift. There is still a chance for NW sustained winds up to 25 knots and 10 foot seas before the weekend is up. Part of the reason for calmer seas yesterday was that we were so far north and the low pressure system was to the south of us. It was actually the farthest north I have ever been, and we will go even farther north before it is time to head back to Dutch Harbor.



Weather forecast

Personal Log

While we have had some quiet days, the fishing has been picking up. Unfortunately, the fish seem to be accessible more for the night crew than our shift. For example, we may fish once in a twelve hour shift, but the night crew may fish 2-3 times! We did have a couple of fishing mornings where there was enough time for a quick coffee and piece of toast and then on to the wet lab. Let me paint a picture for you... its 0430, the four of us (Abigail, Katie, Rebecca, and I) are keeping the beat to the tunes on the iPod of choice for the day in our full foul weather gear

while we sort, sex, weigh, and find the lengths of pollock. It's quite the jam session- all before breakfast! It may seem like a strange way to start the day, but it's pretty cool!



Pollock on the sorting table



Processing Pollock: we record data about length, weight, stomachs, and otoliths.

Another benefit to having the day shift is that I was able to experience sunset as I looked west



Sunset: 0400

(off the port side of the ship) from my stateroom at 0330 and by the time we finished fishing at 0645, the sun was rising! Between 0400 and 0700 is one of the quieter times during my shift. It is a good time to get laundry done, regroup for the



Sunrise: 0645

day, and one of the most peaceful places to go is the bridge. As you finish climbing the stairs you enter the darkness of the bridge; no fluorescent or incandescent lights staring you in the face. Even the headlamps worn and the covered monitors are red. I found myself closing my eyes and rocking as the boat swayed back and forth. Definitely a different atmosphere than being in the wet lab processing fish. This of course all changes after breakfast when more people are up for their shift. I find it amazing how many different environments there are on one ship throughout a day.



The bridge at sunrise

Another new experience for me occurred by the time I made it to the Acoustics lab on Friday morning. The echo sounder was already in the water collecting data. The advantage of this



The echo sounder

single transducer is that it has the ability to be dropped closer to the fish (about 50m) to allow for more precise data. It still functions like the transducers that are on the centerboard of the ship: sending “pings” or sound waves and recording target strength. The transducers that do not interfere with the echo sounder continue to collect the same data but from farther away (around 80m), and then the two sets of data can be compared. There is also a small CTD that is attached to the unit. To make it even better, I was able to see the North Star and the moon while on the deck where the echo sounder comes on board!

This might be too much excitement for some of you, but like I said before I need things to do. This brings me to the new challenge on the ship; Ensign Amber Payne spearheaded a “European Challenge of the Century.” It is a series of exercise challenges that include all members on board the *Oscar Dyson*. Now, this challenge continues throughout this season which ends in October, so the scientists (that’s me!) were randomly placed on teams to contribute while onboard.

Even before the challenge, Abigail, Katie, Rebecca, and I have made a habit of heading to one of the two gyms to rip it up while blasting tunes. That’s right- two gyms on this ship! You can chose to run, bike, row, lift, and there are plenty of other options as well. Even though the gym has become part of my daily routine and running on a boat MUST burn more calories than on land, I don’t think it has been enough with Ray’s cooking. It’s like eating out at your favorite restaurant EVERY day!

Animals seen

Chrysaora melanaster

pollock (1-2 years)

fulmars

murres

puffin

Word of the day

guile: deceit

New Vocabulary

barometric pressure: the downward force that the atmosphere exerts per unit of a certain area.

swell height: measure of wind waves generated locally; vertical distance between trough and crest

muslin wick: plain woven cotton fabric

humidity: the amount of moisture in the air

gale force winds: strong winds between 28-47 knots

target strength: strength of the sound waves returning after reaching the fish