

SEA TURTLES - W. SAMOA

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MARINE ENVIRONMENT SURVEY:
PROPOSED ALEIPATA ISLANDS NATIONAL PARK,
WESTERN SAMOA

EXCERPTS

1989

MARINE ENVIRONMENT SURVEY :

PROPOSED ALEIPATA ISLANDS NATIONAL PARK , WESTERN SAMOA

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CONTENTS

	Page
1. Foreword	1
2. Abstract	2
3. Introduction	2
4. The Shoreline, Lagoon And Shallow Reef Environment	8
4.1 Shoreline	8
4.2 Sand substrate	8
4.3 <i>Syringodium isoetifolium</i> seagrass beds	10
4.4 <i>Halophila ovata</i> seagrass beds	10
4.5 Sand/ <i>Halophila</i> assemblage	11
4.6 Mixed coral assemblage	11
4.7 <i>Porites cylindrica</i> dominated coral assemblage	12
4.8 Massive <i>Porites</i> dominated coral assemblage	13
4.9 Sand/rubble substrate	13
4.10 Reef crest	14
4.11 Dredge and fill	14
5. The Reef Slope Environment	15
5.1 Reef slope benthic community patterns	15
5.2 Spur and groove with drop off	26
5.3 Spur and groove with broad dissected lower slope	27
5.4 Scoured reef platform	27
5.5 Spur and groove with short slope	28
5.6 The reef channels	29
5.7 Nu'utele and Nu'ulua Islands	29
5.8 Fishes of the reef slope	30
5.9 Effects of <i>Acanthaster planci</i>	32
6. Marine Resource Use	32
6.1 Fishing methods and catches	33
6.2 Village fisheries	36
6.3 Reef gleaning	36
7. Specific Resource Issues	39
7.1 Reef tenure and fishing rights	39
7.2 Fish spawning aggregations	39
7.3 Sea turtle nesting	40
7.4 <i>Acanthaster planci</i> (Crown-of-Thorns starfish)	40
7.5 Destructive fishing practices	40
7.6 Coastal erosion	41
8. Local Current Patterns	43

	Page
9. Discussion And Conclusions	44
9.1 Aleipata marine environment	44
9.2 Marine resource use and management	44
9.3 Tourism, recreation and research	45
9.4 Park management	46
9.5 Boundaries	47
9.6 Zoning	49
10. Acknowledgements	52
11. Bibliography	53
12. Appendices	
1. Fish species list with Samoan names	55
2. Invertebrate food resources	60
3. Raw manta tow data	61
4. Resource use survey questionnaire	62

TABLES AND FIGURES

TABLES

Table 1.	Manta tow observations and scoring system	16
Table 2.	List of informants	33
Table 3.	Fish catch landed at Sale'a'aumua, Aleipata (20 June 1987)	35
Table 4.	Aleipata area village fisheries	36
Table 5.	Timing of fish spawning aggregations	39

FIGURES

Figure 1.	Location of Western Samoa and Aleipata area	5
Figure 2.	Aleipata survey area	6
Figure 3.	Diagrammatic cross section of survey area	7
Figure 4.	Habitat map of Aleipata lagoon and reef front morphology	9
Figure 5.	Manta tow data for percentage cover of hard coral	19
Figure 6.	Manta tow data for percentage cover of soft coral	20

Figure 7.	Manta tow data for percentage cover of dead coral	21
Figure 8.	Manta tow data for percentage cover of macroalgae	22
Figure 9.	Manta tow data for diversity of hard coral	23
Figure 10.	Manta tow data for size range of hard coral	24
Figure 11.	Locations of dive sites and current patterns	25
Figure 12.	Fish spawning aggregations, <i>Acanthaster planci</i> aggregations and sea turtle nesting sites	42
Figure 13.	Park boundaries proposed in feasibility study	48
Figure 14.	Suggested park boundaries and zones	50

1. Foreword

The report documents the results and recommendations of a marine environment survey of the Aleipata area, Western Samoa, carried out by the authors from 16 to 26 June 1988. The purpose of the survey was to describe the reef and lagoon habitats, and their constituent organisms, found in the proposed Aleipata Islands National Park area. In particular, the distribution of fish, corals, algae, seagrass and benthic macro-invertebrates was recorded. Information was gathered on the types and patterns of marine resource use and on degradation or destruction of the marine resources or their associated habitats.

The government of Western Samoa requested the South Pacific Regional Environment Programme (SPREP) to organise this survey under the auspices of the South Pacific Commission (SPC) provision of Short-Term Experts and Services in mid-1986. This request followed recommendations from a feasibility study undertaken by a consultant to UNESCO in late 1985 (Chew, 1987) calling for an "inventory of marine life" and "survey of submarine sea scapes" in the proposed park. The feasibility study was sought by Western Samoa in July 1985 at the Third South Pacific Conference on National Parks and Reserves. The Aleipata Islands (Nu'utele, Nu'ulua, Namu'a and Fanaatapu), also referred to as the Nu'utele Island group, were originally suggested as a national park in an IUCN/UNDAT survey proposing a national park system for Western Samoa (Holloway, 1976). In 1978, the SPC Ecological Advisor further recommended the establishment of a recreational reserve at Namu'a Island as a first step (Dahl, 1978).

The results reported here are restricted by a number of conditions. The survey was conducted during daylight hours only. Thus, nocturnal populations and aspects of the Aleipata marine environment have not been recorded. In addition, the results only reflect that information gathered during a ten-day period in June 1988 and therefore cannot account for seasonal or long-term variations in the marine communities. Finally, the Aleipata area was influenced by strong tradewinds and high seas during the survey and these conditions may have influenced the marine environment and organisms observed.

2. Abstract

The Aleipata area surveyed includes the south-eastern coast of Upolu Island, Western Samoa. The survey consisted of general descriptive ecology and morphology for the Aleipata coastal fringing reef and the fringing reefs of the two detached islands, Nu'utele and Nu'ulua. The area behind the coastal fringing reef to the shoreline was a shallow (<4 m deep) area of sand, rubble, seagrass beds and mixed coral assemblages. A shallow reef platform and algal ridge characterised the reef edge. The reef slope was generally low in hard coral cover except for a few areas. Extensive areas of dead, standing coral colonies covered with algae indicate the effects of Crown-of-Thorns starfish (*Acanthaster planci*) outbreaks in the past decades. The reefs around Nu'utele and Nu'ulua and the south-facing coastal reef were consistently higher in coral cover and diversity. The fish populations appeared to be large and diverse and dominated by the herbivores and corallivores.

The Aleipata area reefs supply the local population with much of their food resources, and a survey of resource use and techniques was conducted. Interviews with village fishermen indicate that a variety of fish and invertebrate food resources are harvested from the reefs. Numerous techniques are employed and most fisheries are pursued throughout the year, with the harvest mainly for local consumption. Some information on fishing rights, destructive fishing practices and local oceanographic conditions was also gathered.

The survey revealed that the Aleipata marine environment supports typical coral reef habitats and associated plant and animal communities, and does not contain particularly unique or spectacular organisms, communities or morphologic features. However, the Aleipata area marine resources are important to the local villages. The villages' use of these resources and traditional community-based resource management practices must be taken into consideration if national park development proceeds.

3. Introduction

The Aleipata area is situated on the south east coast of the island of Upolu, in Western Samoa (Figure 1.). The area consists of a narrow coastal strip backed by high cliffs which reach a height of around 150 m and slope towards the coast. The underlying substrate is volcanic rock of the Salani volcanics. The soils are relatively shallow and generally of poor fertility. The four islands off the coast of Aleipata: Fanuatapu, Namu'a, Nu'utele and Nu'ulua all consist of heavily eroded tuff cones with coral fragments incorporated within the rock (Ollier et al. 1979). The Aleipata coastline is heavily populated and cultivated whereas its associated islands are uninhabited.

A marine environmental survey was conducted in the coastal area between the villages of Latu in the south and Sale'a'aumua on the east coast. The reef front survey was conducted between Tuluinga passage in the south and Fuinu'u passage in the northeast. The marine environment surrounding Nu'utele and Nu'ula Islands was also included (Figure 2.). This area coincides generally with the park boundaries originally proposed in the draft feasibility study (Chew, 1986), but is based on prominent natural features (i.e. reef passes) rather than map co-ordinates. Within this area, the survey extended from mean high water to the bottom of the outer reef slope (depths of approximately 30 m) including the coastal fringing and detached island reefs, and isolated patch reefs (Figure 3.). The intertidal areas immediately adjacent to the Aleipata mainland are described as the shoreline.

The submerged back reef area extending from the shoreline to the fringing reef edge was shallow (maximum depth of 4 m, average depth 2-3 m) with sand and rubble, seagrass and coral patches and is described as the lagoon. To facilitate description, the lagoon area was sub-divided into two sections, north and south, separated by the jetty and adjacent reef pass (Ana). The southern lagoon extends from the jetty south to Cape Tapaga. The wider northern lagoon extends north from the wharf to the pass at Fuinu'u and across to Utufa'alalafa village. In addition, the narrow back reef area from Cape Tapaga west to Tuluinga pass is referred to as the south-facing lagoon. The back reef areas of the two southern islands, Nu'utele and Nu'ulua, were relatively narrow and of limited extent, and were not fully investigated.

Lagoon depths decrease towards the reef edge, with a zone of coral patches and rubble. A very shallow reef platform and crest of coralline algae characterise the reef edge. This drops off to the spur and groove or terrace formations of the reef front. The reef slope then continues sharply downward to a sediment dominated bottom. One submerged patch reef with a pinnacle was identified and investigated in the waters off the Aleipata fringing reef.

There is little published information specific to the environment of the Aleipata area. A brief description of the area's geology, coastal geomorphology and wildlife was included in Ollier, et al. (1979). Other background information concerns the nesting of hawksbill turtles (*Eretmochelys imbricata*) on the islands (Witzell and Banner, 1980; Hansen, No Date). More recently, a comprehensive review of the vegetation of the Aleipata Islands (Whistler, 1983) and a reconnaissance survey of the Aleipata lagoon's landfill and construction materials were conducted (Richmond, 1985).

More general information for Western Samoa was also available on: reef and lagoon resource management (Johannes, 1982); inshore fisheries (Zam et al., 1984); coastal management (Bell, 1985) and Crown-of-Thorns starfish (Garlovsky and Bergquist, 1970). The latter subject is of considerable importance to the condition of Aleipata reef communities and additional information from nearby American Samoa was consulted (Birkeland, et al., 1987; Wass, 1980).

The following information was obtained from the literature on the condition of reef and lagoon resources in Western Samoa. The information was obtained from the following sources: Johannes (1982), Zam et al. (1984), Bell (1985), Garlovsky and Bergquist (1970), Birkeland et al. (1987), and Wass (1980).

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Figure 1. Location of Western Samoa and Aleipata area

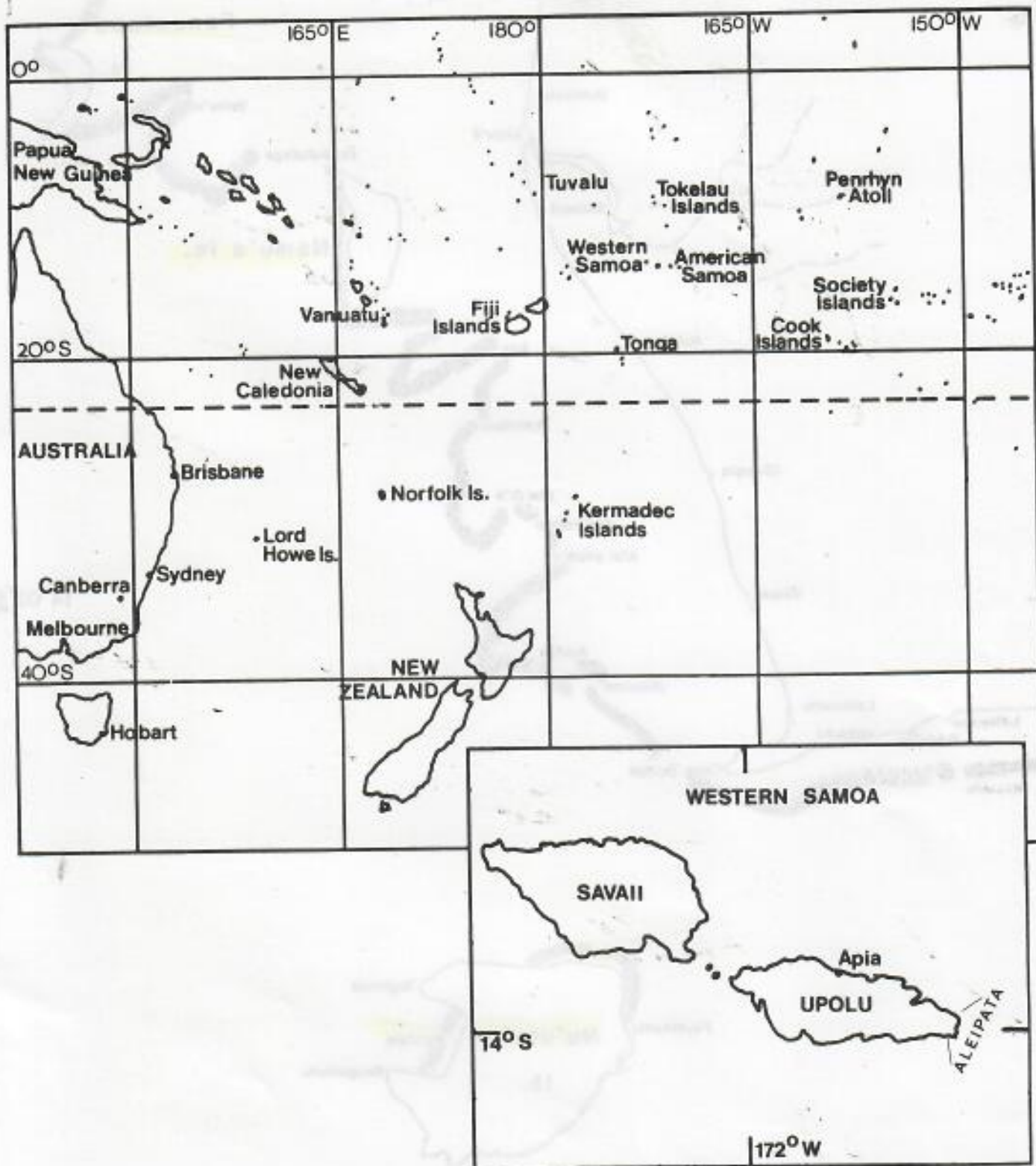


Figure 2. Aleipata survey area

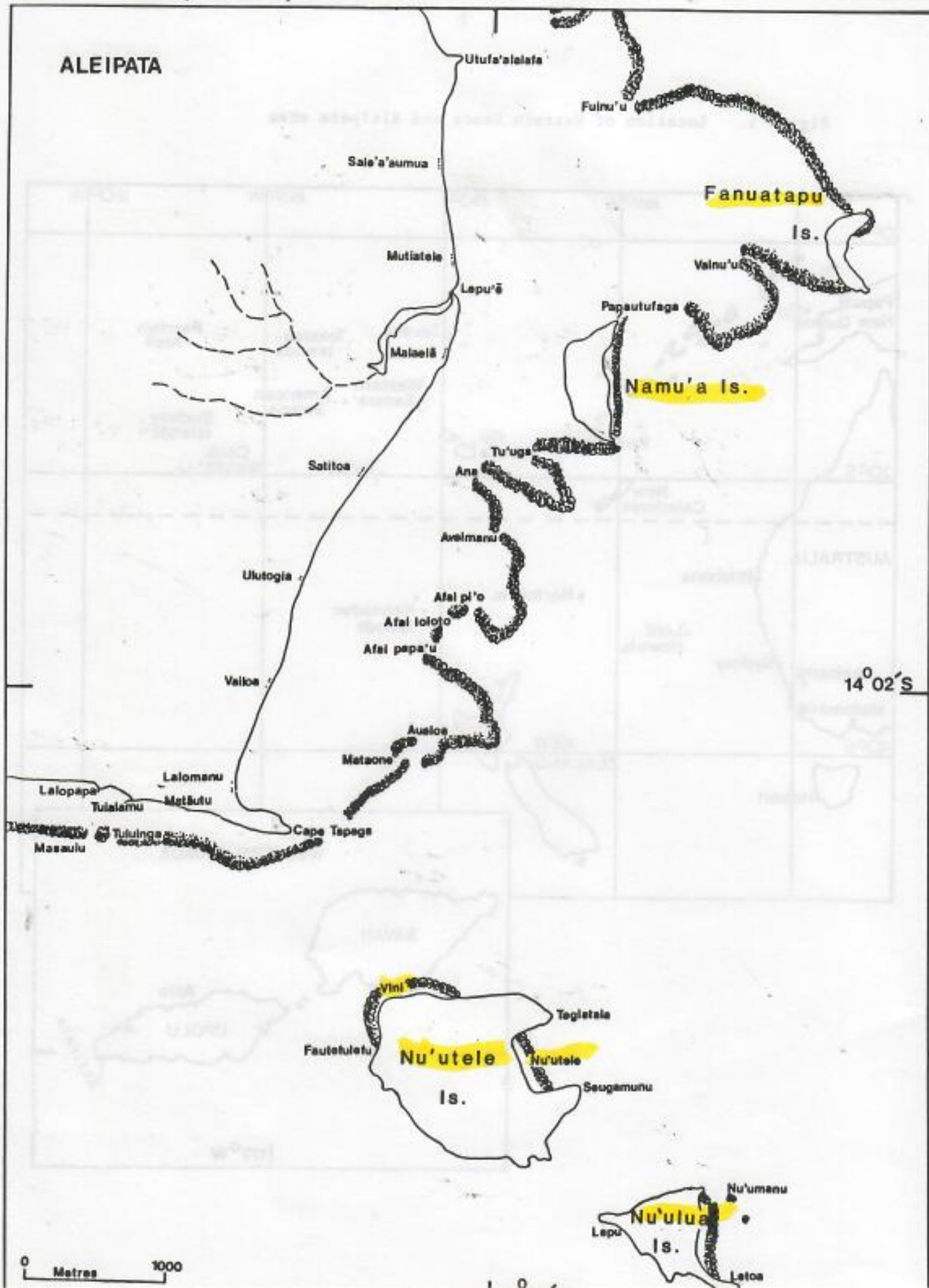
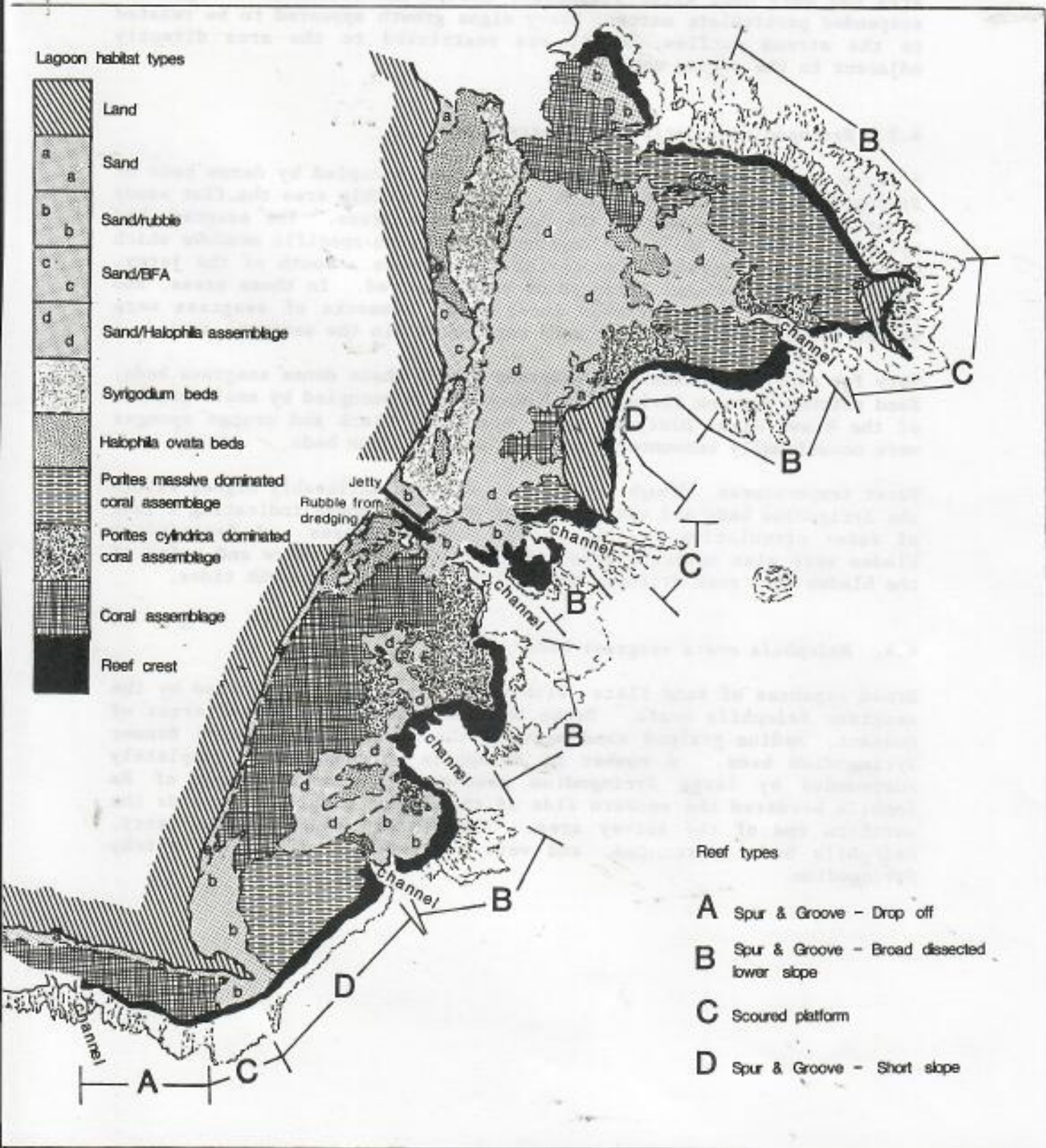


Figure 4. Habitat map of Aleipata lagoon and reef front morphology



In front of the stream mouth at Lepu'e, there was an area of fine sand supporting a mass of fine blue-green filamentous algae. The shallow area had very poor water visibility due to the filamentous algae and suspended particulate matter. Heavy algae growth appeared to be related to the stream outflow, as it was restricted to the area directly adjacent to the stream mouth.

4.3. *Syringodium isoetifolium* seagrass beds

A large area along the northern lagoon was occupied by dense beds of *Syringodium isoetifolium* seagrass. For much of this area the flat sandy substrate had 100% cover of the dark-green seagrass. The seagrass had cylindrical blades 10-25 cm long and formed mono-specific meadows which were readily identified from aerial photographs. South of the jetty, smaller, less-continuous *Syringodium* beds occurred. In these areas, and on the edges of the northern inner reef, hummocks of seagrass were raised above the intermittent sand patches within the seagrass area.

Very few other organisms were observed within these dense seagrass beds. Sand patches between *Syringodium* hummocks were occupied by small patches of the brown algae *Dictyota* sp.. Branching black and orange sponges were occasionally encountered within the *Syringodium* beds.

Water temperatures, though not quantified, were noticeably higher within the *Syringodium* beds and visibility was greatly reduced indicating a lack of water circulation in these areas. Large masses of *Syringodium* blades were also noticed washed up on the adjacent shore and rafts of the blades were seen drifting out the reef passes during ebb tides.

4.4. *Halophila ovata* seagrass beds

Broad expanses of sand flats within the lagoon were dominated by the seagrass *Halophila ovata*. Dense beds of *Halophila* occupied areas of compact, medium-grained sand between the shore and the much denser *Syringodium* beds. A number of *Halophila* patches were completely surrounded by large *Syringodium* meadows. A narrow band of *Halophila* bordered the seaward side of the *Syringodium* beds towards the northern end of the survey area. Immediately south of the jetty, *Halophila* beds surrounded, and were interspersed with, the patchy *Syringodium*.

Within the *Halophila* beds, the irregular sponges found in the *Syringodium* were also present. Small colonies of hard coral (predominantly *Pocillopora damicornis* and *Porites cylindrica*) were found scattered throughout the seagrass. The sea urchin *Echinometra mathaei* was also present. Within larger, shoreward *Halophila* beds, visibility was again noticeably reduced but not to the extent within the *Syringodium* beds.

