



NOAA Teacher at Sea
Jennifer Fry
Onboard NOAA Ship *Miller Freeman*
July 14 – 29, 2009

NOAA Teacher at Sea: Jennifer Fry

NOAA Ship *Miller Freeman* (link: <http://www.moc.noaa.gov/mf/>)

Current location of ship: www.shiptracker.noaa.gov (choose *Miller Freeman*)

Mission: 2009 United States/Canada Pacific Hake Acoustic Survey

Geographical area of cruise: North Pacific Ocean from Monterey, CA to British Columbia, CA.

Date: July 18, 2009

Weather Data from the Bridge

Wind speed: 40 knots

Wind direction: 350° from the north

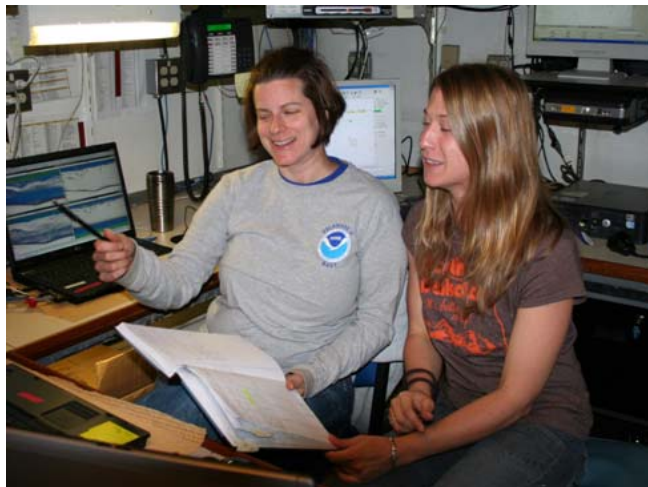
Visibility: foggy

Temperature: 12.9°C (dry bulb); 12.0°C (wet bulb)

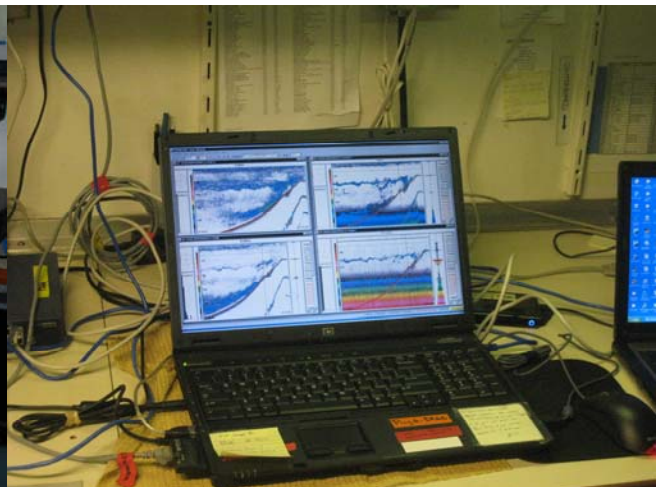
Wave height: 8-10 feet

Science and Technology Log

Acoustics: Lisa Bonacci, chief scientist, and Melanie Johnson, fishery biologist, are in the acoustics lab onboard the *Miller Freeman* as it travels along a transect line. NOAA scientists can detect a variety of marine life under the sea. They use sonar—sound waves bouncing off an object—to detect the animals.



Lisa Bonacci, chief scientist and Melanie Johnson, fishery biologist in the *Freeman's* acoustics lab



This is the sonar readout as it's seen on the computer screen.

There is an onboard sonar system that puts out four different frequencies of sound waves. Each type of fish will give off a different signal depending on its size, shape, and anatomy. The fish are then identified on the sonar computer readout. The strength of the sonar signal will determine the number of hake and the way that they are swimming. As soon as it appears on the sonar as if hake are present, Ms. Bonacci then calls the bridge to request that we trawl for fish.

Personal Log

The boat was rocking in all directions with 40 knot winds and 8-10 foot waves. The fishing trawl brought up scores of fish including a lot of hake. The sonar signals worked really well to locate them.

We dissected and measured many fish, but not before we sat in a giant vat of hake (see photo.) It was a great learning day.



Here we are in a giant vat of hake!

(continued)

Animals Seen Today

Fish:

- hake
- spiny dogfish

Humbolt squid

Myctophidae

Birds



American fishery biologist, Melanie Johnson, and Canadian fishery biologist, Chris Grandin, take biological samples.

Discovery from the Briny

As the trawl net was raised from the depths
The sun broke through the clouds revealing a sparkling azure sky.
Scores of seagulls circled the stern
In the hopes of a bountiful offering
Tasty morsels from the deep
Soon to be thrown overboard.