

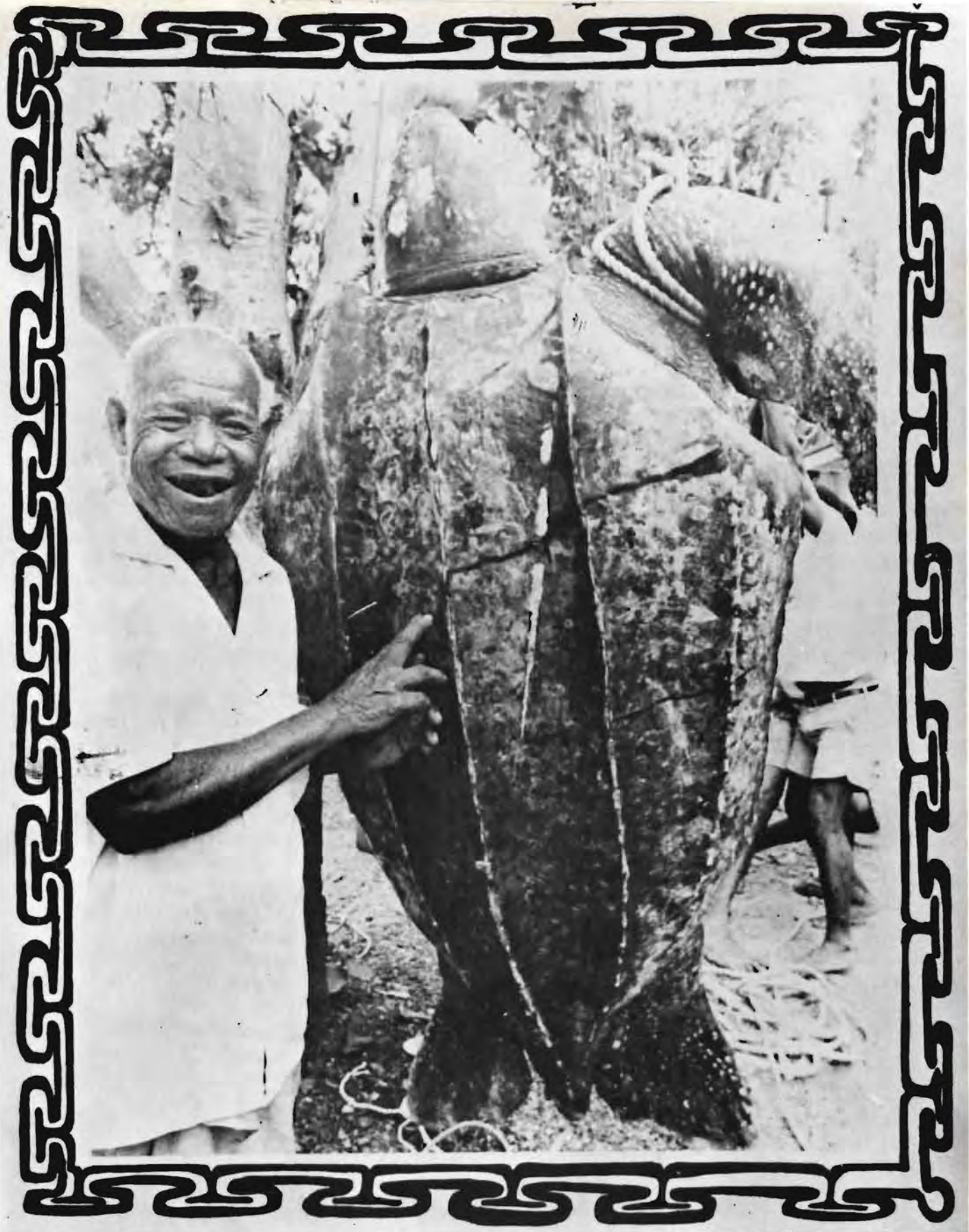
A photograph of a turtle, likely a sea turtle, resting on a dark, heavily textured surface that resembles weathered wood or stone. The turtle's shell is a light brownish-green color with distinct scutes. Its head and front flippers are visible, extending downwards. The text 'TURTLES MEN & MAGIC' is superimposed in the center of the image in a bold, white, sans-serif font with a black outline.

**TURTLES
MEN
&
MAGIC**

Save Sea Turtles for your children



For your
SAVE OUR SEA TURTLES
CONSERVATION BADGE
please write a stamped and addressed envelope to
Wildlife Division, Box 2285, Kamadaba.



With photographs by C. S. Spring except where otherwise acknowledged.

C. Sylvia Spring, Biologist-in-charge, Marine Turtle Project, Wildlife Division, P. O. Box 2585, KONE DOBU. Papua New Guinea.

Contents

	Page
INTRODUCTION	1
THE MARINE TURTLE RESOURCE	2
THE GREEN TURTLE <i>Chelonia mydas</i>	3
THE HAWKSBILL TURTLE <i>Eretmochelys imbricata</i>	7
THE LEATHERBACK TURTLE <i>Dermochelys coriacea</i>	9
THE PACIFIC RIDLEY TURTLE <i>Lepidochelys olivacea</i>	10
THE LOGGERHEAD TURTLE <i>Caretta caretta</i>	11
THE FLATBACK TURTLE <i>Chelonia depressa</i>	11
TRADITIONAL SIGNIFICANCE	12
TURTLE HUNTING METHODS	14
1. Netting	14
2. Harpooning	16
3. By Hand	16
4. Nesting Females	18
5. Platform	19
6. Other	19
RITUALS AND RULES ASSOCIATED WITH THE HUNTING OF MARINE TURTLES	20
1. Traditional Ownership	20
2. Social Restrictions	20
3. Magic Men and Magic	21
KEY FOR THE IDENTIFICATION OF MARINE TURTLES	22
REFERENCES	24
ACKNOWLEDGEMENTS	26

Introduction

Around the coast and islands of Papua New Guinea, traditional village societies still rely heavily on the sea as a major source of their protein, and for these people, the subsistence hunting of turtles is still an important part of their way of life.

In the old days, when there were many traditional rules and rituals associated with the hunting of turtles, turtles were abundant. Today however, turtles are being over hunted as a direct result of an increasing population, the breakdown in traditional practices, the introduction of modern fishing methods, and the ever increasing trend to sell turtles in town markets for money.

Thus the problem of conserving marine turtles in Papua New Guinea is a complex one. There is the problem of the declining marine turtle resource, a problem which is confined not only to Papua New Guinea, but which is one of world-wide concern. There is also the possible loss of an important source of subsistence protein and with it the loss of the magic and ritual which have long been associated with the use of marine turtles in Papua New Guinea.

Therefore, when one thinks of conservation in Papua New Guinea, one must think not only of the resource but also the subsistence society that relies on that resource.