Some *Halophila* beds were located away from the shoreward lagoon area. One of these was near the centre of the large northern lagoon, between the shore and Fanuatapu island. Similarly, towards the centre of the widest point in the southern lagoon there was a small *Halophila* bed. Both of these areas were surrounded, and graded into, areas of sparse *Halophila* and sand, which are described in the following section. In addition, there was a narrow bed of *Halophila ovata* along the western side of Namu'a island.

4.5. Sand/*Halophila* assemblage

Sparsely distributed *Halophila ovata* dominated the sand substrate of the wide northern lagoon. The *Halophila* varied in abundance from very little to isolated patches similar in density to the large, dense *Halophila* beds described above. The substrate consisted of medium-grained sand, with patches of coarser sand and coral rubble. The sand and *Halophila* area in the southern lagoon was similar to most of the larger northern lagoon assemblage.

Few other organisms were observed within the sand and *Halophila* area. Small branching coral colonies of *Pocillopora damicornis* and *Porites cylindrica* occasionally were found. Small sea urchins (*Echinometra* sp.) were present. Massive corals (*Porites* sp.), up to 2 m in diameter, were sporadically distributed throughout the sand and *Halophila* areas. These massive coral colonies were especially common in the eastern portion of the large sand and *Halophila* assemblage in the northern lagoon. In some cases these *Porites* sp. colonies had reached the mean low water level and their upper surfaces had died, creating microatolls.

4.6. Mixed coral assemblage

A large portion of the inner southern lagoon and most of the south-facing lagoon contained a mix of coral types and substrate. Smaller areas of this assemblage were found in the far north of the survey area and just west of Namu'a island. The substrate in these areas was variable, but generally consisted of sand and rubble with scattered large reef blocks and dead, standing coral colonies. Sand predominated closer to shore, with patches of coarse (3-5 cm) rubble in the central lagoon. In the narrow south-facing lagoon, a mix of coarse sand and rubble, with patches of scoured reef pavement, was found towards the reef crest.

In the mixed coral areas, hard coral coverage was highly variable and ranged from 20-30%. Coral species found in these areas commonly included: *Porites cylindrica*, *Pocillopora damicornis*, *Psammocora contigua* and heads of the massive coral, *Porites* sp. Other hard corals encountered less frequently were: *Fungia* spp., *Millepora exaesa*, *Alveopora* sp., *Sandolitha robusta*, *Pavona decussata*, branching *Acropora* spp., *Cyphastrea* sp., *Leptastrea* sp. and *Pocillopora verrucosa*. In the south-facing lagoon, the mix of corals included: *Acropora robusta*, *Acropora humilis*, *Pocillopora eydouxi*, *Lobophyllia* sp., *Euphillia* sp. and other low branching and small plate *Acropora* colonies.

Soft coral colonies and zoanthids (predominately *Sinularia* and *Palythoa*) were present within the mixed coral assemblage. Holothurians (sea cucumbers) occurring in the sand/rubble areas included *Holothuria atra* and *Synaptid* sp.. The sea urchins *Echinometra mathai*, *Diadema setosum* and the pin cushion urchin *Culcita novaeguineae* were present. In addition, occasional encrusting and small branching sponges were encountered. The macroalgae *Halimeda* sp., *Chlorodesmis* sp. and the brown algae *Dictyota* sp. were also present. Bare sandy portions of the mixed coral assemblage areas supported the seagrass *Halophila ovata*.

4.7. *Porites cylindrica* dominated coral assemblage

Between the reef crest and the mixed coral assemblage or the sand/*Halophila* areas, shallow lagoon areas were dominated by colonies of *Porites cylindrica*. These areas consisted of monospecific beds of the finger coral *Porites cylindrica*, up to 5 m in diameter, and associated beds of rubble. The largest expanse of this occurred in the southern lagoon, but it was also present to the north and east of Namu'a Island in the northern lagoon. Extensive colonies of the soft coral *Sinularia* sp. were also present in the *Porites cylindrica* areas.

Other hard corals present within this area included: *Porites rus*, *Seriatopora hystrix*, *Millepora exaesa*, *Pavona varians*, *Acropora humilis*, *A. robusta*, *A. hyacinthus*, and *Millipora dichotoma*. Other corals which were less conspicuous included: *Merulina ampliata*, *Galaxea fascicularis*, *Astreopora* sp., *Fungia* sp., *Pavona decussata*, *Leptastrea purpurea*, *Pocillopora eydouxi* and *P. meandrina*.

Invertebrates which occurred within this *Porites cylindrica* area included the sea urchins *Echinometra mathai* and *Diadema setosum* and the blue starfish *Linkia laevigata*. Numerous Holothurians and anenomes were also present. Algae similar to that which were found in the mixed coral assemblage (*Halimeda*, *Chlorodemis* and *Dictyota*) were also present within this assemblage.

5.6. Reef channels

The reef front around Aleipata is dissected in numerous places by channels of various widths (Figure 4.). The nearshore end of the channels were dominated by a slope of reef detritus that extends down 20 m to the sandy channel floor. This slope of reef block, sand and rubble supported a sparse coral cover of 0-5%. The few colonies found there included: *Cyphastrea* sp., *Favia stelligera*, other *Favia* spp., *Pavona varians*, *Diploastrea heliopora*, *Millepora* sp., *Pocillopora meandrina*, and small encrusting *Montipora* sp.

Where the outer channel wall merges into the adjacent reef front type (spur and groove system and/or the broad dissected lower slope) a vertical escarpment is present. This reef cliff extends down to the sandy channel floor. Dead algal encrusted coral and some encrusting soft corals were found along these barren walls.

5.7. Nu'utele and Nu'ulus Islands

The north and west sides of Nu'utele island supported reef development similar to the spur and groove with broad, dissected lower slope common on the Aleipata coastal reef. The Nu'utele reefs, however, were narrower and the reef slopes somewhat more irregular. The fringing reef which fronted Vini beach was backed by an incompletely developed and partially in-filled reef flat. A shallow, very narrow break in the reef allows passage to the beach in calm seas.

The reef front at Vini had a sloping terrace on the upper reef slope which was dominated by dead plate *Acropora* colonies, similar to the Aleipata coastal reefs. In places, small *Acropora humilis* and *A. robusta* colonies had become established on the dead plates. Below depths of 2-4 m, increasing amounts of live coral were found, locally covering up to 30-50% of the substrate. The coral cover was made up of the species mentioned above in addition to: *Pocillopora eydouxi*, an encrusting *Porites* sp., branching *Acropora florida* and *Millepora platyphyllia*. Soft corals were generally less common than the Aleipata reefs.

From depths of 5-15 m, the terrace was irregularly dissected by 1-2 m deep channels, or grooves. These transported coral rubble and sand down the channel sides to the channel bottoms which were filled with platy coral rubble. Towards the edge of the reef terrace, at about 15 m deep, massive colonies of *Porites lutea* were common, as well as *Porites rus* and *Pavona clavus*. Overall coral cover remained low at around 10-20% towards the terrace edge, where some small clams (*Tridacna* sp.) were present.

From depths of 15-25 m the reef dropped steeply, with near vertical cliffs and overhangs in places. On the upper portions of the slope, moderate size colonies of massive *Porites lutea* and *Diploastrea heliopora* occurred, along with *Montipora sp.* and *Stylophora sp.* Encrusting coralline algae dominated the vertical slopes, with occasional wire coral colonies (*Cirripathes*) along the overhangs.

At the bottom of the slope, at 25-27 m, coral rubble and some terrigenous black volcanic sand were present. Slightly detached from the main reef slope were 2-4 m high, irregular mounds with moderate to high coral cover (30-60%) and increased coral diversity. Additional corals included: *Favia stelligera*, *Pavona varians*, *Leptoria phrygia*, *Pachyseris sp.*, *Leptastrea purpurata* and *Montipora sp.*

The islands of Nu'utele and Nu'ulua were volcanic cones with their craters open to the sea, facing northeast and east, respectively. The embayments formed by the open-sided craters contained well-developed coral reefs. Although rough weather prevented the dive on Nu'ulua from being completed, the following information gathered from Nu'utele is generally applicable to the crater embayment on both islands. From the edge of the islands' sand beaches, scoured reef flats extend out about 20 m and then drop off into a short, fairly steep reef slope supporting moderate to high (30-60%) coral cover. A sand bottomed channel indented the reef slope at Nu'utele, with vertical reef walls on either side extending down to its 3-5 m deep sand floor which sloped gently seaward.

The reef slope coral community was dominated by colonies of plate *Acropora sp.*, *A. robusta*, *Millepora exaesa*, *M. platyphilla* and *Diploastrea heliopora*. At depths of 5-8 m, the steep, coral-dominated slope gradually became a broad slope of mixed coral and sand. Coral cover gradually decreased from 20-30% in the upper portions to 5-20% at around 20-25 m. Large colonies of massive *Porites sp.* were most common, with large soft coral colonies (*Sinularia*) also abundant.

The most diverse coral assemblage of the Aleipata area survey was encountered on these slopes and included: *Pocillopora meandrina*, *P. eydouxii*, *Leptastrea pupurea*, a variety of branching and encrusting *Acropora spp.*, *A. humilis*, *A. clathrata*, *Favia sp.*, *Cosinarea sp.*, *Favites sp.*, *Acanthastrea sp.*, *Leptoria phrygia* and the soft coral *Palythoa*. The corals were generally aggregated into mounds around larger massive colonies. The sandy substrate in between the mounds became more extensive as the slope continued gradually seaward below 25 m depths.

The north and south sides of Nu'ulua island, the south side of Nu'utele, and some of the north side of Nu'utele were characterised by volcanic cliffs and associated sea stacks which plunged steeply into the sea. These cliffs often descended vertically to the adjacent sea floor, at depths of 20-30 m. The substrate was generally scoured and algal encrusted, with very little coral. Towards the crater embayments and the reef development on west Nu'utele, the cliffs were less severe and scattered corals occurred, with massive *Porites* colonies most abundant.

5.8. Fishes of the reef slope

Fish species were recorded on the Aleipata reefs during the intensive spot dive surveys. The common species encountered were typical for Samoan reefs (Appendix 1.).

There were large populations of herbivores (particularly *Ctenochaetus striatus*) and corallivores. *Pomacentrids* (damsel fish) were the most obvious and diverse genus. Large grazing *Scarids* were numerically abundant but appeared to be limited in diversity. The large *Scarid*, *Bolbometopon bicolor*, was particularly common. Wrasses (*Labridae*) were common and diverse. *Cheilinus undulatus* was conspicuous throughout the area.

The common reef piscivores (*Epinephelus* and *Cephalophis* sp.) were present in varying numbers and diversity throughout the area but were more abundant and generally of larger size around Nu'utele and Nu'ulua islands. Fish of the *Lutjanidae* and *Lethrinidae* families were not common. Very few coral trout (*Serranidae*) were observed except *Plectropomus leopardus* and *Variola louti* around Nu'utele island and *Plectropomus leavis* along with numbers of *Lethrinids* and *Lutjanids* around Namu'a island.

Although no quantitative data is available, fish populations and diversity in the Aleipata area were what would be expected for this type of reef environment with the current level of fish harvesting. Samoan fishermen harvest an unusually large range of fish species and therefore do not overly deplete any particular species or group of fish (Johannes, 1982), resulting in the noticeable population differences in the types of fish encountered during the survey. For example, rabbit fish (*Siganidae*) are more easily captured by spearfishing and hand-lining and appear to be more abundant and larger where access by fishermen is limited by environmental parameters.

A limited summary of fisheries resource use in the Aleipata area is documented in Section 6. A list of fish species identified throughout the survey and their Samoan names (where applicable) is presented as Appendix 1.

5.9. Effects of *Acanthaster planci*

The Aleipata area reef slope displayed a paucity of invertebrates other than the corals typical of coral reef communities in this region. The low amount of cover by hard corals was most likely related to the effects of past *A. planci* (Crown-of-Thorns starfish) aggregations. The reef displayed a benthos consistent with observations of other *A. planci* damaged reef communities the authors are familiar with.

Garlovsky and Berquist (1970) reported 'infestations of Crown-of-Thorns starfish existed at several points on the south coast of Upolu' (June 1969). Dahl (1978) reported 'The reef around Namu'a was heavily infested with Crown-of-Thorns starfish (*Acanthaster planci*) during the visit, with densities up to one per square metre in the corals behind the reef, and many observed moving across the sand lagoon floor' (30 August to 14 September 1978).

In American Samoa, in 1977, Wass (1980) reported 'large concentrations of *Alamea* (Crown-of-Thorns starfish) have heavily damaged portions of the fringing reef of Tutuila, and have denuded Taema bank and several smaller offshore banks'. Birkeland *et al.* (1987) reported, 'The *Acanthaster planci* population greatly reduced the substrate surface cover by corals in 1979'. They further state that 'It had been found that all corals had increased in abundance at all sites' with exceptions, in their survey of the Fagatele Bay National Marine Sanctuary in April 1985.

The available evidence and similar outbreaks with similar timing in American Samoa provides data to support the authors conclusion that much of the area survey has been largely denuded of coral by *Acanthaster planci*. The poor recovery of corals in the Aleipata area however may suggest that more recent aggregations, probably after the report by Dahl in 1978, may have occurred. It is clear that extensive damage to hard corals has occurred throughout most of the survey area.

6. Marine Resource Use

Information from in-depth interviews with 11 full-time fishermen from Aleipata villages and a brief survey of catch landed during one Saturday by 14 fishermen (or pairs of fishermen) was compiled to give the following indication of marine resource use. The information is not the result of a long-term survey of marine resource use in the area, but is the result of a short-term effort meant to:

- 1) indicate the types, levels, locations and targets of Aleipata fishermen and women;
- 2) highlight existing problems in marine resource use; and
- 3) indicate potential problems of this resource use in relation to the proposed park.

Spearfishing was common and takes place 5-6 days per week, sometimes all day, and is pursued throughout the year. Catch numbers ranged from 10-40 fish per harvest with mixed responses as to whether yield was generally declining or increasing. Catch sizes were given as 8-45 cm. Important species were: fuga, malau and gatala; with mataeleele, pone, alog, eel and octopus also mentioned. During full moon, rays (90-120 m) are caught by spearfishing.

On Saturday (20 June 1987), the fishermen coming ashore at Sale'a'aumua were briefly interviewed and their catch counted. All of the 14 fishermen (or pairs of fishermen) had primarily been engaged in spearfishing. The species caught, the total number caught and the number of fishermen having that species is recorded in Table 3.

Table 3. Fish catch landed at Sale'a'aumua, Aleipata (20 June 1987)

Species	Total catch	No. of Fishermen
Mataeleele	216	13
Ava (3-5 cm)	200	1
Afa	54	1
Tivao	25	9
Fuga	24	8
Anae	24	1
Ta'ulaia	23	7
Vete	14	5
Marini	13	6
Lo	12	7
Sumu	12	5
Matapuna	5	1
Tifi tifi	4	3
Gatala	3	3
Lalafi	3	2
Filou	3	1
Fugausi	2	2
Mafu	2	2
Malau	2	2
Ali	2	2
Pa'a	2	1
Faisua	1	1
Pusi	1	1
Mo'o	1	1
Taotaoama	1	1
Avaava	1	1
Fai	1	1
Pone	1	1
Fe'e	1	1

6.2. Village fisheries

Information gathered on the number of fishermen and boats in the Aleipata area is compiled in Table 4. A total of 490 fishermen were estimated to be actively fishing from the eight villages within the survey area. Of this figure, approximately 71% were considered to be 'full-time' fishermen (with fishing as a primary activity, whenever possible) and 29% as 'part-time' fishermen (with fishing as a Saturday and secondary activity).

A total of 8 Alia catamarans (both aluminium and wood) were based in the area, although 2 were not operable at the time of the survey. The Alia were used primarily for trolling and deep-water handlining. Approximately 300 canoes were found throughout the villages and were used for spearfishing, shallow-water handlining, and access to reef areas for gleaning.

Table 4. Aleipata area village fisheries

Village	No. Fishermen	% Full Time	% Part Time	No. Alia	No. Canoes
Satitua	40	-	-	2	40
Vailoa	80	60%	40%	1	30
Lalomanu	120	70%	30%	3 (1*)	40-100
Sale's'aumua	90	70%	30%	1*	90-100
Ulutogia	40	70%	30%	1	15
Utu fa'alalata	20	80%	20%	0	4
Mutintele	50	80%	20%	0	40
Lepu	50	70%	30%	0	5
Total	490	Ave. 71%	29%	Total 8	264-334

* Inoperable

6.3. Reef gleaning

The harvest of invertebrates and seaweed from the reef (lama) was primarily undertaken by the women on the reef flats during low tide. A variety of reef organisms were gleaned from the reef. The information on this activity gained from the interviews is summarised below, with results presented by taxonomic groupings. Names of organisms are given in Samoan, which are listed along with scientific and common names in Appendix 2.

7. Specific Resources Issues

The detailed interviews also sought information on a number of specific resource issues. These were: reef tenure and fishing rights, fish spawning aggregations, sea turtle nesting, *Acanthaster planci*, destructive fishing practices and coastal erosion.

7.1. Reef tenure and fishing rights

Villages of the Aleipata area (as described in the introduction) were considered to have exclusive rights to the marine resources of this area. No specific boundaries, or seaward extent, were defined. It was, however, specified that the lagoon area was particularly prohibited to outsiders. Fishing activities such as night torch fishing, poisoning and lama (reef gleaning) were stated as specifically exclusive to the area residents. No traditional regulations, enforcement or punishment aspects were defined by the respondents.

7.2. Fish spawning aggregations

A number of locations in the lagoon area were described as the sites of spawning aggregations (Figure 12.). Seven species were indicated as having spawning aggregations. Location information did not always specify whether the site served for the spawning aggregation of one, or all, of the 1 to 3 species mentioned by each respondent. Despite this the information indicated there were specific areas in the lagoon which were important as fish aggregation sites.

Information on the timing of spawning aggregations was somewhat mixed and has been summarised in Table 5. No respondent felt that any of the spawning aggregations sites habitat were being degraded.

Table 5. Spawning aggregations

Species	Months indicated
Gatala	May-June, June
Malau	All year
Lo, Palaia	October-November, December-January
Pone, Lo, Palaia,	March-April, May June,
Atule, Loloa	June-July, July-August

7.3. Sea turtle nesting

Information on sea turtle nesting, primarily for hawksbill (*Eretmochelys imbricata*) and some green sea turtles (*Chelonia mydas*), reinforced previous data available on this resource (Witzell and Banner, 1980). Most respondents indicated nesting takes place on the two beaches of Nu'utele island (Nu'utele and Vini beaches) and the Nu'ulua island beach. A few also remarked on nesting occasionally occurs at Namu'a and Fanuatapu island beaches (Figure 12). Nesting season was identified as between October and January. November to December were the most often cited months. A few fishermen, however, mentioned June-July, April or all year round as the nesting periods.

In general, the respondents collected turtle eggs when nests were found. Most felt that nests were increasingly difficult to locate and eggs harder to obtain.

7.4. *Acanthaster planci*

Information gathered on the present and past abundance and distribution of the Crown-of-Thorns starfish (*Acanthaster planci*) around Aleipata was not very precise. All respondents felt that *A. planci* populations were decreasing, especially within the past 3-5 years, from what had been very high populations in the late 1970's. One fisherman indicated portions of the lagoon where populations were still large (Figure 13.) although this was not verified by this survey.

When the outbreaks had occurred, some fishermen believed they spread from nearshore, out to the reef and then along the reef front. Most felt that the population had begun to decrease because there was not much live coral left to feed on. Almost all the respondents thought that the corals were beginning to recover with the decrease of *A. planci* populations over the past 3-5 years.

7.5. Destructive fishing practices

Overall, respondents felt the widespread use of dynamite and poison had decreased greatly, if not 'stopped', within the past 2-5 years. Many mentioned that these practices had been banned by the village councils in the area since 1985. The village council has the power to impose fines of taro and/or pigs upon those caught using these techniques.

Dynamite fishing was particularly identified as having for the most part been halted in the past 5 years or so. A few fishermen noted that occasional blasts have been heard during the past year. The authors observed a number of coral patches apparently destroyed by blast fishing. One interviewee mentioned that if a fisherman did acquire dynamite, that the use of it would take place at Nu'utele island, as far from the villages as possible.

Destructive fishing practices are illegal, but persist. The use of dynamite and poison for fishing in the Aleipata area is apparently declining due to enforcement and punishment carried out by village councils. These enforcement and regulation activities should be supported and concurrent educational activities developed regarding the problems of destructive fishing practices. Aleipata area villages continue to exercise control over adjacent fishing rights, especially within the lagoon. This village based control of the access to, and use of local marine resources should be further documented and incorporated into any continued action towards protected area development or management planning at Aleipata.

9.3. Tourism, recreation and research

The Aleipata reef, lagoon and islands present a setting of scenic value to visitors to Western Samoa. However, the distance from Apia, via either of two moderately rough dirt roads for much of the way, does not render the area particularly accessible from outside.

Within the area, the beach of Namu'a Island is a nice visitor destination, as has been noted (Dahl, 1978; Chew, 1987). It is reached by a short boat ride across the shallow lagoon and is sheltered from the rough seas of the open ocean. The lagoon immediately west and north of Namu'a supports coral assemblages of interest for snorkeling.

The area does not generally offer good opportunities for visitor supported SCUBA diving operations. Although water visibility can probably be quite good at times, there are strong currents running between the outer reef slope and the detached islands, creating unsafe diving conditions. The strong winds and wave activity often experienced in the area make diving uncomfortable, if not hazardous. These conditions also lead to reduced water visibility, as experienced during the survey. Equally important, the area surveyed does not offer spectacular coral formations or reef morphologic features sought by intertional dive tourists.

As a location for marine science research and education activities, the Aleipata area is not particularly special in its opportunities. However, protected status would theoretically mean that reef and lagoon processes were operating in undisturbed conditions. Thus a relatively typical Samoan marine ecosystem that is recovering from severe degradation by Crown-of-Thorns starfish would be available and could be of interest for ecological research and educational uses. The demand for these uses is not known at this time.

9.4. Park Management

It is beyond the scope of this report to fully develop management proposals or comment on management policies and strategies already proposed (Chew, 1986; 1987). However, certain marine resource issues which were highlighted during the survey require comment and an indication of possible management responses.

A. Marine resource use

A more systematic survey of marine resource use would be valuable as park development proceeds. A catch monitoring programme and more thorough information on the location, timing and methods of resource harvest (mainly fishing) activities would aid management plan development. In particular, more detailed recording of fishing rights and special sites of importance to renewable resources (e.g. fish spawning aggregation sites) would be useful. Fisheries division personnel would be most suited to gather this information.

B. *Acanthaster planci*

The effects of outbreaks of Crown-of-Thorns starfish on the reef slope coral cover has been discussed (see Section 5.9.). The reef coral communities are recovering, a process which may take decades (Pearson, 1981). Monitoring of the recovery of the reefs at Aleipata and of *Acanthaster* population levels would provide useful information on the recovery of Western Samoa reefs and add to Pacific wide data on *Acanthaster* population levels.

C. Sea turtles

Important sea turtle nesting beaches exist in the proposed park area (Witzell and Banner, 1980). Protection of the nesting sea turtles and their nests and eggs should be a high management priority for the park. Population surveys of the turtle should be carried out, as well as investigations to determine the types and levels of threats to the breeding population. The activities of the former hatchery should be reviewed to determine whether this is an appropriate management response for consideration in the context of the proposed park.

D. Coastal erosion

The east-facing coast of the Aleipata shoreline is subject to considerable erosion (Richmond, 1985) which has apparently taken place mainly in the past decade (see Section 7.6.). A systematic survey of the situation is required and investigation into possible causes and appropriate responses. Any proposed shoreline structures and, especially, dredging activities in the area should be seriously evaluated in the erosion problem context.

B. Reef sanctuary:

The reefs around Nu'utele and Nu'ulua islands and along the front of Namu'a island, from mean high water to the bottom of the outer reef slope, should be given sanctuary status. This will constitute a "core zone" for the park's marine environment. All activities removing organisms or disturbing the marine environment, particularly the living resources, would be excluded. Limited recreational, educational and scientific activities could be allowed.

C. Seasonal sea turtle sanctuary:

The beaches of Nu'utele and Nu'ulua islands should have only limited access and use during sea turtle nesting season (September to July). All access to these beaches should be prohibited during the peak nesting months of January and February. Disturbance of nests and collecting of eggs should be strictly outlawed throughout the year, except for scientific or hatchery purposes.

D. Recreational reserve:

The beach, shoreline and lagoon coral formations around Namu'a island should be protected for their recreational value to Aleipata residents, Western Samoans and overseas visitors. Activities which remove or disturb the marine environment, especially corals, should be excluded. It is suggested that the zone extend 200 m into the lagoon from the northern end around to southern end of the island.

