

WHALE WATCHING

Student Looks for Clues in Whale Boings

Cory Ann Hom-Weaver's (ASCI '09) senior project took her on a two-week cruise in the waters off Kauai, Hawaii, on an 87-foot sail boat, complements of the U.S. Navy.

"When I first thought about a senior project, the last thing that came to mind was whales, and yet there I was, in the middle of the Pacific in search of the elusive minke whale," Hom-Weaver said.

The project was led by marine biologist Tom Norris, president of Bio-Waves Inc. in Encinitas, Calif., and funded by the Navy. And it brought Hom-Weaver back to her hometown of Kauai.

The objective was to collect as much data as they could about that particular whale in that particular location. For two weeks, the 10-member crew towed a 200- to 400-meter long hydrophone array behind the vessel, collecting "boings," biological signals made by the minke that are thought to be a type of song related to courtship and breeding.

"Back on land, I was able to analyze the boings that we had sampled and compare their pulse repetition rate (the difference in frequency between the harmonics of the signal) to boing noises



that had been previously collected off Kauai," Hom-Weaver explained.

"I also analyzed boings that had been collected near Guam and the Northern Mariana Islands – where minkes were not known to exist – and compared those data to data collected in Hawaii and in waters off San Diego. We wanted to see if the population of whales around the Northern Mariana Islands had distinct stock structure from the two types already identified," she said.

The team discovered that the boings collected off Kauai were statistically different than the other two types.

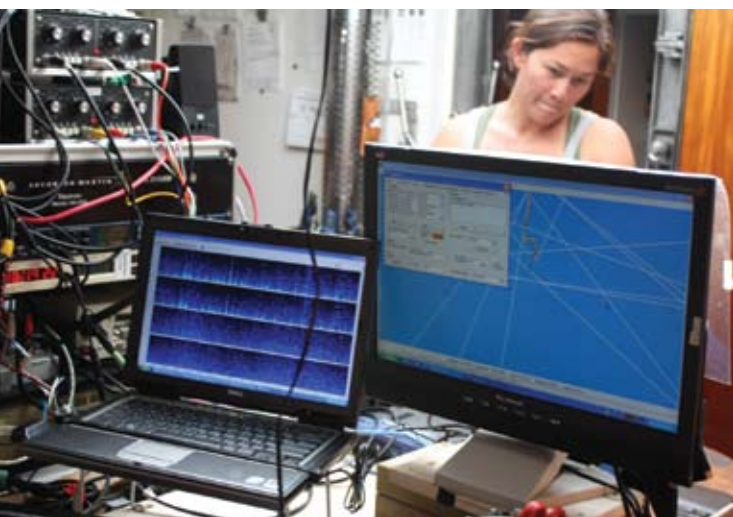
So why is this information important?

"Boings are thought to be a type of song that might be related to reproductive behavior," Hom-Weaver said. "It is possible these islands are places of breeding and courtship. It is important to know the location and reproductive behaviors of these animals for management and conservation purposes.

"In its national defense mission, the Navy is responsible for environmental stewardship," Hom-Weaver explained. "Therefore, if they know the location and population densities of these animals, they can limit their practices to areas with low marine mammal populations, so as not to interfere with them."

Now on terra firma, Hom-Weaver ruminates about her senior project experiences.

"I learned how to set up and use a hydrophone array for passive acoustic operations. I learned that field research is much harder than it looks. I learned the basics of sailing and the art of patience. When you're working on the water all day long, with computer equipment that is not 'sea worthy,' trouble shooting is a great skill to have."



Cory Hom-Weaver analyzes whale boing frequencies for her senior project.