



**NOAA Teacher at Sea
Christopher Harvey
Onboard NOAA Ship OSCAR ELTON SETTE
June 5 – July 4, 2006**

Date: June 12, 2006

Time: 6:45 PM Hawaii

Location: Somewhere else adrift in the Pacific Ocean!

Entry

The hardest part of this job, aside from waking up around 6:30 in the morning, is keeping track of the events of the day through my journal entries. Yesterday I didn't feel like writing much, so I skipped an entry just to make it harder on myself today. I've been told that I don't need to write about everything each and every day, but I know from all of the journals that I have kept during my travels, writing is as much for me to look back on as it is for those of you keeping up on my experiences here. So this entry is a bit of a hodge-podge, smorgasbord, or mishmash of sorts.

I have read through my last entry a half dozen times and I am still amazed at the experience. It seems premature of me to say that I've had my turning point in this trip already. But it sure feels that way. It is a struggle to work now. I feel like a man on a great pilgrimage to some Holy Land who has found Enlightenment midway through his journey, and so longer needs to travel--but does so for the sake of sharing his experience along the way. And on a ship at sea, one does not really have the luxury of turning the ship around and going home. *That's* how I know that there is quite a bit more in store for me. And so I will go another day, awaiting what will be.

A common theme of the voyage is the regular showing of "Groundhog Day" at 8 PM each evening. I have not taken to watching it yet, but I love the idea of showing it again and again. I was warned, after the ship left the harbor of course, that the lobster cruise becomes Groundhog Day after a few days. And so far, this must be true. Yesterday I was back in the wet lab measuring lobster all day. Nothing much happens there, and I am in the air conditioning rather than in the sun, so I should be grateful for that. However, I am starting to wonder if the costs involved in this research expedition are worth the results that we are getting.

I have been asked by some of you to share the results of our catch. I don't have all of the numbers next to me right now, but the general trend is that the lobster catch in the NWHI really sucks. We are pretty much right on par for the last few years of data, which for the most part averages less than one lobster per trap. In some cases, such as today, the catch rate is much, much lower than that. Which leads me into explaining part of the reason for this mission to exist. I will do my best to explain this, as it has been related to me thought my prying and probing.

Part of NOAA's purpose for existence, as an extension of the US Department of Commerce, is to conduct surveys to promote the use of sustainable fisheries for the US.

What this means is that the US government has recognized that fisheries provide the economy a fairly sizable chunk of change, employment opportunities, and the likes, and would like to continue to improve the industry. The Hawaiian Islands are some of the most protected land areas in the United States, governed by up to three different organizations. Since the year 2000, commercial fishing of lobster in the NWHI has been completely eliminated. Commercial bottom fishing is still permitted, but on a very restricted basis. There were concerns that, for the 100+ years that commercial lobster fishing was legal in the NWHI, the lobster population was suffering a serious blow and was unable to recuperate itself year after year. For this reason, various government agencies, particularly during the end of the Clinton era, gained a greater control over the environmental protection of the NWHI and the waters surrounding them.

We are here now as part of a study to document the growth, or lack thereof, of two types of lobster native to the Northwest Hawaiian Islands: the Slipper Lobster and the Spiny Lobster. Scientists have been interested in the growth rates of these two lobsters because, for the most part, growth has been very, very slow over the last few years. Determining the age of lobster is extremely difficult, as is left to best estimates based on size. Over the last few years, thousands of lobsters have been tagged, and we are on the prowl for such lobster so we can document their growth over time.

The best place to see what is going on in the lobster community is to spend time in the wet lab measuring the specimen with Bob, the Chief Scientist of the ship, who has spent over thirty years working out of Hawaii. Although he probably gets tired of my probing, most of what I have come to know about our mission has come from the last two days I have spent in the wet lab. There we take measurements of each lobster, and after we are through, Bob crunches the numbers and spits out data for us to compare to previous years. As I said before, we are right on par for last year's numbers. Perhaps slightly higher, at best.

If we are not catching more than one lobster per trap, and the lobster that we are catching are only slightly larger than the year before, if that, can we open the waters to commercial lobster fishing again? Think about that for a minute, and then come back to me...

