



NOAA Teacher at Sea
Taylor Parker
Onboard NOAA Ship *Oscar Elton Sette*
April 19 – 29, 2009

NOAA Teacher at Sea: Taylor Parker

NOAA Ship: *Oscar Elton Sette*

Mission: Hawaiian Bottom Fish Survey

Geographical area of cruise: Kailua Kona coast of the big island Hawaii

Date: April 22, 2009 – Earth Day!

Weather Data:

Winds: 1-3 knots variable. 1-2 ft swells. Water temp: 24 C. Air temp: 80 F. Voggy.

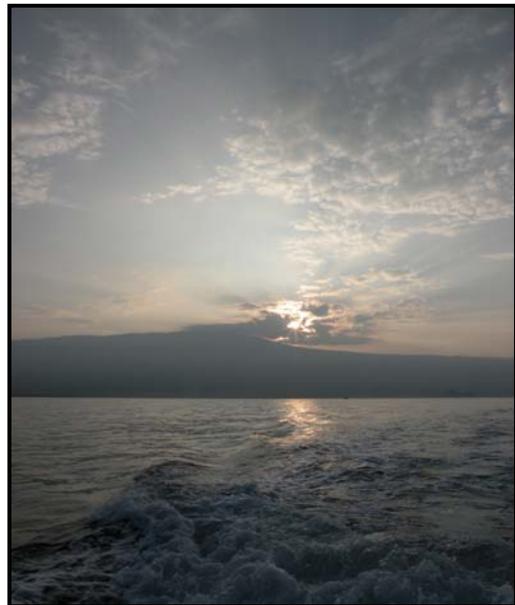
Science and Technology Log This morning I awoke with a cup of tea and this beautiful sunrise coming over the big island. There is something auspicious about a morning like this and our day turned out truly favorable. At 6am we started our safety meeting with the regular GAR survey. The GAR survey is a standard safety check before deploying small boats. It stands for Green, Amber and Red and those are the colors associated with the number that represents the amount of danger with the operation. Apparently we



Me holding the handheld CTD

were green because the crew prepared the boats. The larger boat dropped into the water with Chief Scientist

Ryan Nichols leading the bottom-fishing. I jumped in the smaller boat with scientist Don Kobayashi to do CTD surveys. CTD's stand for Conductivity, Temperature and depth. Depth and temperature are pretty self-explanatory but conductivity is the measurement of electrical current that is found in the water. This conductivity is proportional to the amount of salt in the water and it increases with a rise in temperature. Therefore, you can figure out the salinity by analyzing the temperature and conductivity. Don is working on measuring the unique circumstances that occur when two or more ocean currents come together and create calm waters known as slicks.



Happy Earth Day!

Lighter plankton collect within the slicks along with debris. It is curious to note whether the calm waters draw the weaker fish or whether they search the slicks out on their own. Not much is known about these converging points of down-welling and Don is trying to find out what makes them special. The weapon of choice for his study is an instrument that is about 5 pounds and about a foot and a half long. For our original drop we set a buoy down in the middle of the slick with a drogue, a sea anchor that works by means of an underwater parachute. We then dropped the CTD 5 times on each side of the buoy at 10 meter intervals, which expanded outside of the slick. This level of specificity allows for accurate readings of what is occurring just below the



Larvae found while dip-netting



The Drogue

surface. The way the slicks start to appear and just as quickly disappear or even elongate is mysterious. The final page of this log has the results from one of the CTD drops with an explanation.

After measuring the physical characteristics of the slicks we started dip-netting them, chasing the plankton and debris. Don sat on the bow and I leaned over the port side cruising along at about 1-2 knots trying to

find bubbles, debris or any sign of life like a glimmer from the side of a fish or a Pilot Whale (I'll get to those soon). We caught a few things; well, actually Don caught almost everything while the baby fish evaded me diligently. We collected our, or rather, Don's haul and kept in a bucket for safe keeping. We caught a big red light bulb with Goose-neck barnacles on it, but more

importantly, fish hiding underneath it.



Our haul from the slick. The light bulb has life underneath, I swear.



Goatfish

The light bulb brought in most of our haul but we did find some other larvae hanging out under a bunch of bubbles.

After dip-netting for a while we found the other boat and helped them bottomfish. We grabbed one of their reels and spent the remaining two hours of our trip trying to catch fish. Where I wasn't successful with the larvae, I made up in catching a Yellowbarbel Goatfish

(*Parupeneus chyrsonemus*). Unfortunately for us, yet fortunately for him, this colourful bearded fish was not a target species. We let him go safe and sound with only an odd abduction story to tell his friends.

