

REGIONAL MARINE TURTLE CONSERVATION PROGRAMME

VANUATU TURTLE SURVEY

MASKELYNE ISLANDS, SOUVA MARIKULA

10 - 21 NOVEMBER 1992

VANUATU PROGRESS REPORT TO

THE SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME

by

THE ENVIRONMENT UNIT
VANUATU GOVERNMENT
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REPUBLIC OF VANUATU

DECEMBER 1992

1. INTRODUCTION

During the first (August 1990) and second (August 1991) meetings and workshops for the Regional Marine Turtle Conservation Programme (RMTCP), Vanuatu reported about its work programme for turtle tagging. In 1989 a postal survey consisting of questionnaires about the presence and harvesting of turtles had been distributed widely throughout the country, Figure 1. About 60% of these had been returned and the results have been used to assist us in the identification of priority sites for census and tagging activities under the RMTCP.

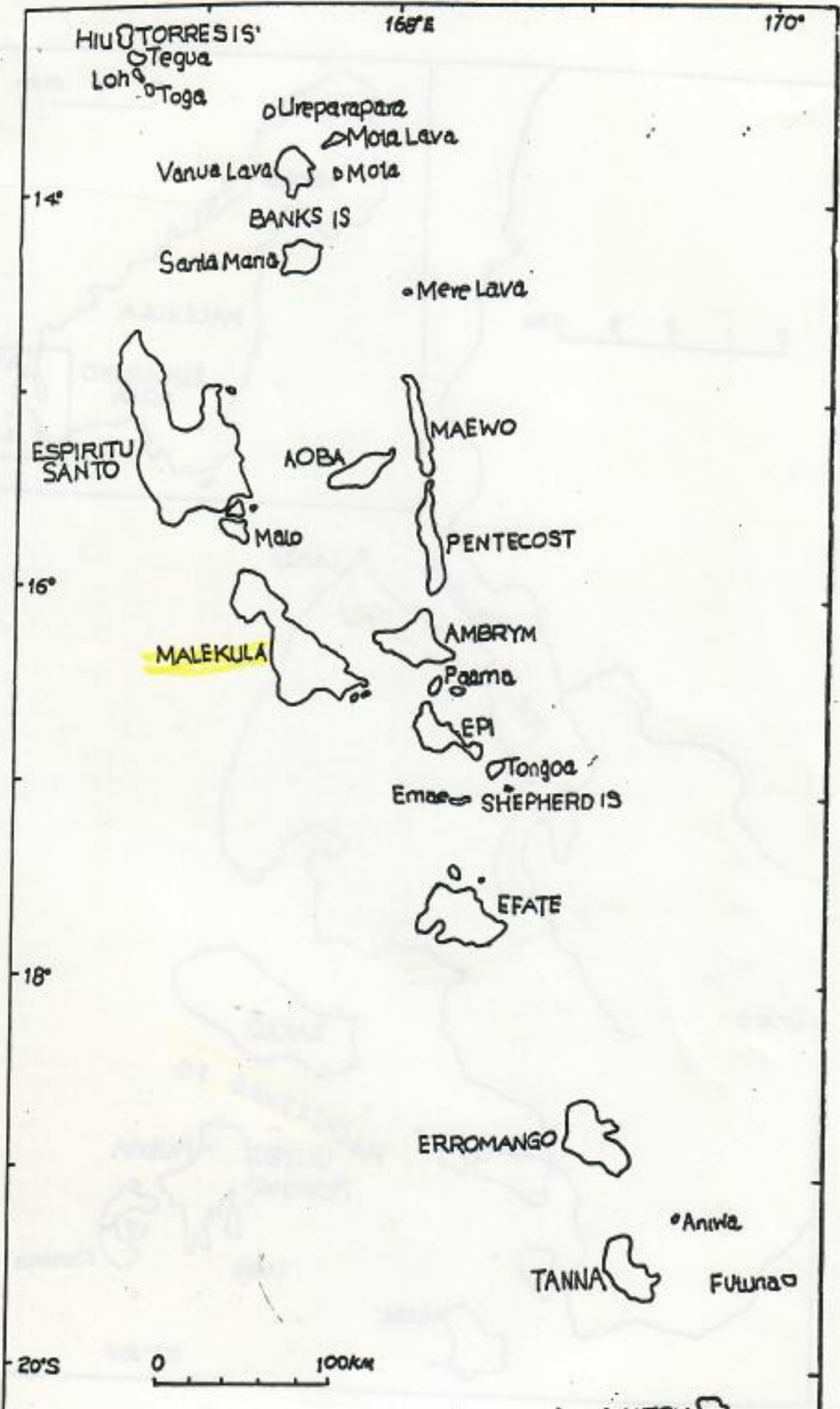
From the general results of the survey it was found that the best time for turtle nesting is between November and April. In 1990 and 1991 no censusing and tagging were carried out because of the cyclones that have caused serious damage to the priority sites that were to be surveyed. The best nesting time which is between November and April is also a wet and cyclone season in the Pacific region.