The answer seems to be, no. Here are some things to think about: we had to sail for two days to get out here, have 20+ personnel onboard, and use about 2 pounds of bait per trap for 160 traps per day. If we are only catching, on average, one lobster per trap, then it does not seem cost effective to fish for lobster out here. This seems to be the general consensus. So what next?

As scientists, we must move further into the issue and ask ourselves why aren't the lobsters growing? In a time where every scientific question seems to be answered with "Global Warming," we must take into consideration many other factors as well. Water temperature and salinity may be changing over time. But there is also the issue of food supply for the lobsters. Is the quantity or quality of food decreasing? What about predators? There are many times more white tipped reef sharks present in these waters now than ever before. Could this be influencing lobster growth (how is the marine food

chain in the NWHI changing?)? Are the lobster stressed for other reasons? Are the coral heads in which the lobsters take shelter growing, or dying?

With so many variables, we must do our very best to keep our constants in this investigation constant. Such constants include: location of traps, type and amount of bait, and measuring points on the lobster. Bob has done a very good job of keeping these things constant over the last few years, despite how easy it would be to change any of them at any other time. If he were to do that, he would essentially be throwing out years and years of previous work.

So what are we doing here? I ask myself that every day! We are here to make evaluations of the sustainability of the lobster fishing industry--not quite as “tree-hugging” of a mission as I had first anticipated, but important nonetheless, if the Hawaiian Islands’ fisheries are to significantly contribute to the US economy. Whether or not we are justified in spending the time and money we are spending is still up in the air for me, but maybe that is why I am just an “observer,” and “scientist,” rather than head of some government agency.

Today I switched jobs and became a “cracker.” Yeah, according to some of my students I already am a “cracker.” But in this use of the word, I was paired again with Amee in opening the traps as soon as they were hauled onto the ship. I tell you, the only thing worse than smelling dead mackerel is smelling dead mackerel that have been sitting at the bottom of the ocean for a day growing more and more putrid. I was very reluctant to begin the job today. I have resigned myself to simply stacking traps. This gets me away from the lobster, shark, crabs, and dead fish of the traps and allows me to listen to music on the fantail while small-talking with the crew about anything and everything. As I have made reference to already, I am very undecided about my involvement in the research we are conducting. Since I signed up for the job, I will do it to the best of my ability. But it is already difficult for me to do jobs, such as cracking, because I see some things that do not sit well in the stomach.

Amee and I sang Disney songs all day long to pass time, to the chagrin of the others around us. In all, we were finished rather early. I threw the bait overboard to the waiting sharks (one of my undecided arguments), and took a nap (never an undecided argument!). I am about to head outside to watch another Pacific sunset, followed immediately by the task of setting out bait to thaw overnight. Tomorrow is an early morning, since I have to wake up at start cutting bait by 6:30 if I want to eat breakfast (another undecided argument, breakfast is NOT to be missed!).

Not to be forgotten, last night was another first for me. Doc, Amee, and I were sharing conversation over a cup of tea on the weather deck when the moon rose like a flame over the ocean. For a moment I thought we were drinking hallucinogenic tea. But we were all having the same trip. I pointed out what looked to be an island on fire, perhaps a volcanic eruption. Amee said it was a Viking ship of old. Doc said it was the moon. I didn’t believe any of us, so I ran towards the bridge to ask more experienced sailors what it could be. Then the fire spread into the sky, outlining the shape of a mushroom. *So this*

is the end! The Nuclear Holocaust has begun, and Honolulu is gone! My love story with the sea would soon turn into one of survival, with no one left to read about it!

Then the curve of a red/orange moon nudged itself above the clouds. And with each passing second I could see Her rise, red and rich as fire. And full. I trembled at the sight of a red moon and thought of any nautical expressions that might predict the outcome of such a sight. *Red sky at night, sailor's delight. Red sky in morning, sailors take warning.* No, that wouldn't work! It doesn't say anything about red moons! And that was the only nautical expression I knew! In my trembling, I eventually grew comfortable at the sight of something amazing. I stood there in silence for the next hour as I watched the blazing moon shed its color as it rose into a darkened sky. The few stars that were bright enough to hold their own light in its presence seemed to glow red and orange in its reflection. Rising still into the night, I went to bed again truly impressed at whatever forces allowed this moment to be...again. When I thought I had seen it all, something like this comes along. What a Beautiful life! Have I said this before?