The approach of the Wildlife Division to conservation in Papua New Guinea is conservation through management and controlled exploitation rather than total protection. The concept of the Wildlife Management Area legally reinforces traditional conservation practices, and places the onus for conservation and enforcement on village people.

Thus, education is an important aspect of our work. Most marine turtle surveys have combined education with field extension work. Educational aids are invaluable for reaching the people and for stirring and maintaining interest in schools and villages. The marine turtle project distributes posters, stickers, badges and booklets, and uses slide sets, scientific papers and 16mm films for educational and public awareness purposes.

This booklet has been prepared as an aid for teachers in schools and for the general public, and is dedicated to all those working in the fields of conservation.

Sylvia Spring,
Division of Wildlife,
Port Moresby.
November 1980

The Marine Turtle Resource

There are only seven species of marine turtles left alive in the world today. All species are experiencing serious survival problems.

Six of these species are found in Papua New Guinea waters. They are the Green Turtle *Chelonia mydas*, the Hawksbill Turtle *Eretmochelys imbricata*, the Leatherback Turtle *Dermochelys coriacea*, the Pacific Ridley Turtle *Lepidochelys olivacea*, the Loggerhead Turtle *Caretta caretta*, and the Flatback Turtle *Chelonia depressa* (Spring, 1980).

There is also one record of the subspecies *Chelonia mydas agassizi* from Papua New Guinea (Pritchard, 1979).



Green turtle is dragged to the Daru market for sale.

Photo: Office of Information



Juvenile green turtle carapace and hawksbill scutes, Kandoka Village, West New Britain.

Photo: David Bishop

The Green Turtle

The green turtle *Chelonia mydas* is the most abundant and widespread turtle found in Papua New Guinea. It is also the main turtle hunted. Besides being the most plentiful it is also the most favoured for eating. It is identified with a vernacular name in nearly all parts of coastal Papua New Guinea (Rhodin, Spring & Pritchard, 1980).

Apart from village use, green turtles are sold regularly in a few markets, especially Koki Market in Port Moresby and Daru Market in the Western Province. In Koki Market a large green turtle will fetch between K60 and K80. Generally the shell is thrown away, although juvenile shells are sometimes used as a decoration for the house or for sale to tourists.

Today, the only remaining significant

breeding populations occur on the uninhabited island groups, in Seventh Day Adventist areas and in areas where turtles are not favoured as a food item.

Fortunately there is an abundance of good nesting beaches and uninhabited islands around the coast of Papua New Guinea. In most village interviews, the people could name a nearby uninhabited island or stretch of beach where turtles nest. However most villagers had noticed that turtles no longer feed on reefs or nest on beaches in front of the village. Hunters now have to go further afield to catch turtles. There are several uninhabited island groups in the Manus Province which are important breeding areas for green turtles. These are the Sabben Islands, the Purdy Islands, the Los Reyes Islands and Johnson Island.

Eggs and females are collected from these islands but collection is usually limited by the weather conditions, by the long distance involved, and to some extent by the clans who own the Islands. There are also the Kaniet and the Anchorite Islands in the Western Islands which are rarely visited by people because of their remoteness.

Seventh Day Adventists do not eat meat and that includes turtle meat. In areas where SDA's are established, villagers report a noticeable increase in turtle populations, over a period of thirty to fifty years. The Hermit Islands are an extremely isolated ring of islands, with a very small population (53 people) who accepted the Seventh Day Adventist faith in the 1950's. Prior to that, they hunted and ate green turtles. Today, turtles



are extremely abundant, and nest on all the islands from June to September. Other important breeding areas for green turtles occur on Mussau Island in the New Ireland Province where the people converted to the Seventh Day Adventist faith in the 1930's, and Lou Island in the Manus Province.

In the Trobriand Islands, the village people are yam cultivators, and yams are the most important foodstuff. Turtles are not eaten as it is believed that eating turtle meat will ruin the magic of the garden and the yams will die. There are only one or two villages which hunt turtles. Turtles nest on a few beaches on Kiriwina Island, but mainly on the outlying, uninhabited islands e.g. Tuma, Munuwata and Simlindon Islands.

The other main breeding area for green turtles is Long Island in the Madang Province. The major nesting beaches lie along the northwest coast of the island. This area has long been exploited by passing fishing boats and Government trawlers. Long Island has since been declared a Wildlife Management Area, with restraints on taking nesting females during the months of May, June and July. Outsiders are no longer allowed to take turtles from the Wildlife Management Area. The International Union for the Conservation of Nature is funding a research programme, now being carried out at Long Island by the Marine Turtle Project of the Wildlife Division, studying the nesting biology of three species of marine turtles.

All green turtles seen in Papua New Guinea are of the sub-species *Chelonia mydas mydas*. However, there is one record of *Chelonia mydas agassizi* from the Manus Province (Pritchard, 1979).

Top: *Chelonia mydas*
centre: Green turtle *Chelonia mydas mydas* and *Chelonia mydas agassizi* Lorengau Market, Manus Province. **Photo:** P. Pritchard.
bottom: Green turtle slaughtered for sale in Koki Market.

The most serious, threat to green turtles in Papua New Guinea today has been the sale of green turtle meat in the town markets. It is a threat, not only to the sea turtle resource but also to the village subsistence society which relies on turtles for food.

Nietschmann (1979) says, "Subsistence societies cannot persist if they sell subsistence resources, and endangered and threatened species cannot be saved by selling them".

Market surveys conducted in Koki Market, Port Moresby since January 1979 show that over the last two years, a total of 874 female green turtles have been killed for sale at a cash value exceeding K36,000.

Most of these have been females of breeding size, taken from the coast from Idia to Hood Lagoon.

Turtles sold in town markets are those that exceed village consumption. There are no figures available for village consumption.



this page: top: canoe, Trobriand Islands

below: green turtle carapaces, Mussau Island, New Ireland Province. **Photo:** P. Pritchard.

centre: copra plantation, Hermit Islands, Manus Province.

bottom: canoe, Luf Village, Hermit Islands.



Hawksbill carapaces from Karkar Island, Madang Province

Photo: P. Pritchard

Tortoiseshell combs, Hermit Islands



Young girl from Kavataria village Milne Bay Province wearing tortoiseshell earrings



Lime spatulas from the Woodlark Islands, Milne Bay Province

The Hawkbill Turtle

Almost as abundant but not so widespread as the green turtle, is the Hawksbill turtle *Eretmochelys imbricata*. Hawksbills are eaten when found, and poisoning is apparently uncommon. However there is a documented case from New Ireland where three children died from eating hawksbill meat (Likeman, 1975). Hawksbill eggs are also eaten when found. Hawksbills are sold in town markets. One or two a month are sold in Koki Market in Port Moresby.

