

THE CONSERVATION OF THE HAWKSBILL TURTLE IN WESTERN SAMOA

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The hawksbill turtle (*eretmochelys imbricata*) population in Samoa has been depleted to near extinction through extensive human predation pressure upon the eggs and nesting turtles. The Fisheries Division of Western Samoa initiated a hawksbill conservation programme in 1971 in which approximately 500 eggs are transferred each nesting to a hatchery in an effort to replenish the turtle stocks. Such a conservation project is not only ecologically important but it is also important for local nutritional and industrial reasons. Adult turtles captured near the reef have always been an available protein source, and jewellery made from the shell provides an excellent revenue.

The turtle hatchery site is located in the easternmost district of Upolu Island, near the main hawksbill nesting beaches. These beaches are on two small offshore islands, Nu'ulua and Nu'utele, five miles south-east of the hatchery site. As unstable weather conditions prevent hatchery personnel from staying on the nesting beaches overnight, egg collecting expeditions are sent out every morning during calm weather in a 16-foot fibreglass boat powered by an outboard motor.

Heavy surf prevents landing on the islands, so the boat is anchored outside the beach reefs and the crew swim through the surf carrying a plastic watertight container for removing the turtle eggs. All eggs are carefully removed to the hatchery as quickly as possible to reduce embryonic mortality through high temperature exposure. The egg incubation area is a section of upper beach platform surrounded with plastic mesh fencing to keep unauthorized personnel and domestic animals from disturbing the incubating eggs. These eggs are reburied in holes of similar proportions to the original nest and a circular wire mesh enclosure is placed over the excavated area to catch the emerging hatchlings.

A large metal-roofed shed contains 10 drainable concrete rearing tanks in which the hatchlings are placed and fed minced fish. To keep the turtles from being conditioned to human feeding, the time of feeding is changed daily and people are not permitted near the tanks. At irregular intervals the tanks are stirred violently allowing the turtles periods of strenuous swimming and diving. Fresh sea water is provided by a portable gasoline pump, completely flushing the tanks once a day.

Since starvation may be an important factor in hatchling mortality, the hatchery turtles are fed extra quantities of food before releasing in order to help them survive until their first pelagic meal. To reduce predation from

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Locating a turtle nest by probing the sand with a sharp stick.

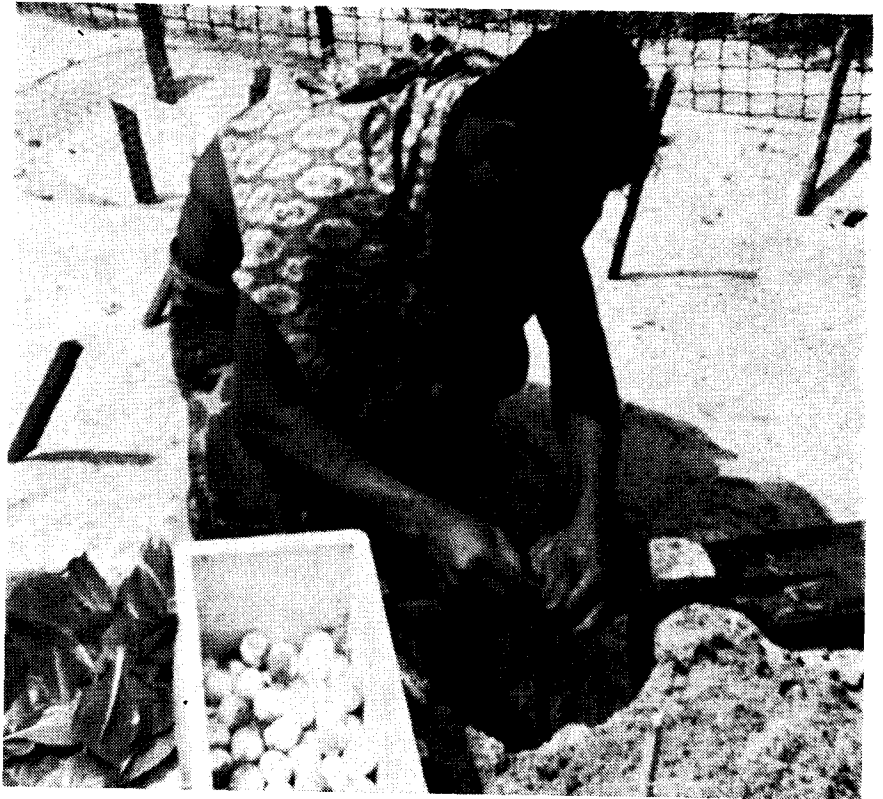
feeding schools of pelagic fishes, the turtles are then taken two to five miles outside the reef at dusk and released in small groups with 20-30 metres between groups.

The turtles will become conditioned to human feeding within ten days if feeding precautions are not taken, four weeks being the maximum time limit even with these precautions. In the month of captivity the turtles have increased 30-40 per cent in length, 100-120 per cent in weight and they are strong swimmers and divers, being able to escape many potential predators. Thus we expect to increase the percentage survival of young turtles through this simple process of protecting the eggs and releasing strong healthy animals.

The Fisheries Division attempted to educate the Samoan people about



Carefully removing the eggs into the plastic watertight container.



Replanting the eggs in the incubation area in a hole similar to the original nest.

Newly hatched turtles emerge after two months incubation and are quickly removed to the rearing tanks.



Young turtles in a tank.





Returning down beach with eggs. This poor nesting beach is one of the few beaches in Western Samoa where turtles still lay eggs. This is due to the inaccessibility of the beach to Samoan fishermen.

marine turtle ecology and conservation. Upper level school classes in the turtle nesting district were given conservational pamphlets, lectures and slide shows. Turtle conservational radio broadcasts emanated from Apia and an 8 mm movie depicting all aspects of the turtle hatchery programme was shown in certain districts. All public information material employed was conducted in the Samoan language and made as interesting as possible by including turtle legends and songs. This important facet of the conservation programme, unfortunately, was not given enough priority to saturate the Samoan public with conservational information before its termination.

Since the establishment of the turtle hatchery we have attempted to supplement the programme with protective legislation, with little success. The Samoan Government has not yet passed turtle conservation legislation because it would interfere with Samoan custom.

It is hoped that funds can be raised and that support for the project will be continued by the Fisheries Department, in order that the progress can be maintained. There is evidence, after two years of operation, that some improvement is being made in the turtle stocks of Western Samoa. The next two years are critical in determining the effectiveness of such a programme.

ACKNOWLEDGEMENTS

The author is indebted to Mr William Travis, who initiated the turtle hatchery. With the help of the late Alan Banner and Viliamu Matagi the hatchery was actually built and plans for the field work laid out. With deep sorrow, I report that Alan Banner was killed by a shark while carrying out routine field work at the turtle island on 16 April 1972. □