



The HMSC Newsletter



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Pamela Rogers, Editor



Bruce Mate and crew aboard the R/V Beagle

Marine Mammal Program: Research and Discoveries in 2002 *by Carol DeLancey*

Bruce Mate's group, the Marine Mammal Program, uses satellite-monitored radio tags to track the movements of endangered whales, with the goal of finding and characterizing the critical habitats of these whales (where they feed, breed and calve). Here are some of the highlights from 2002:

Right Whales

For the first quarter of the year the group continued to receive telemetry from southern right whales tagged off South Africa in September 2001. Tags were applied to whales in two areas: Witsand (on the Indian Ocean side of South Africa) and Saldanha Bay (on the South Atlantic side). Animals from these two locations have been thought to be separate stocks.

Of the 21 tags applied, 18 sent telemetry, with four of the tags lasting longer than 100 days and one transmitting for 161 days—a record for this species.

Before this study began, the *only* record of a southern right whale anywhere other than the coast of South Africa was a single photograph taken near Bouvet Island in 2000. Our understanding of southern right whale movements has increased substantially due to this study.

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The first thing that surprised the group was that initially, five of the whales moved in nearly parallel pathways. They were all going in the same direction, but not traveling together. It appeared to be the first example of an open ocean migratory corridor ever seen in a whale species. As the study went on, four animals went to or near the edge of Antarctic sea ice. Three animals moved north into an area associated with old whaling grounds, linking whale movements of many years past with those of the present. Mate and his group suspect that the convergence of cool waters from the south with warmer waters from the north may create a food-rich area that attracts right whales to that area.

When the whales' tracklines were overlaid with seafloor topography, the group found evidence that the whales may home in on certain seafloor features, either for navigation or because they cause upwelling which promotes growth of food sources. One remarkable association occurred when three different whales crossed over the same underwater ridge at separate times, and ridges appeared frequently along the tracklines of several whales. It is not yet clear whether they know about these ridges and purposely move over them, or whether they are simply there because a good food source is also there.

Two things that the study was able to prove immediately were: 1) the animals from Saldanha Bay and Witsand are not different stocks (some of the tagged animals moved from one tagging area to the other); and 2) some animals never left the coastal area, staying throughout the summer feeding season. This means that South Africa is now the first known location for studying feeding right whales in the southern hemisphere, and is also an example of animals moving back into an area where they were once abundant before everyone thought that whaling had eliminated the summer feeding population.

Sperm Whales

In January 2002, Bruce went to New Orleans to present the findings from the August 2001 tagging of a sperm whale in the Gulf of Mexico.

The meeting was attended by academic researchers, scientists from federal agencies such as National Marine Fisheries Service and Minerals Management Service, and representatives from the oil and gas exploration industry. All were intrigued by Bruce's report, since this is the first time that detailed data have ever been recorded for a sperm whale's movements. The whale moved back and forth along the 1000-meter contour near the Mississippi Canyon for three months, leading the group to wonder if sperm whales there had year-long site fidelity. But then the whale headed east and then south, traveling in a counterclockwise path around the Gulf of Mexico to the Gulf of Campeche, where the tag ceased transmitting after 137 days and 5,116 miles, due to battery exhaustion.

Given this proof that, for the first time, it is technologically possible to track a sperm whale's daily movements, several of the attendees at the meeting got together and hammered out a collaborative research agreement funded by Minerals Management Service. The three-year research plan involves the collaboration of Texas A&M University, Woods Hole Oceanographic Institute, Oregon State University, Minerals Management Service, and the oil and gas industry. (The oil and gas industry has a vested interest in learning whether the acoustic exploration for undersea reserves has an impact on marine mammals, but until now, no method existed of determining this impact objectively.)

In June, the OSU research team traveled to the Gulf of Mexico for three weeks, and in that time were able to attach tags to 18 sperm whales. In a first for the research program, a 100 percent success rate was achieved and every single tag transmitted! Several of the tags continue to transmit into January 2003, and the group is now sending a team back into the Gulf of Mexico to relocate some of these animals, both to document the long-term effects of tagging and to see what other whales the tagged animals may be associating with.