The shell of the hawksbill is thick and richly coloured and is used to make tortoiseshell products. On a world wide scale, the hawksbill is seriously endangered, because it has been heavily exploited for its tortoiseshell.

In Papua New Guinea, when a hawksbill with a particularly beautiful shell is eaten, the shell is saved for making into combs, or dried as a decoration for the house or for sale to tourists.



Bride price ornaments, Porebada Village, Central Province

Photo: P. Pritchard



Fish hooks from Tami Island, Morobe Province



Bride price item from the Milne Bay Province

Photo: B. Hudson



Delicate tortoiseshell carving, Western Islands



Dorsal view of an adult hawksbill turtle from Northern New Britain, with juxtaposed carapace scutes and non-serrate shell margin.

Photo: P. Pritchard

In the past, hawksbill shell was used to make a variety of everyday items, such as spoons and knives, but these are now supplied by the tradestores. It was also intricately carved to make items of traditional bilas such as belts, bracelets, limesticks, and brideprice items, but these are rarely seen today.

Nesting of the hawksbill seems to coincide largely with that of green turtles. Some important nesting areas for hawksbills are Raboin Island in the East Sepik Province; Onnita Island, the Sabben and Purdy Islands in the Manus Province; Kiriwina Island in the Milne Bay Province; Idia, Haidana and Daugo Islands in the Central Province; and on several small islands in the Western Province.

Above: juvenile hawksbill turtle from Rambutyo Island, Manus Province
Photo: P. Pritchard



Right: male hawksbill from Ponam Island, Manus Province.



The Leatherback Turtle

The leatherback turtle is the largest and heaviest of all sea turtles. It reaches an average carapace length of just under 2 metres, and an average weight of 225 kgs.

This turtle is black in colour, with irregular whitish spots. Instead of the shell which other turtles have, it has a soft, leathery carapace which is raised up into seven longitudinal ridges. The leatherback lives in the deep open sea, feeding on jellyfish, and venturing near land only to lay its eggs. It has a very delicate skin, and prefers to nest on short beaches with deep water approaches.

Regular nesting is reported to occur widely along the north coast of New Guinea and on some of the larger islands, but always in low densities. Reported regular nesting sites include Tulu and Timonai Villages on Manus Island; Garu and Ganoi Villages in New Britain; along the south-east coast of New Ireland; Long Island and parts of the mainland of the Madang Province; on Normanby Island in the Milne Bay Province; along the coast from Boiken to Turubu in the East Sepik Province and around Aitape in the West Sepik Province.

There are many reports of leatherbacks sighted floating at sea and there have been several reported cases of leatherbacks nesting on the Papuan side of Papua New Guinea.

When found, this turtle and its eggs are usually eaten by village people. There are several disadvantages in eating this turtle. The flesh is very oily and the consumer is left with a fishy smell for several days. The shell is sometimes boiled down to collect oil for wick lanterns.

The latest estimate of the world population of adult female leatherbacks lies between 30,000 and 40,000 (Pritchard, 1979). They are protected in most countries where they are found, and steps are currently being taken to declare the leatherback totally protected in Papua New Guinea.



Author with leatherback shell, Pila Pila beach, Rabaul

Photo: C. Lohberger



Adult female leatherback Trengganu, Malaysia.

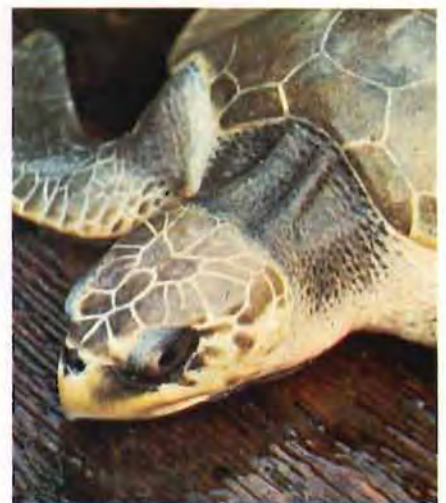
Photo: P. Pritchard

The Pacific Ridley

The Olive or Pacific Ridley *Lepidochelys olivacea* is relatively uncommon in Papua New Guinea waters. However nesting has been reported from Turubu Village in the East Sepik Province; along the north coast of West New Britain, and from Ataliklikun Bay, East New Britain. Specimens are also occasionally drowned in the nets of prawn trawlers operating in the Gulf of Papua.

This species is also recognised from several locations around the coast of Papua New Guinea and identified by the village people with a vernacular name. These locations include Nuguria Island, Bougainville Province, Porebada Village and Fisherman's Island in the Central Province, Ahuſ and Pak Islands in the Manus Province (Rhodin, Spring & Pritchard, 1980) and also from Kitava Island and Kaibola Village in the Trobriand Islands, and from Kui Village in the Morobe Province.

below and left: Pacific ridley caught in the Gulf of Papua. Photos: David Gwyther



The Loggerhead Turtle

The Loggerhead turtle *Caretta caretta* is often confused with the green turtle or the olive ridley turtle, by village people. The only positive identification of this species in Papua New Guinea waters is from tag recoveries. There have been several recoveries of Australian tagged loggerheads from the Trobriand Islands (Bustard & Limpus, 1976). In the Trobriand Islands, village people report mating and nesting of loggerheads on some of the uninhabited outer islands.

The loggerhead is also rather widely recognised and identified with a vernacular name: along the coast of the Western Province; from Hula and Porebada villages and Fisherman's Island in the Central Province; from the Woodlark Islands in the Milne Bay Province; from several locations in the Manus Province (Rhodin, Spring & Pritchard, 1980), and from Kui and Laukanoi Villages in the Morobe Province.



Loggerhead turtle *Caretta caretta*

Photo: Colin Limpus

The Flatback Turtle

The Flatback turtle *Chelonia depressa* has only been recorded from the Gulf of Papua. These records come from the incidental catch of flatbacks by prawn trawlers operating in the Gulf of Papua. To date there have only been 11 such records. There have been no reports of Flatbacks nesting anywhere in Papua New Guinea. However this species is identified with a vernacular name from Fisherman's Island in the Central Province and from Tureture Village in the Western Province (Rhodin, Spring & Pritchard, 1980).



Flatback turtle *Chelonia depressa*

Photo: Ray Moore

Traditional Significance

Around the coast and islands of Papua New Guinea, the village people still rely heavily on the sea as a major source of their protein, in the form of fish, turtles and shellfish. Often gardens are very poor and so traditional exchanges are made between the coastal and island people and the inland or mainland people. Turtles and fish are exchanged for garden produce such as sac-sac (sago), taro and greens.

