



**NOAA Teacher at Sea  
Ginger Redlinger  
Onboard NOAA Ship RAINIER  
July 15 – August 1, 2007**

**NOAA Teacher at Sea: Ginger Redlinger**

NOAA ship RAINIER

Mission: Hydrographic Survey –Baranof Island Project

Date: July 25-27, 2007

Completing Survey Gulf of Esquibel, Tide Gauge Inspection – Nossuk Bay.

**Weather Data from the Bridge**

Visibility: 10 Nautical Miles

Wind directions: 110°

Wind Speed: 10 Knots

Sea Wave Height: 0-1 feet

Seawater Temperature: 14.4° C

Sea level Pressure: 1012.9 millibars (mb)

Cloud cover: Cloudy

Temperature: 16.7° C, (62° F)

**Mariner Word of the Day:** Scuttlebutt.

A scuttlebutt on an old sailing vessel was the barrel where drinking water was stored. People would gather and talk casually, or gossip, as they drank water. This led to the second definition of scuttlebutt, “a rumor.”

**Science and Technology Log**

We moved the ship from Steamboat Harbor to Bocas de Finas near Bush Top Island because winds were picking up. The ship is safer when it is not anchored in a high wind area! Weather matters a great deal when you are working on the water. Winds contribute to sea waves, swell heights, and can create less-than-ideal conditions for hydrographic surveying. Weather is taken into account in planning when, and where the ship will travel to work. It also determines what should be done first. Specifically, determining the day’s priorities can depend on what time the winds and seas are expected to change. While seaworthy vessels can work effectively in rough waters as is sometimes necessary, knowing when the water will be rough makes for better planning.

What I have come to appreciate on this ship is the accuracy of the weather predictions aboard the RAINIER. If the Orders of the Day (OOD) read that it is going to rain – it rains. If it tells me that there will be swells in the afternoon from 3 to 4 feet -there are! Now I don’t know about you, but I have noticed when I am at home the only accurate weather forecast I get is when I look out the window.

What is it about the weather information that is used on board that makes it so reliable?

First, there are many sources of information about the weather that are available, and second, they use them! The Officers on board know a great deal about the earth, from surface to upper atmosphere, so they know what information is necessary for a good analysis. There are many resources available to the RAINIER that you can access too. For example, there are text-based discussions of the weather based on the use of different global models, there are local forecasts, there are infrared satellite maps updated every 30 minutes so you can see where clouds are forming and how they are moving, there are also satellites that collect data in order to show the visibility spectrum, or how much light is available –every 30 minutes. (It tells you the amount of radiant-light energy entering the area.) Another is QuickSCAT that creates a chart of the wind’s movement in an area (with lots of small arrows) so you can see exactly what directions it is moving (wind swirls and moves like water around rocks – it doesn’t just go in one direction all the time!). Lastly, there are grids that tell you the extent of high and low pressure systems, how strong they are, and where they are likely to move. Pressure systems impact the direction of the winds, and their strength.

With all of this information, you can take into account many variables that effect navigation: visibility, wind speed and direction, cloud cover, precipitation (which also impacts visibility), water movements, (direction and speed of waves, and swells). I should also add a non-weather related variable that impacts planning – tides. Considering all these variables together helps predict conditions in order to choose the best time of day to complete work, and move vessels through the water SAFELY! As everyone starts their day they know what to expect so they are well prepared.

Website for weather information related to the RAINIER’s work (thanks to CO Noll):

- ✓ Marine Forecasts Homepage: <http://www.weather.gov/om/marine/forecast.htm>
- ✓ Offshore Forecast for Southeast Alaska:  
<http://weather.noaa.gov/pub/data/raw/fz/fzak52.pajk.cwf.aeg.txt>
- ✓ National Weather Forecast Discussion Page (with glossary hyperlinks):  
<http://www.crh.noaa.gov/product.php?site=NWS&issuedby=AJK&product=AFD&format=txt&version=1&glossary=1>
- ✓ Coastal Zones of Southeast Alaska:  
<http://lowbandwidth.arh.noaa.gov/wmofcst.php?wmo=FPAK57PAJK&type=public>
- ✓ GOES Infrared satellite (good for clouds):  
<http://www.goes.noaa.gov/GIFS/ALIR.JPG>
- ✓ GOES Visible spectrum satellite (good for sun)  
<http://www.goes.noaa.gov/GIFS/ALVS.JPG>

- ✓ British Columbia forecasts, eh.  
[http://www.weatheroffice.gc.ca/marine/region\\_01\\_e.html](http://www.weatheroffice.gc.ca/marine/region_01_e.html)
- ✓ QuickScat (Wind direction and speed):  
[http://www.ssmi.com/qscat/scatterometer\\_data\\_daily.html?rgn=pacific\\_north\\_east&size=small](http://www.ssmi.com/qscat/scatterometer_data_daily.html?rgn=pacific_north_east&size=small)

And graphics:

- ✓ Pacific Profiles – Predictive Charts  
[http://www.opc.ncep.noaa.gov/shtml/P\\_brief.shtml](http://www.opc.ncep.noaa.gov/shtml/P_brief.shtml)
- ✓ Local Higher-resolution grids (experimental):  
<http://pajk.arh.noaa.gov/fcstgrids.php>

**Yesterday's work:**

Tide Gauge check – Nossuk Bay. We traveled to Nossuk Bay to inspect a Tide Gauge, as it was not sending data correctly. Tide gauge inspections require SCUBA (Self Contained Underwater Breathing Apparatus.) The divers were going to 40 feet below the surface. The pressure is greater underwater every 33 feet, so it is harder to move and to breathe. A specialized crew is sent for this job since it requires specific training in order to execute perfect communication, keen observations, and precise movements of the boat.