10. Acknowledgements

Special thanks to Mr Savale Time (Fisheries Division) and Mr Everett Bishop (Peace Corps Volunteer) for conducting most of the marine resource use interviews. Mr Samuelu Sesega (Forestry Division) and Mr Bishop organised overall logistics and transport for the field work. Mr Lui Bell (Fisheries Division) provided information on Aleipata fisheries and organised use of the Fisheries Division boat. Other personnel from the Department of Agriculture, Forests and Fisheries provided addition support and services.

Special appreciation also to Mr Simi Teropenaia and his family who provided accommodation and meals for our stay in Saititua Village. Thanks is also due to Simi for his capable and confident boat handling in often less than ideal boating conditions. To all of the above we express our appreciation for the assistance received which made the visit productive as well as enjoyable.

Mr Greg Andrews was supported by funds from the South Pacific Commission (SPC) under its Short-Term Experts and Specialists Services. Additional support for report writing and graphics was provided by the South Pacific Regional Environment Programme (SPREP). Mr Paul Holthus is funded at SPREP by the SPC and United Nations Environment Programme (UNEP).

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Fanuatapu Island

Namu'a Island

Sale'a'aumua

Mutiatele

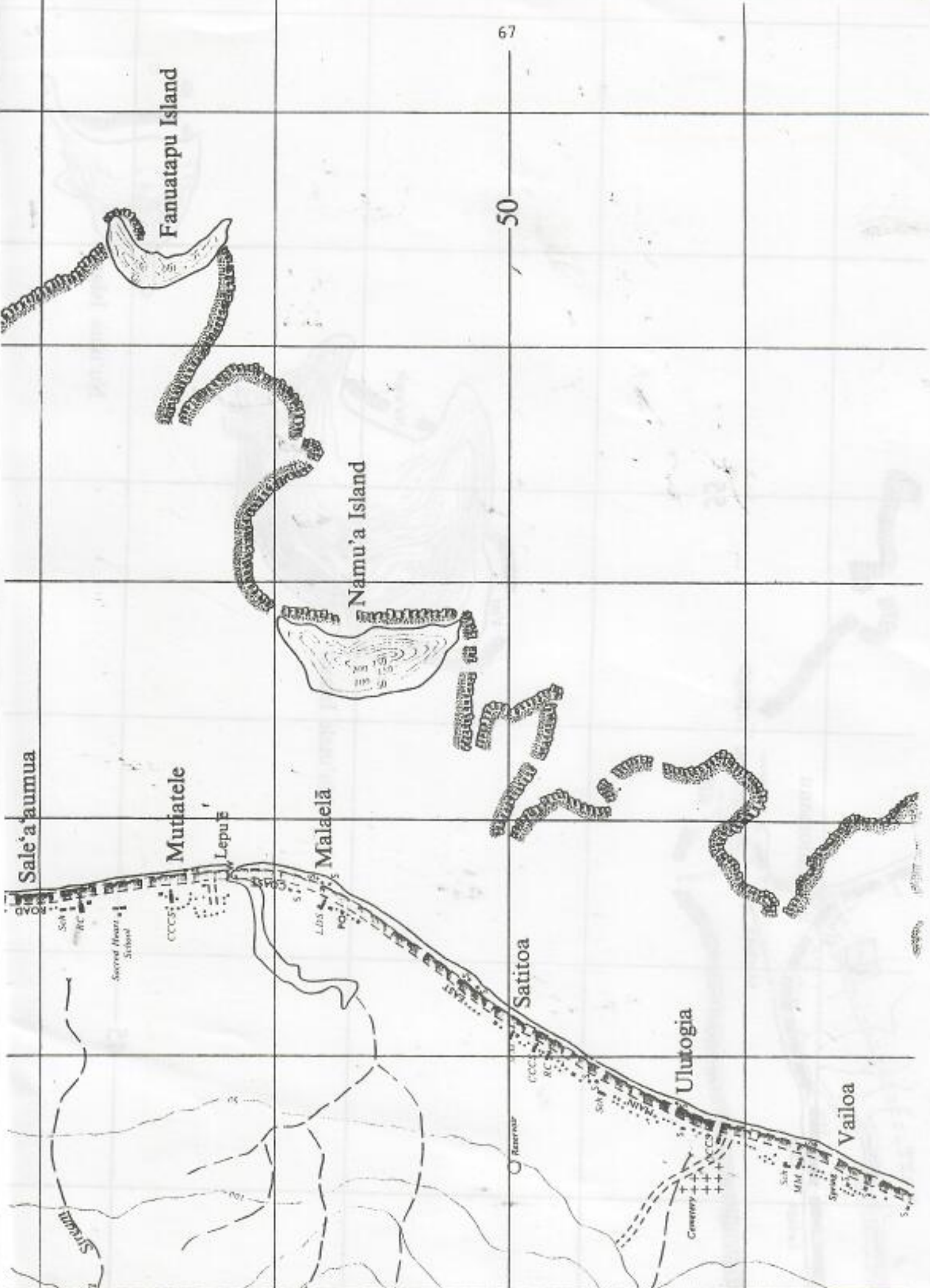
Lepu

Malaela

Saitoa

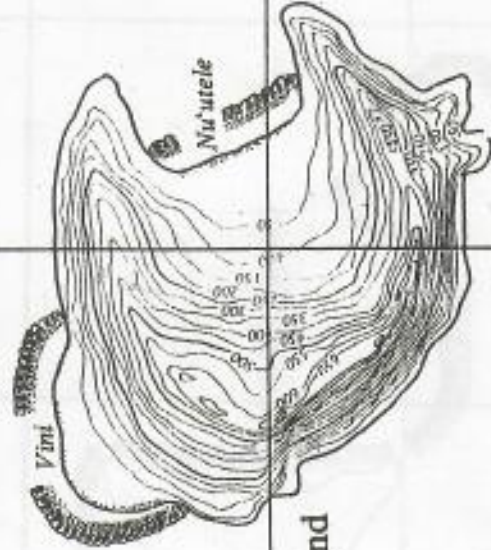
Ulutogia

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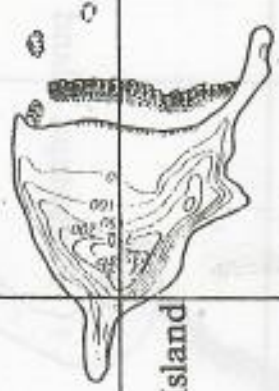




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Nu'utele Island



Nu'ulua Island

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Air Micronesia: Don

By Anne Harpham

Advertiser Staff Writer

Air Micronesia yesterday told the Civil Aeronautics Board it no longer wants to operate under the supervision of Continental Airlines, but wants the assistance of another airline.

Continental and Air Micronesia have been battling for 18 months over formulas involved in their 16-year-old joint venture. Continental owns a 30 percent interest in Air Micronesia, Aloha Airlines owns 10 percent, and the United Micronesia

Development Association owns 60 percent.

When Air Micronesia was given authority to operate its Western Pacific routes in 1968 one of the requirements was that it operate under Continental's supervision.

Last year, a split developed between the Continental and non-Continental entities over the joint venture.

In October 1983, Continental filed suit in Houston, its headquarters, to enforce a 1973 profit-sharing agreement among the three owners.

SPIA sued over Samoa crash

South Pacific Island Airways has been sued for a total of \$12 million by the families of a man who was killed and a passenger who was injured in a July crash in American Samoa.

The widow of Kilonia Logoa'i seeks \$3 million in general damages and \$5 million in punitive damages. And the adoptive father of Sogi Pahulu, who was injured in the July 21 crash, is seeking \$2 million in general damages and \$2 million in exemplary damages.

The SPIA plane — a De Havilland Twin Otter — careened off the runway on Ta'u Island and crashed into the terminal building. All three crew members and eight of the 11 passengers were injured.

Logoa'i died a few days after the crash.

The suits allege that one of the reasons for the crash was that a down elevator cable was rusted through.

SPIA was grounded by the Federal Aviation Administration last month after Norwegian aviation authorities said a SPIA charter flight strayed dangerously close to Soviet airspace on Sept. 29.

The agency also alleged numerous maintenance, training and record-keeping violations. A National Transportation Safety Board has upheld most of the allegations.

SPIA has denied the charges and has appealed the grounding to the full National Transportation Safety Board.

To Live or not To Live

By WAYNE WITZELL

Photos by author

Considering it was only 0930 hours, it was sweltering hot. Our tiny motor boat skidded through the Pacific swell into the glare of the morning sun. With Alan Banner at the helm and me bailing water, we approached a small deserted island off the eastern coast of Western Samoa — our destination. We were inspecting the beach for hawksbill turtle eggs but found, instead, two sets of turtle tracks which never made it to the nesting area. Turtle and human footprints intersected with cataclysmic results, signs of struggle and the reptilian blood of

death. We silently made our way back home.

The Fisheries Division of Western Samoa, under the supervision of William Travis, initiated a sea turtle program late in 1971 in an attempt to study, and possibly help, the already depleted hawksbill population. The project was built and originally operated by two Peace Corps volunteers, Alan Banner and myself, plus a Samoan assistant, Viliamu Matagi who is the present Project Manager.

Every morning an expedition is sent out to the three island beaches to bring back fresh hawksbill eggs before the Samoan fish-

Author and assistant are ready to begin measuring and tagging male hawksbill turtle, Eretmochelys imbricata.





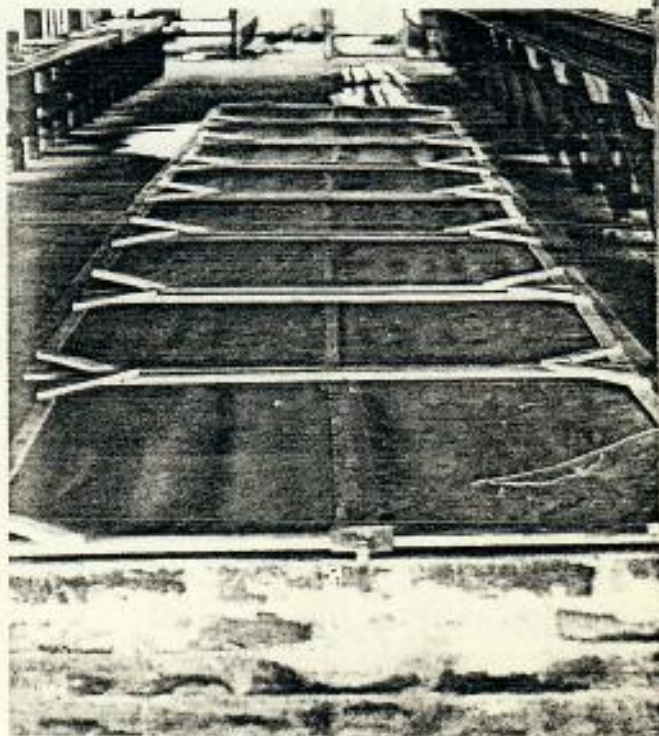
Painless method of identification will result in increased knowledge about migration, nesting.

ermen destroy them. Unfortunately, we are not always first to the eggs and the turtle population is rapidly being exterminated. All eggs brought in by our beach patrol are transplanted to the mainland hatchery where they are kept under constant surveillance.

After emergence, the hatchlings are placed into one of several concrete tanks and fed fresh sea food for approximately one month before being released. We cannot keep the turtles much longer than a month due to the logistical problem of obtaining an adequate food supply for many hundreds of turtles over a sustained period of time. Also, the hatchlings easily become conditioned to human feeding if extreme care is not taken. At the end of the month in captivity, the turtles have gained much weight, have grown considerably, and are strong swimmers and divers. The turtles are taken two to five miles outside the reef at dusk and released in small groups with twenty to fifty meters between groups.

Such a conservation project is primarily aimed at predation reduction in the early life

stages of the hawksbill. The long list of predators includes many different species of rats, crabs, birds, reef and oceanic fishes.



Hatchlings are kept in these holding tanks until old enough to survive life in the open sea.

Human predation upon the eggs is by far the most destructive. By reducing these predation pressures, through the releasing of strong turtles, we are hoping to quadruple the present survival rate of the hatchlings and replenish the turtle stocks around Samoa.

A large part of the turtle program is that of informing the Samoan people about turtles

and conservation. For a project like this one to be successful at all, the people must understand a little about the life history of the hawksbill, how it has been thrown out of balance by the people themselves, and how our project is helping to correct this imbalance.

The lack of modern public service equipment, plus the language and cultural bar-



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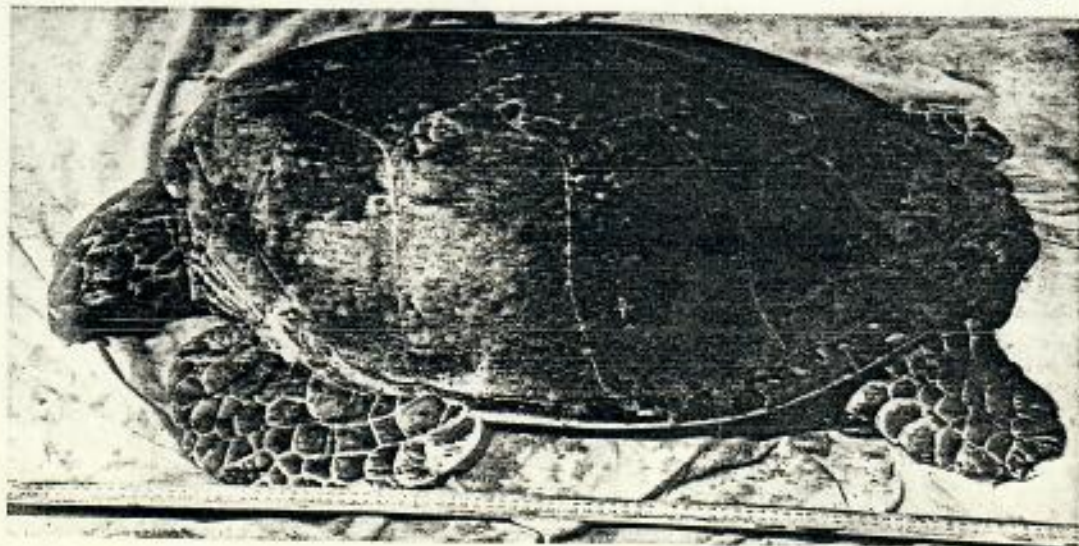
LEFT: Hatchery manager, Viliamu Matagi, collects newly emerged hatchlings from protected nesting area. ABOVE: Turtle float in 10th Western Samoan Independence Parade emphasizes theme of "Save Our Turtles". Through education programs, public is told of conservation needs.

riers, make such a public information task almost impossible. All of the schools in the turtle nesting area are being approached first with pamphlets, lectures and visits to the hatchery site. The schools are then given two small turtles, for a science demonstration project, which they take care of for two months and then release. Some schools have also been given egg clutches for hatching as an added scientific project. A short 8mm movie has just been finished which will sup-

plement our school education program and also form the nucleus of our attack on the adult population.

The success of the public information program is hard to judge at this time but we have gotten excellent response from several schools, especially those which have had the most exposure to the project. One school even built a twenty foot papier maché turtle for the 10th Samoan Independence parade and handed out SAVE OUR TURTLES leaflets!

Mañy turtles, such as this one, are carefully photographed as well as being measured and tagged.



THE CONSERVATION OF THE HAWKSBILL TURTLE IN WESTERN SAMOA

LIBRARY OF
GEORGE H. BALAZS

By WAYNE N. WITZELL*

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

* U.S. Peace Corps, Fisheries Division, Department of Agriculture, Forests and Fisheries, Apia, Western Samoa.

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 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, 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. □



POLYNESIAN

October 16, 1984

Mr G. Bacazs
992-A Awaawaanoa Pl
HONOLULU HAWAII 96825

Dear Mr Bacazs,

As per your request, please find enclosed the booklet "The Land - Its People The Way of Life" in Western Samoa.

Polynesian Airlines operates a regional service between most of the South Pacific Islands. A special 30-day unlimited "Polypass" fare is available for \$999. This fare allows unlimited travel throughout our network for 30 days - no advance bookings are necessary.

Similarly, we also have a "7-islander" fare which allows 21 days of unlimited travel between Fiji, The Samoas, Niue and Tonga (Tongatapu and Vava'u). The cost is \$399.

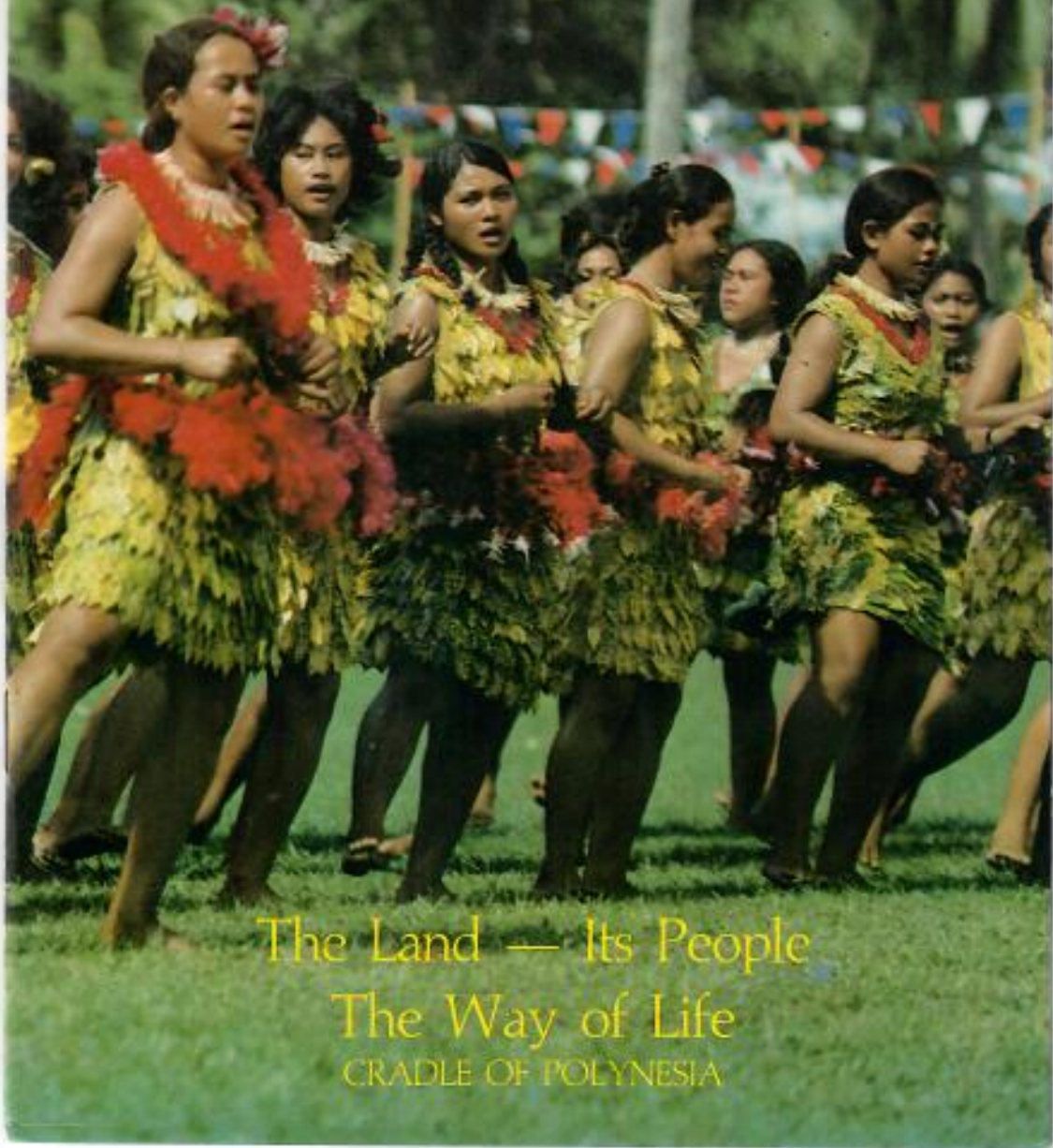
Enjoy reading about this wonderfully unique destination and contact us again should you have any further queries - we will be happy to assist you.

Yours sincerely,

Sose Annandale
Sales Representative
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Western Samoa



The Land — Its People

The Way of Life

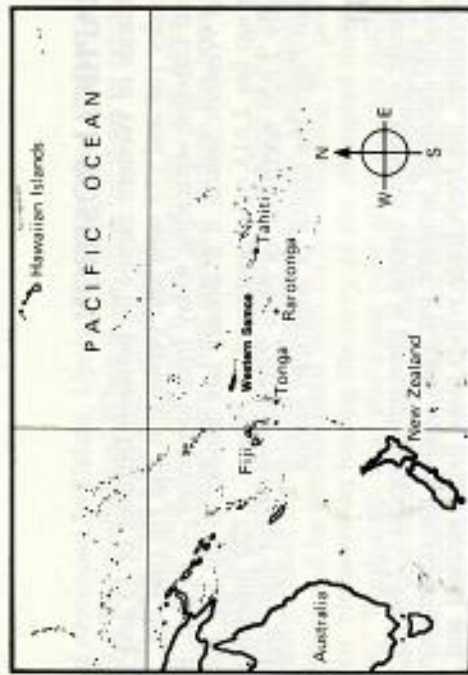
CRADLE OF POLYNESIA



our fine Clock Tower. Tipa



Traditional costumes worn by Westsco Samoan girls holding ceremonial positions



INTRODUCTION

WESTERN SAMOA with an area of 1,100 square miles lies in central Polynesia, and consists of two main islands, Savaii and Upolu, and the smaller islands of Apolima, Manono, Fuaifua, Namua, Nuutele, Nuulua and Nuusafee Savaii (660 sq. miles) is the "Big Island", but it is in the second largest and more developed island of Upolu (430 sq. miles) where the seat of government and centre of commerce are located.

Apia, the capital of Western Samoa, is situated on the north coast of the main island of Upolu. Once a centre of intrigue, where foreign consuls plotted the annexation of the South Pacific, and later a haven for trading schooners, Apia is now a peaceful, but fascinating capital of the new island state. A few modern buildings have risen in Apia but some of the older ones with their wide verandahs link today with the romantic and sometimes turbulent history of early South Seas days.

In Apia live some 30,000 of Western Samoa's population. Although the majority of the citizens are Samoans, there are also Europeans, Chinese and people from other Pacific islands. While the Samoans have their own soft, musical language, almost everyone speaks English as well.

Beautiful beaches grace the Western Samoa shoreline. About a mile out to sea black lines of reef encircle the land. The waves dashing in anger, are reduced by the reef into dying creeping layers of white foam which disappear completely as they reach the peaceful lagoons. Within the lagoons, (that part of the sea between the beaches and the reefs) the water is warm and calm. Inland, cool crystal-clear fresh water abounds in the rivers, lakes and waterfalls. Up in the highlands lush-green mountain country rises to blue-green heights to overlook acres of tropical plantations, the shoreline and offshore islets. There are many dormant volcanoes and old lava fields. Roads thread through picturesque Samoan villages stretched along the shores of colourful and palm-fringed lagoons. Varieties of the decorative hibiscus, the frangipani, poinciana (red flaming tree), bougainvilleas, ginger blooms and innumerable other exotic tropical flowering shrubs are everywhere. Their colours and fragrance are a never ending joy.

TALOFA LAVA (Greetings)

The government and people of Western Samoa welcome you to our Polynesian nation. We are pleased to associate with you and are interested to learn from you, while in our country, we encourage you to learn about and participate in our culture and way of life. Our culture has been developed over some 2,000 years and is strongly ingrained in our people. We know that you will respect the customs of our people as long as you are adequately informed. This brochure has summarized basic information on Western Samoa. We hope that it will serve to stimulate your interest in learning more about our country and the way of life of its people.

We are anxious to establish a friendship with you. As good friends we invite you to visit us again and we trust that our friendship will grow and be strengthened with each visit.

GEOGRAPHICAL POSITION

The islands of Western Samoa lie between latitudes of 13 and 15 south and longitudes 168 and 173 west and between it and Fiji runs the International Dateline separating today from tomorrow — so that, if it is late Saturday in Western Samoa, it is already late Sunday in Fiji and Tonga. The Samoan group lies 2,613 miles southwest of Hawaii, 2,700 miles from Sydney, only 1,800 northwest of New Zealand, 793 from Suva and 80 miles away is Pago Pago, the capital of American Samoa.

CLIMATE

The climate of Western Samoa is pleasantly tropical (72-86 °F) with more than 2,500 hours of sunshine per year. During the cooler months May through November, the fresh trade winds make living pleasant and comfortable. For the aquatic enthusiast the sea temperatures are ideal all year round being mostly in the lower eighties (80-85 °F) and seldom as low as 75 °F.