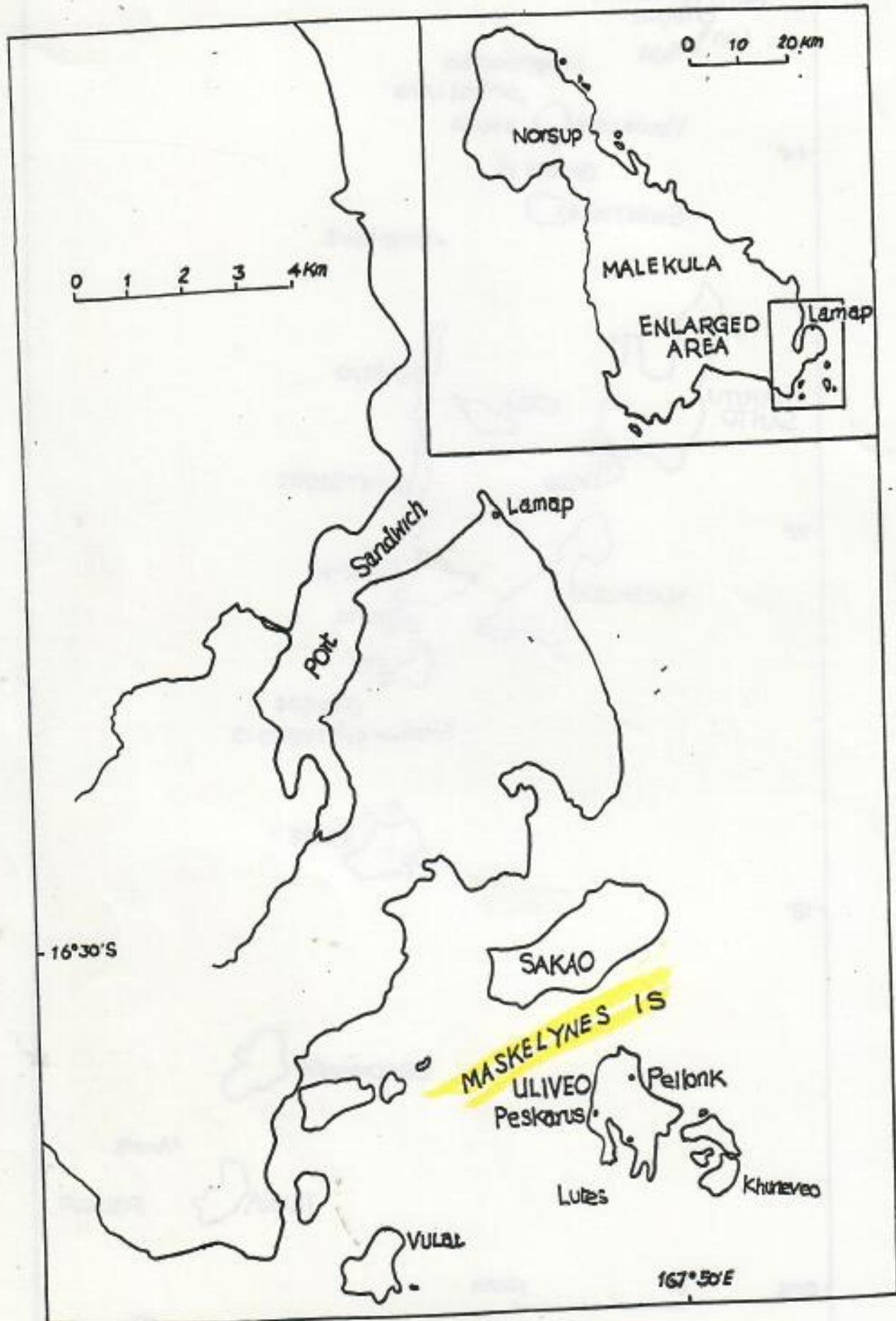
In November 1992 for the first time the Environment Unit Staff members and the SPREP Turtle Consultant, Ms Suzie Geermans conducted a survey in the Maskelyne Islands in South Malekula, Figure 2. The Maskelyne Islands were given the priority for turtle survey because from the results of the postal questionnaire survey of 1989, it was found that the areas around South Malekula including the Maskelyne Islands have good population of marine turtles, particularly the Green (*Chelonia mydas*) and the Hawksbill (*Eretmochelys imbricata*) turtles.

On 8 November 1992, Ms Suzie Geermans flew to Port Vila in Vanuatu, where she joined Ernest Bani and Gaston Atuary from the Environment Unit. The team flew to Lamap airstrip on mainland of South Malekula where they were met by Joseph Soksok and Kalorip Setrack who are Environment Unit's contact people on South Malekula on 10 November. The team travelled to Uleveo Island, Figure 3, in the Maskelyne on a 12ft dinghy with a 25 hp outboard motor where they camped.

METHODS Survey of 10 - 13 November 1992.

The survey started in the afternoon of 10 November 1992 at Lutes village. It was basically a preliminary survey of the sites around the village where there have been reports of turtle nesting, the last of which was in 1989. All other nesting sites were also surveyed. Discussions with the village chief indicated that there are still many marine turtles found on the reefs around the village and the island but the villagers have not seen any nesting for several years.