The most heavily utilised turtle is the green turtle *Chelonia mydas*. Traditionally, turtles are eaten in feasts such as bride price payments, and funerals. Today, however feasts are also held for non-traditional special occasions relating to business, political and religious activities, e.g. Christmas, and Independence Day celebrations or the opening of a new church or business group.

In the Manus Province, turtles still play an important role in the traditional village life. When turtles are needed for a big feast or lapan, the chief or leader organises a turtle hunt. Up to sixty turtles are usually required for an important feast such as a lapan. When caught, the turtles are usually kept on their backs in the shade or in a banis in the sea, where they are fed chopped clams, fish and sea grasses until the feast day arrives. When all the preparations have been made for the feast, the turtles are killed. If guests from other villages, especially mainland villages are invited, they bring along exchange presents such as sac-sac, dog's teeth and tambu, according to the number of turtles which have been provided by the host village.



A basket of turtle meat, Long Island, Madang Province

Photo: P. Pritchard



Brideprice headband with dog's teeth, Tulu Village, Manus Province



Turtle banis, Pak Island Manus Province

Photo: P. Pritchard

Turtles are usually given a quick roast, then cut up and boiled in a pot with a few greens. All of the turtle is eaten including parts of the shell, blood, bones and internal organs.

In most places around the coast of Papua New Guinea, turtle hunters are respected persons within the village and undergo a certain amount of training before they are accepted as such. When a significant occasion arises and turtles are required for a feast, there are strict procedural guidelines for the hunters and their families, before, during and after the hunt. These rituals are designed to increase the efficiency and discipline of the hunting party, and to create respect for the roles played by certain individuals within the community.

When turtles are caught, there are also guidelines for the distribution of meat between relatives and families and guests from other villages.



Green turtles in a banis Seichte Bay, Manus Province

Photo P. Pritchard



Roasting a hawksbill turtle, Pomam Island, Manus Province



Turtle meat is sorted into pots before boiling, Pomam Island, Manus Province



Sale Selef, Leader of the turtle net, Ponam Island, Manus Province.

Turtle Hunting Methods

Turtle hunting methods and their associated rules and rituals have been passed down from generation to generation, with a few modifications along the way. These techniques and their rituals though widely varied can be roughly grouped as follows:

1. *Netting.* The traditional net is rarely used today, but was rather widely used in the 'taim bilong tumbuna'. This net was made from bush fibres and the art of making the net usually belonged to certain families. Most nets have disintegrated today. However, in the Manus Province there are several left which are used for special occasions. There is one on Ponam Island, which is

considered a sacred object stored in a special house and looked after by an elder who supposedly possesses magic powers and who is highly respected in the community.

This story was told by Sale Selef, Ponam Island, Manus Province "The two elders of the turtles are called Kiribom and Kiyo. Kiribom is the leader of the right side of the net and Kiyo is the leader of the left side. When a turtle is needed, the people concerned come to the two leaders and discuss their needs. The two leaders confer and set a date for the net to be cast. Twenty-four men are needed to cast the net, twelve for each side. On the day of the hunt, the canoes are gathered together and supplies (tobacco, coconut) are placed inside them. There are ten canoes,

two large ones and eight smaller ones. The net is weighted with stones and is carried on the two large canoes. We paddle until we come across a channel and we wait there until a turtle is spotted, and then the net is cast. As the net is cast, some men leap into the water and when a turtle is caught in the net they yell "Aiii". Then the two large canoes converge and the turtle is picked up by the smaller canoes. As each turtle is caught, a tabut is blown. Usually eight or nine turtles can be picked up in one channel. The first turtle caught is mine as I am the elder of the two leaders. I have an ancient garamut that used to belong to my ancestors when they were eating men. I have it here today and I put oil in it and some leaf, the kind my ancestors used and I sing a song to

the turtle saying.....“wherever you have come from you will not return” During the hunt we observe total silence, the only man allowed to talk is myself. We move from passage to passage catching turtles, until I observe the time to go back to the village.

We go back and with me leading, the hunting party lands on the beach. The leader of the left side and I lead with our garamuts and out sticks and we go into our houses and the canoes are pulled onto the beach. Only then are the women allowed to come to the beach with our food. There is a strict tambu against women and children touching the turtles. A special group of men (organised beforehand) carry the turtles to a banis built in the sea. They are responsible for feeding the turtles until they are required for the feast.”

The traditional net was also used by the people who inhabit Fisherman’s Island today. All the villagers on the island are fishermen and turtle hunters, and their families. There is no fresh water on the island and so the gardens are very poor. The people live by selling their fish and turtles in Koki Market and buying vegetables. Originally the island was a camp site for fishermen coming up the coast from the Hula area. In 1957, two families from Hula and Alukuni villages settled on the Island. Today there are approximately 120 people belonging to 5 or 6 different families living there. Their main diet consists of fish, but during the Lahara season (September to April) green turtles are eaten daily. There are still old men on the island who remember the old rules associated with the hunting of turtles.

In the old days, turtle hunters used a net called *Aooa walona* made from bush rope and woven by hand. The use of the net was accompanied by some strict rules.



House where the umben or turtle net is stored, Ponam Island, Manus Province.



Old fisherman stretches out the net (umben) made from a special fibre. The net is 200m long, Laukano Village, Morobe Province. Photo: K. Sinba

a. the owner of the net could not sleep with his wife for one year before the hunt, neither could he speak nor eat with her.

b. before the hunt, the owner of the net had to bathe in the sea from a certain point. It was believed that when the owner did this, he was calling the turtles and it would bring good luck on the hunt.

c. the owner’s wife had to bathe before the hunt and she had to tie on

a grass skirt after bathing and leave it on until the net had been brought back to the village.

d. when the hunt was over, according to the number of turtles caught the hunters called out to the people in the village.

Traditional nets or umbens are still used in some parts of the Morobe Province and in most of the West New Britain Province.



Detachable harpoon with perei. Manus Province.



Detachable spear tips — one for turtles, one for dugongs. Western Province Photo: B. Hudson

2. *Harpooning.* This is the most widely practiced method of hunting turtles. It is traditional in some areas and introduced in others.

(a) Fixed-spear tip. This consists of a wood or bamboo harpoon with a fixed iron tip. This is used in the East Sepik and Madang Provinces and in the Trobriand Islands, Milne Bay Province.

Two or three men in a small canoe hunt turtles, usually at night, using a lantern. When the turtle is speared, one or two men leap into the water and lift the turtle onto the canoe. Only a few turtles are caught on these expeditions as there is limited space on the canoes.

