

HPA TEACHER LOGGING LOGGERHEAD SEA TURTLES

Marc Rice, assistant headmaster and science teacher at Hawaii Preparatory Academy, recently participated in the largest single deployment of satellite tagged animals anywhere in the world.

Rice, who also directs the Sea Turtle Research Program at HPA, joined George Balazs, leader of the Hawaiian Marine Turtle Research for the National Marine Fisheries Service (NMFS), Honolulu Laboratory, and several colleagues from Japan in attempting to answer the question of oceanic migratory habits of loggerhead turtles through the use of satellite telemetry.

Hatchling and juvenile loggerhead turtles spend many years in the pelagic waters of the North Pacific Ocean where they feed on planktonic organisms. Their travels during these "lost years" are still somewhat of a mystery although it is known that they will often travel many thousands of kilometers as they circumnavigate the north Pacific basin. During their travels they sometimes are caught by long-line fishermen, both by foreign vessels and domestic ones based in Hawaii. A better understanding of the pelagic migratory habits of juvenile loggerheads could lead to the development of important strategies for the conservation of this species in the North Pacific.

In April 2003, Balazs put out seven satellite tags on juvenile loggerhead turtles from the Port of Nagoya Public Aquarium, Nagoya, Japan. These turtles were fitted with satellite tags and released into a region off the shore of Japan where the Kuroshio current sweeps close to the mainland. The turtles have been tracked for about eight months now and their paths have been amazingly similar, as though they are following some special oceanographic features of the ocean currents. This was not unexpected as it is believed that food items are most abundant along regions where currents converge. By using satellite images of the north Pacific that give temperature, sea level, and other physical and biological (e.g. chlorophyll) measurements, scientists at the NMFS, Honolulu Laboratory will correlate these factors with the observed paths of the tagged loggerheads.

With the introduction of smaller satellite tags this year, it was possible to attach tags to smaller turtles that had

been raised at the Port of Nagoya Public Aquarium. The new SPOT 3 tags are small enough that they can be put on turtles that are less than one year old, an age class that was not represented in the earlier studies. Rice and Balazs traveled to Nagoya this past November to deploy 18 satellite tags on 17 loggerhead turtles ranging in size from 25 to 50 centimeters. Each of these tags, as with the previous tags, is fibreglassed to the dorsal carapace of the turtle so that it will remain attached for a period of at least 1.5 years after which it will slough off as the shell grows. This is about the maximum time the batteries will last for the satellite tags.

Over a period of three days, Balazs and Rice attached the tags and placed the turtles into individual pens pending their release. Each of the tags remained in the off mode prior to release in order to conserve battery power. The turtles were to be released on Nov. 26 about 40 miles offshore in the Kuroshio current, but the ocean was extremely rough and the trip was delayed. The turtles remained very safe and healthy in their individual pens.

On November 27, the seas calmed just enough to make the voyage on board one of the large ferry boats that travels from Nagoya to Sendai, passing through the edge of the Kuroshio current. At about 6:30 a.m. on Nov. 28, each of the turtles, with names such as "Coco," "Byte," "Masa," "Yoko," and "Ama," was lowered in a basket 30 feet over the side of the ship and released into the ocean. Almost immediately, signals began to be

picked up by the ARGOS satellites passing overhead at that time. Currently, all 17 turtles are transmitting and giving position data on their whereabouts. As the largest single deployment of satellite tagged animals anywhere in the world, this release, because of its numbers, will give the NMFS a much better understanding of the movement of these endangered turtles as they migrate around the north Pacific basin.

Since 1987, HPA and the NMFS, Honolulu Laboratory, have worked together on a project that enables HPA students to assist the federal agency's investigations of turtles in West Hawaii. The work has grown over the years in scope, magnitude, and importance to overall species conservation.