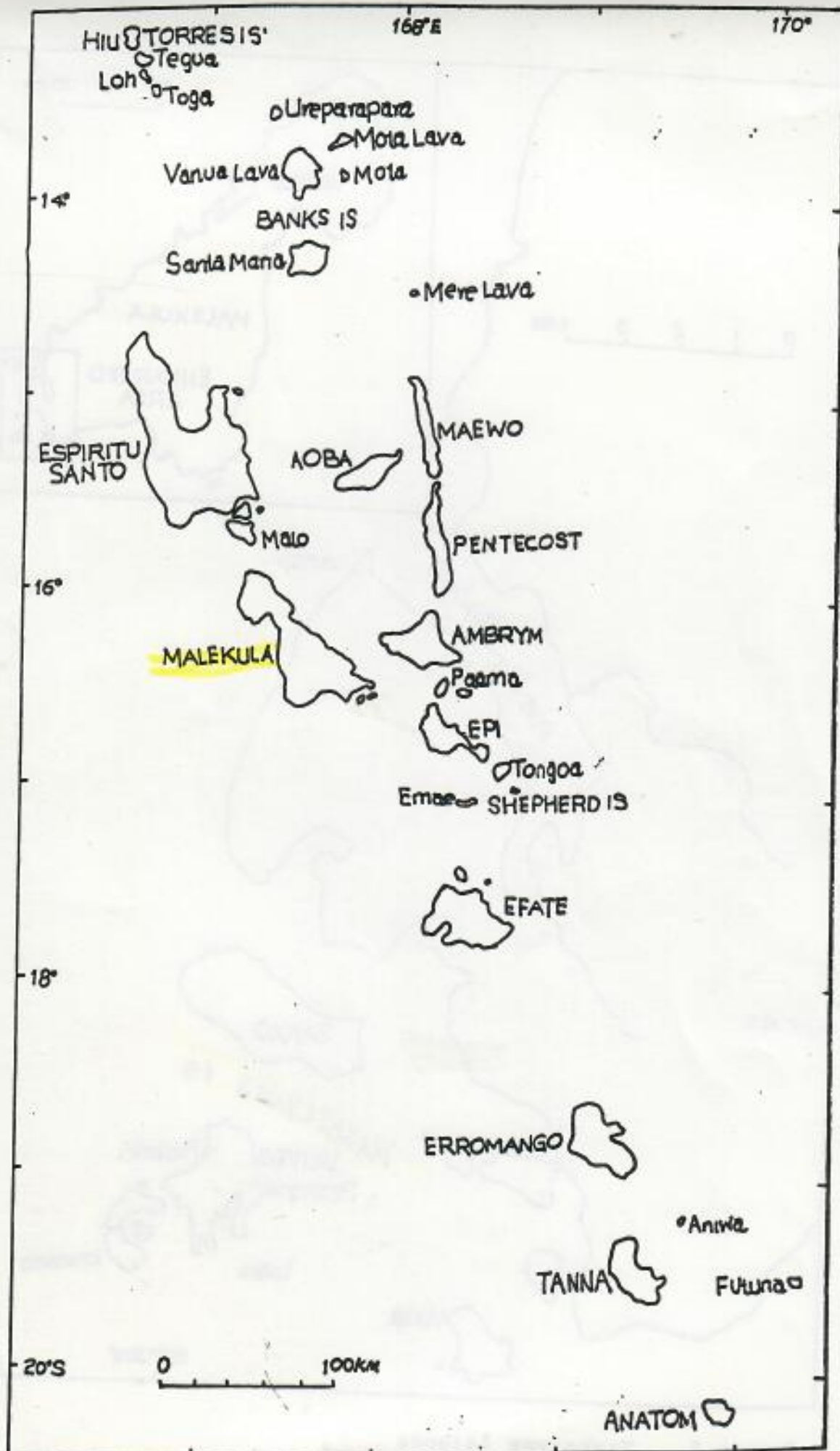


Figure 1. Major islands and island groups of Vanuatu

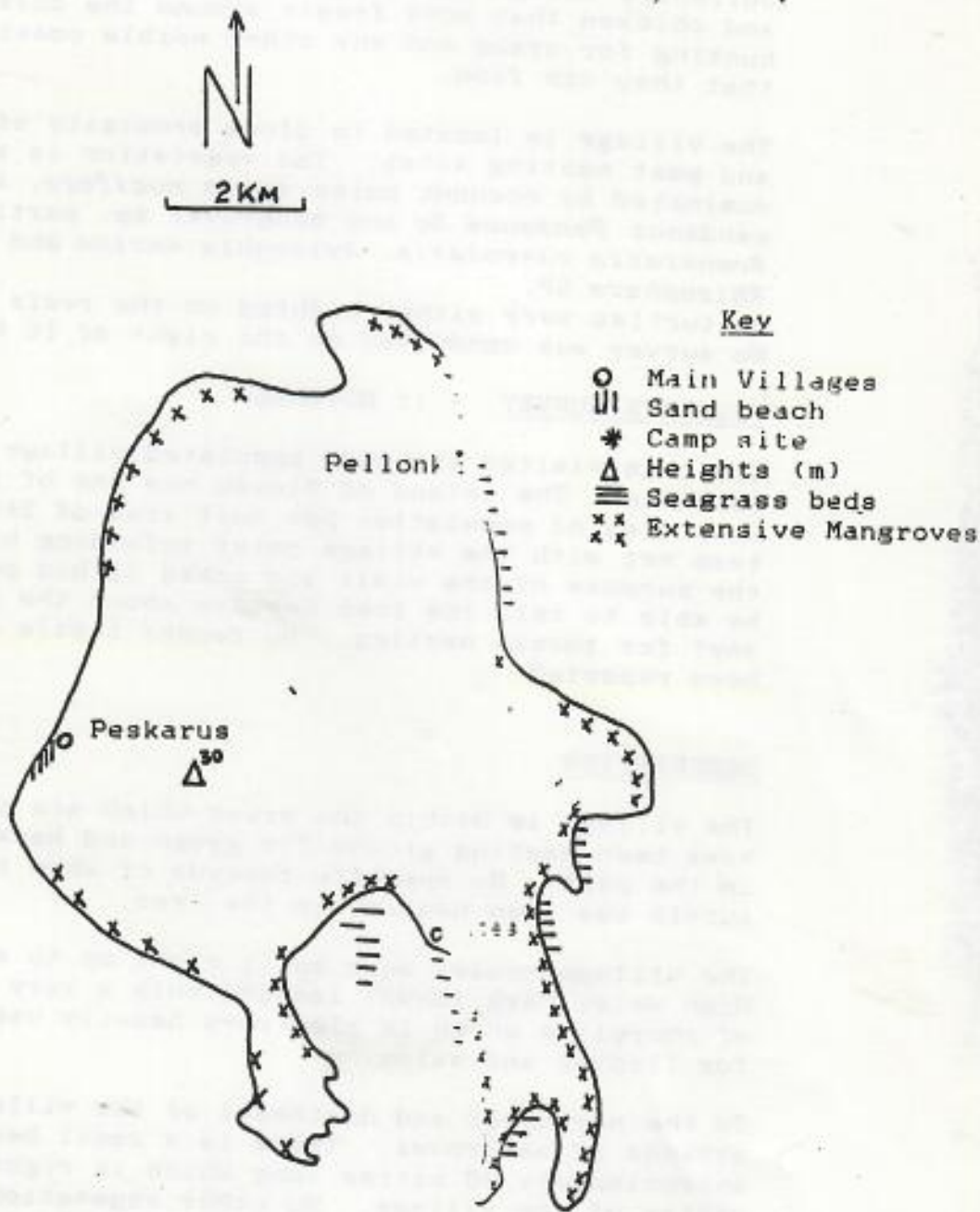


Figure 3. ULIVEO

DESCRIPTION

Lutes (Loklenuen) village is located on the Southern end of the island of Uleveo in the Maskelyne. The past nesting sites surveyed are of small narrow beach areas found in between mangrove strands. The beaches are currently being used for picnicking and there are pigs and chicken that move freely around the coastal areas hunting for crabs and any other edible coastal fruits that they can find.

The village is located in close proximity of the beaches and past nesting sites. The vegetation is sparse and dominated by coconut palms *Cocos nucifera*, scattered pandanus *Pandanus Sp* and mangroves sp. particularly *Sonneratia caseolaris*, *Avicennia marina* and *Rhizophora SP*.

No turtles were either sighted on the reefs or nesting. No survey was conducted on the night of 10 November.

PESKARUS SURVEY - 11 NOVEMBER

The team visited the most populated village of Uleveo, Peskarus. The island of Uleveo has one of the highest densities of population per unit area of 260/sq km. The team met with the village chief informing him about the purpose of the visit and asked if his people would be able to tell the team members about the sites (if any) for turtle nesting. No recent turtle nestings have been reported.

DESCRIPTION

The village is within the areas which are thought to have been nesting ground for green and hawksbill turtles in the past. No specific records of when the last turtle was seen nesting in the area.

The village houses were built right up to about the Mean High Water Mark (MHWM) leaving only a very narrow strip of shoreline which is also very heavily used regularly for fishing and swimming.

To the northwest and northeast of the village are strands of mangroves. There is a small beach area of approximately 30 metres long which is right in the centre of the village. No other vegetation cover is found apart from some scattered coconuts (*Cocos nucifera*) and some fruit trees. Like the areas around Lutes, the animals are left wondering everywhere and with low tide depth it does not provide good nesting ground.

No turtles were either sighted on the reefs or nesting. The survey took place at low tide during the first part of the day.

VULAI AND SAKAO ISLAND

The team visited Vulai Island in the afternoon of the same day Peskarus village was surveyed. This was a logistical trip to find out possible camp sites on the island. The island is presently un-inhabited. The island of Sakao was also visited on the same afternoon to identify camp sites for the survey.

During the preliminary visit to Vulai island two tracks were recorded, one of a hawksbill and another of a green.

No turtles were sighted on either of the two islands. There are reports that on Sakao Island, there were 3 nestings found in December 1991 of which the eggs were eaten. Vulai island was also said to be the best nesting area because it is uninhabited.