(b) Detachable spear-tip. In the Manus Province, the 1930's Japanese

fishermen who were after trochus, taught the village people how to hunt turtles using a detachable spear-tip harpoon. Prior to that, turtles were traditionally caught by hand. The spear tip is made from a three cornered file. This tip is attached to a wooden float or perei by a sturdy cord. When the turtle is speared either from a canoe or by a swimmer in the water, the harpoon detaches, leaving the spear tip embedded in the turtle shell. The turtle is allowed to swim until it is exhausted and then it is picked up by the canoe.

This method is also used in the Western Province today.

Story of turtle hunting from Kadawa village.

"As soon as you get a canoe, go across to the south to the shallow reefs where there are plenty of turtles and dugongs. As soon as you reach the reefs, someone must climb the first mast where there is a cross-bow. This fellow is called the pilot. He guides the canoe on the hunting trip and tells the skipper which way to go. From the mast, the pilot tracks the turtle and guides the harpoonist. When the turtle is harpooned, the harpoonist passes the harpoon to the person standing behind him. The turtle is allowed to run, and the rope securely attached to the mast. The canoe follows the turtle until the turtle tires and then hunters dive in and grab it. The spear tip is removed, the harpoonists change and the whole thing is repeated again".

3. By hand. In the Saint Matthias Group in the New Ireland Province, turtles were traditionally caught by hand. Today, however, the people are Seventh Day Adventists, and consequently do not eat turtle meat. In the old days, the village elders believed that drinking turtle blood would increase their diving and swimming powers and so turtles had to be caught without a drop of blood being spilled. Canoes would pursue a turtle until it tired and came up for air. A man would then leap into the water and wedge a wooden pole into the soft neck of the turtle under its shell and flip it over onto its back so it could not dive. The turtle was then lifted up onto the canoe, alive and unwounded.



Nesting beach, Long Island, Madang Province.

Photo: P. Pritchard

In Bipi Island, in the Manus Province, turtles were also traditionally caught by hand for feasts. Kupe Pakrokai, Bipi Island, says, "In the old days, when thinking of catching turtles, the season is the first thing which comes to mind. This is the time when the marine turtles appear in great numbers, because normally they don't. The season is calculated from the changes in the sun's position throughout the year. When the sun shifts its position of rising, this is the season for the turtles. The chief calls the hunters and tells us to prepare food, fishing gear, canoes, betel nut and tobacco. After the preparation the elders then signal the fishermen to proceed to the Sabben Islands, or Six Islands which traditionally belong to Bipi Island, and which are a nesting area for marine turtles. As soon as the canoes arrive at the islands, a feast normally takes

place. This particular feast is known as *Mbulukal*. There is a pot of cooked food representing an ancestor who owns the islands or the reefs. The food is then divided and distributed among the grand children, (of the ancestors) the present owners of the islands. According to the custom, friends and relatives all share the food together with the island owners. After the feast, the fishermen prepare for the next day. In the early morning, at about five o'clock, the fishermen proceed out to sea. Once at sea, the canoes all line up as they paddle along looking for turtles. Once a turtle is sighted, there is a competition to see who catches the first turtle.

One canoe will usually catch between two and ten turtles, depending on the luck of the men. At the end of one day's hunting, if not enough turtles

have been caught, then another day of fishing is necessary. Normally fifty to sixty turtles are needed. The canoes then return to the village, and on the beach the garamuts welcome the fishermen back home. Turtles are kept in a banis in the sea until the feast day.

Turtles are also traditionally caught by hand in the Western Islands, Manus Province and in the Trobriand and Woodlark Islands in the Milne Bay Province. In the Woodlarks, turtles are hunted on a dark night in calm water. Canoes follow the phosphorescent trail left by the turtles and hunters leap onto them.



Turtle turned during egg laying, Long Island, Madang Province.

Photo: R. Adams



Turtle eggs collected by villagers for consumption, Long Island, Madang Province.

Photo: R. Adams

4. Nesting females. This is a rather widespread practice today. In the Manus Province it is a traditional practice with associated rules. In other areas it is non-traditional with little or no regulation. In Manus there is a practice of calculating when a nesting female will return to lay her next clutch of eggs. Kupe Pakrokai, Bipi Village: says "After one or two days during the nesting season, the people return to the islands in search of eggs. When the eggs are dug out they are counted. Customarily for every one hundred eggs, ten small sticks known as niaket must be collected, if there are two hundred eggs, then twenty niaket must be collected. These niaket are used to determine the second coming of the mother turtle using the daily counting system. The person who collected the eggs, must report to the owner of the island and brief him on his findings. If that person then wishes to collect the mother turtle for some purpose, he has to obtain permission. Each day, a niaket is counted and thrown away. This is done every day until there are only three small niaket left. The egg collector then returns to the island and waits for the turtle to return". This technique is still used today, but not as often, as nesting females are not as plentiful as they were in the past.

In Tulu village, in the Manus Province, there is a strong traditional tie between the leathery turtle *Dermochelys coriacea* and two clans. The people believe that the leatherback turtle belongs to these two clans, and that the turtle will not return to nest if this ownership is not recognised. Only members of these two clans can use the divining method to predict the return of the nesting female turtle. Every female which comes ashore to lay its eggs is eaten if found. When the turtle is killed it is cut up and divided according to tradition. The front end and the head goes to one clan, and the rear end goes to the other clan.

5. Platform. This was the traditional way of hunting dugong in the Western Province, and was in some places also used to hunt turtles. This method is no longer used. Laade 1971 describes this method.... "The dugong was usually hunted with a harpoon from a so called 'dugong platform' (nat). The harpoon is a long spear of heavy wood with a butt end in which a barbed head is inserted. The latter is lashed onto a long rope. The nat consists of six bamboo poles lashed together with a plank on top of them. It was erected on a shallow place or reef where at low tide tracks of feeding dugong had been discovered. At high tide the animals would return to the same place. The nat was only used on a moonlit night. The hunter with his harpoon would be alone on the nat. A canoe with some men used to wait some distance away until he called for their assistance."



Harpoon and perei, Manus Province.

Photo: C. Lohberger

6. Other. Laade 1971 also describes turtle hunting from Saibai and Boigu Islands in the Western Province..... "Turtles were always hunted from the canoe. Formerly this was done with the help of the sucker fish (gapu) which was fastened to a long rope, the fish used to find the turtle even in the dirtiest water and attach itself to its shell. Then the rope would be hauled in and the turtle caught."



Outrigger canoe, Western Province.

Turtles are also caught in fishing nets and by hook. A few are shot by speargun, but in general this practice is frowned upon by the village elders.

At Kitava Island, Milne Bay Province mating pairs of turtles are caught with rope during the breeding season.



Harpoon, Western Province

RITUAL ASSOCIATED WITH THE HUNTING OF MARINE TURTLES.

In areas where turtles are caught for feasts, there are still a lot of ritual and rules associated with their capture and consumption. In areas where traditional authority and respect are breaking down, especially around city centres, traditional restraints on taking turtles and other wildlife are becoming less effective.

