

False Killer Whales Around Kaua'i and Ni'ihau

by Robin W. Baird



A false killer whale off the Napali coast of Kauai, June 14, 2012.

—Robin W. Baird photo

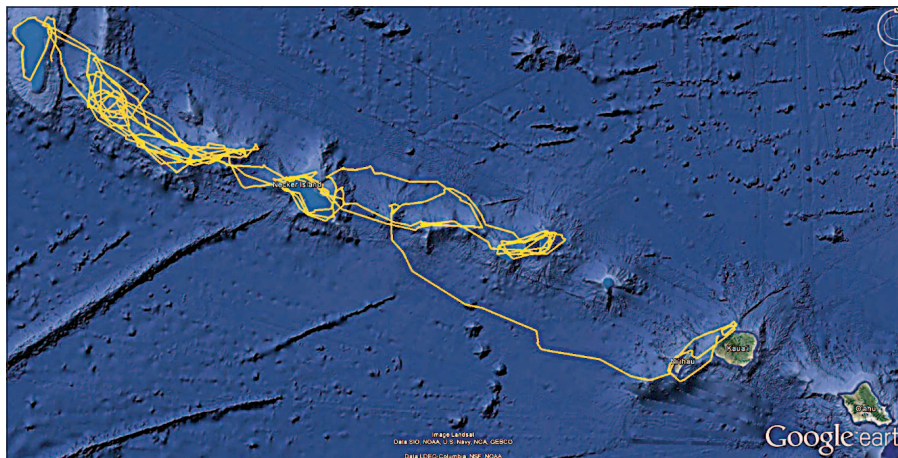
■ Much of what we know about the abundance, movements and residency of false killer whales in Hawai'i's waters comes from photographs of their dorsal fins, either taken during our research, or contributed by other people who spend time on the water. These photos, if they show distinctive markings on the fin, allow us to track individuals through time, see who they associate with and where they go, and estimate their abundance.

I first started working with false killer whales in Hawai'i in 2000 while living on Maui, photo-identifying individuals and using a crossbow to collect small skin/blubber samples for genetic studies. In 2002, this work was expanded to the leeward waters of O'ahu and the Big Island where we encountered false killer whales, albeit infrequently, an average of only once every 14 days on the water.

The photo-identification work, based on resightings of distinctive individuals, indicated there was a small population, with less than 200 individuals, that appeared to be resident to the islands. The genetic analyses of the skin samples, undertaken at the Southwest Fisheries Science Center, revealed that false killer whales around the main Hawaiian islands are reproductively isolated from those in offshore waters.

In 2003, as part of a six-week long trip on the *ALA KAZAM*, starting off Kona and ending off Kaua'i, we surveyed with two vessels for 12 days around Kaua'i and Ni'ihau, including a trip out to Ka'ula Island, but did not find any false killer whales. Trips back to Kaua'i and Ni'ihau in 2005, 2008, twice in 2011, and in January 2012 were productive for finding other species of whales and dolphins, but false killer whales eluded us, despite spending 88 days on the water during these research efforts.

In 2007, we started remotely deploying satellite tags (about the size of a 9-volt battery) with an air rifle. These tags were implanted with titanium darts into the dorsal fin and allowed us to track false killer whales and other species of toothed whales in Hawai'i for periods of weeks to months.



Map showing the trackline of a false killer whale satellite-tagged off Kaua'i on June 13, 2012, over a 42 day period through July 25, 2012



A false killer whale mother and calf. The adult female was identified as HIPc116 in our photo-ID catalog based on distinctive markings on the dorsal fin. HIPc116 was first documented off Kona in 1990, and has been documented in 10 different years off the islands of Hawai'i, Maui or O'ahu.

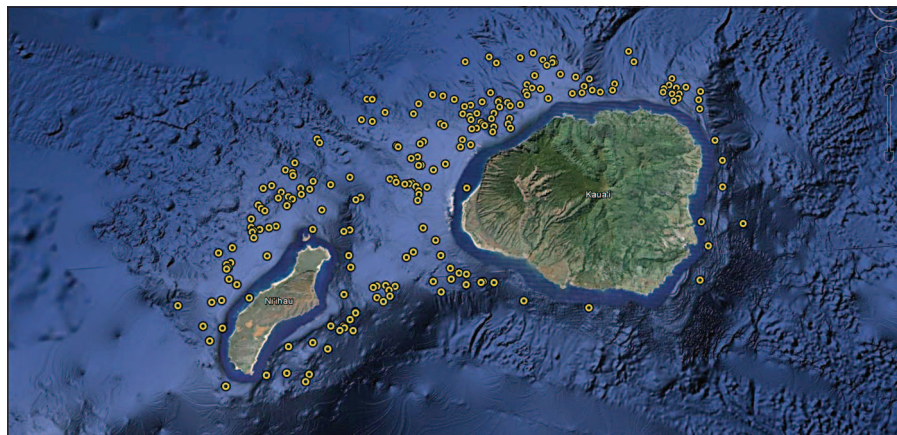
—Robin W. Baird photo

We tagged false killer whales off the Big Island (each year from 2007 through 2011) and off O'ahu (in 2009 and 2010), a total of 27 individuals tagged for an average of 48 days each.

The first animal we tagged off O'ahu moved to the west around Kaua'i and Ni'ihau, our first evidence that individuals from the resident population that moved between O'ahu and Hawai'i also used the area around Kaua'i and Ni'ihau. We had some photos of false killer whales off Kaua'i taken in 2008 by Chris Bane, the captain of *HOLO HOLO* at the time, but these individuals did not match our catalog, so whether they were part of the main Hawaiian islands resident population, or from some other population, was a mystery.

