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SOUTH PACIFIC COMMISSION

SIXTH TECHNICAL MEETING ON FISHERIES

Suva, Fiji, 23 - 27 July 1973

THE CONSERVATION OF THE HAWKSBILL TURTLE ERETMOCHELYS IMBRICATA  
IN WESTERN SAMOA

by Wayne N. Witzell  
U.S. Peace Corps  
Fisheries Division  
Department of Agriculture, Forests and Fisheries  
Apia. Western Samoa.

ABSTRACT

The construction and operation of a Hawksbill turtle hatchery in Western Samoa is described. A conservation education programme was carried out in an attempt to stem the decline in stocks.

Eggs are collected from nesting beaches, hatched and the turtles released after a period of four weeks. The hatchlings are fed on fish until their release. Great care has to be exercised to prevent too great a conditioning to hand feeding. Turtles are released at dusk 2-5 miles outside the reef in order to improve their chances of survival.

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The hawksbill turtle 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 program 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 as well. Adult turtles captured near the reef have always been an available protein source and jewelry 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, Nu'utele, 5 miles southeast of the hatchery site. Unstable weather conditions prevent hatchery personnel from staying on the nesting beaches overnight, therefore egg collecting expeditions are sent out every morning during calm weather in a 16 foot fiberglass 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 a large factor in hatchling mortality, the hatchery turtles are fed extra quantities of food prior to releasing in order to help them survive until their first pelagic meal. To reduce predation from feeding schools of pelagic fishes, the turtles are then taken 2-5 miles outside the reef at dusk and released in small groups with 20-30 meters between groups.

The turtles will become conditioned to human feeding within 10 days if feeding precautions are not taken, 4 weeks being the maximum time limit even with these precautions. In the month of captivity the turtles have increased 30-40% in length, 100-120% 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 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 program 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 program, unfortunately, was not given enough priority to fully saturate the Samoan public with conservational information before its termination.

Since the establishment of the turtle hatchery we have attempted to supplement the program 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 foods 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, for it was entirely through his immense efforts that the turtle hatchery was initiated and maintained at its present level of success. 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 April 16, 1972. It is men like Alan who are the functioning foundations of all successful operations everywhere.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The records should be kept in a secure and accessible location, and should be updated regularly.

2. The second part of the document outlines the procedures for conducting a physical inventory count. This involves comparing the physical count of goods on hand with the quantities recorded in the accounting system. Any discrepancies should be investigated and explained.

3. The third part of the document describes the process of reconciling bank statements with the company's cash account. This involves comparing the bank's records of deposits and withdrawals with the company's own records to ensure that they match.

4. The fourth part of the document discusses the importance of reviewing and approving all financial transactions. This includes ensuring that all invoices are properly recorded and that all payments are made in a timely and accurate manner.

5. The fifth part of the document outlines the procedures for preparing and reviewing the financial statements. This involves calculating the net income or loss for the period and ensuring that all assets and liabilities are properly valued and reported.

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