Missionary activity has also resulted in the breakdown of traditional rituals but not always to the detriment of turtle populations. For example in the Western Province, turtles were once only eaten in feasts, but are now eaten as daily food. On the other hand, in Seventh Day Adventist areas, the people no longer eat turtle meat, and the turtle populations are increasing.'

In the more remote provinces, traditional ways of hunting turtles are still respected and practiced.

1. Traditional ownership of reefs and beaches. In most places the right to fish certain reefs and beaches is controlled by individuals or by clans, thus allowing some measure of control over the exploitation of turtles in these areas. However this system relies heavily on traditional authority within the village. In the old days, poachers were dealt with effectively by force. Today this is no longer possible. However, the Wildlife Division has created the concept of the Wildlife Management Area, which enables traditional landowners to legally take any offenders to court, thereby enforcing traditional rules, and placing the onus for enforcement on the villagers themselves.

2. Social Restrictions. These restrictions while not primarily of a conservative nature often have a side benefit of conservation.

(a) Hunters. These rituals are usually designed to discipline the hunting party and so make it a well-organised and efficient hunt. Usually hunters do not sleep with their wives on the night before the hunt. There are a variety of restrictions such as not indulging in gossip, or having bad thoughts, or prying into other people's belongings. If a man's wife is pregnant he cannot participate in the hunting party.



Green turtle, Amphlett Islands, Milne Bay Province

Photo: Office of Information

(b) Village restrictions. These are usually based on the belief that unless they are observed, bad luck will fall on the hunting party. There are many restrictions on the hunters' wives. e.g. in the Manus Province, wives cannot sweep, or work until their men return. Children cannot play or make a lot of noise until the hunt is over.

(c) Restrictions on eating turtle meat. People or clans who believe themselves related to turtles cannot eat turtle meat (East Sepik; Trobriand Islands, Manus Province). It is also prohibited for all villagers to eat

turtle meat during the yam planting season in the East Sepik. In the Trobriands, also, if a person has eaten turtle meat, he or she cannot go near the yam garden for three days. In the Northern Province, the people believe that if a pregnant woman eats turtle meat, she will give birth to a baby with flippers instead of arms and legs. In the Arawe Islands, in the West New Britain Province, pregnant women do not eat hawksbill meat as they believe it will decrease their child bearing ability. The people of Kui Village in the Morobe Province, do not eat Leatherback meat as they believe



Typical turtle catch, Nuguria Island, Bougainville Province

Photo: J.W.J. Wankowski

that it will weaken their endurance, in such things as climbing mountains or hills or doing hard work. In Bai Village, Morobe Province, the animals (pigs, dogs) are stopped from eating any part of the turtle as the people believe that if the animals eat turtle, when the time comes they will go and have their litters in the bush away from the village, and so all the bones and turtle scraps are carefully burnt.

3. Magic Men and Magic. There are a number of magic men who believe that they possess powers over turtles. There are magic men in Turubu Village and Cape Wom Village East Sepik Province; Sim Sim Island, Milne Bay Province; Ponam island, Manus

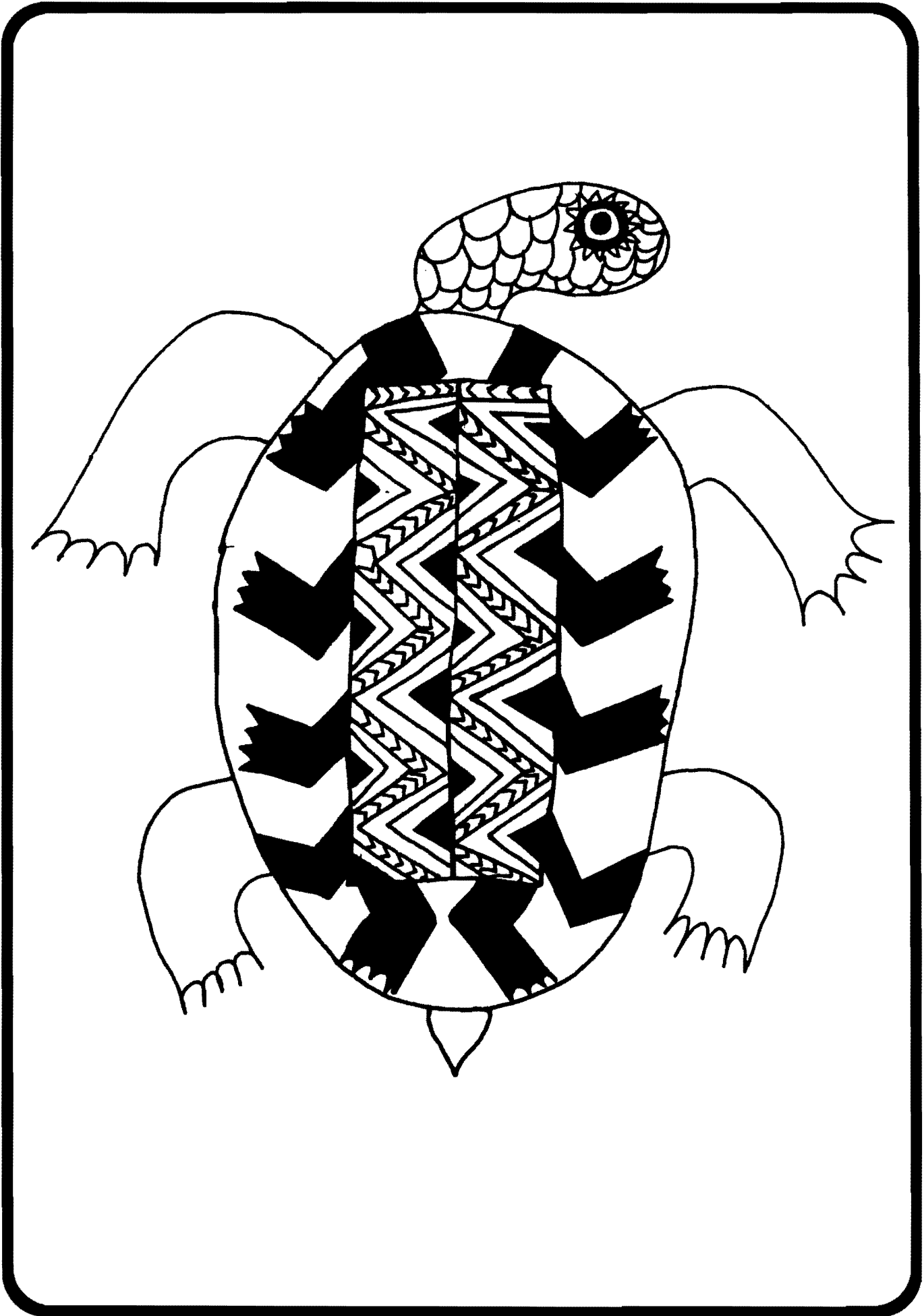
Province; Parama Village, Western Province; Pusapabariya Village, West New Britain Province. They do not eat turtle meat as they believe they will lose their powers if they do.