Officially the "rainy" season extends from November through April. In actual fact the pattern is much the same all year round: brief downpours alternate with long stretches of sunshine. This steady flow of sun and rain combine to produce a lush vegetation of rain forest which covers much of the islands.

HISTORY

Many scholars believe what the Samoans themselves have always believed — that Western Samoa is the cradle of Polynesia. Savaii, the larger of the two main islands of Western Samoa, is identified as the legendary Hawaiki, the original home of the Polynesian people who were later to conquer the wide expanse of the blue Pacific in their waves of migrations north to Hawaii, west to Easter Island and south to New Zealand.

The Samoan islands were first sighted by the Dutch navigator, Jacob Roggeveen, in 1722 and named the Navigators Islands in 1786 by French navigator, Bougainville. In 1830 the pioneer Missionary, John Williams, landed in Savaii, and from then on the true modern history of the Samoan people can be said to have begun.

AN OUTLINE HISTORY OF WESTERN SAMOA

A myth about the origin of the name SAMOA.

Tagaloalagi the "life source" of Samoan mythology lived in the tenth heaven. As ruler of all beings in the descending heavens, he was powerfully endowed with all attributes of deity.

Tagaloalagi had a son called Lu. Due to misbehaviour he was banished from the tenth heaven. Lu fled with some of his followers and they settled at Uafato. Lu kept his hens (moa) in a fence where the rest of the people were forbidden to enter. They were sacred (sa) hens (moa).

Tagaloalagi loved to eat seafood and one day, he sent down his fishermen to catch some fish for his meal. His fishermen left the tenth

heaven and descended to Uafato, Upolu. The men fished all day, but they caught only a few small fishes. When it was time for them to return to the tenth heaven, they were very tired and hungry.

It was not surprising then that when the fishermen came across the place where Lu kept his "forbidden hens" they sneaked through the fence and chased the sacred hens.

Lu, who was out fishing in his canoe heard the cackling of his hens and he immediately chased the thieves to the ninth heaven. Tagaloalagi heard the commotion, and he remonstrated with Lu for disturbing the peace of the ninth heaven. However on hearing the story of the attempted theft of the "sacred hens," Tagaloalagi, who was a just ruler asked that his fishermen should be saved, and he would give his daughter Masinatailago to Lu to take as his wife. Tagaloalagi also directed Lu that they should make their home on earth and call this place Samoa. Hence the name Samoa or hens.

NB — This is one myth among several others.

EARLY HISTORY (as depicted in Legends)

After Tagaloalagi, one of the greatest men in Samoan history came Pili. He lived about 850 A.D. Pili, through his marriage to Sinaletavae and through personal prowess became very powerful. Pili is known in Samoan mythology as Pilipa'u (when he was dropped from heaven by his parents for his waywardness and presumptuousness), and as Pilipopo (when he lived in Apopo, he planted a taro plantation which stretched all the way from Asau to Apopo).

He was a wise ruler and Samoa was peaceful under his care. When he died he divided Samoa amongst his four sons. Tua looked after Atua, Ana became the guardian of Aana, Tuamasaga looked after the central portion of Upolu, Tolufale was given the island of Mulifanua and Manono. There were no boundaries set by Pili of the area for each of the sons, and this provided fuel for the frequent wars which followed after Pili died and the sons were left to their own devices.

TONGANS IN SAMOA

Tonga conquered Samoa in 950 A.D. and for about 300 years the Samoans were ruled by the Tui Toga. The line of Tui Toga eventually became weak and in 1250 A.D. the Tongans were driven out by Atiogie's sons, Tuna, Fata and Savea. The wars between the Tongans and the forces organised by these three brothers raged along the north and south coasts of Upolu and Savaii. Forts were built at Luatuanuu, Safata, Vailoa, Apolima and eventually the Tongans were finally driven out to Tulatala, (Nuusagale). The parting words of the Tuitoga are re-echoed as the origin of the title Malietoa, "malie toa, malie tau, afae ae toe oo mai Toga, e sau i le aoauli folau ae le o le aoauli tau". (Brave warrior, bravely fought! If the Tongans ever come back again, it will be for a friendly visit, never again to fight you". The first Malietoa was Malietoa Savea, the third son of Atiogie.

ultimately became the centre of the Pacific concerns of this company. Various advantages for Apia as the central site were cited. Samoa was central to all other islands. Apia also had a relatively good harbour. The first notable evidence of commercial activity by the Samoan people was the buying and selling of copra. This started in 1867.

1860: The cotton boom in U.S.A. aroused the business interests of various people in Samoa. The variety "Sea Island Cotton" was introduced and this grew well in Samoa. Cotton was a very important export till 1890. By then most people had turned back to copra as better export revenue, because the American Civil war had ended and farmers were again growing cotton. Samoa could not compete with the Americans for cotton markets. The rate of growth of commercial activity corresponded to the rate of increasing interest of foreign businesses on ways of obtaining Samoan land. Land was sold cheaply by the Samoans to unscrupulous business men. Commercial plantations were developed which needed many labourers. It was difficult for the owners to get the Samoans to work on the land. So workers were brought to Samoa from the Niue Island, Rarotonga and later the Solomon Islands.

The recruitment of workers especially from Micronesia resulted in a flourishing business of "Blackbirding" by owners of ships. One of the best known "Blackbirders" was Bully Hayes who lived a long time in Apia.

First attempts at establishing some form of Central Government

Wars between the various factions of Tama Aiga were very common. There were wars of succession, between various districts who propounded the same rights to one of the four titles of Tafai. These internal squabbles between the traditional leaders of Samoa were exploited by various Europeans who were in Samoa as representatives of their countries.

The most notable of these men was Colonel A. B. Steinberger who was in Apia as "special agent" of the U.S. to make a study and report to the home government on the people, the products and harbour of Samoa.

1873: The warring factions met in Mulinuu to decide on a new government. Colonel Steinberger was welcomed and a constitution was drawn up.

Steinberger, a self seeking opportunist made it known to the Samoan people he was finding out if a U.S. protectorship would be well favoured by the Samoans. When Steinberger presented his report at the U.S. Senate, the decision was that Samoa should not be part of the U.S.

1875: Steinberger returned to Samoa. He ended the rule of the two "kings" Tupua Pale and Malietoa Laupepa. He manipulated people and events in such a way that in July 1875 he was offered the post of premier, which he accepted. S. S. Foster the U.S. Consul did not like this, and so Foster arranged a confrontation which brought about the deposition of Steinberger back to the States.

The events which took place were not well taken by the U.S. Government. The people involved were penalised.

Meanwhile Samoa was left in internal turmoil. War started brewing between

1722-1830 VOYAGES OF DISCOVERY

1722: Jacob Roggeveen — Dutch Explorer arrived Manua on the "Arenel" and "Thienkoven". From Manua he went to Olosega and Ofu.

1786: Louis Antoine De Bougainville named the Samoan Islands "The Navigator Is" arrived with two ships "La Boudese" and "L. Eloile".

1787: De La Perouse on "L. Astrolabe" and "Bronssole".

1791: Captain Edwards of the British Admiralty arrived on "H.M.S. Pandora". He was looking for the mutineers of the "H.M.S. Bounty".

The First Europeans 1800

The first Europeans to settle in Samoa, were sailors, whalers, beachcombers and escaped convicts. Most of them were rejects of their particular society, adventurers who by chance landed in Samoa.

The Missionaries 1830

The missionaries were the first notable agents of change in Samoa. Armed with their Bibles and staff, they brought with them values of puritanism which were common in Europe in the 19th century. In the name of Christianity they propagated the values of hard work, thrift, abstinence and others which were the values also of colonialism spreading far and wide in the same century.

1830: John Williams landed at Sapapalii on his boat "Messenger of Peace". He managed to convert Malietoa Vainuupo, hence all of Samoa (Nafanua had foretold that Samoa should await their kingdom which will come from heaven).

1832: Second visit of John Williams.

1828: Some Samoan Methodists who lived in Tonga set up a Methodist Church in Savaii. (Documentary evidence to support this is difficult to find).

1835: Peter Turner of the Methodist Church landed in Manono. He started Methodist Mission in Samoa.

1845: Roman Catholic Missionaries landed at Lealatele, Savaii.

Commercial Activity in Samoa

Agricultural activity of the Samoans was maintained along the subsistence level. Sealers and whalers had called in the islands long before the missionaries arrived but since there were no seals and whales were scarce, this was not a profitable commercial venture in Samoa.

1847: A United States Commercial agent was appointed to Samoa. His name was John Williams Jr. He was the first person to export copra. He did this while he was the U.S. Consul.

1854: A member of the worldwide German firm "Godeffroy and Sons" was sent to survey the Pacific for possible trading posts.

1855: A branch of "Godeffroy & Sons" was set up in Apia. This branch

Laupepa and Talavou. The district chiefs and parliament decided that they needed protection. The country divided into three factions. The faction behind Malietoa Laupepa asked help from Britain. The faction behind Tamasese enlisted the help of the German Consul. Mataafa and his group asked help of the U.S. Help was not readily available and fighting broke out again and again.

1889: Naval ships arrived in Apia harbour to try and solve the problems of leadership in Samoa.

1889: (March) the great hurricane broke out which wrecked the 3 German warships "Adler", "Olga", "Nipsic"; the three American warships "Vandalia", "Eber", and "Trenton" while "Calliope" the only British ship escaped.

The wars were stopped and an elaborate agreement was drawn up, by the three powers. Briefly summarised this said that the 3 powers would rule Samoa jointly.

Three Power Administration 1889-1899

This was another period again of unrest. Instead of one ruler, Samoa had three. This inevitably led to a clash of administrative ideas. The people divided between Malietoa Laupepa, Tamasese and Mataafa was exiled when the three powers set up Malietoa Laupepa as King. When Malietoa died in 1898, Mataafa came back and he immediately set up preparations to set himself up as king. Fighting started and Mataafa took control.

The three consuls intervened and invalidated control imposed by Mataafa.

Mataafa and his forces thereby went inland. Thus, begun what could be called guerilla warfare by Mataafa. It was now the three consuls, Malietoa Tanumafili I and Tamasese against Mataafa. When news of this fighting

reached the Home Governments of the three consuls, commissions were sent to disarm the Samoan warriors and to persuade the descendants of the kingly titles to relinquish the term "king". The three powers also agreed that Samoa should be ruled thus: Western Samoa to be administered by Germany and Eastern Samoa by U.S.A. Britain bowed out peacefully.

German Administration 1899-1914

Dr Solf was appointed as governor of Western Samoa. Many more German settlers arrived in Samoa and developed plantations. Again the Samoans would not work in the plantations of the traders and planters.

1903: Consequently the first Chinese workers arrived.

1912: 2184 Chinese workers in Samoa.

1903: A native Land and Title Commission was set up to solve numerous title and land problems.

Despite attempts by governor Solf to rule Samoa justly, according to the best systems of Western justice, the matai and faipule did not like it that their authority or rule was undermined. They felt that western justice did not suit the Samoans and their way of looking at things.

So in 1906, two chiefs from Safotulafai organised a group of people who collected a public tax from wage earners. This was against Governor Solf's



People stroll leisurely, sunbathing pool and drive with the knowledgeable Puka-Chuanga in the background.

Things came to a head on December 28, 1929 when Mr Smyth and Mr Gurr, other exiled leaders of the "mau" returned, and the "mau" followers gathered in Apia to welcome them back. Soldiers and police were there to keep order. They saw some of the "mau" leaders and they tried to arrest them. In the confusion, Tamasese Lealofi tried to speak to the people, but some soldiers or police fired their guns into the crowd and Tamasese and ten others were killed. The Mau followers went into the bush and prepared for war. This did not happen, but the government intensified efforts to eliminate the mau.

1931: General Hart became military administrator. O. F. Nelson one of the supporters of the Mau was imprisoned, then exiled.

1936: **Labour Party came into Power in New Zealand.**

Tried to eliminate the harsh mistakes of the previous government, recognised the Mau as a political party, and many of the exiled Mau leaders returned to Samoa.

The Mau continued as an organisation till 1948.

The Depression of the 1930s

The two major products, which were Samoan exports, copra and cocoa were affected. However problems of unemployment and general insecurity of the western countries were not felt in Samoa.

World War II 1939-1942
The presence of the Japanese in the Pacific presented a threat to most of the Pacific Islands.

1942: U.S. Marines occupied Samoa to prepare for a Japanese attack. The Japanese were finally stopped and Samoa was safe.

THE GOVERNMENT

Western Samoa was the first independent Polynesian nation. Its smooth transition from Trusteeship to Independence on the 1st-January 1962 evoked considerable international comment. Unlike many newly independent countries, Western Samoa's first years have been marked by political stability. Before Independence, Western Samoa was a Trust Territory administered for the United Nations by New Zealand. From 1900 to the First World War Western Samoa was a German territory.

Western Samoa is a fully independent state with a parliamentary system of Government. The Constitution of the Independent State of Western Samoa came into force on 1 January 1962, the Day of Independence.

Legislative — The law-making body as provided in the Constitution is Parliament consisting of the Head of State and the Legislative Assembly.

The Legislative Assembly consists of 45 Samoan members and 2 members representing the individual voters. The Samoan members are elected from territorial constituencies on a franchise confined to matais while the part-Samoan and European Community — the individual voters — elect their two members by universal suffrage. The House is presided over by a speaker elected by the members who also elect the Prime Minister. The life of each

government's law. The chiefs were arrested and put into jail. Tamasese released them, but they were caught and put back into jail. Mataafa and other government officials gave a public apology and the prisoners were released.

During Solf's administration, the Motootua Hospital was built in its early form. Various other departments like Police and Prisons, Customs, Public Works, Treasury, etc. were started.

Mau A Pule

1908: This Mau was started by some talking chiefs who wanted changes in the government. This Mau A Pule was an opposition party by some talking chiefs of Savaii. The leader was the intelligent and capable orator of Safotulafai, Lauaki. As penalty for stirring up trouble, Lauaki and others were exiled to the Marianas.

1910: Dr Schultz succeeded Dr Solf.

1912: Tamasese and Malietoa were given the title of Fautua.

For the latter part of German Administration, Samoa was relatively prosperous commercially. Then World War I broke out and New Zealand

quietly took over Western Samoa in 1914.

1918: Influenza Epidemic killed about 8000 Samoans. The influenza was brought to Samoa by the naval ships from Europe where all kinds of diseases raged in the ravages of war and destruction. The Samoans, unused and not immunised to Western diseases died in thousands.

New Zealand Administration 1914-1962

(*Western Samoa a mandate of Britain, under New Zealand*).

Colonel Logan became the first New Zealand Administrator. He was replaced by Colonel Tate round about 1920. The National government set-up was made up of a Legislative Council (the law making body) and the Fono A Faipule. The Legislative Council was made up of three Fautua, four officials who were Europeans, and four appointed members.

Fono A Faipule

Consisted of 31 matais. An advisory body only, not a law making body.

The Mau Movement 1925-1948

Opposition from the Faipule and Matai grew very strong, and the chiefs organised themselves as the Mau. The Mau did not like the forced changes Richardson advocated.

The Mau was organised as a government which had a central committee, with a secretary/treasurer. Headquarters were set up in Vaimoso. They also had a uniform, a flag, policemen and courts. This was the first manifestation of Samoan nationalism expressed along Western lines of organisation. A newspaper "The Samoan Guardian", started by O. F. Nelson told the people what the "Mau" stood for, and all its activities.

It was opposition to the government of Richardson, and this was illegal, so many followers of the "Mau" were punished by imprisonment, or banishment.

Assembly is three years though it may be dissolved earlier.

Head of State — His Highness Malietoa Tanumafili II is at present the Head of State and will continue in office for life. After that the Head of State will be elected by the Legislative Assembly for a five-year term.

Executive — Executive Government is carried out by a Cabinet consisting of a Prime Minister elected by a majority of the Legislative Assembly elect and eight other Ministers selected by the Prime Minister. The present Prime Minister is the Honourable Tofilau Eti.

INTERNATIONAL RELATIONS

Western Samoa became a member of the United Nations in 1977 and is a member of various UN agencies including ADB, ESCAP, UNDP, UNCTAD, UNIDO and FAO. The International Monetary Fund maintains an advisory official in the country. Western Samoa is a member of the World Bank, the Commonwealth, and is an associate member of the EEC.

In the South Pacific Region, Western Samoa is involved in the work of the South Pacific Forum, the South Pacific Commission, the South Pacific Bureau for Economic Cooperation, the South Pacific Regional Fisheries Agency, the Pacific Islands Development Commission, the Tourism Marketing Council of Polynesia, and the Pacific Area Travel Association.

Western Samoa receives bilateral aid for development from a number of developed countries including New Zealand, Australia, the United Kingdom, Japan, West Germany, United States and the People's Republic of China.

Besides the International Dateline boundary, there is another man-made boundary which is of great significance to Samoa — the political boundary which divided the Samoan Islands into the "Two Samoas" — Western and American Samoa. Western Samoa is an independent nation, American Samoa is an unincorporated territory of the United States of America.

SOCIAL SERVICES

Western Samoa has excellent schools (government and mission) that provide education from primary to college (high school) level for its young population. Medical services and drugs are available at a small charge.

A general hospital is located in Apia providing medical treatment for the urban area population. Medical treatment is administered to sick people outside the urban area by doctors and nurses stationed in the outer-district hospitals. There are also a number of private medical clinics available in the town area.

PEOPLE

The Culture of Samoa is traditional yet adaptable, basically Polynesian but distinctively Samoan and is a source of identity and inspiration.

Traditional authority is vested in the matai of the country. Each extended family, or aiga, has at least one matai at its head, who is appointed by consensus of the aiga. Ownership of customary land is legally vested

in the matai who directs the economic, social and political affairs of the aiga. There are 362 villages in Western Samoa with a total of 12,600 matai. Only the matai vote in national elections (except in the case of two seats under the individual voters roll). Each village is governed by itsfono, or council of matai, which can fine or otherwise punish offenders against village rules.

Each village also has a women's committee which assumes responsibilities for health matters, handicrafts and some agricultural projects such as poultry development.

Missionaries first came in 1930 and now Christianity is an integral part of Samoan custom. Pastors command great influence and respect in the villages, with each village having at least one church and pastor. The main religious organisations in Samoa are the Congregational Christian Church, Catholic Church, Methodist Church and Church of the Latter Day Saints.

The German plantations were seized after the First World War, and are operated by the government owned Western Samoa Trust Estates Corporation (WSTEC).

There are several other commercial estates growing mainly copra and cocoa, but most production comes from the village sector. Subsistence agriculture remains the principal economic activity, involving two-thirds of the labour force. A surplus is produced for sale, mainly root crops, banana and fish for local sale, and copra and cocoa for export.

The population of Western Samoa is now 160,000. Western Samoa shelters the largest proportion of full-blooded Polynesian population in the world today.

Samoan life has been traditionally leisurely, and the Samoan is prone to be content with his few possessions. It has been truly said that if a Samoan has healthy children, a neat and comely wife, a house of his own, a canoe, a coconut tree, banana trees and a few pigs, he has intelligence enough to know that he is well off.

The Samoans love ceremony, sports, singing and dancing. Most events of significance are marked by ceremony — the Kava Ceremony is a must at meetings of chiefs, when entertaining important guests and on occasions of particular rejoicing. Ta'alolo the traditional presentation of gifts from one village to another or to visitors is a regular occurrence. Of the games introduced by the European to the Samoan, cricket is the most popular in the islands. The Samoan version of cricket is a combination of English cricket and American baseball. Rules are elastic — developed and changed as the game progresses with nearly the entire village population participating. Dancing comes naturally to men and women alike, and any occasion is excuse enough for a heat-warming session of dancing.

The Samoan is the purest surviving Polynesian type. He is conservative and unspoiled. In character, the Samoan is a person with a reputation of being upright and dignified, is friendly to visitors but expects his customs to be respected. The majority of Samoans can be seen living their lives in their



school group performs at Independence Celebrations, above. The eastern tip of Upolu, seen over Nu'utele, below.



traditional native fashion almost entirely unaffected by contact with another civilization enjoying the food which they themselves can produce and coveting little else.

Today, as in the past, the unit of Samoan life is the aiga (pronounced eye-ing-ah) family. Such a family is not merely the immediate family as Europeans understand the term, consisting of parents and children, but an extended family group of blood marriage and adopted connections. The whole aiga (family) is involved in upholding the honour of the title that gives them identity and standing in Samoan life.

The extended Samoan family shares with each other the necessities of life, join hands to build a needed church or school or road, suffers and meets each crisis as a group more than as separate individuals.

The matai (chief) or that member of the family on whom the title is conferred by the family is the acknowledged chief for the family. Selected by common consent of the aiga, the matai assumes responsibility for directing the use of family lands and other assets belonging to the aiga. The matai must, by his behaviour, do honour to the title he bears and the people whose social status is bound up with it. This is especially true on such occasions as births, deaths, marriage, the investiture of chiefs and playing hosts to visitors. In return for his leadership, the matai is rendered services by the tautua (untitled) and matai (titled). There are traditional services which are rendered to the chief. There is not the autocratic type of relationship that one might think exists. For example, if anyone in the family (aiga) is to be married, the chief will call his family together and all will decide who will provide the dress, the food that each will bring, the entertainment, presents and so forth. This is traditionally accepted by the people and there is no resistance to the requirement to provide such service.

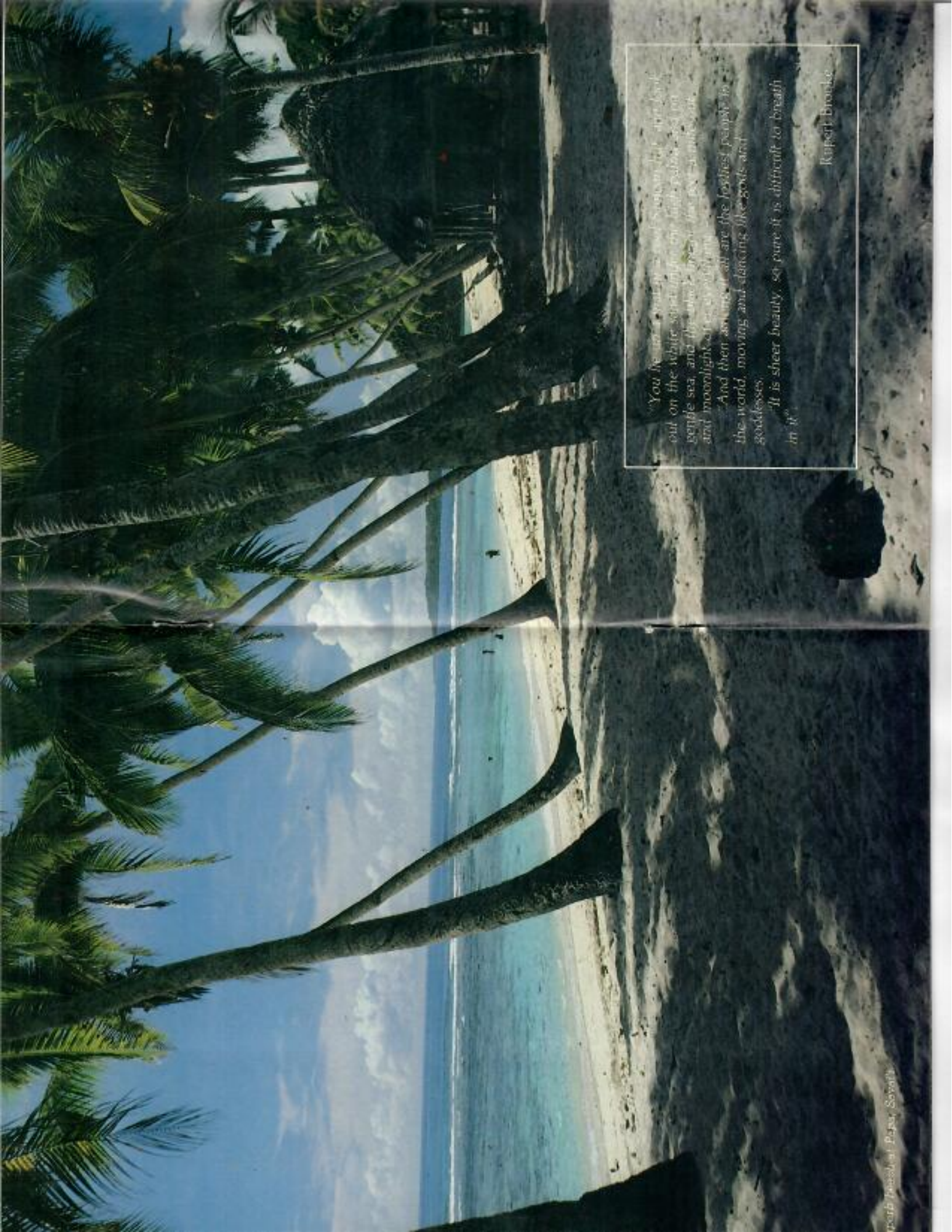
ECONOMIC

Western Samoa is blessed with rich soil, a good climate, political stability, an abundant ocean and a strong and healthy people. The country is dependent mainly on three agricultural crops, coconuts, cocoa and bananas for exports and for its economic needs. In order to diversify its economy Western Samoa has initiated projects to develop new agricultural products, the timber and visitor industries, food processing, and so forth. The Enterprises Incentives act 1965 offers enterprises a tax holiday for five years with a possible renewal for another five years, duty free imports of construction materials, vehicles, equipment and tax free dividends up to two years after the tax holiday ends.