Further detailed reports of the islands are in the report.

SURVEY BY CUSTOMARY PRACTICE - 12 NOVEMBER

Another method used during the survey was by traditional calls made by the people of Pellonk. With this practice, women who are pregnant are not allowed to be near the area during the calls. There is a specific area outside the reef platform in the deep pools where the spirits of the families of Pellonk are believed to live.

Traditional turtle calls were made by families of the deceased to release or send the turtles to the sea surface. This has been proved to be true because several turtles appeared during the calls only for a few minutes then they dived down again.

No turtle was captured as their appearance seem to be some distance from the caller. An outrigger canoe was only used.

A survey was also made on the island of Khuneveo, Southeast of Uleveo. An island of approximately 2 ha with white sandy beaches along the northwest and Southwest with large mangrove strands covering the rest of the island is uninhabited. The island was habited until 1966 when the village was moved to Lutes after a strong earthquake.

Vegetation is sparse and dominated by coconuts (*Cocos nucifera*), oak tree, (*Casuarina equisetifolia*) mangrove sp. and Burao (*Hibiscus tiliaceus*).

Pigs and goats are kept on the island making the undergrowth almost non-existent. Seagrasses are abundant in the shallow bay.

No turtles were sighted. A survey was undertaken at night on the reefs at Pellonk and Lutes.

TURTLES TAGGED - 13 NOVEMBER

Five turtles, 2 hawksbill and 3 greens were caught overnight by villagers of Pellonk (2) and Lutes (3) and were tagged the next day. Details are on the data Sheets. (Appendix 2)

VULAI ISLAND. NESTING SURVEY 15 - 18TH NOVEMBER.

Following the observation of recent turtle tracks on beach 4 of Vulai Island. Figure 4, this island was selected as the preferred location for nesting studies in the Maskelyne Island group. Shallow reef flats made the beaches inaccessible to turtles at low tide and consequently the beaches were patrolled hourly from 2 hours before high tide to two hours after high tide on the nights of 15 to 18 November.

The weather was fine throughout the survey.

The survey was undertaken during the week after the full moon.

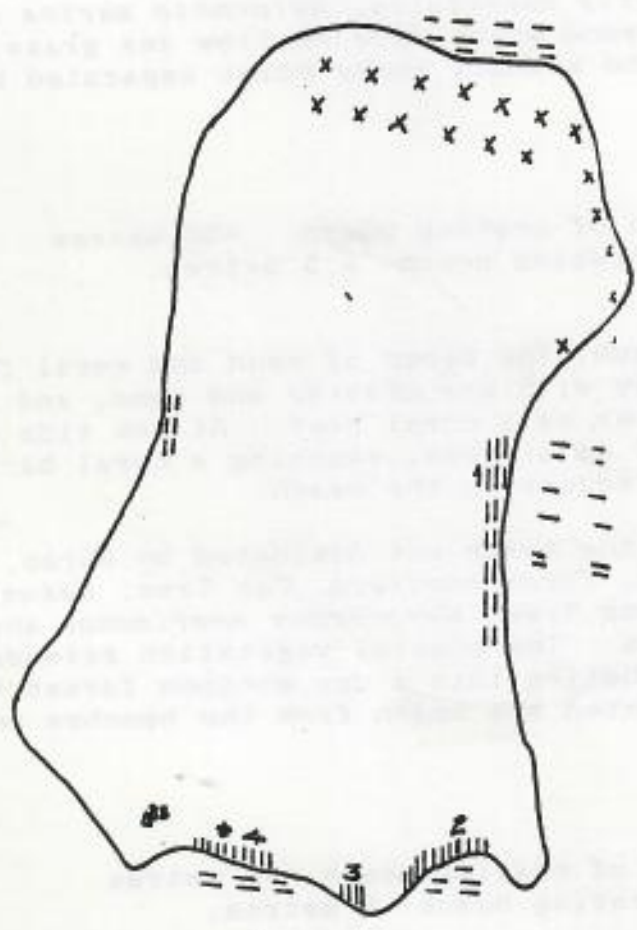
No nesting turtles were sighted.

DESCRIPTION

Vulai Island is a small low island with small sedimentary rock outcrops in the south to a maximum 60 metres. Mangroves cover the northern half of the island, which is surrounded by shallow sea grass meadows and reefs. A narrow mud flat separates the mangroves from the southern part of the island. The south western side of the island has beaches of coral rubble and the south four sandy beaches separated by uplifted sedimentary outcrops and surrounded by shallow coral reefs.

At the time of the survey the island was very dry, and water stress was apparent, with many trees shedding some foliage. The rocky outcrops supported a low open forest which included Namariu (*Acacia* sp), Canoe Tree (*Gyrocarpus americanus*), Nabanga (*Ficus* sp.). A burao thicket (*Hibiscus tiliaceus*) was common in drier areas such as the inland slopes of the rock outcrops. Small scattered plantations of coconuts were present in opportune locations. A small dry monsoon thicket vegetation type occurred in a low lying moister areas.

Although located in the... the... living in...



- Key
- ||| Sand beach
 - 1-4 Survey Sites
 - * Camp Site
 - △ Heights (m)
 - ≡ Shallow seagrass meado
 - xx Extensive Mangroves

Figure 4. VULAI

Although inhabited in the past the island is at present un-inhabited. The owners and former residents are now living in Peskarus.

BEACH ONE

Approximate length of nesting beach: 300 metres
Average Depth of nesting beach: 4 metres.

Description of beach: The white sandy beach backed a broad very shallow bay with seagrasses and scattered patches of coral throughout. A coral reef separates the bay from more open water. At low tide depth in many places was 30cm or less preventing turtle access.

Vegetation behind the beach was sparse and dominated by Coconuts (*Cocos nucifera*), Burao (*Hibiscus tiliaceus*), and Pandanus. Behind the narrow coastal vegetation there was a small un-managed coconut plantation. At the northern end of the beach there began an extensive stand of mangroves, including *Sonneratia caseolaris*, *Avicennia marina* and *Rhizophora* sp. beyond which were shallow sea grass meadows. At the Southern end a small rocky point separated beach 1 from beach 2.

BEACH TWO

Approximate length of nesting beach: 400 metres.
Average Depth of nesting beach: 6.5 metres.

Description of Beach: The beach of sand and coral fragments lined a shallow bay with sea grasses and sand, and separated from more open water by a coral reef. At low tide depth in many places was 30 cm or less, exposing a coral barrier and preventing turtle access to the beach.

Vegetation behind the beach was dominated by Burao, *Hibiscus tiliaceus*, Coconut, *Cocos nucifera*, Oak Tree, *Casuarina equisetifolia*, Canoe Tree, *Gyrocarpus americanus* and occasional Pandanus. The coastal vegetation extended inland some distance graduating into a dry monsoon forest type. Rocky points separated the beach from the beaches on either side.