**ENS Pereira, Divers- Physical Scientist Campbell and LT Yoos, Coxswain O'Connor review safety checks and dive plan.**



**Divers begin their descent.**

After ensuring the underwater section was working properly attention shifted to the land-based components. The crew, except the coxswain, went ashore to inspect the rest of the equipment. Since we noticed fresh bear sign in the area, we talked loudly and kept our eyes open.

After everything checked out ok we returned to the ship. I had fifteen minutes to eat lunch and return to the boat for sediment surveys and a run to

Craig, AK to pick-up two officers joining the RAINIER for the trip back to Washington. One is a Junior Officer returning to the RAINIER for the trip back to Sand Point. The other is the new Commanding Officer, who will be replacing CO Noll. CO Noll's commission with the RAINIER ends with the completion of this journey.

We gathered samples from seven different locations where ships and boats anchor when they enter Boca de Finas. Knowing the bottom type can ensure safe anchorage. Not knowing what the bottom



**Survey Tech Krynytsky and ENS Villard-Howe (Navigation Officer) gather and examine bottom samples.**

neatly arranged everything was – with one exception – the boots in the picture below. I asked the man behind the counter about this and he said, “The contents of those boxes will be gone in the next 48 hours – so we don't bother to mess with them. So I think the crew is correct.

At about 10:00 last night, I asked ENS Villard-Howe some questions about ropes, navigation & direction vocabulary. We started to talk about all sorts of nautical topics. She went to her cabin and brought me three very important books – her top three if you want to know anything about maritime topics! The Eldridge Tide and Pilots Book (first written in 1854),



**Checking the transmission equipment to ensure it is working properly.**

is made of when you drop anchor can be dangerous. Surveying the bottom consists of dropping a line with a scoop to the bottom, and examining the contents once the sample is back on board. The contents are compared to a descriptive chart to be sure the correct classification is selected. This information will appear on NOAA charts to help navigators in this area.

### **Personal Log**

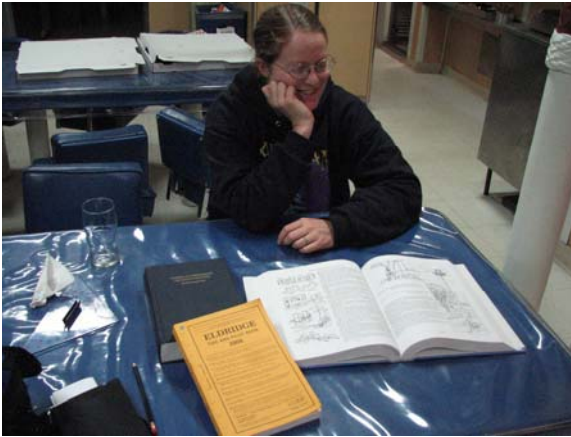
The crew jests that the official footwear of Alaskans is a boot called XTRA TUF. When in Craig, we stopped in at the local sporting goods store and I noticed how



**Sporting Goods - Craig, Alaska**



American Merchant Seaman's Manual, and The Ashley Book of Knots. (If anyone wants to get me books for my classroom – these are the three on my wish list! Young potential mariners and marine scientists can learn a great deal from them! )



**Villard-Howe's top three books.**

We talked for another forty-five minutes. As we started to yawn in between sentences we said “enough.” (It wasn't the company or the topic we were exhausted.) I have to admit, I felt like I was talking with someone who knows and loves the history, knowledge, and skills of her work. She has a true passion for maritime work and her work on the RAINIER.

For my students, I wish them the same level of passion for their endeavors and appreciation for the contributions and history in their yet-to-be chosen field. It is this kind of dedication that makes a great worker, teammate, and leader. There are

many examples of this on board – I just happened to spend the later part of the evening exploring the depth of knowledge of one crewmember!

Personal milestone- Sea legs: I ate greasy-yummy pizza on the way back from Craig, AK (a small port town on Prince of Wales Island), while bouncing and rocking across 2-3 foot swells for an hour and it didn't bother me one bit! : )

### **Question of the Day**

Topic 1: What websites can you use to learn about tomorrow's weather in your area? (Start from the ones that are listed above, and see if you can't find the links from the SE Alaska sites to your local information.) What information is used to forecast weather in your area? Using the information on the website, try to forecast the weather tomorrow – (temperature, precipitation, general conditions.) See what the “news forecasters” say. Check to see how you did. What would you do different the next time you try to forecast the weather?

Topic 2: How do satellites gather satellite information? How many weather satellite systems are on the NOAA website? Where is the closest NOAA weather station in your area?

Topic 3: What is a Merchant Marine? Where do Merchant Marines work?