This independent Polynesian state is well worth consideration by the entrepreneur and venture capital of any parts of the world seeking areas of "Safe" investments under the conditions of uninterrupted industrial peace and non-discriminatory treatment by the government.

Investment in Western Samoa

The state of development in Western Samoa is such that investment,



You lie in a boat in the "rain forest" and look out on the white sand, the turquoise water, the gentle sea, and the white thatched huts on the beach and moonlight on the water.

And then someone tells you that you are the loveliest people in the world, moving and dancing like gods and goddesses.

It is sheer beauty, so pure it is difficult to breathe in it.

Kupert, Brooke



Girls at work screen printing at Island Styles' factory near Apia.

both foreign and local, is strongly encouraged in productive areas of the economy. The dual problems of a continuing balance of trade deficit and unemployment, especially amongst the youth, can be alleviated by the intensified use of resources to raise production for the local market and export markets. The promotion and encouragement of such investment has been a policy of the Government of Western Samoa since independence in 1962.

In addition to the assistance offered to new and expanding ventures under the Enterprises Incentives Act 1965, Industrial Free Zone Act 1974 and incentives for primary production, the Government of Samoa has established an Industrial Development Zone where industrial land is made available under long term lease arrangements.

Western Samoa has the largest Polynesian population living in an authentic Polynesian culture with established traditions and customs still honoured. The political structure is stable and has been matured and strengthened by overcoming difficult economic and social challenges. Among the various advantages Western Samoa has to offer are:

- (a) A healthy, educated and adaptable labour force with a pool of under-employed workers available for employment;
- (b) Relatively low wage rates and a proven, high worker productivity;
- (c) Government stability and a democratic tradition which is the product of a unique Polynesian culture that dates back many centuries;
- (d) An investment climate in which industrial and agriculture investment for many projects is actively encouraged, to provide employment



Upolu's scenic cross-island road from Apia.

opportunities, the introduction of modern technology, use of local resources and generally for the improvement of the welfare of Samoans;

- (e) Generous investment incentives and freedom for repatriation of both capital and profits;

- (f) Progressive land laws, allowing the long term leasing of lands for agricultural or industrial use;

- (g) Equity participation by an expanding group of entrepreneurs, or in some cases, by the Government itself, and available loan-funds through the Development Bank of Western Samoa and the two Commercial Banks.

The Government of Western Samoa is committed to assisting investors in the establishment of industrial and agro-based processing industries in Western Samoa.

LAND TENURE

All land in Western Samoa is legally —

- (a) Customary land — Land held in accordance with Samoan custom and usage (i.e. land traditionally vested in matai (chiefs) who hold the land in trust for their aiga (family group)). Customary land can be leased but not purchased.

There is a Lands and Titles Court that settles land disputes arising mainly out of badly defined boundaries and from conflicting claims of individual matai (chiefs).

- (b) Freehold land — Land held in fee simple.
- (c) Public land — Land vested in the state.

CHURCHES

Western Samoa is a great church-building nation. One is continually impressed by the number of churches. Nearly every village has an elaborately built church complete with a high steeple. Some of the churches are enormous in proportion to the congregations that contribute to their upkeep, but they're the centre of a way of life in these islands.

The fusion of religious principles and traditional values makes the Samoan proud possessor of a culture where the old people are respected, the young are looked after and each member knows his place in the community.

CULTURAL AND HISTORICAL

There are numerous places of cultural and historical value in Western Samoa, but for those whose stay is brief, a visit to Vailima and Mulinu'u would be most rewarding.

VAILIMA

This is the historical residence of Robert Louis Stevenson or Tusitala (Teller of Tales) as the Samoans named him. When Robert Louis Stevenson came to Western Samoa, he was already a world famous writer (Treasure Island, Dr. Jekyll and Mr Hyde, etc.) but he was very ill; he came in search of a place in which to heal and continue writing. He chose Western Samoa



her and children bathing near Aleiapata.

and wrote in a letter to a friend — ".....I.....go at last to the Navigator Islands. God go with us! It is a Pisgah sight when all is said. I go there only to grow old and die; but when you come, you will see it is a fair place for the purpose." Western Samoa revived his health, and at Vailima, he continued writing prolifically. Such works as *A Footnote to History*, *The Beach of Falesa*, *The Wrecker*, *The Ebb Tide*, and *Catrina* flowed from his pen until he died on 3 December 1894, in Western Samoa, 10,000 miles away from his birthplace, Edinburgh, Scotland.

It is now the residence of the Head of State. Visits to the residence grounds are allowed only when permission is obtained either from the Prime Minister's Department or through visitor information centres in Apia. Directly above Vailima is Mount Vaea at the top of which is the tomb of Robert Louis Stevenson with the words of his immortal "Requiem" carved upon it. There is a trail which leads to the tomb and it can be visited at any time.

MULINUU

At Mulinu'u, the visitor may view Tiafau, the traditional burial ground of Samoan royalty. The malae or the grounds where national ceremonies are held adjoins the House of Parliament. Also situated at Mulinu'u is the Independence Monument, Lands and Titles Court and the House of Parliament.



Samoa soap being made at the Western Samoa Estates Corporation plant.

LEFATU CAPE

A 21-mile scenic shoreline drive along the west coast takes the visitor to Cape Lefatu. The cape has a setting which ideally reflects the character of the South Seas. It has the off-shore islands of Manono and Apolima, which could be visited by long boats and outboard motor boats, palm-fringed beaches and calm waters reflecting the ever changing colour of the sky.

The extreme point of Cape Lefatu owned by His Highness Malietoa has historical significance... canoes left from Lefatu Cape for exploration and other voyages to far flung islands of the South Pacific. Samoan tradition has it that it was at Cape Lefatu in the year 1250 the Samoans finally vanquished and drove out to sea the Tongan invaders who occupied the Samoan Islands in the early part of the 13th century.

SAVAI

On a clear day in Upolu, you can see the not-too-distant island of Savai, the "big island" of the Samoan archipelago. You cross over in 1½ hours by ferry boat or by plane in a few minutes. Allow yourself a leisurely two-day visit in Savai and observe Polynesia at its truest. It is for the hardy, but you will always remember your adventure.

Savai is the island with secluded beaches as well as large timber resources. A 35 minute flight on a Britten-Norman Islander by Polynesian Airlines takes the visitor from Apia to the township of Asau the site of the timbermill and where a new airport and deep-sea wharf have been constructed. Daily flight services by Polynesian Airlines from Faleolo will take you to Salelologa in seven minutes and Asau about 25 minutes. Direct flights could also be arranged from Fagaliu airport within the town of Apia.

SIGHTSEEING

Sightseeing for visitors to Western Samoa begins soon after they arrive at Faleolo Airport and take the 20 mile drive to the commercial centre of Apia. James Michener called this "the most beautiful drive in the South Pacific."

A scenic drive around the island provides the visitors with much beauty and charm to appreciate and remember. The road takes them along the coastline, through plantation lands and over mountain country. Roads are a bit rough in parts, but its worth seeing the Samoan people in their natural environment.

Local tour operators provide sightseeing tours of visitor attractions and points of cultural and historical interest.

FALEFA FALLS, MAFA PASS, FUIPISIA FALLS AND THE DISTRICT OF ALEIPATA

A lovely 40-mile drive along the east coast threads through some of the most colourful scenery on the island and takes the visitor after 18

miles to Falefa Falls. The drive continues over Mafa Pass which commands a breath-taking view of the shoreline then passes Fuiipisia Falls, a magnificent 180 ft waterfall. The drive ends at the village of Amaile in Aleipata district at the eastern tip of Upolu. The District of Aleipata is noted for its palm-fringed lagoons, white sandy beaches, and the off-shore islets of Nuulua, Nuutele, Fanuatapu and Namua.

CROSS ISLAND ROAD AND TIAVI FALLS

The cross island road from Apia in the north to the coastal village of Siumu in the south cuts across the middle of the island of Upolu. Road-side scenes include Vailima, the former home of Robert Louis Stevenson, lush green rain forests and the magnificent Tiavi Falls.

LEGAGA & SALAMUMU VILLAGES

On the south west coast of the island of Upolu is the pretty seaside village of Lefaga where, in 1952, the American film "Return to Paradise" starring Gary Cooper, was filmed. In 1981 a film based on the story "The Coral Island" was filmed in the beautiful island of Salamumu where they now have fales for rent to interested visitors.

ISLAND OF MANONO

Take a trip around the island of Manono, the legendary Bali Hai, with its beautiful clear water. Land on one of the beaches for lunch. Pass the island of Apolima and Nautopa. The boat leaves from Manono-uta near Cape Lefatu.

CENTRAL GROUP COCOA PLANTATION (W.S.T.E.C.)

Located about 3 miles inland from Apia is an interesting illustration of one of Western Samoa's chief agricultural products. It was in here that the renowned "Lafi 7" the highest producing hybrid cocoa in the world was first developed. Its production is now being accelerated by vegetative propagation.

MULIFANUA COCONUT PLANTATION (W.S.T.E.C.)

The largest copra plantation in the Southern Hemisphere lies 25 miles west of Apia and the drive passes through native villages which give a close up of life in these islands.

SWIMMING

Wherever you go in Western Samoa you can always find a place to swim. Along the coastline are fine swimming beaches and safe lagoons where swimming and skin-diving may be pursued all the year round. Inland there are mountain streams, waterfalls and lakes — some excellent swimming facilities in and around Apia township and close to the main hotel accommodation include:

PALOLO DEEP MARINE RESERVE

Only about a mile from Aggie's Hotel and located in the lagoon on the eastern front of the Pilot Point, Palolo Deep is typical of the hundreds of deeps in the Western Samoan lagoons. It is ideal for swimming for underwater photography and is noted for the beauty of its coral formations growing on the floor of the lagoon. Fascinating and vividly coloured small tropical fish-life flash and dart among the coral. With the aid of a pair of water-glasses, the wonders of the reef can be seen and appreciated.

Coral reefs surround much of Western Samoa, protecting the coastline and forming shallow lagoons. Within the reef's protecting walls many deep, irregularly-shaped "holes" can be found on the lagoon's floors. These "holes" provide an ideal environment for the growth of fragile corals, which in turn provide a home for many varieties of tropical fish. Palolo Deep is one such "hole", which because of its accessibility and close proximity to Apia, gives the visitor a wonderful opportunity to easily and safely view tropical marine life in its natural state.

'Palolo' is the common name for the reefworm (*Eunice viridis*), part of which swims to the surface each year in October (following a lunar cycle). It is a traditional Samoan delicacy. The Reserve takes its name from this worm. Palolo Deep is a Marine Reserve, so all marine life and natural features in the Deep are protected from damage or destruction.

This protection (under the 1974 National Parks and Reserves Act) is designed to ensure that the Visitor's enjoyment of the Deep is not spoilt by careless or thoughtless use, and the Deep continues to remain undisturbed as a spawning ground and food source for the many varieties of corals, fish and plant life in the lagoon.

Visitors must ensure that:

- They do not destroy or break pieces off the living coral. As some corals are very fragile, take care not to stand on them.
- No fish or other marine life, or other natural features are removed.
- No rubbish is deposited in the Deep.

In other words, please leave Palolo Deep as you find it.

VAIALA BEACH

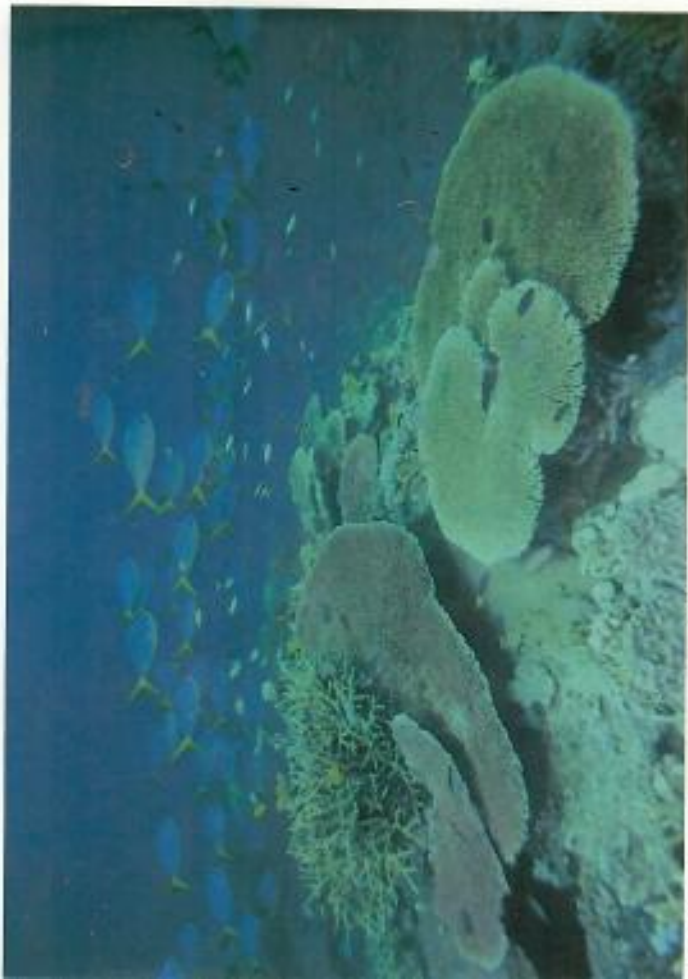
It is only about a mile from Aggies Hotel in Apia. Swimmers are cautioned however to be extra careful of an undertow especially during heavy surf. It is suggested that perhaps a companion should accompany you while swimming here.

MULINU'U BEACH

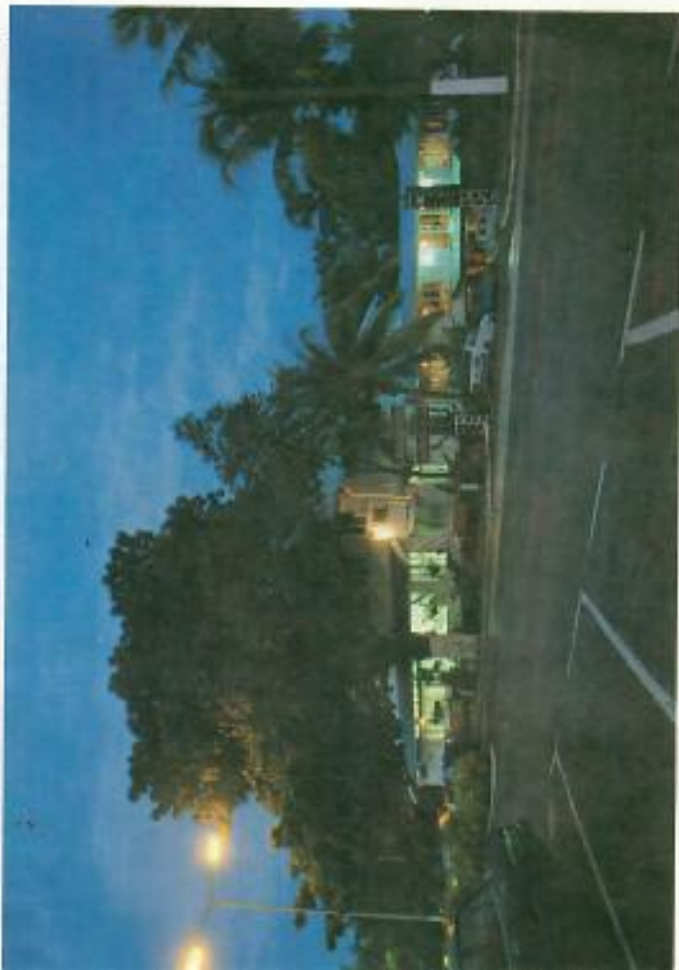
This beach is also about a mile from Apia.

FATUMEA OR PIULA CAVE POOL

The Fatumea Pool is located at Piula Methodist Theological College on the east coast, only a half-an-hour drive from Apia. It is an oval-shaped



Palolo Deep, popular marine reserve in Apia.



Aggie Gray's Hotel, Apia, by night.

natural pool with fresh cool crystal clear water flowing from a cave beneath the church. The Pool is neatly kept and surrounded with black lava stones which separate the warm sea water from the fresh water. Fresh water enthusiasts may have refreshing dips at this pool at a small charge.

SOLOSOLO

About six miles from Apia this black sand beach is ideal for surf enthusiasts. However, swimmers are cautioned to be extra careful of an undertow especially during heavy surf.

PAPASEEA

Papaseea "Sliding Rock" is about 5 miles from Apia. Visitors may experience at a small charge the thrill of sliding down on a natural rock waterchute into a cool shaded pool. There are sliding rocks for males, females and one for children.

LAKE LANOTO'O

A crater lake teeming with gold fish about 12 miles from Apia is difficult to reach, but amply rewards the effort. A guide to the lake could be recruited at the visitor's hotel.

SPORTS

Fishing — Fishing in Western Samoa is, by and large, not really a sport but rather a way of life. People go fishing either to bring their catch to the market to sell or for their own consumption. There is spear fishing, netting, snorkeling and the like. Deep sea fishing is ideal and powered fishing boats for hire are available. Marlin, tuna, wahoo, mahimahi and sailfish roam the Samoan waters.

Golf — Men and women are eligible to join as members of the Royal Samoa Country Club. Regular golf competition amongst members during the season are held every week. Visitors are welcomed to use the golf course and facilities by arrangement with the Secretary of the Golf Club.

Rugby — Rugby Union has gained a strong foothold in Western Samoa. The season usually commences in March and ends in June. School rugby football season starts about the same time and their games are on Wednesdays. Club matches are held on Saturday afternoons at Apia Park and at various village grounds and school football fields.

Boxing — Boxing season usually opens in July and ends in December but it depends on whether or not the promoters are willing to promote the game until the end of the year. Western Samoan boxers have dominated the scene during the last three South Pacific Games.

Cricket — Cricket to the Samoans is as popular as baseball to the Americans. Cricket, unlike the way it is played in many Commonwealth

countries, has its own Samoan version.

It is played throughout the year and is more or less a community game. Men and women, some young others old — all join in for a game of cricket (kirikiti).

Bowling — Outdoor bowling played at the bowling green in Apia. Visitors may use the green by arrangement with the Secretary of the Apia Bowling Club.

Tennis — Although there is a tennis season which usually starts in March every year, tennis is played throughout the year. There are a number of tennis courts (grass, asphalt and concrete) in and around Apia which cater for tennis enthusiasts. Visitors are welcome to play on the courts.

An inter-island tennis tournament is held annually between American Samoa and Western Samoa usually during Easter.

Other Sports — Horse racing with pari-mutuel betting is held several times a year. Long boat races are held once a year during Independence Celebrations in June. Volleyball is played throughout the year. Track and field competitions also held by the schools around August.

SHOPPING

Shopping in Apia can be quite exciting. The shops are stocked with goods from all over the world. Samoan curios and handicrafts are sold either in the shops, hotels, the handicrafts corporation store or at stalls located along the beach front and Vaea Street.

CEREMONIAL FEASTS

Attend any Samoan ceremonial feasts you may be invited to. You'll enjoy the native dances and the delightful food at a Samoan feast. You sit on the ground and eat with your fingers from large green banana leaves. Among the many delicacies are roast suckling pig, native pigeon, crab, breadfruit, papayas, pineapples, mangoes, avocados, taros, banana, palolo — the "Caviar of the South Seas", and palusami — a Samoan speciality of coconut cream wrapped in taro leaves and baked.

ACCOMMODATION

There are hotel accommodations available, offering air-conditioned rooms with private bath and telephone.

AIR TRANSPORTATION

There are daily flights between Western Samoa and American Samoa; weekly flights between Nauru and Western Samoa; weekly flights between Western Samoa and Fiji; weekly flights between Western Samoa and Tahiti via Rarotonga; weekly flights between Rarotonga and Niue; four weekly flights between Western Samoa and New Zealand through Polynesian

Airlines and Air New Zealand. Two airlines, the Polynesian Airlines and Air Pacific provide connecting services with the main overseas air networks at Pago Pago International Airport in American Samoa and Nadi International Airport in Fiji. Visitors from the United States of America can travel all the way to Western Samoa via Honolulu and Pago Pago on either Continental Airlines or South Pacific Island Airways under the low U.S. domestic airfare. Polynesian Airlines operate daily flights services between the islands of Upolu and Savaii. Polynesian and SPLA airlines (based in American Samoa) also operate three or four daily flights each between the two Samoas.

Polynesian Airlines also has a new weekly service to Sydney, Australia, via Vila, Vanuatu, and Noumea, New Caledonia, in association with Air Vanuatu.

SHIPPING

There are regular shipping services provided between Western Samoa and New Zealand, Japan, the United States, Australia, Europe and the United Kingdom although the frequencies of these services vary.

SOCIAL CLUB ACTIVITIES

Social evenings and dances featuring authentic Polynesian native dances are often held and more particularly on special occasions, such as when cruise ships are in Western Samoa or during a national holiday. Visitors are usually most welcome to these functions held at local clubs and hotels.

SIGNIFICANT ANNUAL EVENTS

Participate in some of the more significant events in Western Samoa during —

DECLARATION OF INDEPENDENCE AND FLAG RAISING CELEBRATIONS

First three days in June is when the whole nation celebrates the Declaration of Independence by authentic Samoan singing and dancing, horse racing, rugby football competitions and various other sporting contests, highlighted by the fautasi (long boat) racing.

WHITE SUNDAY

A sort of second Christmas for Samoan children. The day starts with children, dressed in immaculate white and their heads garlanded with flowers, marching and singing to the church. Later family feasts are held, with children in the seats of honour.

CHRISTMAS AND NEW YEAR

An atmosphere of festivity prevails during Christmas time through New Year. Native song and dance troupes make the merry rounds in the villages and around the main town of Apia. The many social clubs, societies and associations hold dances featuring authentic Polynesian shows just about every night. The festivities are climaxed on New Years Eve at midnight when



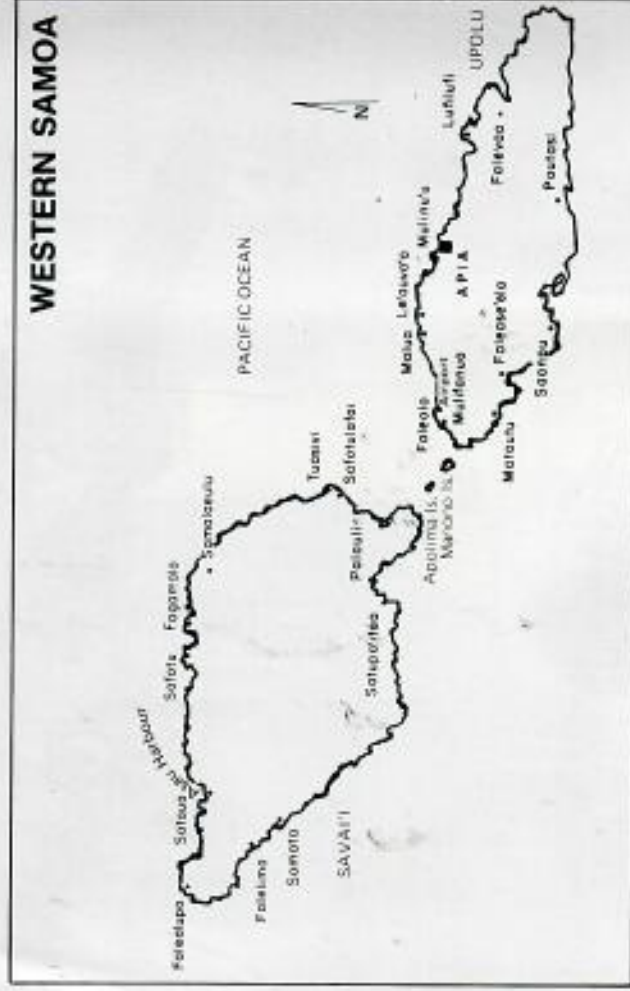
there is ringing of church bells, beating of native drums and the firing of bamboo guns. For the rest of the night, the visitor can mingle with the islanders as they celebrate the biggest "Island Night of the Year" festival held annually in Apia beginning sundown New Year's Eve till sun-up New Year's Day.

