

Thank very much for your time. I enjoyed meeting you.

1990 Turtle Tagging with QUEST

By Cheryl Rosenfeld

Kaneohe Bay is the largest bay in Hawaii. Located on the windward side of O'ahu, it is noted by the National Marine Fisheries Service (NMFS) as being a hot spot for Hawaiian Green turtle (*Chelonia mydas*) sightings.

The Hawaiian Green turtle lives in epipelagic waters (open ocean) until it reach approximately one foot in length. At that size it take up residency along various Hawaiian shoreline habitats, where it feeds during high tides on benthic algae and sea grass (*Halafala ovalis*), and rest during low tide on and in the reef flats.

When a turtle was sighted, it was captured, brought to the surface and taken back to the boat.

In 1958, NMFS first started recording incidents of body tumors on many of the turtles living in Kaneohe Bay. The tumors, located on the fleshy portion of the turtles' bodies, are called fibrous papilomas. They range in size and location, contain calcium deposits yet are soft to the touch, and are very unsightly. Advanced stages of tumor growth infect the mouth area, impeding the turtles' ability to eat. In addition, external

growths affect the speed and grace of the turtles, stripping them of the gifts that mother nature so generously adorned them. In recent years NMFS has also recorded incidents of tumored turtles in Kailua Bay and around the Kahaala Beach park, both located on the Island of O'ahu. Elsewhere in Hawaii the turtles are healthy.

World-wide, tumors have been

reported off of Cape Canaveral and the Florida Keys, and nowhere else. At this time there is no explanation for this pattern.

In 1973, as a means of keeping efficient records, the Hawaii Institute of Marine Biology (HIMB) implemented a turtle tagging project that began in Kaneohe Bay. Later, NMFS adopted the project, and it now spans from Hawaii to Tahiti to Yap, an island northeast of Indonesia. In the past year alone, more than 60 turtles have been tagged in Kaneohe Bay as part of this project.

On May 17, 1990, students taking part in MOP's Quantitative Underwater Ecological Survey Techniques Workshop

Pictures will be of better quality (QUEST) held on Coconut Island, Kaneohe Bay, had an opportunity to be part the NMFS turtle tagging project. The expedition, led by George Balasz of NMFS, took Sherri Miller (UH Hilo), Marc Lammers (UH



George Balasz of NMFS tags a turtle with an alloy identification tag. Photo by Cheryl Rosenfeld

Manoa), Dawn Beyer and Bill Barnum (both of Windward Community College) to collect data on three of the turtles' resting reefs (numbers 41, 42, and 43), located on the northwest end of Kaneohe Bay. There, participants snorkeled over the reefs in search of resting turtles. When a turtle was sighted, it was captured, brought to the surface and taken back to the boat. All turtles were hand caught using only snorkel gear.

After a total of four turtles was captured and placed on the boat, team members engaged in standard data collection procedures which included standard

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length and curve length measurements. Standard length, measured utilizing a caliper, is the distance from the midline behind the neck to the posterior edge of the carapace. Curve length is measured using the same two points while incorporating the curvature of the shell. This measurement is calculated using a tape measure. The smallest turtle recorded that day was 31.7 centimeters and the largest was 63.3 centimeters standard length. Barnacles were counted and removed, tumors were documented and classified according to size, location and numbers, and each turtle was tagged with two tags, one metal and one plastic. The metal tag is 3/4 of an inch long made of alloy Inconel, nickel and cadmium. Etched into the metal tag is a serial number and group of carefully selected words stating:

WRITE
UNIVERSITY
HIMB
96744.

The other tag is made of plastic, has a serial number and is presently in the testing stage. (Presently tag distribution is a cooperative effort between HIMB and NMFS).

During QUEST, turtle tagging workshops were scheduled for May 17 and 18. Fortunately, due to the overwhelming enthusiasm of the QUEST participants, George Balazs was invited to conduct an extra day of turtle tagging excursions. According to Balazs, the total numbers of turtles caught and tagged during the three-day period was 17, with a total of 40 turtles sighted. Of the total 17 captured, 44 percent carried the fibrous papiloma tumors, and two individuals

were new recruits from the pelagic waters to the Bay. Balazs said this can be observed by noting the lack of algae and barnacle fouling on their shells, in addition to their plastrons (underside of the shell) being white instead of harboring yellowish-orange pigmentation. The yellowish-orange color is believed to be the result of the introduction of a vegetarian diet, an adaptation to their permanent migration from the deep seas to the coastal areas. Most importantly, the new recruits were tumorless. Balazs also stated that, according to data collected on tumors over the years, it appears that the foreign bodies stimulating growth of the fibrous papiloma are not being brought in from the open oceans, but are found somewhere in the coastal water habitats. Unfortunately, there still is not enough information on the tumors' originations and growth patterns for a concrete hypothesis to be formulated.

For anyone interested in Hawaii's Green Sea Turtle or the turtle tagging project, there are endless opportunities to get involved in the field. George Balazs is always in search of enthusiastic volunteers to assist him with his field and laboratory work, full-time or part-time. For more information on the NMFS Turtle Tagging Program, contact George Balazs @ Honolulu Laboratory, NMFS, Southwest Fisheries Center, 2570 Dole Street, Honolulu, HI 96822. You may also phone him at (808) 943-1221.



George Balazs of NMFS, Bill Barnum and Marc Lammers examine a recently captured turtle. Photo by Cheryl Rosenfeld