Humpback Whales

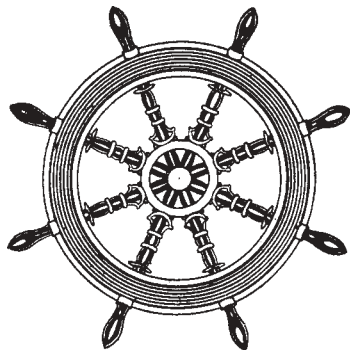
Within days of the team's return from the Gulf of Mexico, they were attempting to tag hump-

back whales off the Oregon coast. This research, funded partially by GLOBEC and by the National Oceanic and Atmospheric Administration, is intended to learn more about the migratory routes and winter habitats of eastern North Pacific humpback whales. Unfortunately, humpbacks tend to stay at least 30 miles off the Oregon coast, making them very difficult to get to in a land-based operation. Also, the Oregon coast is notorious for strong winds, fog, and rough seas in the summer—and this summer was no exception. The team was unable to tag a single whale. They had to give up by mid-August, because at that point it was time to pack up the gear for their next trip: to Gabon, and the opportunity to tag the first humpbacks ever tagged in the southern hemisphere. This work, funded partially by the Wildlife Conservation Society and partially by the Marine Mammal Program Endowment, will discover for the first time where African humpbacks go during their spring migration and summer feeding season.

Despite some rough living conditions and weather difficulties, the team was very successful in Gabon, putting out 15 tags. (Ironically, humpbacks off Africa were easier to locate and tag than humpbacks off the Oregon coast.) Data from these tags came in through December, and analysis is still underway.

2003

Now the group is preparing another round of studies, including research on humpback whales off Socorro Island, Mexico; year two of the sperm whale research in the Gulf of Mexico; fin whales in the Mediterranean; and possibly humpbacks off Madagascar. It should be another busy year for the OSU Marine Mammal Program.



NMFS Modular Office Building Leaves

The double-wide modular office building brought in by NMFS Northwest to house its overflowing staff in August 2001 was removed on December 19, 2002. It was a delicate job squeezing in the unit between the east wing of the main building and the NAL, and then carefully extricating it. The staff formerly housed in the modular unit have moved into either the new Barry Fisher Building or the NAL offices vacated by others moving into the Fisher building. The lawn area will be returned to its pre-building state as soon as conditions permit.



February Soup Kitchen Coming Up

Yes, it's almost time for that wonderful homemade soup and goodies to satisfy your hunger every Tuesday noon in the mailroom in February. All proceeds go to the Lincoln County Food Share where support is badly needed.

It takes at least two big pots of soup to feed everyone, so the sign-up sheet in the Director's office has two spaces for soup chefs. There are also spaces for the bread and sweets chefs.

Come fill up your bowl and open your heart!



THE BIG ONE: Earthquakes in the Pacific Northwest

The big one – it's not a matter of if, just a matter of when. That is the message of *The Big One: Earthquakes in the Pacific Northwest*, a new exhibit that will be on display at the Visitor Center from January 9 through March 10.

Created by the Burke Museum of Natural History and Culture in collaboration with the region's leading earthquake experts, the exhibit addresses key questions that every Northwesterner should know: *Why are earthquakes inevitable here? What hazards do they present? What can we do to prepare?*

Visitors to the exhibit will learn about the geological processes that cause Northwest earthquakes, the ways earthquakes are detected and measured, the hazards they present, and steps we can all take to make our homes and families safer. There also are examples of intriguing earthquake research, including the fascinating scientific detective story that proved that major earthquakes—"Big Ones"—really *do* happen here.

In conjunction with the exhibit, the Visitor Center will sponsor several talks on the topic of earthquakes. On Saturday, January 11, the Burke Museum's Senior Research Geologist, Dr. Catherine Townsend, will present a public lecture on "Earthquakes, Mountains, and the Geologic History of the Northwest

On Saturday, January 25, Dr. George Priest of the Oregon Department of Geology and Mineral Industry will discuss "Cascadia Subduction Zone Earthquakes: What to Expect on the Oregon Coast."