SAMOA ETIQUETTE

Don't violate Samoan custom . . . for centuries these customs have been respectfully passed from one generation of Samoans to another. A visitor with the best of intentions can quite easily degrade them.

With respect to Samoan traditions and customs:

- (i) Don't do or take anything in the village without first requesting permission from the person who holds the "pule", or authority. The Samoans feel highly honoured when their "pule" is given due recognition and will go out of their way to please visitors.
- (ii) Don't address your Samoan hosts in their fales (homes) while standing. Sit down cross-legged on a straw mat and then talk. If your Samoan hosts stand to say hello or goodbye you should do the same. Do not stretch your legs out while sitting. If you are tired while sitting crosslegged you may cover your feet and legs with a mat and stretch them.
- (iii) Don't eat while standing inside a fale or walking in a village.
- (iv) Don't drive a vehicle, ride a horse, use an umbrella or carry a load on your shoulders when passing in front of an open fale (Samoan house) in a village compound wherein chiefs are holding a fono (meeting). Out of respect for the chiefs and the dignity of their deliberations the passerby is supposed to stop his vehicle and walk past the fale; dismount his horse and guide the animal while passing but not ride it. You are expected to lower an umbrella or a load carried on your shoulders while passing.
- (v) Don't drink a cup of kava in a kava ceremony without first of all tipping a little out of the cup into the ground immediately in front of you.
The kava (national traditional beverage) ceremony is a sacred ceremony and highly respected custom in Samoa. It is served at meetings of chiefs, when entertaining important guests and on occasions of particular rejoicing.
If served in a kava ceremony you must first of all tip out in front of you a bit of its liquid content and while doing so, say "Manuia" (good fortune). You do not have to drink the entire amount, if some kava is left tip it outside and hand the cup back to the server.
- (vi) Don't create a din in or near a village or while swimming during vesper hours. During the early evening hours when most Samoans are offering prayers, quietness is expected within the village.
- (vii) Don't enter a fale while an aiga (family) is offering prayers.



WESTERN SAMOA

Visitors must remain outside until prayers are said then enter.

- (viii) Don't wear flowers inside a church.
- (ix) Don't undertake heavy manual work on Sundays. The overwhelming majority of the Samoans are church goers and the Sabbath is strictly observed as a day of rest.
- (x) Don't wear bikinis, brief shorts, or bathing suits in public places (except beaches). Men should not walk around without shirts in the streets or within public places (except beaches and villages).

MISCELLANEOUS

- (i) Don't wade out to the reefs without sandals or other footwear. Some corals in the lagoons and on the reefs have very sharp edges.
- (ii) Don't be overwhelmed by village children swarming all over you. They are naturally curious. The friendlier you are the more excited they get.
- (iii) Don't tip. Tipping is neither customary nor expected in Western Samoa.
- (iv) Don't go canoeing with a camera and not have adequate waterproof protection for your camera.
- (v) Don't leave any valuables (watches, cameras, etc.) unattended while swimming.
- (vi) Don't swim beyond the reef. It is dangerous even for the very strong swimmer.



Western Samoa

Further information on Western Samoa may be obtained from the Department of Economic Development, Government of Western Samoa, PO Box 982, Apia, Western Samoa.

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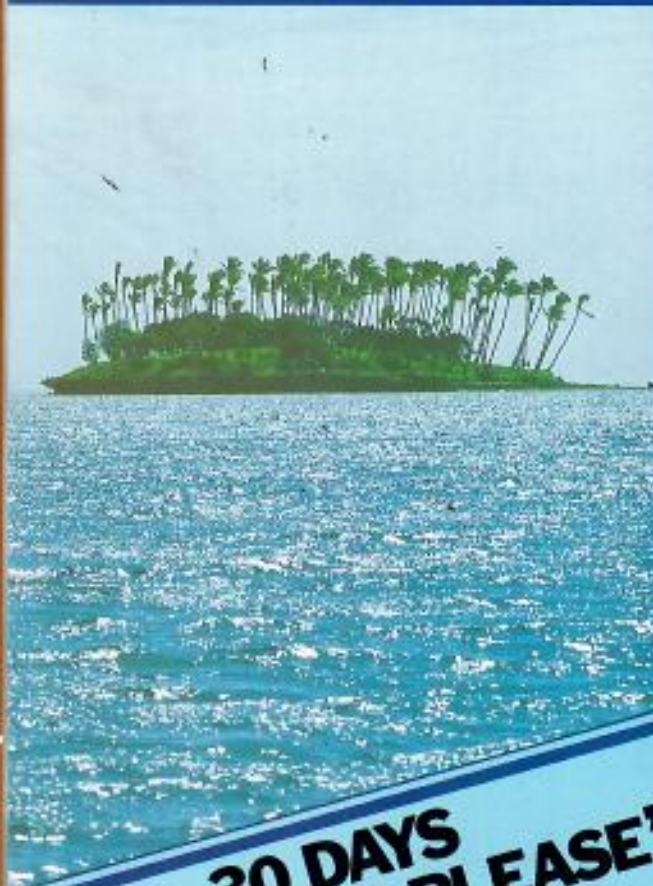
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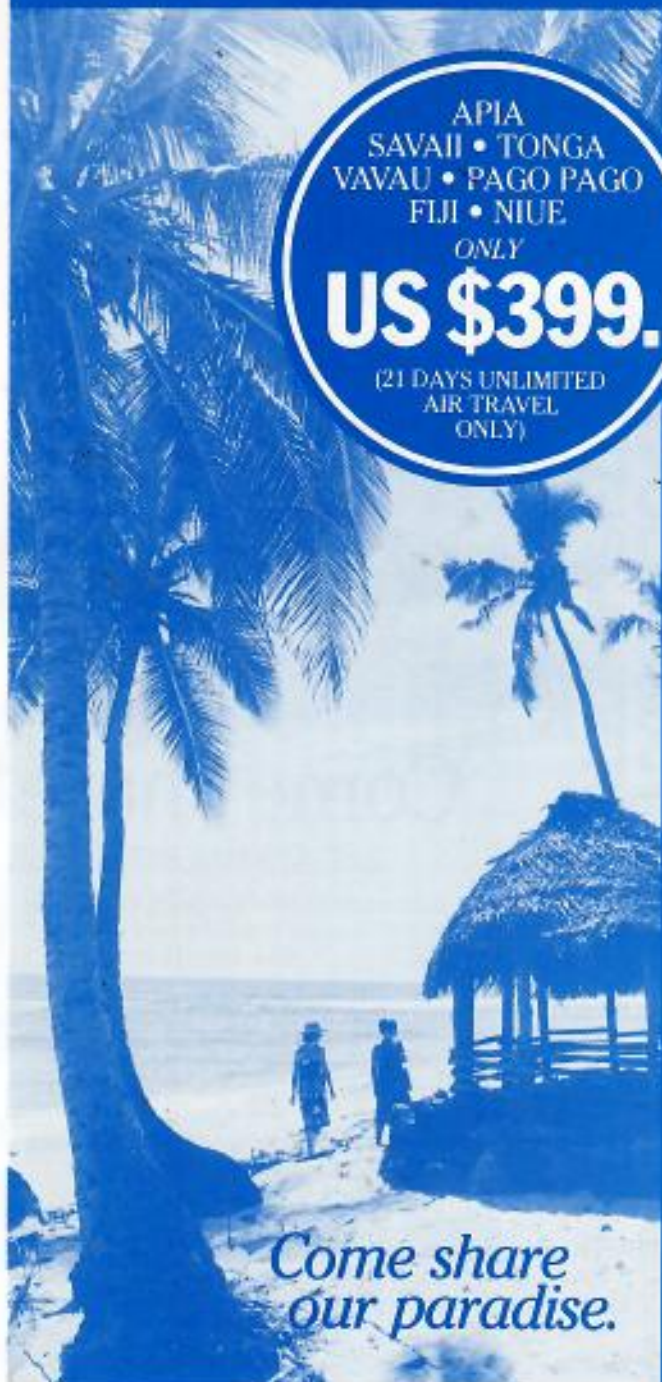
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Turtle Hatchery Project,
Lolopue Aleipala
P.O. BOX 1181
Apia. WESTERN SAMOA.
7th December 1981

Dear George Balazs.

Hallo Gues

I am Very Happy to write this letter to you and your Family. I Hope that all well with you and your

Family. Thank you for Pesina Seaki Fee for the School to pay. Well the turtle Hatched move the the Place where you point I Have 10 Nests in the Hatched One I Said - ~~xmas~~ Merry - xmas - and Happy new year. and the angel Said to them have no Fear for behold I announe to you a good New. of great joy that will be for all the people

yours truly

George Balazs
alafa atu Malu

April 13, 1982

F/SIRC2:GB

Mr. James R. Hollyer
Peace Corps Fisheries Biologist
Economic Development Department
Fisheries Division
P. O. Box 880
Apia, Western Samoa

Dear Jim,

I regret that it has taken me a month of answer your letter of 12 March. There was a possibility that I would be able to travel to Pago Pago (and over to Apia) for a few days during April, but the U.S. Coast Guard flight I had planned to use did not become available. I had hoped to meet with you in person to discuss some of your concerns about the Aleipata hatchery project.

To answer the central question that seems to be posed in your letter of 12 March, no, in my professional opinion I do not think that the project is "doing more harm than good." In my view, the overall project has been a very positive factor to the conservation of Samoan hawksbills. It represents a worthy effort by the Samoan Government to aid Samoan turtles. The project has been underway now for over 10 years, and for most of the time it has operated effectively on its own without foreign outside help. This is a credit to Western Samoa, and I have emphasized the above points to Mr. Philipp on several occasions. The project should most certainly continue under Viliamu, or another capable local individual, during the coming years. I have no idea why Viliamu left Aleipata the day after you arrived. I can only speculate that perhaps for some reason he felt uncomfortable or stressed working with you or perhaps there were personal problems that arose.

My interest in the project has been to advise and improve upon what already exists. No project of this sort runs exactly as we would like it to, not even my own here in Hawaii. Perhaps the letters authored by Jack Woody that I sent you presented too many ideals, all of which could not possibly be achieved under conditions and circumstances that exist in Western Samoa (and many other areas of the world). After operating mostly unaided for 10 years, I have thought that now would be an appropriate time to assign a Peace Corps person to the hatchery for 1 year on a full-time basis to work under, and with, Viliamu. You are correct in stating that you are the fifth Peace Corps person to be at the hatchery, however, except for Alan Barner and Wayne Witzell back in 1971-72, none of the workers stayed for more than a few days or weeks at a time. I have corresponded at length on this topic with both Gene Feldman and Bob Davidson.

No one really knows how long the ideal time is to grow hawksbill hatchlings before releasing them. However, a 3-month period seems reasonable. If disease has now become a substantial problem, I recommend that the tanks be thoroughly cleaned and left dry and unused for a few weeks. If turtles hatch during this time, they can be immediately released.

I encourage you to continue viewing the project in a positive manner, and lend Vilianu whatever help you can as your time and other tasks permit.

Best regards,

Sincerely,

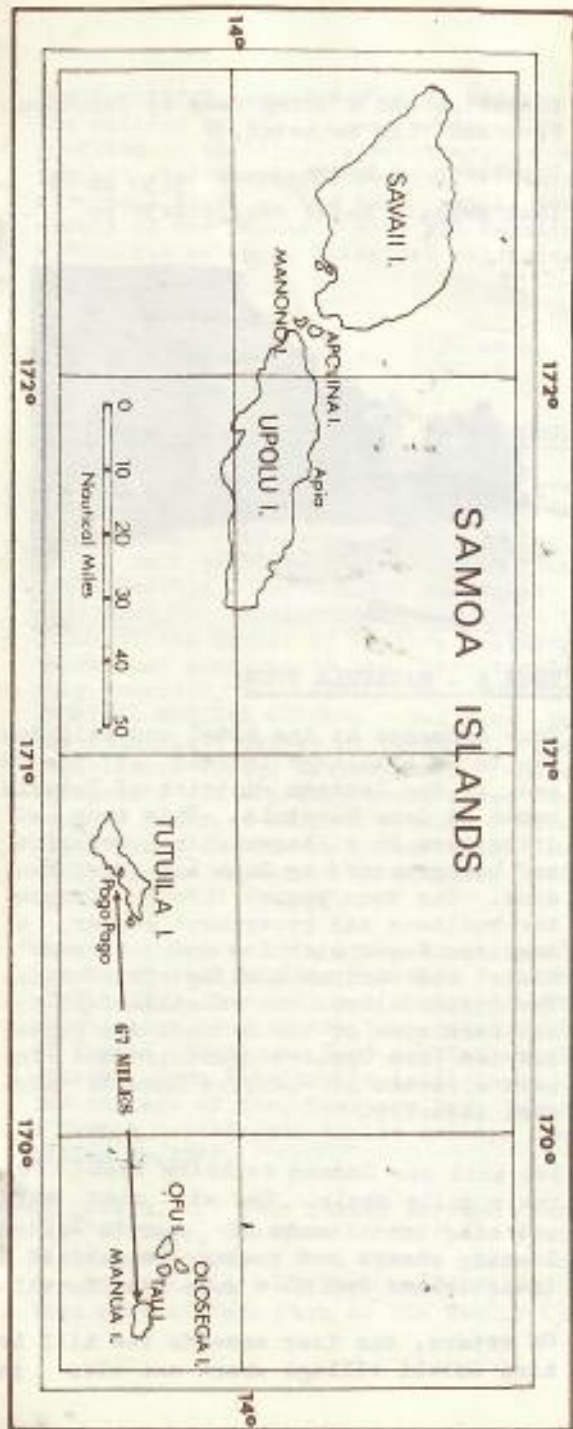
George H. Balazs
Fishery Biologist

cc: A. Philipp

GHB:ey
cc: Balazs
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SAMOA

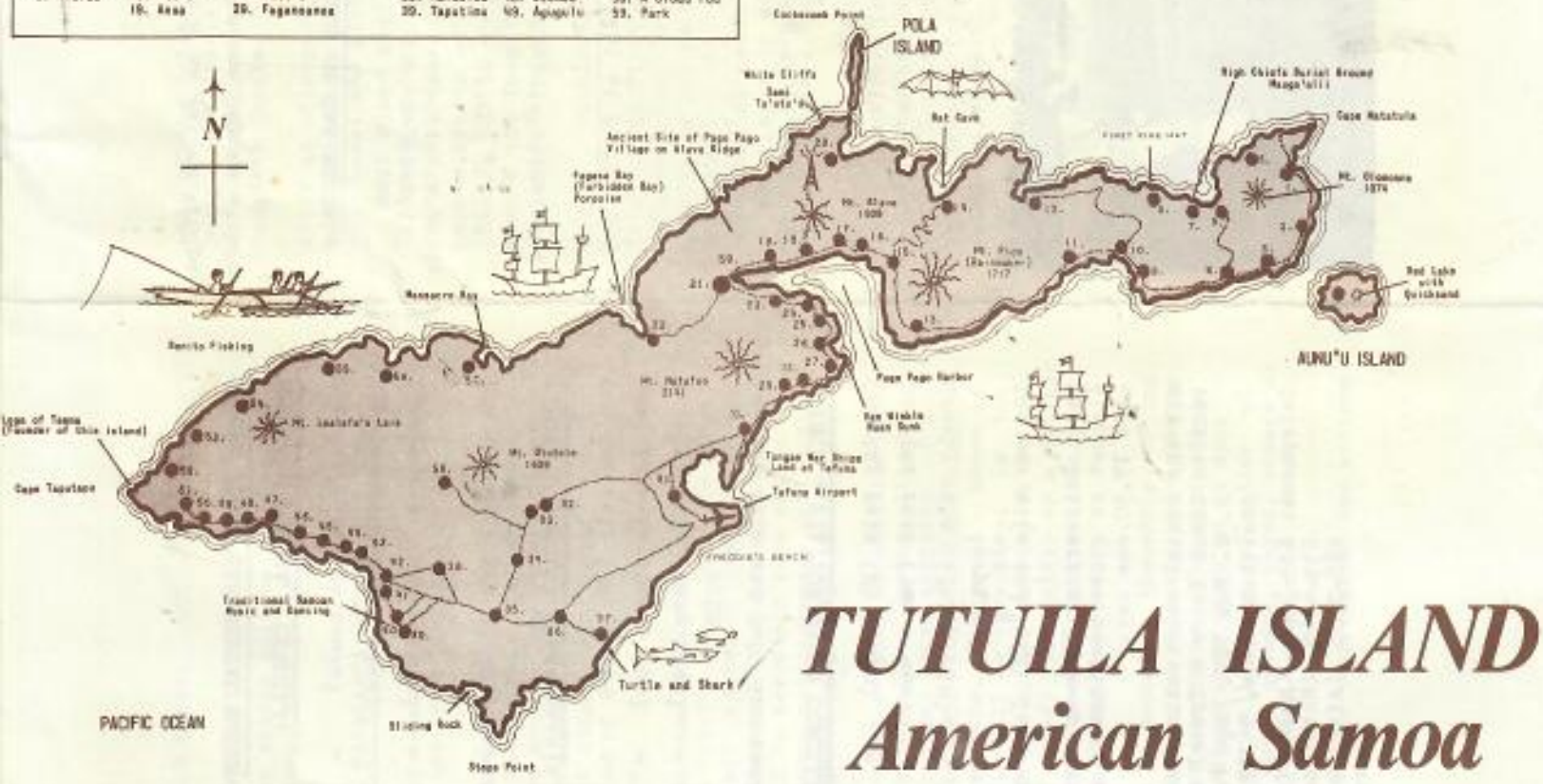
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| 7. Sa'ilile | 16. Lepaa | 26. Faga'ala | 36. Ili'iili | 46. Nua | 56. A'olou Tuli |
| 8. Maseasi | 17. Laila'oa | 27. Fatuafatu | 37. Vaitogi | 47. Se'etaga | 57. Aasi |
| 9. Aiofa | 18. Afa'a | 28. Mafu'a | 38. Malae'oa | 48. Utumae | 58. A'olou Fou |
| | 19. Aaa | 29. Fagane'oa | 39. Taputua | 49. Agupu'u | 59. Park |



TUTUILA ISLAND

American Samoa

TOUR A - TAPUTAPU TOUR:

Perhaps the most popular tour with tourists because of its reasonable length (3 hours), and its variety of scenery and landscape. Taputapu takes you through the Western District of Tutuila, the main island of American Samoa. Throughout unusual rock formation as the "Flower Pot" (an islet covered with palms protruding straight out of the reef and sea). The drive hugs the winding coastline for the better portion of an hour, but then goes inland where you can see the beautiful greenery of lush vegetation and tropical plantation.

You will pass through the village of Leone, an ancient capital of Samoa, where you will see the following: Guest House Pale of Paramount Chief Faiivae and His burial ground, the oldest Christian Church in Samoa, and monument to John Williams the first missionary landed in Samoa (1832).

The tour turns into Paradise Valley, the site of angry waterfall. As you approach the rapids area, you will feel the cool mist in the air and hear the roar of the falls. The waterfall itself is a sight to behold thousands of gallons of fresh mountain spring water cascading downward to finally merge with deep, natural pool at the bottom. The pool is safe so anyone is welcome to take the opportunity to bathe the native way and to frolic in a refreshing waterfall almost completely hidden by dense tropical undergrowth.

All in all, 28 villages are included in the tour. One of them is Amanave village (a Tourist Rest Area) where native ladies often may be seen doing handweaving or selling handicrafts. On return, the tour passes by the wide green lawn-village of Vailoatai on its volcanic

coastline and sliding rock by Taputimu Farm and then to hotel.

Duration: 3 hours. 9:30 am &
Tour departs hotel daily: 1:30 pm



TOUR B - MATATULA TOUR:

Tour commence at the hotel and will take you to Tula village located at the far end, of the Eastern District of Tutuila, known as Cape Matatula. This tour will drive thru 26 villages with oceanfront and backgrounded by lush and green mountains. The tour passes through Fagato the business and government center of American Samoa with its open Farmer's Market and curious looking open buses. The drive follows the coastline of the southern side of the island, and passes the two Tuna Canneries which are the main elements of American Samoa's largest industry.

You will see Samoan catching fish for their daily meals. One will also enjoy watching inhabitants of Aunu'u Island loading canoes and rowing long boats to their island two mile away from Tutuila.

On return, the tour ascends the hill behind Amouli village where one view the

the beautiful, sparkling white beaches of the village of Aoa. Opportunity will be profited or shelling, picnicking, canoeing and even overnight camping, if so desired. Finally, the tour will wind slowly by the mountain side via Fagaitua, a townlike village, therefore returning to the hotel.

Duration: 3 hours

Tour departs hotel daily: 9:30 am & 1:30 pm

TOUR C - PAGO HARBOR CITY & FAGASA TOUR:

Visitors will be awed by the cheer green walls of Pago Pago Harbor that Pago Harbor is considered by the safest, as well as the most beautiful harbor, in the South Pacific. Leave hotel and drive west pass "Penicillin Road" (so named because of the number of doctors residing there) and continue to the territory's only hospital, the LYNDON B. JOHNSON TROPICAL MEDICAL CENTER. You pass thru the commercial center of Fagatogo, the Legislature (Fono) Building and Sadie Thompson's old boarding house made famous by Somerset Maugham's Rain. This drive winds around the harbor which is actually the crater of an extinct volcano.

This tour drives up a steep mountain slope "le Mafa" that bisects the main island of Tutuila. You will see a magnificent north-shore by with the tiny quiet village of Fagasa (Forbidden Bay) nestled snugly within. From this bay, a trail leads to the village of Asu, Massacre Bay where a French Captain and twelve sailors were killed in 1787.

On return, the tour passes through Pago Pago village, continue on to the foot of Rainmaker Mountain (Mt. Pico). You turn around at Lauli'i village sandy beach, then stop at Pago Park or the Senior Citi-

zen Curio Shop for Polynesian Arts and handicrafts on displays and for sale, then return to hotel.

Duration: 2 hours

Tour departs hotel daily: 9:30 am & 1:30 pm



TOUR D - AOLOAU & VAITOGI VILLAGE TOUR:

Your tour will take you to Aoloau, a village perched high on a mountain top overlooking the international airport and Lavalalava Nine-hole Golf Course. A splendid view will also be afforded of Massacre Bay where the handful of French sailors were inexplicably attacked and killed by angry natives in the 18th century. In addition, one will be able to view the territory's television transmitters on a far off mountain, not to mention our highest peak, Mt. Matafao.

A stop will be made at the Aoloau Vill-Tourist Project. Herbs used by the Samoans for medicinal purposes abound here. At this site, demonstration of taros and bananas cultivations will be given. Tapa making and handweaving will be seen. There will also be a demonstration and preparation of an "Umu" (an

open pit oven underground used by the Samoans for cooking food).

After leaving the mountain hamlet of Aoloau, you will be transported to the quiet village of Vaitogi, Home of the Turtle and the Shark. It is here on Vaitogi's volcanic shoreline constantly pounded by a relentless sea where a Samoan legend was spawned and is perpetuated to this day. Samoan Folklore of a blind, for shellfish to satiate their hunger when they were swept into turtle and shark. You will have a rare opportunity chant an ancient Samoan song calling the famous pair to return to the site where the alleged transformation took place. More likely than not you will be astonished as you bear witness to a living legend when these two natural enemies are seen cavorting together amidst the surf. It is worthwhile to see the blow-hole and geyser-like scene of waves once splashed against volcanic rocks.

Under departing Vaitogi, you will ramble through Iliili village, tropical bushland shadowed by Banyan trees forest before reach the hotel.

Note: Demonstrations and preparation of an "Umu" (open pit oven) is taction only for a group of 20 people or more.

Duration: 3 hours

Tour departs hotel daily: 9:30 am & 1:30 pm

TOUR E - CABLE CAR RIDE TO MT. ALAVA & AMERICAN SAMOA MUSEUM

A spectacular ride over the Harbor by Cable car. This tour offers magnificent views of the mountain terrain of Tutuila and the Harbor. The tour commences from the hotel proceeds passed a T.V. Studio with broadcast the largest educational

T.V. Network in the world, Lee Auditorium (turtle-like) House, then to lower terminal at Solo Hill to aboard a tramway. The car ascends across the harbor to the top of Mount Alava to a height of 1700 ft. and distance of one mile. The distant Islands of Western Samoa and Manu'a can be seen on a clear day.