BEACH THREE

Approximate length of nesting beach: 40 metres.
Average Depth of nesting beach: 5 metres.

A sheltered sandy beach flanked by low cliffs. Shallow water with a bottom of sand and coral. At low tide the coral reef prevented turtle access to the beach.

BEACH FOUR

Approximate length of nesting beach: S.G. has measurement.
Average depth of nesting beach:

This beach was the most suitable for turtle nesting on the island and was the only beach accessible to turtles at low tides. Two turtle tracks were observed on this beach on November 11, one of a Green Turtle the other a Hawksbill Turtle.

The beach lined a broad shallow bay with a largely coral floor and was variously backed by Pandanus *Pandanus sp.*, Oak Tree, *Casuarina equisetifolia*, Burao *Hibiscus tiliaceus* and *Cocos nucifera* with a narrow band of low dry monsoon forest vegetation type further inland.

OTHER GENERAL OBSERVATION

There were many tree fern trunks (*Cypraceae sp.*) scattered throughout the vegetation behind the coastal margin. However no tree ferns were seen growing on the island. Perhaps these had been washed ashore by cyclones the previous year?

A limited bird population was observed which included Reef Herons, Megapodes, White-collared Kingfisher, Lorikeets, and and a Honeyeater. Suzie thought she heard a Shearwater, but this was not confirmed by a sighting.

Pigs and flying foxes were the only land mammals. There were no identification of either lizards or invertebrates.

NOTES FROM CONVERSATIONS WITH LOCAL VILLAGERS

Local Villagers believed turtles tended to nest around the full moon.

In Pelonk only men caught turtles and this was undertaken at night, possibly because it was felt to be easier to catch them on the reef. There was also a custom way to call turtles that was demonstrated to Ernest Bani, Gaston Atuary and Suzie Geermans.

Turtles were caught and eaten in the Maskelynes, particularly in association with the New Yam festival.

A Leatherback Turtle was observed and caught by villagers at Peskarus, perhaps two years before. It was described as being large and black and totally unlike other turtles. It reputedly had eggs inside. It was not eaten because people felt it was too different; marks on its back looked like sores; and they were worried that it might be evil or poisonous.

SAKAO ISLAND. NESTING SURVEY 18 - 19 NOVEMBER.

The island of Sakao was selected as a preferred location for nesting studies following observation of turtle tracks on beaches 1 and 3. Two turtles came ashore on these beaches in December, 1991.

After spending 3 nights on Vulai island, the survey team then moved to Sakao island. The team patrolled the beaches for two nights. No turtle was sighted.

DESCRIPTION

Sakao island, Figure 5 is a raised coral in origin. It is about 4 times bigger than Vulai and higher. Mangroves appear in patches round the island. The island is surrounded with barrier reef. Sakao is heavily disturbed by human activities. The villagers of Pellongk, Peskarus and Lutee all make their village gardens on Sakao. Beaches 3 and 4 are visited daily. Beach 4 is the main landing beach. Both beach 3 and 4 are boarded by coconut plantation with cattle under the coconut.

At the time of the survey the island was very dry, and water stress was apparent. The days were hot and humid. The high island supported open high forest with thick undergrowth. Soil is very fertile. The coastal vegetation is dominated by mangrove sp, *Acacia* sp, nabirbir *Hernandia nymphaeifolia*, Nabakura *Callophyllum inophyllum*, Vutu *Barringtonia asiatica*, Pandanus *Pandanus* sp., burao *Hibiscus tiliaceas* and Coconut *Cocos nucifera*.

BEACH ONE

Approximate length of nesting beach: 215 metres.
Average Depth of nesting beach: 4 metres.

Description of beach: The white sandy beach backed with very shallow bay with sea grasses and scattered patches of coral throughout. A coral reef separates the bay from the open water. At low tide access to the beach by turtles is difficult.

Vegetation behind the beach is dominated by Namariu *Acacia* sp, Nabirbir *Hernandia nymphaeifolia*, Vutu *Barringtonia asiatica*, Pandanus *Pandanus* sp., and burao *Hibiscus tiliaceas*. The beach is boarded by mangroves and rocky shoreline to the west and by mangrove only to the east. Beach 1 is separated from beach 2 by a section of mangroves.

A turtle came ashore on this beach in December, 1991. The eggs were eaten by the villagers.

