HICEAS: Hawaiian Islands Cetacean and Ecosystem Assessment Survey

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NOAA FISHERIES SERVICE

Pacific Islands Fisheries Science Center

Southwest Fisheries Science Center

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ADDITIONAL CRUISE INFORMATION:
http://swfsc.noaa.gov/PRD-HICEAS.aspx

At-sea Report No. 1: 1-14 September 2010

Erin Oleson, Chief Scientist

Leg 1 of HICEAS on NOAA Ship *Oscar Elton Sette* left Honolulu September 1 with 16 scientists aboard. The cruise is paired with the NOAA Ship *McArthur II*, which sailed out of La Jolla, California early August, and in collaboration with our colleagues at the Southwest Fisheries Science Center. Our science party consists of 6 marine mammal observers, 2 seabird observers, 3 acousticians, an oceanographer, 3 visiting scientists, including Teacher-At-Sea Donna Knutson from Bismark, North Dakota and Eddie Balesteri of the Hawaii Longline Association, and our Chief Scientist Erin Oleson from Pacific Islands Fisheries Science Center. We immediately headed west with our goal the far reaches of the Northwestern Hawaiian Islands, surveying to the south of Kauai, Nihoa, Necker, and French Frigate Shoals en route. Unfortunately, by day four we had to turn and head back to Oahu for a medical evacuation of one of our crew. He/She is OK, but needed to see a doctor before our scheduled return to port at the end of the month. We headed way west again, this time north and east of Kauai and the Northwestern Hawaiian Islands. The first week, we had 16 sightings of cetaceans so far, a respectable count for this relatively windy and unproductive region of the planet, including a sunset sighting of Bryde's whales for three nights straight. We've also seen sperm whales, and a number of schools of dolphins. Team Acoustics has been working very hard to debug their ailing hydrophone array, after many late nights has decided to move on to our backup array, and should be up and running again first thing tomorrow. Oceanographic operations are running smoothly, reporting the similarly deep thermocline that has been observed by the oceanographers on the *McArthur II*.

The second week was a big week on the Sette, with several firsts and very productive team all around. After a frustrating week of problems with our primary acoustic array, Team Acoustics is back to work with the backup array in tow.

The primary array will be flown back to Hawaii from Midway later this week, where it will then make its way back to San Diego for debugging and repairs in time for leg 2. Mammal and bird teams are both in high gear, including our dedicated Independent Observer Eddie, who has been expertly spotting cetaceans, birds, marine debris, and great fishing spots.

The big excitement this week was first, a great feeling of pride in rescuing an entangled juvenile green sea turtle and then, the awe of examining a freshly deceased Kogia on our deck. On Thursday last week our independent observer Eddie spotted what looked to be fishing gear in the water. Our observer team quickly investigated and found that among the debris was a small entangled turtle. Everyone aboard ship then jumped into high gear as we launched our small boat, brought the turtle and debris aboard the boat to disentangle it, and then freed the young, healthy turtle back to the ocean. The turtle appeared uninjured and quickly disappeared into the water.

Entangled sea turtle.

Removing sea turtle from entanglement.

The next day, the observer team spotted was looked like a large green slick in the water ahead. As we approached the strange discolored water, the team identified the floating mass as a dead Kogia, one of the most rarely seen cetaceans, with sharks feeding on the carcass. Again, everyone jumped into high gear as we maneuvered the ship to bring the dead whale aboard the ship. Once we had the whale along side, it was clear that the whale had not been dead for long, though has taken a beating from the sharks nearby. Nicky, a scientist from Southwest Fisheries Science Center, lead the charge in dissecting the dead whale, collecting sections of skin, blubber, muscle and of each organ for later study back in the labs at Southwest Fisheries and Hawaii Pacific University. With dedicated help from graduate student Aly Fleming and Teacher-At-Sea Donna Knutson, we thoroughly studied this rare animal, including collection of the entire stomach for diet analysis, the dorsal fin for tag attachment research, and the head for acoustics and morphology research. The dead whale on deck also attracted a lot of onlookers form the science party and crew. There is still considerable debate about which species of Kogia we brought aboard: Pygmy sperm whales, *Kogia breviceps*, are larger, have more teeth, a smaller, further setback dorsal fin, and a more robust square head than their cousins the Dwarf sperm whale, *Kogia sima*. Our whale seems to have some mix of these characteristics, so the debate rages on. Amazing that even with the whale on deck it is still difficult to know for sure which species we're looking at. Genetic analysis will eventually confirm its identity.

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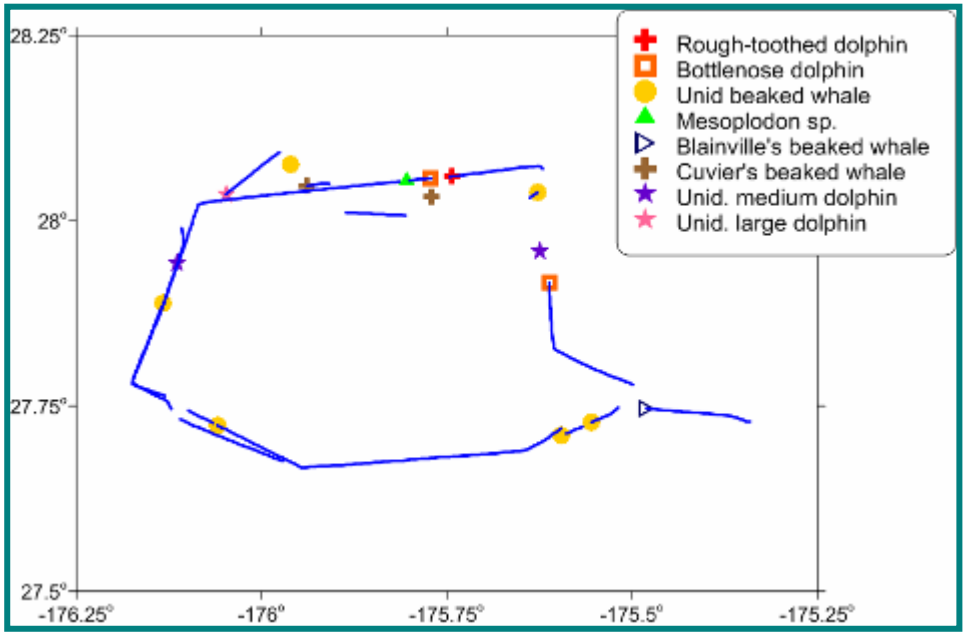
The weekend brought relative quiet, though with a slight increase in mammal sightings and some species of birds we hadn't yet seen on this trip, as we continued west along our trackline to Pearl and Hermes Reef. On Monday, we reached Pearl and Hermes and have spent the last two days surveying for cetaceans around the island. So far, there have been record numbers of beaked whales - 10 sightings in 2 days - as well as a number of dolphin schools. Tomorrow we continue with our survey toward Midway and Kure, then turn back east again for the second half of this leg. So far to date, we've surveyed 1,172 nm of trackline, recording 39 mammal sightings, including 10 different species, and a few that were left unidentified. Oceanographic operations are continuing smoothly, with 22 CTDs, 57 XBT and surface chlorophyll samples under our belts documenting a well defined thermocline at about 50m depth. The thermocline has shoaled since arriving at Pearl and Hermes. If the trend reported from the *McArthur II* holds, this may be accompanied by great increases in sighting rates as we continue to the north.

***Kogia sp.* found dead at-sea.**



Survey at Pearl & Hermes Reef, September 13 and 14.