



**NOAA Teacher at Sea
Elizabeth Eubanks
Onboard NOAA Ship DAVID STARR JORDAN
July 22 – August 3, 2007**

NOAA Teacher at Sea: Elizabeth Eubanks

NOAA ship DAVID STARR JORDAN

Mission: Catch rates of pelagic sharks comparing J hooks to Circular hooks in support of The Relative Abundance of Sharks Survey

Date: Day 2, July 23, 2007, Monday

Pacific Ocean

**Weather Data from the Bridge taken at
1500 (3pm) - Deep Sea Temp at 2000 (8pm)**

Air temperature: 19.7 degrees C

Sea Temperature at 300m 7.9 degrees C

Sea Temperature at surface: 19.1 degrees C

Wind Direction: 350 (NW)

Wind Speed: 5.2 kts

Cloud cover: – Partial – Alto cirrus

Sea Level Pressure: 1011.5 mb

Sea Wave Height 2

Swell Wave Height <1

Science and Technology Log

Today has been beautiful. The lines were set at 0600 and then hauled at 1000. We only caught 3 sharks this morning, 2 Blue and 1 Mako.

We set lines again 1330 (Do you know what time that is? – 1:30pm) While we were having a break we noticed a huge pod of Common Dolphins. They appeared to be having so much fun flying up into the air. There were at least 30+ it was so cool to see so many. Our haul this evening was a skunk – no sharks, but that is okay tomorrow is a new day.



NOAA Teacher at Sea Elizabeth Eubanks models the abandon ship suit, also known as a "Gumby" suit.

We had drills today, fire and abandon ship. The fire drill required us to move to the dry science lab, where I already happened to be. The abandon ship drill required that we put on long pants, long sleeve shirt, a hat and our "gumby" suit, as it is called. It is a dry suit, much like some divers would wear. It is big and bulky and funny looking.

I had mentioned yesterday that although the main focus of this trip is to test the J and Circle hooks, many other studies are being supported. Last night after dark some of us fished for Rockfish. Russ Vetter a NOAA scientist who is Head of Fish Ecology within

the South West Fisheries Center and heads 4 teams of scientists. Those teams study small pelagics such as anchovies, egg and larvae- ichthyo-plankton, pelagic sharks which we are studying now and his personal group is molecular ecology which has been studying Rockfish for years. I got an earful last night. The Rockfish that we were fishing for were about 200 feet below the surface. So they live in very deep water, which means that they are **benthic** fish. There are some that are **pelagic**, but I will get to them later.



Various species of Benthic Rockfish

Dr. Vetter was telling me that there are about 130 different species of Rockfish in the Pacific, 70 of which are in the region he studies. They are one of the most sought after for commercial fishing. These fish bare live young, which is very unusual for a fish. These fish also live very long, well past 60 years and some in the tub shown above could be over 40. Scientists have a theory that the older the mother is, then the better mother she is to her live-born babies. Scientist are still learning a lot about them, but like many other fish they are becoming over fished in certain areas and greatly depleting (making vanish) populations of these fish. There are two ways to fish for Rockfish, one is to create a long line that is geared to benthic fish and the other is to simply fish the way we did last night, with deep sea rigs. We were catching them pretty quickly and probably caught 14 or so within 45 minutes. We used rigs that had 2 hooks on them and it was common to pull up two at a time.

When you pull up most of these fish, their bodies and eyes are all bulged out and sometime their swim bladder is coming out of their mouth and if you notice in the photo above they are all floating although many are not dead yet. Why is this? What happens to them? -- If you can answer this question you are half way to figuring out the answer to my **question of the day**.

The fisheries management has now set a limit to how many fish the commercial fisherman are allowed to bring per outing and they have set a limit of only 2 hooks per rod, whereas prior to this some commercial fishermen would use up to 10 hooks. There is no size limit because once you catch these fish you can't or have no reason to toss them back (**referring to question of the day**).

The commercial fishermen are pretty easy to monitor when they fish these benthic, fish. Management can go to their boat or meet them at the docks to check on them. Managing pelagic Rockfish is more difficult, because these fish hang out in the kelp and are easier to catch from a smaller craft, which allows for potential deception of total catch.



NOAA Teacher at Sea Elizabeth Eubanks holds a Rosie Rockfish.

We catch the fish, fillet the fish, eat the fish and then Dr. Vetter will take the carcasses (bones) to his lab to study the DNA. The more you learn about a fish, the more you can protect it from being depleted (vanishing) from an area. This is good, because so many fishermen count on this fish for their lively hood. If scientist learn more about the fish and protect the fish, then we will always have that fish around. Also we know that golden rule "we are all connected – we are all affected." So if we deplete the Rockfish, in some way we too are affected. Right? –Right!

Personal Log

I was so excited to have the opportunity to fish last night. But I did hate that my catch was so small and I couldn't just toss it back into the ocean, because it wouldn't survive. So that made me feel bad, it was still alive when I caught it and it looked at me with it's big beautiful eyes.

I am getting into the groove of things here. I was so happy to have slept well last night. I got up early even though I could've slept in. It is just so nice to be here. Of course I miss Rob and Hooch. I really miss Rob, because I know he would be so interested in all that we are doing on this ship.

Now, I am in terrible trouble. I just went into the galley to get a Fig Newton and I was told to open the cooler, that there was something better in there... I really thought they could be wrong, because I am not a huge ice cream fan. I am selective about what types really suck me in.... and OH NO! Ben and Jerry's Cherry Garcia has that capability! They have a huge carton of it. I am still amazed at all the food and well prepared meals on board.

Today, for lunch, I had black eyed peas, rice, mixed veggies and a great salad with hearts of palm and that was only the veggie stuff they offered!

Oh happy day,
Elizabeth Eubanks

Please direct your emails (questions for me and answers to my questions) to my yahoo account (so I can keep track of your questions) **AND** to the email address listed below. I will **NOT** be checking my yahoo email account until I return to land!

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Question of the Day

(2 parts)

Why would the Rosie Rockfish not survive if I put it back into the ocean, right after I caught it and realized that it was still alive, but very small?

Why is this (the inability of the rockfish to survive after being caught) a major problem for commercial fishing industries and the population of the Rockfish?

One more for fun-

What is the difference between an ice cream float and ice cream soda?

Question of the trip

Which hook, the J or Circle will catch more sharks?

Please make a hypothesis. Utilize resources to justify your hypothesis.

-----Yes, you get extra credit for this.

Vocabulary

Taken from the Sea, State, Wind and Clouds- US Department of Commerce

Sea Waves are generated by the wind blowing at the time of observation, or in the recent past, in your local area. Sea waves change after they move under the wind that has created them.

Sea Swell Waves – have traveled into your area of observation, after having been generated by winds in other areas (sometimes thousands of miles away). Swell waves remain symmetrical and uniform.