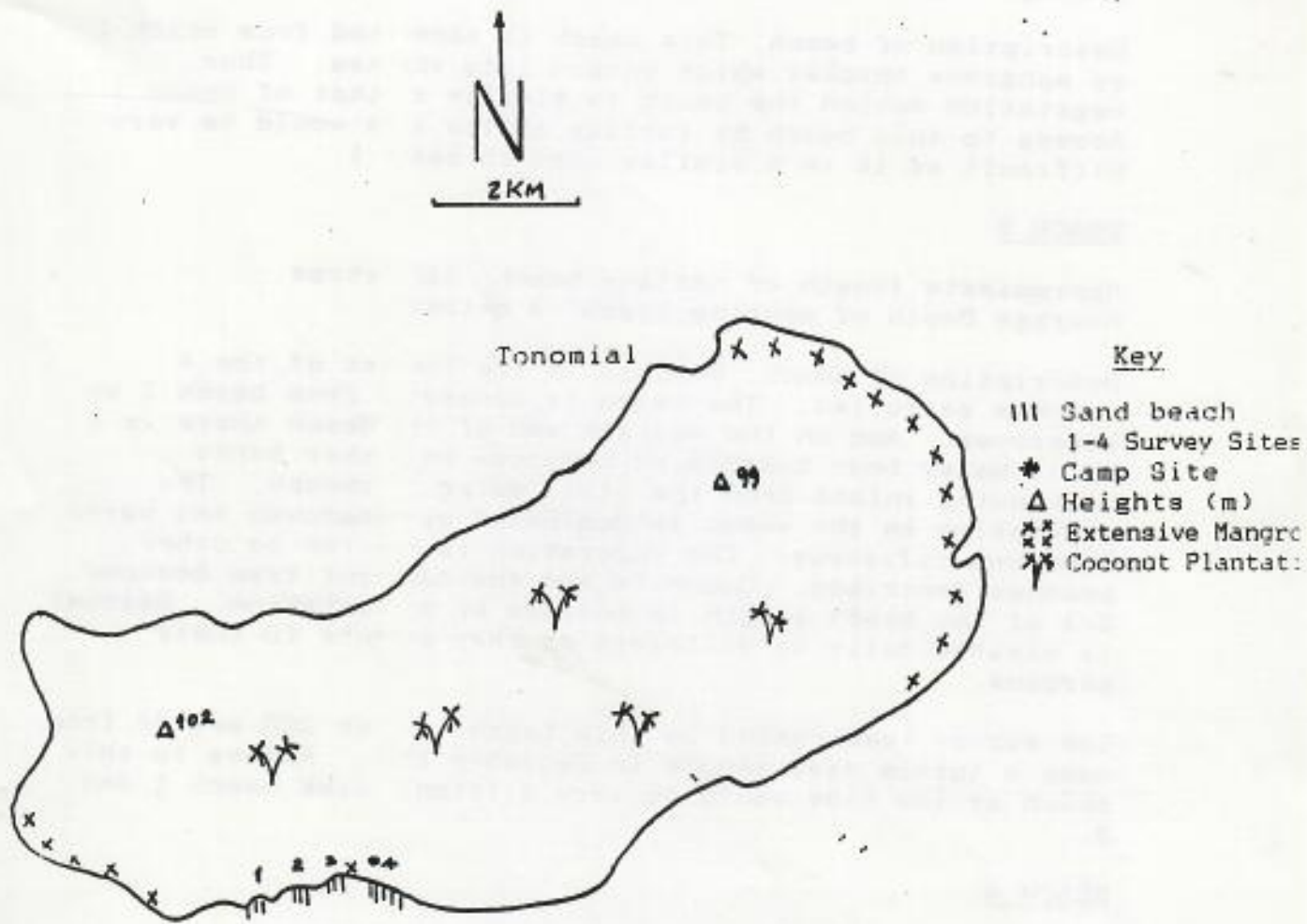


Figure 5. SAKAO

BEACH 2

Approximate length of nesting beach: 172 metres.
Average Depth of nesting beach: 4 metres

Description of beach: This beach is separated from beach 1 by mangrove thicket which extend into the sea. Thus, vegetation behind the beach is similar to that of beach 1. Access to this beach by turtles at low tide would be very difficult as it is a similar case to beach 1.

BEACH 3

Approximate length of nesting beach: 660 metres.
Average Depth of nesting beach: 4 metres

Description of beach: Beach 3 is the longest of the 4 beaches patrolled. The beach is separated from beach 2 by mangroves. And on the western end of the beach there is a still water body bordered by mangrove on either banks. Continuing inland from the still water is swampy. The vegetation in the swamp is dominated by mangroves and burao *Hibiscus tiliaceus*. The vegetation is similar to other beaches described. Coconuts are the dominant tree because 2/3 of the beach length is bordered by a plantation. Beach 3 is visited daily by villagers as they commute to their gardens.

The survey team camped on this beach. About 200 metres from camp a turtle came ashore in December 1981. Access to this beach at low tide would be very difficult like beach 1 and 2.

BEACH 4

Approximate length of nesting beach: 440 metres.
Average Depth of nesting beach: 4 metres

Description of beach: Beach 4 has similar vegetation with coconuts dominating. The whole length of the beach is bordered by a coconut plantation. The eastern end is marked by mangroves while the western end is separated by mangrove from beach 3. Beach 4 is the most disturbed beach of the 4 beaches. It is the main landing beach for the villagers of Uleveo island.

OTHER GENERAL OBSERVATION

There were few big trees scattered along every beach. Sea bird observed include Reef Heron.

On beach 1, two sea snakes were observed on the night of 18 November. Both were black and white stripes. Numerous crabs were observed. Particularly on beach 1 and 2 and where the mangroves divide the beaches.

On beach 3 numerous snake like tracks were observed on both nights. The tracks were terrifying as the team could not work out what exactly the tracks belong to.

RECOMMENDATIONS

Turtles are present feeding in the sea grass meadows and coral reefs of the Maskelynes. Both Green and Hawksbill Turtles would appear to be fairly common, and Leatherbacks are occasional visitors uncommon enough not to be recognised by local villagers. Both Green and Hawksbill Turtles are nesting in the area, although only in small numbers nest. There is a reasonably high level of predation of turtles for meat and eggs.

We would make the following recommendations to improve the efficiency of future turtle surveys:

1. Prior to future surveys in the Marine Turtle Conservation Project a preliminary visit to the proposed study area should be conducted by a Staff member of the Environment Unit. The purpose of the Preliminary visit would be to hold discussions with villagers, chiefs and land owners; to arrange survey logistics; to identify study sites; and to finalise the study programme. The preliminary survey will enable the Environment Unit to make all necessary preparations before returning to the area to conduct the survey. This will avoid imposition on local communities for resources and equipment more available in Port Vila and enable most efficient use to be made of available survey time.
2. This survey was the first survey undertaken by staff in the Environment Unit of marine turtles. Future studies would benefit from production of a practical field handbook that describes turtle measuring and survey techniques; that clearly illustrates different turtle tracks, eggs and behaviour patterns; and that gives practical tips to the novice researcher. The SPREP Marine Turtle Conservation Project Consultant would be the ideal person to produce this material.
3. In future studies it would be valuable to include a feeding ground study to estimate the population density of turtles in the area and to obtain more detailed feeding ground descriptions. This would allow quantitative comparisons of different habitat areas throughout Vanuatu and assist in identification of significant areas for conservation and protection. Such a study would best be undertaken during the day, and so be compatible with the night time nesting surveys.

4. Records of tagged turtles should be entered into a database programme to enable reference of information when a sighting is reported.

CONCLUSION

The Vanuatu Marine Turtle Survey was conducted for the first time between 10 and 21 November 1992, in the Maskelyne Islands off South Malekula. The islands have turtles on the reefs, mainly the Green (*Chelonia mydas*) and the Hawksbill (*Eretmochelys imbricata*) turtles. There has not been any sighting of turtles nesting during the past year and this is because of the large number of people living on the main island of the Maskelynes, Uleveo and their movement between the islands for fishing and gardening which cause some threats to the decline in the turtle population.

During the two weeks survey only five turtles were tagged, 3 greens and 2 hawksbill. No eggs were found. The turtles of the Maskelyne Islands are declining in numbers. There are reports of the decline in the number of animals caught annually on the habited islands as this is already heavily populated. The current nesting areas are said to be on the beaches of the South West areas of the mainland of Malekula, sites which there was no time to survey during the trip. The people of the Maskelyne Islands are now prepared to support the marine turtle tagging programme for conservation of their wildlife resources through sustainable use and development.

REGIONAL MARINE TURTLE CONSERVATION PROGRAMME.

VANUATU TURTLE SURVEY.

MASKELYNE ISLANDS, SOUTH MALEKULA.

10 - 21 November, 1992.

