



2003 Field Staff: (from left) Adam Frankel, Christine Gabriele, Suzanne Yin, Susan Rickards

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**HMMC UPDATE - June 2003**

### Summary of Winter 2003 Field Studies of Humpback Whales off the Kohala Coast

The 2003 field season, between 11 February and 13 March 2003, was the Hawai'i Marine Mammal Consortium's (HMMC's) most diverse and ambitious effort so far, and we believe it was a real success. We continued to collect and build upon our data base of shore-based scan data. We will incorporate these data into a manuscript on the relative distribution and abundance of humpback whales (*Megaptera novaeangliae*) in Kawaihae Bay 1988-2003. We built and installed a sonobuoy array that allowed us to record whale song and locate individual singers from the shore station for the first time in ten years. We hosted a well-attended "Listen to the Whales Day" public event at shore station. We conducted photographic identification surveys and learned to collect genetic samples. The purpose of this newsletter is to provide our supporters and interested friends with a summary of the winter 2003 season. It also gives us a chance to thank the many people who helped make it all possible.



*Adam Frankel rigs a sonobuoy for a water test at Kawaihae Harbor*

#### **Acoustic Tracking of Singing Whales**

The preparations for the hydrophone array began in December, immediately after we were notified that we had been awarded the Hawaiian Islands Humpback Whale National Marine Sanctuary and State of Hawai'i Department of Land and Natural Resources research contract. Adam picked up where he left off after the 2002 field season, building sonobuoy transmitters and PVC buoys in his garage in Maryland. Once in Hawai'i, we assembled and tested the sonobuoys and designed anchoring systems that allowed us to bring the buoys

home every night. We installed the array in late February, when our research vessel, *Malolo*, (on loan from the University of Hawaii West Oahu) was ready, after having its new Honda 4-stroke engine installed. The sonobuoys transmit underwater sounds through the air, via antennas, that are picked up by radio receivers on shore. It was great to be able to hear whales from shore again, and in total we collected 17.5 hours of acoustic data during 5 days of recording. Now that we have the equipment together and the first round of technical issues resolved, we look forward to perfecting the behavioral data collection that will allow us to address questions about the interactions of singing males with other whales.



*Susan Rickards teaches scan protocol to high school students from West Hawaii Explorations Academy*

### **Shore-based Scans**

The "Old Ruins" shore observation site is located on the northwest coast of the Big Island of Hawai'i, approximately 65 meters above sea level, overlooking Kawaihae Bay. We conducted scan observations once per day in one of four alternating time blocks (7-9 AM, 10 AM-12 noon, 1-3 PM, 4-6 PM) to ensure equivalent coverage of all daylight hours. The goal of each scan was to document the presence and relative position of all marine mammals, vessels and aircraft. HMMC staff assumed the roles of behavioral observer and theodolite operator, while students and volunteers rotated through the roles of computer operator and notetakers (including map-maker). Whale and vessel locations were recorded with a theodolite or 7x50 binoculars with compass and reticles. In 2003, we conducted 57 scans on 16 days, resulting in 41.3 hours of observations from our shore station. In addition to numerous humpback whales, we also observed spinner dolphins (*Stenella longirostris*) on 7 days. In contrast to 2001 and 2002, false killer whales (*Pseudorca crassidens*) were not seen this season. Vessels: We saw an average of 5.4 vessels in each scan (s.d. = 2.8, range 0 to 11). Two scans had no vessels present. Aircraft: Most scans had zero or one aircraft sighting (mean = 0.8 aircraft, s.d. = 1.1, range 0 to 4). The 2003 scans add to a long-term database on the relative distribution, behavior and seasonal presence of humpback whales off the Kohala Coast. Three high school students from the West Hawaii Explorations Academy assisted us with the scans during school hours as part of their academic curriculum. We were impressed by the students' ability to quickly pick up the techniques we taught them. Despite some logistical and scheduling challenges, we felt that the collaboration was beneficial to the students and to the research.



*Susan Rickards, Chris Gabriele and Suzanne Yin in their element, on the water with whales*

### **Boat-based Studies of Individual Whales**

We opportunistically approached humpback whales to get fluke identification photos during most daily trips to set and retrieve the sonobuoys in *Malolo*. Including groups encountered on 5 boat days of directed photography and genetic sampling, we approached 52 groups (containing about 126 whales) and were able to collect many photos as well as 19 sloughed-skin & biopsy samples.

### **Sharing the Results of the Research**

HMMC hopes to be able to provide the rigorous scientific information on marine mammals and other marine resources along the Kohala coast by describing patterns of distribution, habitat use, and behavior of humpback whales. HMMC also provides educational opportunities and makes the results available to educators, community members and resource managers. that will be needed by resource managers to evaluate the



potential effects of development and other threats. Reports are being prepared for the Hawaiian Islands Humpback Whale National Marine Sanctuary and the State of Hawai'i Department of Land and Natural Resources. At "Listen to the Whales" Day we started a community mailing list so we can stay in contact with interested members of the public through our website ([www.hmmc.org](http://www.hmmc.org)) and presentations. So far this year, public presentations have been given at Waikoloa School, at the Northwest Hawaiian Islands



Discovery Center in Hilo, as well as a live appearance by Chris Gabriele on the O'ahu-based educational television program, *KidScience*.



**ACKNOWLEDGEMENTS:** This project would have been impossible without funds provided by the Hawaiian Islands Humpback Whale National Marine Sanctuary and State of Hawai'i Department of Land and Natural Resources. HMMC board-member Joe Mobley of the University of Hawai'i loaned us a skiff (*Malolo*) needed for sonobuoy maintenance and photo-ID surveys, and Honda Motor Corporation of America gave us a sweet deal on an engine to replace the old

ones on *Malolo*. Without this generosity, the project may not have been feasible. Likewise, we could not have succeeded without support from local volunteers like Kim New, Holly Sargeant-Green, Todd Buczyna and Emily Herb. For data collection help we thank Corey Holiday, Ryan Turner and Nhamdi Kassel from the West Hawai'i Explorations Academy and their teacher Nina Greenberg and 'taxi mom' Nancy Turner for making it work. The eight-member 2003 Hawai'i Explorer's Club expedition did an outstanding job helping with scan data collection. Thanks to Susan Chivers and Nick Kellar of National Marine Fisheries Service Southwest Fisheries Science Center for providing a NMFS scientific research permit and biopsy training. HMMC board-member Chris Clark of Cornell University loaned us an amplifier that made it possible for us to listen to the sonobuoys from shore. Assistance from Dave Mellinger and his software "Ishmael" made real-time tracking of singers a reality! Paul Berry's role as "Mr. Fix-It" was much appreciated. Without Billy Rickards' willingness to drive to work in whatever car we gave him, the *Malolo* never would have gotten in the water. Thanks to Kathy Frost and Lloyd Lowry for having us onboard *Stryker* for biopsy training. The



administrative support of the Kula Nai'a Foundation was essential to the success of the project. Funding for the project came largely from a contract with the State of Hawai'i Department of Land and Natural Resources and the Hawaiian Islands Humpback Whale National Marine Sanctuary. Contributions from the Explorers Club Hawai'i 2002 and 2003 Expeditions (Angela Barranco, Mort & Danielle Beebe, Dan Bennett, Collette Cutrone, Constance Difede, Will & Nancy Harte, Faanya & Robert Rose, Brian Hansen, Giangi Negra, Sylvia Taylor, Mike Thoresen, Fleur van der Minne, and their fearless leader Scott Hamilton) made it possible for us to come close to making ends meet!