In Turubu Village, the magic powers can be passed from person to person, but once a person has the knowledge, then he can no longer eat turtle meat. If he does, his arms and legs will swell up and sores will erupt on his body. There are only a few men in the village who know how to call turtles as all of the old men have died. When turtles are needed, the magic man cuts a special vine which contains a magic (pulpulu) for turtles and he makes a sing-sing to the vine on the beach. When he finishes this sing-

sing, he puts the vine away and then works another sing-sing during which the turtles come up out of the water. This power is only used for special occasions. The vines have a tambu placed on them, and the only person allowed to touch them or cut them is the magic man himself. If the turtles come up there will be a lot of fish in the sea also, so it is a good time to go fishing. If no turtles come up, then there are no fish and so no fishing. The best times for calling turtles is during October through to September.

KEY TO MARINE TURTLES OF PAPUA NEW GUINEA

- 1 Very large turtles (carapace length up to 180cm) with longitudinally ridged, plateless, leathery shells; no claws or body scales; front of upper jaw strongly cusped *Dermochelys coriacea*
- 2' Smaller turtles (carapace length up to 120cm, usually less) with hard plated shells, without or with only slight longitudinal ridges; claws and scales present on all limbs; front of jaw not cusped 2
- 2 Five (or more) pairs of costal scutes (the large plates along each side of the dorsal shell) . . . 3
- 2' Four pairs of costal scutes 4
- 3 Large turtles (over 80cm adult carapace length) with broad heads up to 25cm in width; shell and soft parts generally reddish brown; shell somewhat elongated, with a distinct 'hump' towards the rear *Caretta caretta*
- 3' Smaller turtles (less than 80cm carapace length) with much smaller heads up to 13cm in width, shell and soft parts olive-green in adults, grey in juveniles; shell almost as wide as long, without a hump towards the rear *Lepidochelys olivacea*
- 4 Scutes of shell thick and overlapping, except in hatchlings and very old adults; head very narrow and pointed; two pairs of prefrontal scales (between the eyes and above the nostrils) *Eretmochelys imbricata*
- 4' Scutes of shell thin and juxtaposed; head anteriorly rounded with a single pair of prefrontal scales 5
- 5 Shell low-slung and oval, with the sides somewhat curved upwards, scutes of shell somewhat soft and greasy in texture; much of the surface of the foreflippers covered with wrinkled skin rather than scales *Chelonia depressa*
- 5' Shell less low-slung and somewhat heart-shaped, scutes of shell thin but cornified and not greasy; entire surface of foreflippers covered with discrete scales 6
- 6 Carapace relatively low, not narrowed above the tail; plastron unpigmented, dorsal surface variably pigmented with light to dark spots, radiating markings and other designs *Chelonia mydas*
- 6' Carapace rather high anteromesially, with an incurving in front of the tail above each hind flipper; plastron pigmented with dark grey to varying degrees; dorsal surface dark, often almost black *Chelonia agassizi*



REFERENCES

- Bustard, H.R. & C. Limpus. 1971. Loggerhead Turtle Movements. *British Journal of Herpetology*, 4(9): 225 – 230.
- Kisokau, Karol. 1973. Field Report: Turtle Survey of Garu Village, West New Britain. Mimeographed. Pp. 1 – 7.
- Laade, W. 1971. Oral Traditions and Written Documents on the History and Ethnography of the Northern Torres Strait Islands, Saibai – Dauan – Boigu. Vol. 1 Adi-Myths, Legends, Fairy Tales. Steiner, Wiesbaden.
- Likeman, R. 1975. Turtle Meat and Cone shell Poisoning. *P.N.G. Medical Journal*, 18: 125 – 126.
- Lindgren, E. 1975. Long Island. Wildlife Report, Department of Natural Resources, Konedobu, Papua New Guinea. Pp. 1 – 13 with appendices 1 to V.
- Nietschmann, B. 1979. The Cultural Context of the Turtle Subsistence Hunting in the Carribean and Problems Caused by Commercial Hunting.
Submitted to the World Conference on Sea Turtle Conservation, November 26-30, 1979.
- Pritchard, Peter, C.H. 1979. Marine Turtles of Papua New Guinea: Research Findings, Management Recommendations, and Directions for Future Research. Report on a Consultancy for the Wildlife Division, Department of Lands, Surveys and Environment, Konedobu, Papua New Guinea. Pp. 1 – 122.
- Pritchard, P.C.H. 1979. *Encyclopedia of Turtles*. T.F.H. Publications, Neptune. N.J.
- Rhodin, A.G.J., C. Sylvia Spring and Peter C.H. Pritchard. 1980. Glossary of Turtle Vernacular Names Used in the New Guinea Region. *J. Poly. Soc.* 89: 105 – 117.
- Spring, C. Sylvia. 1978. Marine Turtles in Papua New Guinea: A Programme for their Management and Conservation. *Wildlife Leaflet* 78/6.
- Spring, C. Sylvia. 1979 Marine Turtle Conservation Project: Stage 11. A Management and Conservation Programme. *Wildlife Leaflet* 79/9.
- Spring, 1980. Status of Marine Turtle Populations in Papua New Guinea. Presented to the World Conference on Sea Turtle Conservation, November, 1979. *Wildlife Leaflet* 80/3.
- Spring, 1980. Subsistence Hunting of Marine Turtles in Papua New Guinea. Presented to the World Conference on Sea Turtle Conservation, November 1979. *Wildlife Leaflet* 80/20.



ACKNOWLEDGEMENTS

This booklet could not have been prepared without the cooperation of all those village people of Papua New Guinea who contributed information about their marine turtle resource. Thanks is also given to the following people whose photographs appear in this booklet: Russell Adams, David Bishop, David Gwyther, Brydget Hudson, Colin Limpus, Carlene Lohberger, Ray Moore, Peter Pritchard, Kayama Sinba and Jacek Wankowski. I would also like to thank Jef Kelly and Dross Tukon for their translations of the many interviews with village people.

Finally, my thanks go to the editor, Carlene Lohberger, for her constructive criticisms, encouragement and support.

FRONT COVER: David Gwyther.