Tour will continue to Samoa's Historic Museum of American Samoa. Museum display many old paintings, ancient Sacred Fine Mats (Measina) of Samoa, weapons used in olden days, and may see other historical Samoan artifacts revealing the true polynesian heritage.

Before you enter the Museum, you will observe native ladies and men sitting in Samoan fale (huts) teach Samoan youngsters how to make handwork such as weaving, tapa arts, seashell necklace (ula) and wood carving etc. after visiting the museum then back to the hotel.

Duration: 2 hours

Tour departs hotel daily except Sunday at 10:00 am and 2:00pm



**TOUR F - HER HIGHNESS, AFIIGA FULOTU
FIAFIA (feast)**

Departs hotel at 5:30pm and drive along the coast to Vailoatai village and watch the Sunset, then to Maota ole Ali'i (a Guest House of Iaramaount Chief Faiivae) in Leone Village. You will be greeting and meeting by Her Highness, Afioga a Fulotu. Kava ceremony will be observed and taste an 'Ava (drink of Matai, or "samoan chief"). Visitors will be sitting native-style cross-legged on the floor covered with pandanus mats. Native food and Samoan delicacies "Princess Table" served in "Malo", (tray weaved with coconut leaves,) and menu with barbecue chicken, fish, chop suey, ota (ray fish marinated with coconut milk) bakes taros or breadfruit, palusami (coconut cream wrapped in tender taro leaves) or fa'alifu (boiled bananas or taro with coconut cream or pe'epe'e. Dessert with Samoan Foi (ripe bananas, pineapple, or watermelon (if in season) mixed cold coconut milk; or even a fresh chilled Niu (green coconut).

Cocktail will be served "The Drink of a Royal Prince Vaotupu" before dinner. During the Fiafia, you will listen to a melodic Samoan sound of music, watch entertainment by The Royal Haiatea Polynesian show and will be highlighted by a "Tausaluga" (a royal samoan dance) given by a Taupou (Princess) Afioga a Fulotu.

Duration: 5 hours

Minimum 14 people or more.

Notes: Arrangements should be made 12 hours. in advance.

TOUR G - PICNIC TOUR TO AOA VILLAGE:

Driving from hotel through the Heart of Town, Pagatogo, passes American Samoa Museum, Post Office, Banks and Pago Pago village is known as capital of Tutuila, American Samoa. You will be driven by the oceanfront coastline, and backgrounded by lush, green mountainside until you reach the village of Amouli then turn uphill to view the beautiful, sparkling white beaches of Aoa village.

Aoa Village is designated as a camping area for adventurous tourists would like a quiet place to relax in snorkling, picnicking, canoeing and of course fishing.

Arrangements will be made for time to pick you up after a picnic, otherwise, spend a nite and camp there in a Samoan Hut (fale).

Tour departs hotel daily?
from 9:30 till 3:30pm.



TOUR H - VISIT "NIGHT SPOTS" IN SAMOA:

Leave hotel at 9:00pm and drive across Pago Bay to Tumua Place, then return to The Village and ends at Soli's Restaurant or Tepatasi Terrance for disco music

Duration 4 hours.

Tour departs every night except Sunday.

Any cover charge will be included in rates except your own drink.

TOUR I - FA'ASAMOA WAY OF LIFE TOUR:

This tour is specifically for the curious and adventurous.

Leave hotel at 5:30pm for the western side of the island. In addition to villagers and natives relaxing after the days' work you will witness the fading sun as it disappears behind a romantic foreground of a mysterious sea and dark shoreline.

Sometimes near dusk you will arrive at the High Chief's guest house in Leone, the ancient capital of American Samoa. Here a dinner of traditional Samoan cuisine will be served in true native fashion. Samoan entertainers will enhance the enjoyment of your polynesian repast.

After a quiet evening of chatting with villagers, strolling in the village, reading, or any other activity of your choice you will retire for the night on hand-woven mats. The guest house is open so it will be very airy. In the middle of the night, you may be listening to a melody from guitar or a ukulele strumming by the midnight owls native strolling along the road.

You will be awoken in the early morning to the crowing of roosters and stirring of natives preparing for the day's chores. After washing up to an open faucet, you will have a reflection of scramble eggs, sausage, toast, papaya or juice and coffee or tea.

You will then tour rest of the western

side of the island, at the end of which you will be treated to a barbecue picnic at a roaring waterfall in a deep lush tropical jungle.

After an afternoon of exploring, swimming and eating you will be returned to your hotel and civilization.

This unique tour is available daily except Sundays.

Departs hotel: 5:30 pm and return 2:00pm following day.

Minimum: 4 people or more.

TOUR J - TUIMANU'A ISLAND FAASAMOA TOUR:

This is the first time to introduce this Fa'asamoa tour to Manu'a Islands, and is special to anyone who would like to see an unspoiled native land in Ta'u, the capital of Manu'a Island.

This tour is related to Tour I as listed in our brochure for your information.

You will be met and transfer to High Chief Guest Fale (house) in Ta'u, spend a day or two and Go Samoan Way. A guest house is located near white sandy beach by the seaside for you to snorkling, swimming, canoeing and fishing.

In Ta'u, you will visit Lalopua where a Tomb (Burial Ground) of late King of Manu'a by the name of Tuimanu'a.

Optional tours of the island is available to the eastern end village of Fitiuta is known as "Land of Sunrise" in Matasaua. A jungle ride through the lush, green virgin land is worthwhile in listening birds singing on an hour trip. A beautiful fine beach is safe for shelling.

Duration: 8 hours or 2 1/2 hours.

Tour departs daily: 8:00 am return 4:00pm
unless arrange made for one day or 24 hrs.

TOUR K - ISLAND DAY TOUR BY CAR RENTAL:

You will cover all island tours from Tour A to I as listed in a pamphlet in a day or two by hiring a car with a guide or chauffer. You will be driven around to see beautiful scenery of the inland, stop at Leone Waterfall, pool for a swim, hike to Fagaluva Beach behind Futiga, for shelling or a picnic.

Tour commences from hotel at 8:30am and until 4:30pm.

Duration: 8 hours

Car rental rates are shown in brochure for any car would like to hire. The cost of a chauffer or a tour guide is extra \$3.50 per hour.



SAMOAN ROYAL CAR RENTAL RATES:

TOYOTA - CORONA & COROLLA: U.S.
One-day rate (24 hours) - \$ 20:00
Daytime rate (9am - 4pm) - 18:00
Hourly rate (3hrs. Min). - 4:50
PLUS

12¢ per mile and \$3.00 Insurance.

TOYOTA - COROLLA (lift back):

One-day rate (24 hours) - \$ 22:00
Daytime rate (9am - 4pm) - 20:00
Hourly rate (3hrs. Min). - 4:50
PLUS

12¢ per mile and 3.50 Insurance.

TOYOTA - STATION/WAGON COROLLA:

One-day rate (24 hours) - \$ 22:00
Daytime rate (9am - 4pm) - 20:00
Hourly rate (3hrs. Min). - 4:50
PLUS

12¢ per mile and \$ 6:00 Insurance.

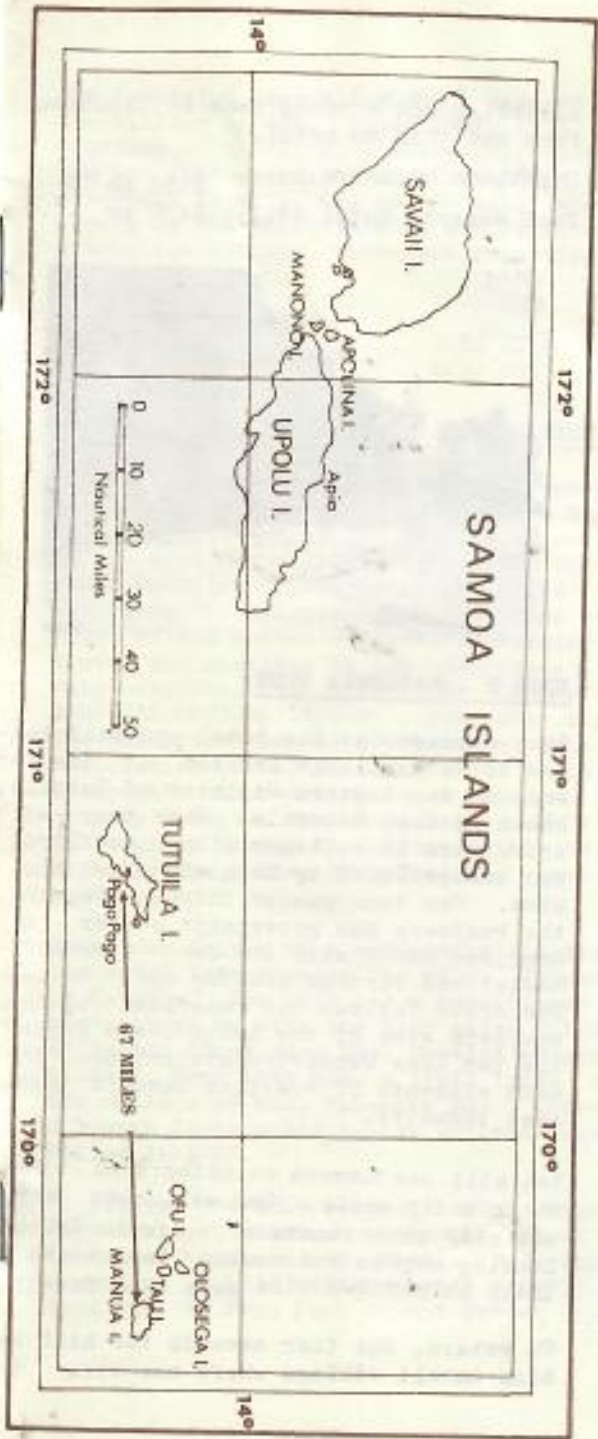
Note: Delivery or Pick-up service to Airport or other destination requested cost \$7.50 one way.

All car rental reservations are to contact to Samoa Tours & Travel Agency, Inc,
P. O. Box 727, Pago Pago
American Samoa, 96799

Telephone: 633-5884 (Main Office)
633-4545 (Hotel desk)
688-7715 (After working hours.)

SAMOA

SOUTH PACIFIC



Samoa Tours & Travel Agency, Inc.

P.O. BOX 727 - PAGO PAGO - AMERICAN SAMOA 96799
 BRANCH OFFICE: PAGO PAGO BAINMAKER HOTEL
 MAIN OFFICE 633-5884 BAINMAKER OFFICE 633-4568
 CABLE ADDRESS: SAMPATOURS

THE OBSERVER

WHAT, CROCODILES?

The number of proposals from overseas to set up business here have been on the increase over the last few years. Most of the proposals have been genuine and well-intended but there have been these which have been far-out, in fact weird.

First, there was the proposal to set up a funeral parlour which although it could well be a normal business undertaking once it was set up, the promise of diverting all corpses coming out of the exit at the National Hospital to the parlour plus the suggestion of laundering profits and channeling them out through diplomatic couriers, killed all the chances of the venture getting off the ground.

The rabbit farm proposal if it had been approved might well do some good to the impoverished local diet but the clandestine manner it was being pushed through aroused enough suspicion to blow out a storm. Besides, the rabbit, a well-known pest, once allowed to breed cannot possibly be controlled and there comes the threat of them doing as much damage to the crops as existing pests if not worse.

And now, who ever has heard of farming crocodiles in a place like Samoa? The suggestion that the crocodile hide business could become a lucrative one for Samoa is a lark. The place can only take a few pet animals. It is well known that the creatures swim back and forth the hugeness of the Florida Everglades, are feared man-eaters in the Congo and the Amazon, and Papua New Guinea is hunting them down.

The one thing about living on the mercy of a faltering economy which continues to show no signs of recovery is that it tempts those who claim they have been done wrong by financial instability to grab quickly at any opportunity opening up.

The temptation, usually, is so overpowering that one's sense of analytical reasoning is shunted and one finds oneself plunging headlong into an involvement which one might later find regretful.

There is the wish to recover quickly in order to fight a winning battle against inflation. The experience can be rewarding to a number who have learned where ambition stops being kind and begins being cruel. Others have not been treated with any friendliness at all by ambition right from the outset.

The way things are happening in this crazy world, someone may well come forward with a proposal to set up a baby farm here for the purpose of exporting to overseas adoption institutions.

The commitment to protect the environment and those living in it against foreign hazards should be everyone's responsibility especially when there is much connivance among government and business people which destroys the ordinary people's efforts to protect for the future.

Amazing it keeps moving

Mika

The amazing thing about this country is that it keeps on functioning even though government helmsmen are away overseas half of the time.

Members of the public have long suspected that some of these overseas trips at taxpayers expense are for government business alright but are also being used for sordid private affairs.

This is a reasonable assumption when one considers the deep involvement of many of our Ministers in commercial enterprises.

The concern is that there has to be a conflict between one's public duties and one's private business; how could one be involved in business and at the same time purport to be serving the interests of the people with just?

The public here may not be aware but in New Zealand an MP, resigned in 1956 from his portfolio of Industries and Commerce when it was publicised that he had taken time off for private business during an official trip to Europe.

Here, people are joking about "ministerial shopping holidays" everytime a Minister leaves on an "official" trip. Perhaps we could follow Great Britain's example and introduce a register where every year the MP's are required to lodge details of their business interests, and the register submitted to Parliament by the Auditor General. Failure to disclose his business interests could result in the forfeiture of an MP's seat.

Our politicians need to be reminded also that Samoans have travelled widely and are better informed than previous generations. They now want activities of government opened up so that they can judge government's performance. They want to see business affairs of Ministers priced opened to ensure that taxpayers money is not spent on running private businesses.

Voters have a part to play too. In the past the tendency was to vote for the candidate who offered more money and food. Its so sad to see this sort of thing going on. The voters are worth far more than a few Eleni and \$10. One's dignity, pride and sense of fairness cannot be bought with money or food.

And remember! Many businessmen can recover costs in a matter of no time. Nothing much is being done to control prices. When politicians start dishing out money and food before election, remember that you have suffered 3 years of hardship while they sat in parliament and did nothing about it.

CROCODILE FARM PROPOSAL RECEIVED

A proposal to set up a crocodile farm here has been received by the Agriculture Department from a resident in West Germany.

This was confirmed by the acting chief livestock officer of the Agriculture Department Vui Leavasa, yesterday.

The details of the application were not revealed by Vui who said simply that the proposal sought the farming here of crocodiles which hides could later be exported.

Vui also did not say who the applicant was.

Neither would he specify on the crocodile species to be farmed.

He said, however, that approval has not been granted and the application has been referred to the Animal Health Division of the University of

the South Pacific School of Agriculture at Alafua for its recommendations.

A spokesman for the university's Animal Health Division confirmed receipt of the application saying that a decision would not be made on the matter until the arrival soon of the

division's new head.

The spokesman declined comment at this stage on likely problems and or benefits from having a crocodile farm here.

Said he: "Let us wait until our new boss has arrived and has considered the proposal."

Turtle Hatchery Project
Lolopue Ataipati
Apia
Western Samoa
5th Aug 1981
R Box 1181

Dear George Balazs

Hallo

I am very very happy writing my letter
you Brother. We are all fine. How are you to
day Brother ~~at~~ we are good to day. my Turtle Project
Running very good only one tell you Brother please you can.
Found my water pump please (Fainakole) & am waiting for you
~~and~~ and William Bodes your way to Pangofang A Samoa
Cool Help you

Art

948-8508
941-6313

Tofa

Patang Talem

ACADEMY THEATRE



*Moana
of the South Seas*

On Monday and Tuesday, August 17th and 18th at 7:30 p.m. the Academy will co-sponsor with the FETU AO and HAWAII Associations, a special screening of Robert J. Flaherty's Moana of the South Seas, filmed in Western Samoa in 1923-24.

Depicting the old "Fa'a Samoa" way of life, Moana was dubbed of value as a document by John Grierson in his review in the New York Sun, 1926. Hence the term, "documentary film".

Moana was also one of the first black and white motion pictures shot entirely on panchromatic film.

Fifty years later, (in 1975), Flaherty's daughter, Monica, returned to the island of Savaii in order to record an authentic sound track for Moana. The track, consisting of natural sounds, Samoan dialog and music, was made with the cooperation of Flaherty's Samoan friends in Western Samoa and Hawaii. **ADMISSION IS FREE**

**THE HONOLULU ACADEMY OF ARTS
900 So. Beretania St., Hono, HI 96814**

The historic strike by Western Samoa's public servants has ended in a considerable success for the strikers. The article below outlines their gains, and presents certain views of Western Samoans on the strike's likely future effects on their society.

Big W. Samoa strike ends, leaving shock waves for the future

After almost 90 days, the Western Samoa public servants' strike (PIM Jul p13) ended on July 2.

The result can only be seen as a success for the striking workers, since the salary rises granted were generally far greater than the government had originally offered. Whereas an 8% rise, to be implemented in two stages with a six-months interval, had been proposed by the government in its 1981 budget, the recommendations of the government-appointed commission of inquiry, which served as the basis for the strike settlement, provided for a 36% rise for workers on salaries of \$788; 27% for those on \$930; 12.44% for those on \$2010; and increases ranging from 6.25% to 7.32% for those receiving up to \$3965.

Those earning \$4110-\$6510 a year will get rises of 6%, and above the \$6710 level, 5%.

Most of the public servants — 4252 — are on the salary scale of \$788-\$2010. Six hundred and fifty-three are on \$2120-\$2675 a year, 356 are on \$2795-\$3285, 364 on \$3415-\$3965, 456 on \$4110-\$6510, and 75 on \$6710 and above.

Announcing the increases, which are expected to cost more than \$2 000 000, the government also foreshadowed the ways in which it planned to raise the revenue to pay for them. These included establishment of a wharf departure tax of \$1 per person, collection of additional income tax following the increases, increasing the airport departure tax from \$3 to \$5, increasing outpatients' fees in public hospitals from 10¢ to 30¢, increasing duty on all dutiable items, and philatelic special sales. Government analysts reckon the increased revenue from these measures will approximately cover the cost of the increased public service salaries.

The question — a vexed one throughout the strike — of reinstatement of striking public servants appears to have been satisfactorily resolved, although some loose ends remained to be tied up as the strike ended. A key factor in the settlement was the last-minute agreement by the Chairman of the Public Service Commission, Esekia Solofa, to reinstate all strikers. On July 1, the day before the planned return to work, it was learned that 207 of the total of 3340 applications for reinstatement which had been made had still not been processed. Mr Solofa, in an emergency meeting with the executive council of the Public Service Association, assured them that there would be no problem with the outstanding 207 cases. On that basis, the PSA leaders announced at a general meeting of the PSA that all strikers should return to work on July 2.

Most interest now centres on the longer-term effects of the strike on Western Samoa's political, economic and social scene — for effects there will certainly be.

Writing for PIM, from Apia before the settlement was reached, prominent journalist Felise Va'a, English-language editor of the weekly *The Samoa Times*, declared:

'If you were in Western Samoa during the time of the strike by Western Samoan public servants, you were likely to take either a pro-government or pro-PSA view.

'In rather mild terms, you were likely to accuse the PSA of callousness towards the public welfare, or government of failing to resolve the legitimate interests of the public servants.

'But one thing became increasingly clear as the strike wore on: probably no other issue has so divided the nation since the 1926-1936 Mau movement as the PSA strike which began on April 6.' (The Mau move-

ment of protest against New Zealand maladministration laid much of the groundwork for the achievement of independence by Western Samoa in 1962, the first Pacific Island country to do so.)

Felise Va'a continued: 'Space will not allow for a thorough discussion of the sociological, economic and political causes and effects of the strike.

'Suffice it to say that it has crippled the Western Samoan government services and economy, and that it may take years to get the economy back right again.

'Since government has already lost millions in revenues as a result of the strike, it can be predicted that a serious depression will hit the economy for the rest of this year and next, and possibly into 1983.

'Socially, the strike has had a disruptive effect in human relationships. Families are divided — bitterly so. A key PSA official is the brother of a cabinet minister, and so on.

'Politically, the strike threatens to shatter the fortunes of Tupuola Efi's political party, and of Tupuola himself.

'So strong is the resentment felt by strikers and their relatives towards government, and of government towards strikers and their supporters, that for many years bitter feelings and memories will persist in a country once thought to be the most stable in the world, socially, economically and politically.

'All that is now in the past. It appears that, for now, Western Samoa is headed for a period of reactionary politics.'

This gloomy view of the future is not entirely supported by comments from a recent visitor to Apia who was interviewed by PIM in Sydney shortly after his return in mid-July.

This gentleman, himself Western Samoan, noted the

almost festive atmosphere prevailing at PSA strike meetings in Apia. 'People would set out from home in the mornings as if they were going to work, but instead they would sit around in the parks, have picnic lunches, concerts and other social activities,' he said. 'One had the feeling that there was no entrenched bitterness about them. It seemed that the good nature of the Samoan people was prevailing over the tensions generated by the strike.'

Where he felt a possible long-term danger lay was in the fact that the government had sought to break the strike by attempting to enlist the *matai* to use their social standing to influence strikers to go back to work.

This had caused great dissent, not least among the *matai* themselves. 'There is a general feeling among the *matai* that they had abrogated part of their traditional rights in the name of nationalism at the time of independence. They feel it is unfair of the government now to attempt to involve them in the affairs of the national state.

'Some *matai* co-operated with the government, and this in turn caused anger among the strikers and their supporters. They saw themselves as trade unionists operating in a modern state and dealing with its government. They resented the attempt to use traditional authorities to influence them in their industrial action,' said the visitor.

'Other *matai* refused to have anything to do with the government's request. This too has its dangers, affecting as it does the existing balances of authority in Western Samoa's society.'

Whatever the eventual effects of the strike may be, it seems clear that the country will never be quite the same after the public service strike of April-July 1981.

'It is true there were strikes before — but never at such strength.' So said Western Samoa's Prime Minister Tupuola Efi of the marathon strike begun in April by members of the country's Public Service Association. A New Zealand observer wrote: 'The first strike by public servants has significant social implications. It represents a major challenge to the matai-dominated political system.' (Only matais — chiefs — can vote and stand for parliament in Western Samoa.) Telecommunications problems both in Australia (where an industrial dispute caused bans on maintenance of equipment), and in Western Samoa, have meant that PIM is able to provide no more than the following skeleton diary of main events of the development and course of the strike. More in PIM August.

W. Samoa public service strike: One for the history books

Early 1980: To combat inflation (estimated to be running at 38% a year), Western Samoa's Public Service Association, in negotiations with the Public Service Commission, sought a 30% pay increase. Agreement was finally reached with the minister responsible for the public service, Asi Eikeni, that there would be a 10% increase payable from June 1980, followed by a further increase of 12.5% from January 1, 1981.

December 1980: The 1981 estimates presented to parliament revealed that the government had decided to grant public servants only an 8% pay rise, to be implemented in two stages, with a six-months interval. No reasons were given for the scrapping of the agreement with Asi Eikeni, and the PSA was given no official statement on the matter.

Early 1981: The PSA appealed, and nearly 4000 marchers turned up at parliament to present a petition supporting a PSA demand for a 15% pay increase. The petition was referred to a committee of mainly government supporters, who rejected it.

March 1981: The PSA decided to make one last appeal, with the understanding that rejection would be followed by immediate strike action. The appeal fell on stony ground.

April 6: The strike began. With telecommunications workers out, the country was virtually isolated from the outside world. Airline, postal, shipping, medical, firefighting and other services were manned by tiny emergency staffs. The government refused to discuss the strike with the PSA, saying negotiations must be carried on through the proper channels with the PSC. It also said

Western Samoa's economy could not stand the cost of the proposed increases, estimated to be \$WS3 million.

April 24: *The Samoa Times* reported: 'The strike's effects are being felt more and more as the absence of the \$½ million injected into the economy fortnightly through government salaries and wages becomes noticeable. Funds entering by way of transfers through the Post Office are also missing from the economy and have thus aggravated the depressed state.' The same issue of the paper reported that the PSA had established a relief fund for its 4000 striking members and had already raised more than \$3000 in cash, not counting food and clothing. PSA president Ieti Tulealo was reported to have gone to Pago 'to contact overseas PSAs and trade unions for support and advice'. Interviewed by the *Times*, parliamentary Opposition Leader Vaai Kolone criticised the government's handling of the strike, saying: 'Government should have solved the problem at the time of the PSA march to parliament, especially as the public servants were already aware of the huge salary increases made for the Head of State, Member of the Council of Deputies, Cabinet Ministers and MPs. They were also aware of the separate deal government made with the doctors and nurses. Under such circumstances government should have carefully weighed the effect of those decisions on the morale of the rest of the public service.' The paper also carried a picture of the third of a series of mass demonstrations and meetings being held regularly by the PSA.