DIARY

- 10 Nov. Arrived in Maskelynes.
11 Nov. Vulai Island 2 tracks recorded by S.G. on beach 4.
1 HAWKSBILL - Did not lay eggs (i.e. a false crawl)
1 Green - possibly laid, could not find eggs.
Sakao Island No tracks.
12 Nov. surveys by traditional practices and on Khuneveo -
no tracks
13 Nov. 5 turtles caught over night by villagers and
tagged.
14 Nov. Sakao Island - one track reported by Jenny, wife of
Kalorip. Beach not established.
15 Nov. Vulai Island - no tracks
16 Nov. Vulai Island - no tracks
17 Nov. Vulai Island - no tracks
18 Nov. Sakao Island - no tracks
Vulai Island - 1 track reported by fisherman from
Peskarus.
19 Nov. Sakao Island - no tracks
Report of 4 turtles nesting on night of 16 November
on a beach west of Baneuv Pt by villagers from the
mainland.
20 Nov. Returned to Pellonk. No survey.
21 Nov. Returned to Port Vila. No survey.

Turtles tagged:

Tag No:	Date	Locality	Village	Lat	Long	Species	Notes
R1401 (LF) R1402 (RF)	13/11/92	Maskelynes	Pelonk	16°31'	167°49'	Green	Carapace length 49.0cm SG; 49.1cm GA. Captured swimming on reef at night. No papillomas. Blood sample taken. TLC +0.5cm.
R1403 (RF) R1404 (LF)	13/11/92	Maskelynes	Pelonk	16°31'	167°49'	Hawksbill	Carapace length 51.7cm SG; 51.7cm KS. Captured swimming on reef at night No papillomas. Blood sample taken. TLC -2.0cm
R1405 (LF) R1406 (RF)	13/11/92	Maskelynes	Lutes	16°32'	167°49'	Hawksbill	Carapace 84.0cm EB; 80.0cm KS; 79.0cm SG. Captured swimming on reef at night. No papillomas. Blood sample taken. TLC 24.
R1407 (LF) R1408 (RF)	13/11/92	Maskelynes	Lutes	16°32'	167°49'	Green	Carapace length 56.0cm KS; 55.5cm GA. Captured swimming on reef at night. No papillomas. Blood sample taken. TLC -0.5cm
R1409 (LF) R1410 (RF)	13/11/92	Maskelynes	Lutes	16°32'	167°49'	Green	Carapace length 62.5cm G; 62.5cm*. Captured swimming on reef at night No papillomas. Blood sample taken. TLC +1.0cm.

TURTLE RESEARCH - Nesting Turtles

Tag No.	Posn
Receipt	
R1409	LP
R1410	RP

Latitude Letos village Longitude _____ am
 Locality Letos village Date 12 / 32 Time _____ pm

Clutch _____
 Yolkless _____
 Multiyolk _____

EGG DIAMETERS
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

RELOCATION
 Yes / No _____

NEST DEPTH
 Top _____ cm
 Bot _____ cm

TEMPERATURE
 Sand _____ oC

COMMENSALS
 Chelonibia....0
 burrowing
 barnacles....0
 Algae, thick..0
 Mud, thick....0
 Other _____

NEST LOCATION
 dune 2nd....0
 dune 1st....0
 grass slope..0
 below slope..0
 below HW....0
 under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

SPECIES
 green.....0
 loggerhead..0
 flatback....0
 hawksbill...0
 ridley.....0
 leatherback.0

DAMAGE
 carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

HOW MANY EGG
 CHAMBERS? _____

CARAPACE
 length _____ cm

CAUSE OF
 DISTURBANCE _____

ACTIVITY

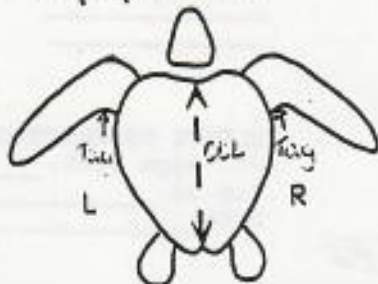
laid.....0
 laid/dist...0
 no lay.....0

CLUTCH DESTRUCTION
 No. eggs dist. _____
 Tag No. _____
 Date _____

RECORDERS
 Measured _____
 Recorded _____

Weight _____ kg

no papillomas



NOTES

TURTLE RESEARCH - Nesting Turtles

Tag No.	Posn
Receipt	
New	

Latitude _____ Longitude _____ am
 Locality _____ Date _____ Time _____ pm

Clutch _____
 Yolkless _____
 Multiyolk _____

EGG DIAMETERS
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

RELOCATION
 Yes / No _____

NEST DEPTH
 Top _____ cm
 Bot _____ cm

TEMPERATURE
 Sand _____ oC

COMMENSALS
 Chelonibia....0
 burrowing
 barnacles....0
 Algae, thick..0
 Mud, thick....0
 Other _____

NEST LOCATION
 dune 2nd....0
 dune 1st....0
 grass slope..0
 below slope..0
 below HW....0
 under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

SPECIES
 green.....C
 loggerhead..C
 flatback....C
 hawksbill...C
 ridley.....C
 leatherback.C

DAMAGE
 carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

HOW MANY EGG
 CHAMBERS? _____

CARAPACE
 length _____ cm

CAUSE OF
 DISTURBANCE _____

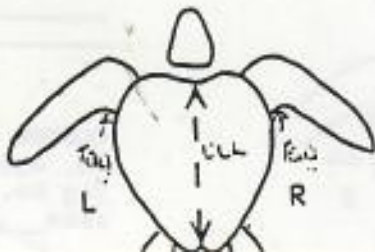
ACTIVITY

laid.....
 laid/dist...
 no lay.....

CLUTCH DESTRUCTION
 No. eggs dist. _____
 Tag No. _____
 Date _____

RECORDERS
 Measured _____
 Recorded _____

Weight _____ kg



NOTES

Tag No.	Posn
Recapt	
R 1405	LF
R 1403	RF

TURTLE RESEARCH - Nesting Turtles

Latitude Letus village Longitude _____ am
 Locality Date 12/1/92 Time _____ pm

Clutch _____
 Yolkless _____
 Multiyolk _____

RELOCATION
 Yes / No _____

NEST DEPTH
 Top _____ cm
 Bot _____ cm

TEMPERATURE
 Sand _____ °C

COMMENSALS
 Chelonibia....0
 burrowing _____
 barnacles....0
 Algae, thick..0
 Mud, thick....0
 Other _____

DAMAGE
 carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

NEST LOCATION
 dune 2nd....0
 dune 1st....0
 grass slope..0
 below slope..0
 below HW....0
 under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

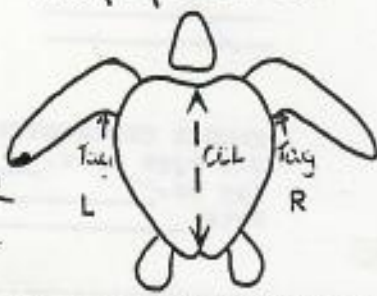
HOW MANY EGG CHAMBERS? _____

SPECIES
 green.....0
 loggerhead..0
 flatback....0
 hawksbill...0
 ridley.....0
 leatherback.0