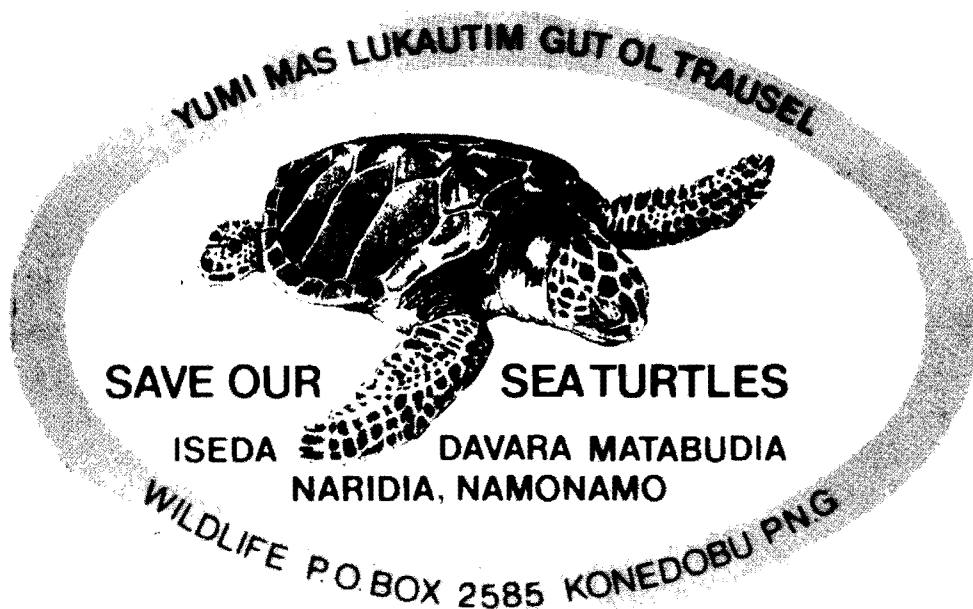
ALSO AVAILABLE FROM THE MARINE TURTLE PROJECT OF THE DIVISION OF WILDLIFE:
Save Sea Turtle posters, badges and stickers.
Subsistence Hunting of Marine Turtles in Papua New Guinea. Slide Set.
Marine Turtles in Papua New Guinea, A Guide to their identification-Wildlife Leaflet 80/2

Write to:

The Marine Turtle Project,
Division of Wildlife,
P.O. Box 2585, KONE DOBU.
PAPUA NEW GUINEA

Tag recoveries

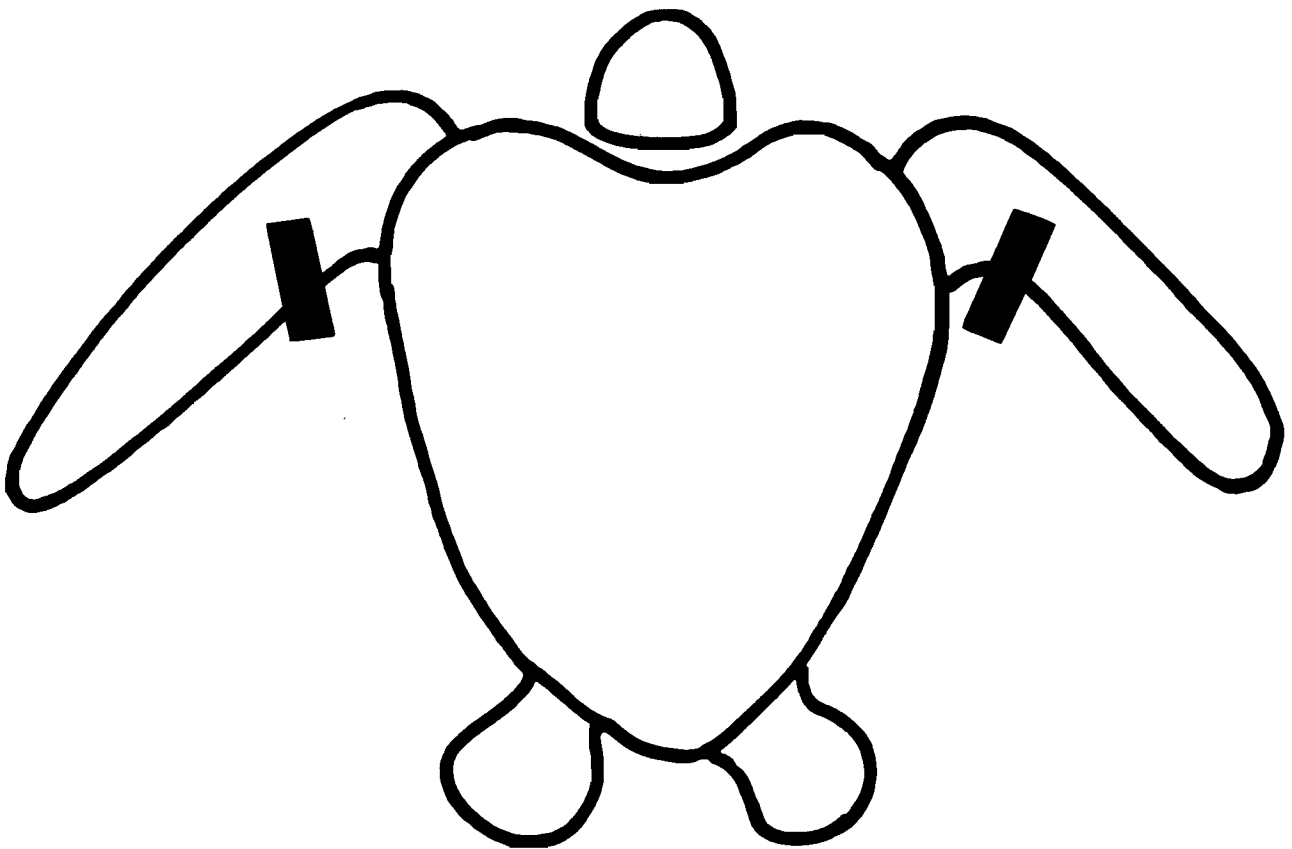
If you find a turtle with a tag attached, send the tag and information as to when and where the turtle was caught, plus measurements to the above address. There is a SAVE SEA TURTLES T-shirt reward.



Reward

FOR TAG RECOVERIES

IF YOU FIND A TURTLE WITH A TAG ON IT



PLEASE SEND THE TAG TO THE:

MARINE TURTLE PROJECT
WILDLIFE DIVISION
P.O. BOX 2585
KONEDOBU
PAPUA NEW GUINEA

WITH YOUR NAME AND ADDRESS, DATE AND PLACE OF RECOVERY OF TURTLE
ACTIVITY OF THE TURTLE AND ANY MEASUREMENTS AND WEIGHTS.

YOU WILL RECEIVE A **SAVE SEA TURTLE!** T-SHIRT, POSTER AND BADGE
AS A REWARD.



Young girl, Tulu Village, Manus Province