In 2010, the first photos of distinctive false killer whales in the Northwestern Hawaiian Islands, taken off Nihoa during a research cruise by the Pacific Islands Fisheries Science Center, helped solved the mystery. Some of the whales photographed in 2010 matched the individuals photographed by Chris Bane off Kaua'i in 2008. Combined with satellite tag data from two individuals tagged off Nihoa, this work provided evidence that there were two island-associated populations of false killer whales in the Hawaiian island chain, one in the main Hawaiian islands, and one in the Northwestern Hawaiian Islands, with the two populations overlapping around Kaua'i and Ni'ihau.

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Map showing locations of a false killer whale satellite tagged off Kaua'i on July 26, 2013, over a 20-day period. This individual was with some of the same individuals that were satellite tagged in June 2012.

False Killers Whales ...continued

Since 2011 we've been conducting twice-yearly field projects off Kaua'i, funded by the U.S. Navy, to get a better idea of what species and populations of toothed whales are being exposed to sonar on the Navy range between Kaua'i and Ni'ihau. On the second day of our second trip to Kaua'i in 2012, we finally encountered our first group of false killer whales off the island. We were able to get good photos of 13 individuals, deployed two satellite tags, and collected two biopsy samples.

Using the location information coming in from the satellite tags, the next day (June 14, 2012) we were able to relocate the group. We deployed another satellite tag, photographed 18 individuals (although some were the same as on the first day), and collected nine more biopsy samples.

These whales left Kaua'i the next day, but instead of moving to the east toward O'ahu, all three tagged animals moved to the west, traveling as far as Gardner Pinnacles in the Papahānaumokuākea Marine National Monument (see map). When we compared the identification photos of the 28 different individuals documented, none matched our catalog, suggesting they were not part of the main Hawaiian islands resident population—for every other group we've encountered in the main Hawaiian islands, about two-thirds to three-fourths of the individuals photographed are ones we already recognize from the population. Combined, the satellite tagging and photo-identification results suggest the group we encountered in June 2012 off Kaua'i was part of the Northwestern Hawaiian Islands population, not the main Hawaiian islands resident population. Genetic analyses of the biopsy samples we collected are being undertaken to confirm this.

Earlier this year, in late July 2013, we encountered false killer whales again off Kaua'i. A comparison of photos showed that the group included some of the same individuals as in our June 2012 encounters. We deployed one satellite tag and collected a biopsy sample for genetic studies, and also observed one whale carrying the head of a large tuna (see photo).

Instead of leaving the area after a couple of days, the tagged whale (and presumably the rest of the group) stayed around Kaua'i and Ni'ihau for almost three weeks, and was still in the area when the tag stopped transmitting on August 16. This particular tag, and one of those deployed on the group in June 2012, provided more than just locations of the whale. It also sent information on the depths and durations of dives, giving us information on where in the water column the whales were foraging and whether they were diving both during the day and night. False killer whales are very active during the day, feeding on large game fish like yellowfin tuna, ono, and mahimahi—all species that tend to be found in near-surface waters.



A false killer whale with the remains of a tuna in the mouth off Kaua'i, July 26, 2013.
—Brenda K. Rone photo

The dive data from the tags has shown that both individuals spent the majority of their time in near-surface waters, but also occasionally dove deep in the water column—one of the individuals dove to over 1,000 meters (3,280 feet deep), while the other dove to over 900 meters (2,952 feet deep), with occasional dives of over 15 minutes in duration.

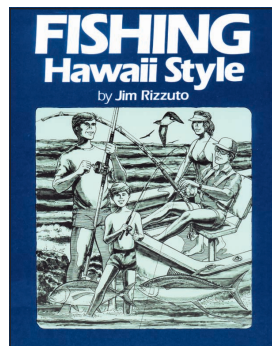
With over 120 days on the water off Kaua'i and Ni'ihau since 2003, we have still not encountered any false killer whales from the main Hawaiian islands population and there is still considerable uncertainty whether those islands are more regularly visited by individuals that live primarily in the Northwestern Hawaiian Islands rather than from O'ahu to the Big Island. We are planning on returning to work off Kaua'i and Ni'ihau again next year, and hope we'll have more encounters with false killer whales to get a better idea of how the two different populations share those waters.

For HAWAII FISHING NEWS readers who take a camera with them on the water, photos of false killer whales, whether off Kaua'i, Ni'ihau or elsewhere, would increase what we know about the abundance, movements and behavior of these whales. If you do have photos you'd be willing to share, please contact me either by E-mail at rwbaire@cascadiaresearch.org or phone at (425) 879-0360.

... Robin

For more information on false killer whales in Hawai'i see
www.cascadiaresearch.org/hawaii/falsekillerwhale.htm

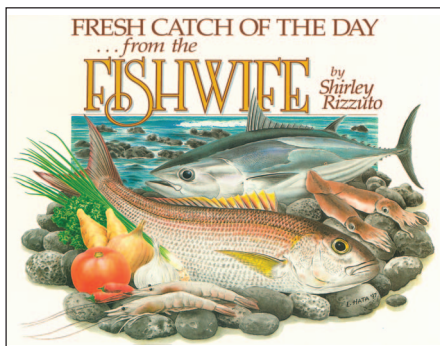
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