CARAPACE length
84.0 ER cm
79.0 SG

Weight _____ kg

no papillomas



NOTES

11-22
 Bird sample

CAUSE OF DISTURBANCE _____

ACTIVITY
 laid.....0
 laid/dist...0
 no lay.....0

CLUTCH DESTRUCTION
 No. eggs dist. _____
 Tag No. _____
 Date _____

RECORDERS
 Measured _____
 Recorded _____

Tag No.	Posn
Recapt	
New	
R 1407	LF
R 1408	RF

TURTLE RESEARCH - Nesting Turtles

Latitude Letus village Longitude _____ am
 Locality Date 12/1/92 Time _____ pm

Clutch _____
 Yolkless _____
 Multiyolk _____

RELOCATION
 Yes / No _____

NEST DEPTH
 Top _____ cm
 Bot _____ cm

TEMPERATURE
 Sand _____ °C

COMMENSALS
 Chelonibia....
 burrowing _____
 barnacles....0
 Algae, thick..0
 Mud, thick....0
 Other _____

DAMAGE
 carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

NEST LOCATION
 dune 2nd....0
 dune 1st....0
 grass slope..0
 below slope..0
 below HW....0
 under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

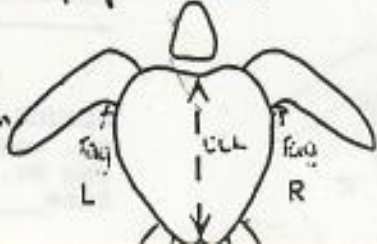
HOW MANY EGG CHAMBERS? _____

SPECIES
 green.....
 loggerhead..0
 flatback....0
 hawksbill...0
 ridley.....0
 leatherback.0

CARAPACE length
56.0 K cm

Weight _____ kg

no papillomas



NOTES

TLC = -0.5cm

CAUSE OF DISTURBANCE _____

ACTIVITY
 laid.....0
 laid/dist...0
 no lay.....0

CLUTCH DESTRUCTION
 No. eggs dist. _____
 Tag No. _____
 Date _____

RECORDERS
 Measured _____

Tag No.	Posn
Receipt	
New	R1401 LF
	L1202 RF

TURTLE RESEARCH - Nesting Turtles

Latitude Pellont village Longitude _____
 Locality Machilicut Date 13/1/22 Time _____ am/pm

Clutch _____	Yolkless _____ Multiyolk _____
EGG DIAMETERS	RELOCATION Yes / No _____
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	NEST DEPTH
6. _____	Top _____ cm
7. _____	Bot _____ cm
8. _____	
9. _____	TEMPERATURE
10. _____	Sand _____ oC

COMMENSALS

Chelonibia.....0
 burrowing _____
 barnacles.....0
 Algae, thick..0
 Mud, thick....0
 Other _____

DAMAGE

carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

NEST LOCATION

dune 2nd.....0
 dune 1st.....0
 grass slope..0
 below slope..0
 below HW.....0

under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

HOW MANY EGG CHAMBERS? _____

SPECIES

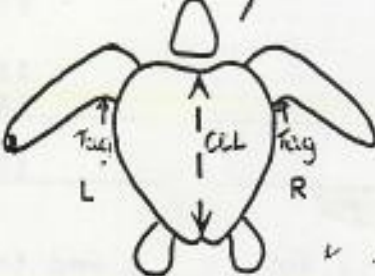
green.....0
 loggerhead..0
 flatback....0
 hawksbill...0
 ridley.....0
 leatherback.0

CARAPACE length
59.0 SG cm
60.0 design

Weight _____ kg

NOTES

Blood sample



TLC = +0.5cm

no pup...

CAUSE OF DISTURBANCE

ACTIVITY

laid.....0
 laid/dist...0
 no lay.....0

CLUTCH DESTRUCTION

No. eggs dist. _____
 Tag No. _____
 Date _____

RECORDERS

Measured _____
 Recorded _____

Blood sample

Tag No.	Posn
Receipt	
New	R1403 RF
	R1404 LF

TURTLE RESEARCH - Nesting Turtles

Latitude Pellont village Longitude _____
 Locality Machilicut Date 13/1/22 Time _____ am/pm

Clutch _____	Yolkless _____ Multiyolk _____
EGG DIAMETERS	RELOCATION Yes / No _____
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	NEST DEPTH
6. _____	Top _____ cm
7. _____	Bot _____ cm
8. _____	
9. _____	TEMPERATURE
10. _____	Sand _____ oC

COMMENSALS

Chelonibia.....0
 burrowing _____
 barnacles.....0
 Algae, thick..0
 Mud, thick....0
 Other _____

DAMAGE

carapace.....0
 LFF.....0
 RFF.....0
 LHF.....0
 RHF.....0

NEST LOCATION

dune 2nd.....0
 dune 1st.....0
 grass slope..0
 below slope..0
 below HW.....0

under tree...0
 under shrub..0
 in grass.....0
 in bare sand.0

HOW MANY EGG CHAMBERS? _____

SPECIES

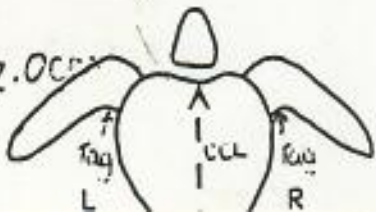
green.....0
 loggerhead..0
 flatback....0
 hawksbill...0
 ridley.....0
 leatherback.0

CARAPACE length
51.7 SG cm
52.0 design

Weight _____ kg

NOTES

TLC = -2.0cm



CAUSE OF DISTURBANCE

ACTIVITY

laid.....0
 laid/dist...0
 no lay.....0

CLUTCH DESTRUCTION

No. eggs dist. _____
 Tag No. _____

RECORDERS

Measured _____
 Recorded _____

Expenditure To Date

In November 1991, \$US 5,000 (VUV 505,000) was transferred to the Vanuatu Project Account from SPREP. The following is a breakdown of expenditure to date.

Maskelyne Islands Survey 10 - 21 November 1992

In VATU Currency)

Airfares and Freight (Vila-Lamap-Vila)	VT	35,800
Boat Hire		12,900
Accommodation		3,000
Fees - Local Guides (x2)		20,000
Land transport		6,050
Materials Tee-Shirts (x64)...		28,300
Reimbursement of survey equipment paid by Suzie Geermans		17,202
Film		330
Goods		11,555
Miscellaneous		18,475
Total		153,612

The total expenditure to date is VUV 153,612 and the funds remaining is approximately VUV 351,388 (US \$ 3,000). This will assist finance in the continuation of the project in 1993.