



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: June 30th, 2010

Weather Data from the Bridge

Time: 1600 hrs

Latitude: 57.16 N

Longitude: 169.09 W

Cloud Cover: Dense fog

Wind: 11.56 knots

Air Temperature: 5.3⁰ C/ 42⁰ F

Water Temperature: 5.09⁰ C/ 41⁰ F

Barometric Pressure: 1005.02 mb

Science and Technology Log

Time with Birds and Mammals

Once we finally left Dutch Harbor behind, I spent some time on the bow with birder, Nate Jones. As I know very little about birds, I quizzed him on every flying specimen we encountered and used his binoculars to observe the birds up close. After a few sightings, I was able to identify the Fulmar by its unique wing movement (quick quick quick soar). We also saw tufted puffins and a black footed albatross. There are two birders on this leg who are responsible for scanning the horizon and counting and identifying the sea birds they observe from the bridge.

We were distracted from our bird watching by a call of orcas. I hustled up to the “flying bridge” to join the marine mammal observers. There are three “mammals” on this leg and they are constantly scanning the horizon with their “big eyes” to observe and identify cetaceans. I was able to observe two separate groups of orcas and heard that porpoises were also spotted.

Although I am technically on the fish shift, I hope to check in with the “birds” and “mammals” later in the cruise.

What's in your water?

I began my shift this morning at 0400 and reported to the Acoustics Lab to meet with head scientist, Neal Williamson. In addition to Neal, my shift includes Abby McCarthy, a NOAA research fisheries biologist, Katie Wurtzell, awesome biologist and my fellow TAS Rebecca. We began the shift by observing our first CTD (Conductivity Temperature Depth) profiler which will be deployed approximately 10 times throughout our trip. The CTD measures conductivity, temperature, and depth (used to calculate salinity) and gathers samples to measure dissolved

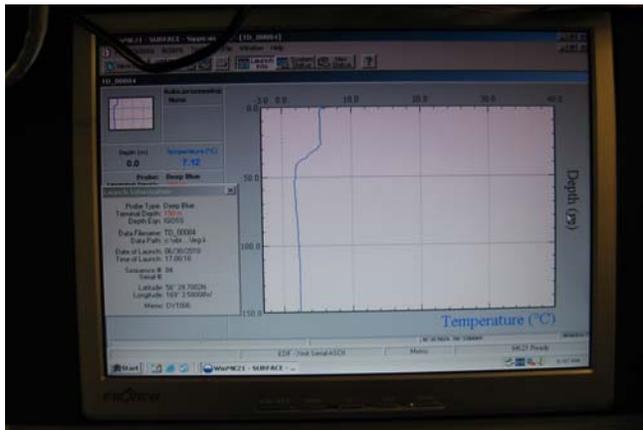
oxygen. In addition, fluorescence is measured to monitor chlorophyll up to a 100 m from the surface.

After our first CTD, we completed our first Methot trawl. A Methot trawl is named after the scientist who designed the net used. A Methot grabs the creatures and collects them into a codend (to make it easier for us to process) at 30-40 m below the surface – our Methot collected jellies and euphausiids (also known as krill). My first duty was to sort through the “catch” to pick out jellies. Next, we measured the weight of the krill before counting a small sample. We also preserved a couple samples for use in larger studies.

Following our Methot, I observed the deployment of an XBT (eXpensible Bathymetric Thermograph). The XBT is used to measure quick temperature data from the surface to the sea floor. The data are graphed at depth vs. temperature to highlight the thermocline, which is where colder water meets water warmed by the sun. Here in the Bering Sea, the thermocline is not always noticeable as



The CTD – measures Conductivity, Temperature, and Depth



Methot – graphing temperature vs. depth – shift in graph shows thermocline.

the water column is subject to mixing from heavy winds and shallow depths.

Personal Log

As I approached Dutch Harbor, I began taking photos from the plane. It sounds crazy, but the landscape is like nothing I have ever seen. Once I was off the plane, my smile grew because of the crisp air and the smell of saltwater. After two days of travel I had finally made it to Dutch Harbor and my luggage made it with me! I was brought to the boat to drop off my bags and then into town to catch up with others on Leg 2. The *Oscar Dyson* was having work

done on its large generator so we didn't leave port until June 29 at 1430 hours. It actually gave me time to get to know a good portion of the people on this leg (the crew, scientists, “birders,” mammalian observers, and the stewards). I was also able to explore Dutch Harbor, Unalaska (we tried to find wild horses...no luck!), and take some walks from the *Oscar Dyson*. Some of the most common flowers and birds seen are the lupines, orchids, and bald eagles EVERYWHERE! They are incredibly loud too! They remind me of seagulls and squirrels back home because there are so many! Wednesday, June 30 was the first day of our 0400- 1600 work shift so we won't see everyone until we are transiting back because of the different shifts. The *Oscar Dyson* has 40 bunks and we are occupying 39 of them-talk about a full ship! For information about what happens during our shift, take a look in the science and technology log. I am truly enjoying

my time and there are plenty of people to make me laugh which is the best medicine when you are a tyro!



Dutch Harbor at low tide from the dock of the *Oscar Dyson*



Dutch Harbor during a typical day

Animals Seen in Dutch Harbor

Bald eagles
Ground Squirrel
Sea Urchin
Sea Stars
Sea Cucumber
Pigeon Guillemont
Oyster Catchers
Mussels
Chiton
Limpets
Hermit Crabs
Snails
(but no horses...)

Animals Seen in Transit

Orcas
Fulmars
Black Footed Albatross
Tufted Puffin

Animals Seen on First Shift

Euphausiids
Jellies
Pollock!!!
Pacific Cod



A Bald Eagle named "Charlie" sitting outside the Unisea Restaurant

Word of the Day

Tyro: a novice or beginner

New Vocabulary:

CTD: (**C**onductivity **T**emperature **D**epth) A device used to measure conductivity, temperature and depth at specific locations within the Bering Sea

Methot: A net used for shallow trawls, named after the scientist

XBT: e**X**pendable **B**athymetric **T**hermograph

Thermocline: the point when the temperature drops