Personal Log

Today I learned a lot about slicks, conductivity and goatfish. The amount of stuff that congregates in the slicks is fascinating and it was wonderful being on the hunt with my net for hours. Even better though was being out on the crystal clear, calm waters off of Kona. There was hardly a breeze, the water was nice and warm and all I wanted to do was jump in. Right when I was thinking about ditching my



The Whitetip is in the lower left hand corner with a Pilot Whale in the upper right



Pilot Whale

boat and going for a swim, a 4-5 foot Oceanic White-Tip Shark (*Carcharhinus longimanus*) swam under us. I was told not to pet it. I have never seen a shark with the reputation as ferocious as this one so close. The ends of his dorsal and pectoral fins were shining white in the clear Hawaiian water and he looked formidable yet tranquil.

While we were dropping the CTD, a call came over the radio from the *Sette* informing us that Pilot whales (*Globicephala macrorhynchus*) were in the

vicinity. We paid it no mind as a sighting like that would most likely pass without our noticing it. Sure enough, within half an hour a pod of about 8 whales were heading directly for us.

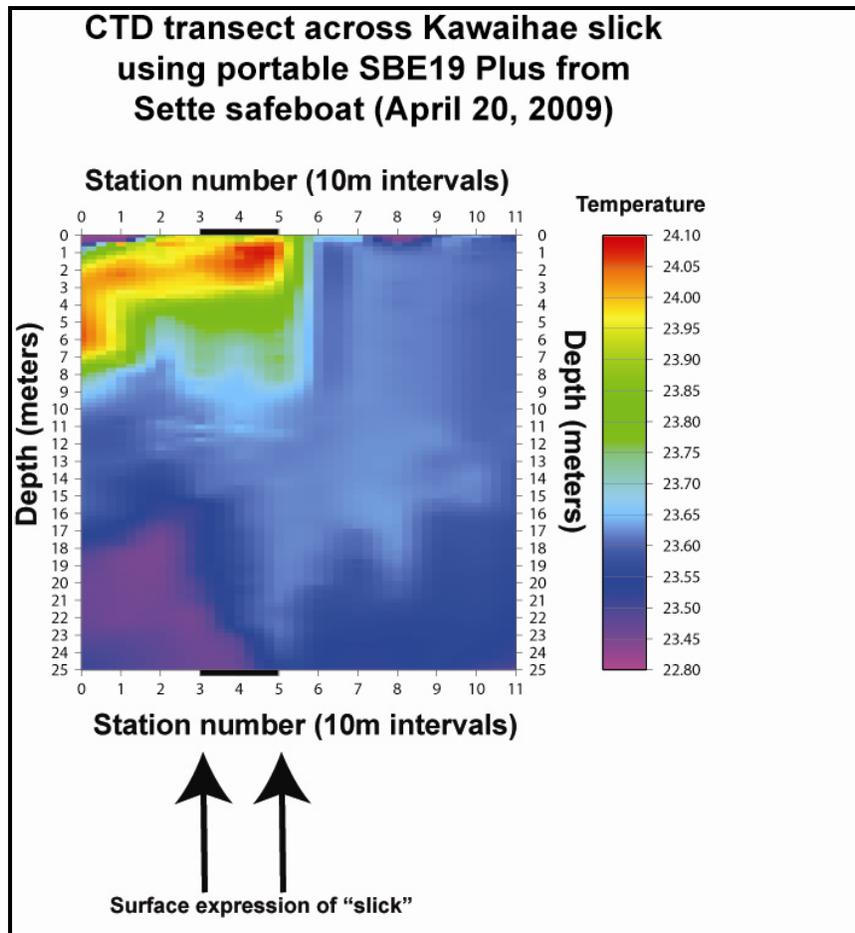
The whales were cruising around us showing us their giant domed heads and curved dorsal fins. When they got within about 10 yards of the boat they all disappeared and didn't reappear until they were well beyond our position. But for a while, we were schooling with Pilot whales.

On our way back to the boat we were



The Oscar Elton Sette with three officers

flagged down by Ensign Norris, Lieutenant Little and CO Lopez from the Fly Bridge. They needed photos of the *Sette* with the large NOAA logo while underway. Well, here is one of the shots and if you look closely you can see all three up there.



Here are some of the data from the handheld CTD dropped in the slicks. As you can see the area surveyed within the slick has higher temperatures deeper and more heterogeneity. This is opposed to just outside the slick where it is colder with little variation.