NOAA Teacher at Sea
Elizabeth Eubanks
Onboard NOAA Ship DAVID STARR JORDAN
July 2 – 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 3, July 24, 2007, Tuesday
Pacific Ocean - South of Catalina Island – a Channel Island

Weather Data from the Bridge taken at 1500 (3pm) - Deep Sea Temp at (2000) 8pm
Visibility: 10nm
Air temperature: 19.8 degrees C
Sea Temperature at 300m:
Sea Temperature at surface: 20.6 degrees C
Wind Direction: 250 W
Wind Speed: 09 kts
Cloud cover: partial Alto cumulus
Sea Level Pressure: 1011.4 mb
Sea Wave Height : 1 ft
Swell Wave Height : 2-3 ft

NOAA scientist Dr. Suzy Kohin (center places) two different satellite tags on a 197cm Mako shark.

Science and Technology Log
Today was absolutely beautiful, the sun was shining all day. We caught 3 sharks 2 Mako and 1 Blue in the first set and 1 Mako in the second set. This isn't a whole lot of sharks but for me, even one shark is great! The really cool thing about the day was that we got a Mako large enough to put satellite tags on. The tags are very expensive ~ $5,000, so they want make sure it is a big enough shark to wear the gear. One of the tags is called a P.A.T. and this stands for Pop Off Archival Tag. This tag collects data such as depth, temperature, light measurement, how far it is from the equator and rates of change. It can be set to record information during certain time periods. They only last up to 8 months and then they pop off. Dr. Kohin set this one to pop off in 6 months. The data is stored in the device so data cannot be retrieved until it comes off of the shark. It pops off of the shark floats to the

top of the ocean surface and then transmits basic data to a central location. Hopefully someone will find the tag and mail it back to NOAA – Dr. Kohin and she will receive a more complete data report. The other tag S.P.O.T. – Satellite Position Only Tag goes on the dorsal fin and as it implies, it only tracks satellites just like a GPS does allowing scientists to know the exact location of the shark.

P.A.T. (black tag) and S.P.O.T. (satellite tags)

Lauren Miko wanted to know what the Circular hook looked like, so here is a photo comparing the two. The circle is believed to cause less damage on the shark. The way that it is curved makes it harder for the shark to swallow, thus reducing the potential amount of internal damage. Also because of the curve sharks are most likely to get this type of hook stuck in its lip/jaw. These shark studies tag and release the shark and are conducted for the overall betterment of the shark, so they need to be kept healthy. Sharks are more likely swallow a J hook and could be damaged in ways that the scientist can't view even if they remove the hook. Regardless if the shark appears to be in great condition it is possible that it has suffered internally and isn't showing effects at the time. Does this make sense? Let me know if it doesn't.
FYI- the circular hook is harder to bait, so it is curved up just slightly to make it easier and not flat if you lay it on a table.

Circular Hook and J Hook size 16/0

Personal Log
This ship is so huge. We basically have about 5 hours a day we have to be on deck working.

Besides that time I am free and just so you know I spend a lot of time on this log for my students and all who read. I also read, send out emails, take dog naps in the sun and wander around from deck to deck , it is amazing how you could go for hours on this large vessel and not cross paths with anyone and then all of sudden you will go to the top deck and run into two people relaxing. It is like walking through a maze. There are more likely

places where you will find folks such as the Mess decks where you eat, snack, relax, watch the tube and of course make scientifically created milkshakes. You also may find people in the crew deck. This is where they have a huge TV, tons of books and lets see, about 500 movies to choose from. The more I think of it, the more I realize that most middle school kids would love this ship. Sean Maloney, it has your name written all over it! Of course although we have amazing food we don't have your mom's great banana bread – at least not yet! Lauren was my first student to send an email, then followed Karissa and Sean.

Grad students, Dovi Kacev, Heather Marshall and Lyndsay testing their ability to make the best milkshake – should you add brownies or Oreo cookies?

Thank you so much for reading and sending a note and questions. Lauren I believe I answered your question – do you now know what a circle hook looks like?

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!

elizabeth.eubanks.atsea@jonems.jordan.omao.noaa.gov

Question of the Day
You will notice that at the top of my weather data I list visibility in nm that stands for nautical mile. I also use the term when I say that we put out 2 nautical miles of long line to fish from. What is the difference between a mile and a nautical mile?

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.