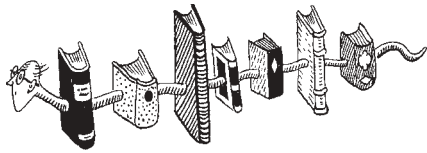
Future talks will be on February 15 and 22, March 1 and 8. All talks will be in the Hennings Auditorium at the HMSC at 1:30 and are free and open to the public



HMSC Holiday Potluck a Great Success

The annual holiday potluck was very well attended last month, and featured several six-foot tables literally groaning with the weight of all the food. Besides the spiral cut ham and the barbecued tuna provided by the science center, the staff brought in food of all descriptions: oysters, smoked salmon, green and pasta salads, rice and grain dishes, beans and vegetables and other healthy things...and then, of course, there was the dessert table...tables, actually, because a second one had to be brought in when space ran out on the first. There were cookies and cakes and brownies and fudge and of course, John Chapman's famous homemade chocolates. It was noted after the dinner that although several dishes on the salad/entrée tables still had some food in them, there wasn't much left on the dessert tables.

The roar of conversation was nearly deafening in the visitor center, and so many people showed up for the meal that seating became a precious commodity. (These are both signs of a good party.) Some people were trickling out by 5:30, an hour and a half after the party began, but by six the public wing was still full of chattering staff. The general consensus was that the new, later time for the potluck was a great success, enabling the staff to relax more fully and enjoy the opportunity to chat with their coworkers and friends without having to watch the clock and get back to work.



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2002 Weather

Interested in what the weather really did this past year at the HMSC? Check out the 2002 summary courtesy of Clay Creech. <http://secchi.hmsc.orst.edu/weather/guin2002/year2002.html>

High wind gust was 62 mph, the low temperature 30.8 and the high 93.8. Even though we had a very dry summer and a spectacular fall lasting well into November, it still rained about the normal amount. Average is 69.6 inches and we got 69.5 - pretty average! The tipping rain gauge on top of the library tends to measure less rainfall mainly because it gets overwhelmed during deluges. So, here's the National Weather Service weighing rain gauge summary page - <http://secchi.hmsc.orst.edu/weather/nws/nwsweigh2002.html>

Long-time library users may be familiar with the continual problem of periodical price inflation: the price for journals keeps going up while the budget does not. Libraries are working hard to find answers to this problem. The BioOne Project (<http://www.bioone.org/>) represents one solution. It is a partnership of scientific societies, libraries, universities and the commercial sector. BioOne aims to provide electronic access to high-impact biological journals, and it gives us a partial way out of our budget problems.

The Guin Library has cancelled its print copies of the following journals available through BioOne:

American Midland Naturalist
Auk
Evolution
Integrative and Comparative Biology
Journal of Mammalogy
Journal of Parasitology
Systematic Biology

In addition, we have cancelled our print copies of the following journals in favor of electronic access:

Ecological Applications
Ecological Monographs
Ecology

New Library Display - Classics of Sea Stories

Authors through time have used the sea as a vivid backdrop for high adventure, an environment for mystery, and a metaphor for life. The latest exhibit in the Guin Library highlights a few classic stories from the *Odyssey* to *20000 Leagues Under the Sea* to *Horatio Hornblower*. The inspiration for the exhibit is twofold: first, winter is a great time to curl up with a good book; and two, Grove Koger of the Boise Public Library crafted a fascinating bibliography of classics published in *Wilson Bulletin*, 1994. The exhibit will be up through March 2003.

Exchange Journals

For years, users of the Guin Library have enjoyed reading current issues of journals that we do not get locally. These are sent over from the Valley Library upon receipt and we keep them for several days. Upon the recommendation of the Guin Library Advisory Committee, we are trying to get a more consistent schedule for the journals so people can plan regular times to browse the exchange journals. We also need to update the list of journals we receive. Those on the Guin Library Discussion List will get the full list and can make comments on what to add and what to drop. The list will also be posted by the exchange journals. Janet would appreciate hearing suggestions for additions and deletions from anyone. Those titles without any champions will be dropped. She will circulate a revised list in late January for final comments and then make the changes in February.





Personnel News

Hal Gray (our Port Engineer) and his wife **Michelle** had a baby girl November 27. Her name is **Molly** and she weighed in at 6 lbs 10 oz.

Welcome also to **Tess Margaret Dziak**, the first child of **Bob Dziak** (NOAA VENTS) and wife **Julie**! She arrived on November 22, weighing 7 pounds 2 ounces and 20 inches long.