1984 EXCERPT

HAWAII

The Hawaiian islands stretch in an almost linear chain from 19° to 28° N. lat., a distance of 2,450 km, in the central north Pacific. The seven southernmost, large, high islands are all inhabited. From there northward stretch a series of small volcanic and low coral islands, atolls and submerged reefs and banks.

Traditionally Hawaiians were excellent, knowledgeable fishermen, and more has been probably written about traditional use of marine fauna in Hawaii than for any other area covered by this review. Surprisingly, however, comparatively little information has been recorded on traditional Hawaiian use of sea turtles. Nevertheless the available information indicates that turtles were important in precontact Hawaii. The turtle, or "honu", figures in many Hawaiian chants and stories. Captain Cook observed their use as food by Hawaiians.

The difficulty of piecing together a useful description of the traditional use of sea turtles by Hawaiians is illustrated by the following: According to an Hawaiian historian writing in 1898 (Malo, 1951) eating green turtles was traditionally forbidden to women, who would be killed for breaking this taboo. Dagget, an American minister working in Hawaii, stated in contrast, in his introduction to King Kalakaua's "The Legends and Myths of Hawaii," published in 1888, that eating green turtle was forbidden to all but priests and chiefs. Two American ichthyologists who studied the fisheries and fishing laws of Hawaii also state that "squid, turtle, and two or three species of birds could be eaten only by the priests and taboo nobility," (Jordan and Evermann, 1902). They give no source for this information; possibly they obtained it from Kalakaua's book, published 14 years earlier.

In contrast to both of the above assertions, a contemporary Hawaiian scholar, Piianaia, is quoted in a popular magazine article as believing that turtle was not limited to the upper classes, and was common food, and for both sexes (Markrich, 1983). He states that Daggett was an "outsider" writing about customs that had disappeared two generations earlier. "You will find," states Piianaia, "that there are structures like fishponds for the holding of turtles on all the islands, and that what they did was capture them and make them available when they were needed. Once a turtle was held for a chief, that was it, nobody else could eat it. But outside of that, anyone could catch turtle. I know of no edict, except perhaps for seasonal ones, that stopped people from taking turtles."

Piianaia acknowledged, however, that the biggest and best turtles were reserved for the chiefs. Waimanalo Pond, or Pahonu, which means "home of the turtle" was located about 14 miles from Honolulu and served as a source of turtles for Oahu royalty. In the late 1800's turtles from Pahonu were placed in sacks and carried on horseback at full gallop to Iolani Palace on Honolulu

to be prepared for dinner (Markrich, 1983). According to one informant, the alii (chief) in this district "was so fond of turtle meat that any one in the district was required to bring any turtles they caught to him (Handy and Handy, 1972).

Turtles were the amakua or ancestor gods of certain families in Hawaii. These families were strictly forbidden to harm or eat turtle (e.g. Pukui, 1972).

The traditional Hawaiina kapu (taboo) system, which contributed to the conservation of marine animals in the islands, gradually eroded after western contact and little of it remained by the mid-1800's (e.g. Titcomb, 1972).

Malo (1931) and Stokes (1906) state that turtles were captured in Hawaii with nets made from bark fibers. The fibers were extracted by scraping the bark with the bevelled edge of a turtle's pleural bone. Turtles were also captured by hand and with spears or harpoons. Cobb (1905) describes a device consisting of two large hooks lashed to a stone attached to a long line. It was apparently used to hook turtles both from shore and by swimmers diving on turtles resting on the bottom and thus easily approached.

Hawksbill turtle shell was used only to a minor degree in Hawaii for making fishhooks judging by archaeological evidence (Emory et al., 1968). It was also used for the disease called 'ea and for making combs and fans (Pukui and Elbert, 1971).

Recently in connection with efforts to repeal U.S. Federal laws forbidding the capture of turtles in Hawaii, the claim has been made publicly that turtles were traditionally employed to clean fishponds of unwanted algae. I have been unable to find any reference to this practice in review articles on Hawaiian fishponds (Summers, 1964; Cordover, 1970; Kikuchi, 1976) nor in articles referred to therein, nor in the literature pertaining to other island groups in Oceania.

Balazs (1980) states that judging by traditional legends and chants, Hawaiians were apparently not aware of the northwestern segment of the Hawaiian Archipelago, except for Nihoa, prior to European contact. Exploitation was therefore limited to the main, southern islands, although archaeological evidence suggests that small groups of Hawaiians (or other Polynesians) may have fished and perhaps hunted turtles around the islands of Nihoa and Necker Reef.

Today 90% of the green turtles that nest in Hawaii do so at French Frigate Shoals north of the main populated islands (Dizon and Balazs, 1982). Only occasional nesting still takes place in the main inhabited islands. This is probably a legacy of generations of intensive exploitation in the inhabited islands, since there are many apparently suitable beaches for nesting there.

CONCLUSIONS

It is not difficult to rank the different Pacific island areas under U.S. jurisdiction on a scale of departure from traditional dependence upon the sea, including sea turtles. Hawaii is clearly the most westernized and least traditional, followed closely by Guam and American Samoa (with the possible

exception of Swain Island). The Northern Mariannas are not far behind, with little evidence of significant dependence upon sea turtles.

Only in the Caroline and Marshall Islands do sea turtles still play essential roles in the lives of significant numbers of people. And even here this dependence is far from universal. Sea turtles do not appear to be essential to either cultural or nutritional well-being on most high islands or district population centers. Even in the Palau Archipelago, where an impressive reservoir of expertise concerning sea turtles suggests their former importance, only a very few handicraft makers would suffer, I suspect, if turtles became unavailable today. Here, as around many high islands, turtles are now hunted more or less like deer, for sport. A turtle for the pot is now an occasional treat, not an essential ingredient in Palauan life.

It is mainly among some of the remoter low islands of Micronesia that sea turtles remain important. McCoy (1982) and Pritchard (1982) point out that turtles contribute significantly to the cultural stability of some of the peoples of the central Caroline Islands and to their independence of the outside world. "The estimated maximum contribution to the protein (intake), perhaps 40 pounds per person per year, is not nearly as important as the cultural role described," (McCoy, 1982).

The work of McCoy and others suggests that traditional taboos and ceremonies relating to the taking and consumption of turtles have almost certainly contributed to smaller numbers being taken than would otherwise have been the case. But these traditions are fading. Moreover, island population pressures in Micronesia are increasing rapidly. On Satawal, for example, the population has doubled since the end of World War II (McCoy, 1982). These factors, coupled with the introduction of technology which makes sea travel faster and easier, all put increasing pressure on turtle stocks. The need for measures to conserve them thus also increases.

Therein lies a dilemma. The people of those islands on which turtles play a vital cultural role would suffer if turtles were denied them. But there will eventually be no turtles left if harvest rates continue to accelerate. At what point does the survival of a turtle stock dictate the implementation of conservation measures that are painful to those who depend upon turtles? No amount of study, in isolation, of subsistence use of turtles can answer this question. It requires, in addition, an understanding of sea turtle population dynamics more sophisticated than any that exists for any sea turtle stock in the world today.

ACKNOWLEDGEMENTS

My thanks to Mike Gawel, Eugene Nitta, and especially George Balazs for help in compiling this review.