April 29: Prime Minister



Tupuola Efi, reversing his previous stand, announced that henceforth he would assume 'day-to-day direction of negotiations with PSA leaders'. The same issue of the Apia weekly *The Observer* which noted this development, also reported that Western Samoa's Cardinal Taofinu'u Pio had donated \$1000 to the PSA, not, he said, because he supported the strike, but as 'a gesture to show his recognition of the PSA's difficulties'.

May 8: *The Samoa Times* frontpage lead story began: 'Striking members of the PSA will have to return to work by 4pm, Monday, May 11, if they are not to lose the PSC's offer (to regard the period of the strike as a grant) of special leave. If they do not return by that time, they will lose their

Ugapo Ulale, vice-president of Western Samoa's Public Service Association. Note 'striking' T-shirt. — *Samoa Times* picture.

jobs and have to seek re-employment to get back into the service. This was one of three basic decisions made by the Executive Council in a meeting held at Vailima yesterday morning.' The council also ruled that a commission of inquiry would be set up into public service salaries, and that no salaries would be paid to PS workers for the period they were on strike. The Executive Council comprises the Head of State, His Highness Malietoa Tanumafili II, sitting with the Cabinet, and is seen as the highest decision-making body in the land. The strikers' response: a march of about 10 000

— *Continued on Page 68.*



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Strike halts W. Samoa

— Continued from Page 13

people on May 11 rejecting the back-to-work direction.

May 14: Tupuloa announced that the May 7 decisions of the Executive Council represented the government's final position.

May 22: *The Samoa Times* reported: 'Sixty per cent of the public servants are still on strike, according to figures released by the PSC yesterday. Of the 4223 salaried public servants only 1468 are back at their desks with 2755 still on strike. Of this total 617 are teachers ...'

May 23-24: A weekend strike by Electric Power Corporation workers in solidarity with the PSA cut electricity supplies. At about this time, Fiji's Minister for Labour Tomasi Vakatora made a short visit to Apia, accompanied by two top conciliators from his department and from Fiji's Tripartite Forum, which links government, business and unions. They said they had come to 'advise, not settle', following expressions of interest by Tupuloa in Fiji's unique methods of industrial conciliation.

June 1: The 19th annual celebrations of Western Samoa's independence reflected the depth of the social divisions caused by recent events. Official celebrations were crammed into one day (Monday June 1) instead of the customary three. They were less well attended than usual.

June 2-3: The PSA 'took over' the remaining two days of the traditional independence festivities, with a Tuesday morning protest march of 10 000 along Beach Road, and afternoon festivities. More activities were performed on Wednesday. *The Observer* of June 5 commented: 'If public attendance at the two separate independence celebrations is a criterion indicating in which direction public sympathy and support were bending, then the PSA rally was decidedly the one.' Participation by old people, school children and University of the South Pacific students and staff was a notable feature of a number of PSA activities.

June 5: *The Observer* reported: 'The government has announced that the Executive Council has approved the recommendations of the commission of inquiry on public service salaries established by it on May 7.' The rises recommended would reportedly cost the government \$1 559 610. They were to be effective from June 1. At PIM's press time, it was still unclear whether the PSA would accept them. The PSA, meanwhile, was engaged in a Supreme Court action to determine if their strike action was within the law, a point vital for reinstatement prospects. But according to the government newspaper *Savali*, 'the Executive Council has resolved to recommend to the PSC that in the consideration of applications for reinstatement by persons who have been on



Tomasi Vakatora — 'To advise, not to settle'.

strike, the PSC should exercise the powers at its discretion with benevolence'.

International support: Although scores of messages have been received by the PSA from trade unions in foreign countries, their support has been mainly moral, and to some extent financial. When PSA leader Ieti Taulealo appealed to the conference of the New Zealand Federation of Labour in May for a ban on all shipping to and from Western Samoa, and a ban on Polynesian Airlines flights out of Auckland, delegates seemed unprepared to take such action. FOL president Jim Knox presented the Western Samoa leader with a cheque for \$1000, and called for a collection in support of the strike from FOL delegates as individuals.

Heroin trafficker involved in mob network

Fishing scheme called

By James Dooley
Advertiser Staff Writer

Heroin trafficker John C.H. Lee tried to involve the government of Western Samoa and Japan's huge tuna fishing fleet in a fish wholesaling business here alleged in federal court to have been "a front for narcotics and smuggling activities." The Advertiser has learned.

Lee, a federal probationer, was more recently involved in the burgeoning condominium time-sharing business, starting out in 1979 with a company founded by a Las Vegas man convicted of massive federal income tax violations in 1978.

In the middle of both the fishing and the time-sharing enterprises was former Waikiki and San Francisco entertainment promoter Ofati "Al Ofati" Malepeai.

In a recent interview, Malepeai, or Ofati, as he is more commonly known, acknowledged a long-standing personal and business associa-

tion with Lee but said he was unaware of Lee's criminal activities.

Lee, 44, of Waikiki, was sentenced to 15 years in prison in December by federal Judge Samuel King, under a 1974 conviction for selling 2.2 pounds of pure Asian heroin to federal investigators.

Lee had been on probation since that conviction, but King revoked his probation and sentenced him to prison because of the contents of a secret government videotape played in court.

On the tape, which recorded an hour-long discussion between Lee and government informant Takehiko Nozaki, Lee betrayed an intimate and extensive involvement, with members of both Japanese and Hawaii organized crime.

In addition to dropping the names of numerous local and Japanese hoodlums, Lee several times on the videotape mentioned the names "Al" and "Ofati."

Ofati told The Advertiser he was a one-third

Monday, March 30, 1981 HONOLULU ADVERTISER

front for smuggling

partner with Lee and Nozaki in a Kaimuki fish and meat wholesaling business.

Nozaki's name surfaced in other testimony during the same hearing. Honolulu police Officer Don Carstensen testified that in 1978, he encountered Lee and Nozaki in Waikiki in the company of four yakuza — members of Japanese organized crime — staying at a Waikiki hotel.

In addition to the fish and meat wholesaling business, Nozaki operated a karate school in the Kaimuki area and owned an adult bookstore called The Crazy Shop on Lewers Street in Waikiki that catered to Japanese tourists.

Nozaki is believed to be the first Japanese national to have entered the U.S. marshal's Witness Protection Program. He has been given a new identity and moved to an undisclosed location on the Mainland.

Nozaki testified in federal court here last week under tight security in a sentencing hearing for fellow former pornographer Alvin Nunes.

In that hearing, Nozaki admitted to having planted in 1974 a small bomb which exploded under the hood of a car driven by Lee. The car was owned by yakuza Wataru "Jackson" Inada.

Lee was uninjured by the explosion. Inada was later murdered shortly before he was to stand trial on heroin smuggling charges which involved southern California Mafia figures.

Ofati told The Advertiser recently that the fish business he was involved in was legitimate as far as he knew, but that he had "a premonition" that Lee and Nozaki might be up to no good.

Lee and Nozaki sometimes would exclude Ofati from business discussions by going into another room to speak privately, he said. They knew Ofati's feelings against illegal ac-

See Tuna '81 Page A-4

Tuna scheme linked to smuggling of heroin

from page one

tivities and respected his attitude, Ofati said:

"See, lots of times, I'd go (to Nozaki's) with John, those two would go in a room and they'd talk. John also had a lot of respect for me that way. They know I'm straight.

"I had a premonition, sure. You're only human. You're gonna sense something secretly is going on.

"But then every time we talk about illegal stuff, I'm always the one who was (saying) 'Eh, we can beat it by doing it this (legal) way.'"

Once when he and Lee were returning from a trip to Samoa, Ofati said, the two were stopped and searched by U.S. Customs at Honolulu Airport because of "John Lee's reputation."

Ofati said his end of the business was to secure a fishing permit from the government of Western Samoa for deep-sea tuna fishing. Lee and Nozaki, Ofati said, were to line up the Japan Tuna Fishing Association.

The idea was to obtain fresh aku at low prices, then wholesale and retail the fish here below prevailing rates, Ofati said.

He said that after a year of work, he finally obtained the necessary permit from the Western Samoa government.

Although Ofati secured the fishing permit, it turned out to be too restrictive. The financial backing of the Japanese fishing industry promised by Lee and Nozaki also failed to materialize, according to Ofati.

That lack of financing killed a good idea, he said.

Ofati said he shipped four 1,500-pound loads of fresh aku to Honolulu in 1978, around Christmas time. Three of the loads were spoiled, but the fourth landed here at a cost of 85 cents per pound, was sold for \$3.50 a pound when the prevailing price elsewhere in Honolulu was \$10-\$12 a pound.

It wasn't the only Ofati business venture involving Lee and his associates that went sour.

Ofati was listed in state business records as director of a firm called Kaloo Inc., which involved Lee and several other men, including Frank R. Moon, a maintenance man once employed by Ofati in a Polynesian revue he produced in San Francisco.

"They come in, I buy them rounds, you know, buy them drinks, known hoodlums, known guys.

"Sometimes they would call me up and say, 'We have a VIP coming in, please take care of them.' I take care of them.

"Nothing illegal about that, but because of me doing that, I'm indirectly involved. That's a sad state of life. I'm indirectly involved and all I wanted to do was help."

"Ever since I got involved in the nightclub business, I take care of the (hoodlums).

Another name mentioned by Lee on the videotape is that of Marcus Lipsky, a Los Angeles businessman who died last year.

Lipsky was once named by a congressional committee as a member of the Al Capone mob in Chicago, where he was born and raised. He moved to the West Coast, stayed clear of the law, and became a millionaire businessman.

Among his interests at one time was a large financial piece of the Don Ho show, which brought him into contact with Ofati, once the manager of Ho's showroom, the Polynesian Palace.

Ofati was asked why Lee would invoke Lipsky's name on the videotape.

"I have no idea," he said. "John does not know the man. John does not know Mr. Lipsky."

He speculated that Lee may have been trying to impress the informant with Lipsky's reputation "from his younger days."

Ofati described Lipsky as "a very influential man" but characterized Lee's use of the name as "a lot of big talk that means nothing."

When Lee was arraigned before the U.S. magistrate in October on probation violation charges, he said he was president of a company called Worldwide Best Products Inc., a time-sharing concern.

Ofati told The Advertiser he got Lee involved in the time-sharing industry in 1978 with the company Ofati worked for until last month, Grand Flamingo Corp., which has converted the White Sands Hotel in Waikiki to time-sharing.

"I knew time-sharing was new to Hawaii and I knew there was a lot of time-sharing companies would be looking for a Hawaii know-it-all, a person who knows Hawaii," Ofati said.

"And I know John Lee knows Hawaii, he has some friends, so I told him why don't you do that?"

Moon, whose name also was mentioned on the videotape, has a record of heroin addiction. He was recently convicted on a drug prescription forgery charge.

When interviewed by The Advertiser, Ofati originally said his only connection with Moon was through the San Francisco production.

When told that his name appeared in business records in connection with Kaleo Inc., he said he passively acquiesced to the use of his name by Moon and others in connection with the company but that his involvement went no further than that.

One of the other men involved with Moon and Lee in these companies was Richard Taylor, a small-time confidence man with a prison record on the Mainland, who became close, for a while, to Alema Leota.

Leota, the reputed former head of Hawaii organized crime, last made news in 1978 when he ran for governor as a non-partisan candidate.

His name came up several times on the Lee videotape.

During the gubernatorial campaign, Leota was a frequent visitor to Kaleo's Ward Avenue office.

Another man mentioned by first name on the tape is Cyril "Smokestack" Chung, another heroin addict recently charged with a series of bank robberies in Hawaii. Ofati acknowledged knowing Cyril Chung.

Asked how he could be friendly toward, or in business with, so many people who are known heroin traffickers or users, Ofati said he was "a victim of circumstances."

"Here you are talking to me about heavy stuff, that I know absolutely nothing about, but I know, because of my associations, I can be implicated," he said.

"Originally he was instrumental in helping me get a (booth) location on Kalakaua, through a friend of his. I paid John a commission. But then after that, John wanted to go on his own," Ofati said.

So Lee broke off from Ofati, and became a "vicious competitor," Ofati said:

"I lost a few things because of him."

Grand Flamingo Corp. is a wholly owned subsidiary of a company that used to be known as Preferred Equities Corp.

The founder of Preferred Equities and the man Ofati referred to as "the chairman of the board," is Leonard Rosen, who last month completed a three-year federal probation sentence for massive tax violations.

Rosen in 1978 pleaded no contest in federal court in Nevada to charges of failing to pay some \$5 million in income taxes for the years 1970-75. Rosen was fined \$5,000 and placed on three years' federal probation.

Las Vegas newspapers at the time said the reason for the light sentence was that Rosen had agreed to cooperate with the IRS in an investigation of a Las Vegas "casino skimming operation" in which millions of dollars of untaxed gambling revenue was moved to offshore "banks" in the Bahamas, via Mexico. The status of that investigation is unknown.

Rosen's name surfaced in another IRS offshore bank investigation called "Project Haven," centering on Castle Bank and Trust in the Bahamas.

The IRS recently slapped a \$5 million tax lien here on Rosen and his ex-wife, a Honolulu resident, in connection with the 1978 case.

Rosen and his wife of 40 years were divorced last year in Honolulu. In the divorce papers, Rosen listed himself as a "consultant" to Preferred Equities, earning \$48,000 a year.

ADVICE FOR VISITORS

Please remember that it can become very hot here, therefore, when you are out and about, we suggest you:

- * drink plenty of liquids to prevent dehydration
- * do not over-exert yourself
- * protect yourself from the hot sun.

Mosquitoes are common throughout the country, so it is advisable to carry an insect repellent with you.

Entry is free to all of the National Parks and Reserves.

For further information contact;

National Parks and Reserves Section,
Forestry Division,
Department of Agriculture and Forests,
P.O. Box 206,
APIA.

National Parks and Reserves



Western Samoa

WHAT ARE THEY?

'Conservation means to 'protect and preserve' and can be applied to almost everything from good land use-to saving energy-to reusing a glass bottle-to establishing NATIONAL PARKS AND RESERVES

The function of a National Park or Reserve is to conserve important natural or cultural features which are of benefit to the country. The many National Parks and Reserves established around the world collectively protect important aspects of the world we live in.

NATIONAL PARKS

NATIONAL PARK has a special meaning. It has been defined internationally as an area of NATIONAL territory, which has special scientific, educational, recreational and scenic interest that is properly controlled and protected by the highest competent authority in the country. National Parks protect and preserve selected areas of the national environment for all time. They must be sufficiently large, to ensure the sanctity of their contents, with one or more ecosystems not materially affected by man, and where visitors are allowed to enter under special conditions for inspirational, educative, cultural or recreational purposes.

RESERVES

RESERVES, a similar concept, but on a smaller scale, are usually set aside with a particular purpose in mind. For example: nature, recreation, historic or marine reserves. These areas play an important role in preserving specific sites and so compliment the National Park system.

WHY HAVE THEM?

The reasons for completely protecting natural areas are many and varied.

- * They provide a reservoir of plants which:
 - a) may be capable of making a substantial, and still unknown, contribution to the world's nutrition-at present 90% of the world's food comes from only 12 species!
 - b) contribute many important drugs, with the possibility of providing many more-nearly half of all prescription medicine contains a drug of natural origin and yet only 5% of all plants have been studied for their medicinal value!
- * They provide a home for wildlife, which may be required in the future as a base for research into high protein food sources.
- * They protect watersheds and ground-water supply areas, ensuring an adequate flow and quality of water and preventing erosion.
- * They protect the environment of cultural, archeological, historical and natural areas.
- * Provides a basis for tourism.
- * They provide aesthetic pleasure and opportunities for healthy and constructive recreation.



ADMINISTRATION

In 1974 the National Parks and Reserves Act was passed in Western Samoa. This legislation provides for the establishment, preservation and administration of the National Parks and Reserves for the benefit of the people of Western Samoa. The National Parks and Reserves section of the Forestry Division, Department of Agriculture and Forests is responsible for their management and maintenance.

MANAGEMENT

The aims of management are:

- * establishing examples of each type of Reserve, ensuring that as many of the different types of vegetation and wildlife as possible are conserved.
- * improving and developing appropriate facilities, to enable the full enjoyment and appreciation of the Reserves.
- * promoting public awareness, understanding and appreciation of these areas, the concepts of National Parks and Reserves, and the need for conservation.
- * protecting the established Reserves.

So far six areas have been set aside. These are:

- O le Pupu-Pu'e National Park
- Mt Vaea Scenic Reserve
- Palolo Deep Marine Reserve
- Stevenson Memorial Reserve
- Togitogiga Recreation Reserve
- Vailima Botanical Garden Reserve

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APIA.



PALOLO DEEP MARINE RESERVE

This Reserve, established in December 1979, is situated just off Pilot Point (behind the Apia wharf), only one mile from the centre of Apia.

Palolo Deep is the name given to a large 'hole' in the reef flats, which hosts a particularly good display of corals and small fish.

The Deep is only a short distance from the shore and provides a safe viewing area for swimmers equipped with a mask and snorkel. The accessway at Matautu is well marked.



O LE PUPU-PU'E NATIONAL PARK

This is Western Samoa's first National Park, set aside by the Government in 1978. The Park, which is about 7,000 acres, runs from the top of the island's main ridge-between Mt Le Pu'e and Mt Fito-down to the coastal cliffs of O Le Pupu, and preserves a wide range of the island's vegetation and its wildlife.

Facilities are being developed to assist visitors to appreciate and enjoy the Park. A short track, giving impressive views of the coast and the lava field formations, has already been constructed along the O Le Pupu coast.

There is an Information and Display Centre at Park Headquarters, Togitogiga, 16 miles from Apia by tar-sealed road.



SAVAI'I ISLAND



MT VAEA SCENIC RESERVE

Mt Vaea is the prominent hill overlooking Apia. The Reserve covers 128 acres of its eastern facing slopes and contains a significant amount of natural forest and a variety of wildlife-despite the fact that much of it has been disturbed and modified by past activities. Much of the lower slopes were replanted with exotic species following severe storm damage in 1963.

Near the entrance to the Reserve, picnic facilities and tracks are being developed adjacent to the Vailima stream, which also provides a centre of interest with its swimming pool and waterfalls.

The entrance to this Reserve, the Stevenson Memorial Reserve and the Vailima Botanical Garden, is at Vailima -just below the Head of State's official residence-approximately 3 miles from the Apia Post Office and is easily reached by bus or taxi.



- 1- Stevenson Mt
- 2- Mt Vaea Scenic
- 3- Vailima Botanical



MT VAEA SCENIC RESERVE

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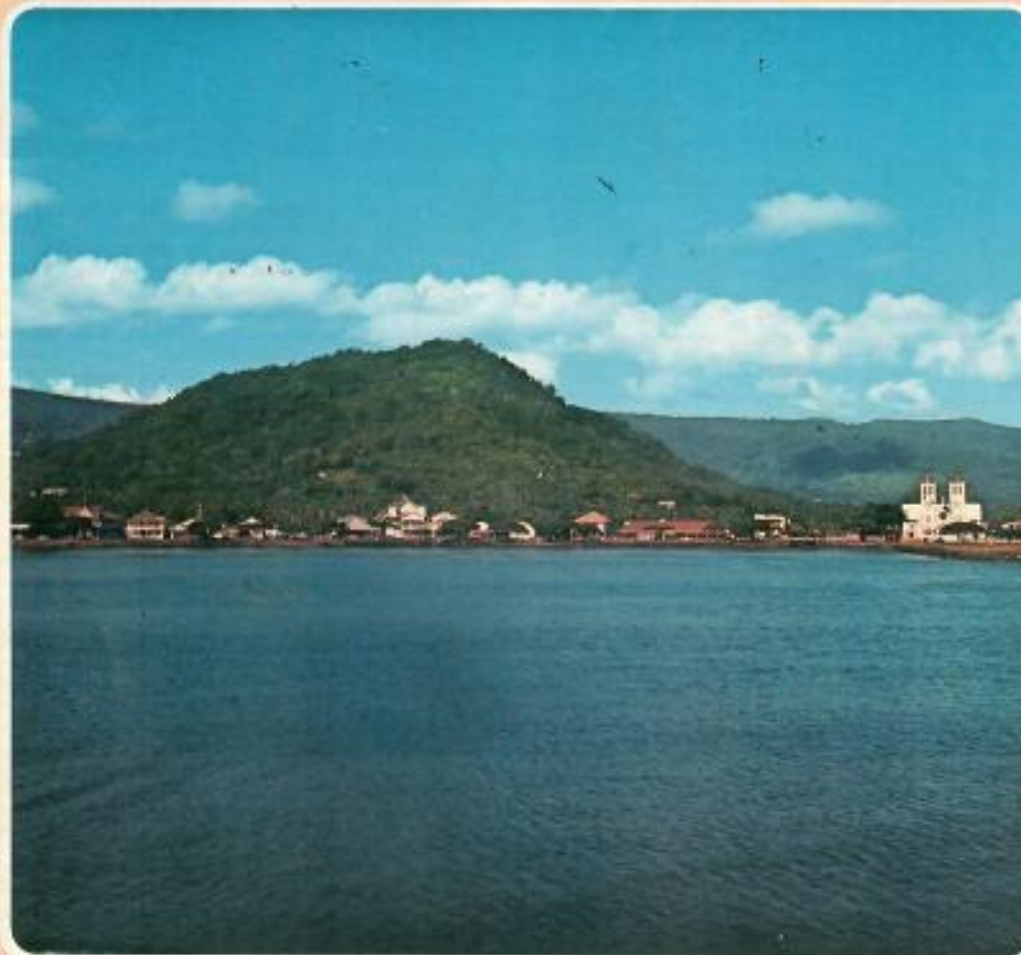
VAILIMA BOTANICAL GARDEN

This area is currently being developed having been reserved in 1978. It is intended to plant a variety of species representative of the flora of the Pacific Basin, however this will be a long term project.

A loop track has been constructed through the area, which includes an experimental forestry trial. This provides an interesting walk and the round trip takes about 45 minutes to complete. The total area of the proposed Gardens is about 30 acres, lying between the Head of State's residence and the Mt Vaea Scenic Reserve's carpark at Vailima.



**SAMOA OCCIDENTALES
WESTERN SAMOA
WEST-SAMOA
SAMOA OCCIDENTALI**



Marka



SUPERFICIE (km²)
AREA (sq. km)

FLÄCHE (km²)
SUPERFICIE (kmq)

2.848

NOMBRE D'HABITANTS
INHABITANTS

BEVÖLKERUNG
ABITANTI

151.894

CAPITALE
CAPITAL

HAUPTSTADT
CAPITALE

APIA

habitants / inhabitants

Einwohner / abitanti

30.000

PRINCIPALES VILLES
PRINCIPAL TOWNS
WICHTIGSTE STÄDTE
CITTA PRINCIPALI

**FALEFA, ALEIPATA, SALANI, LEFAGA
(UPOLU), SALELOLOGA, SALA'ILUA,
MATAVAI, ASAU (SAVA'I).**

Les Samoa occidentales sont constituées par deux îles principales : Savai'i et Upolu. D'origine volcanique, ces îles au relief accidenté et montagneux sont couvertes de forêts très denses. Le sommet le plus élevé est le Mont Silisili qui culmine à 1.858 mètres dans l'île de Savai'i.

Le pays a un climat tropical tempéré avec des températures qui s'échelonnent de 22° à 30°C et un ensoleillement qui excède 2.500 heures. Les mois les plus frais, de mai à novembre, sont également les plus secs. La moyenne des précipitations, surtout abondantes de novembre à avril, est de 3.500 mm par an.

HISTOIRE

Les Samoa occidentales passent pour être le "Berceau de la Polynésie". Savai'i s'identifie à l'île légendaire de Hawaiki d'où les Polynésiens seraient partis sur de grands canots pour se répandre dans le Pacifique avant de peupler les îles qui vont de la Nouvelle-Zélande à l'île de Pâques et à l'île aujourd'hui très moderne d'Hawaï.

Si on ne sait pas à quand remonte exactement le premier peuplement polynésien dans les Samoa occidentales, un Hollandais, Jacob Roggeveen, fut en 1722 le premier Européen à apercevoir ces îles qu'il appela "îles du Navigateur".

Au début du siècle, Apsa fut l'enjeu d'intrigues impérialistes entre l'Allemagne, la Grande-Bretagne et les Etats-Unis, pays qui visaient tous à contrôler les Samoa occidentales. L'Allemagne finit par l'emporter alors que les Etats-Unis obtenaient la mainmise sur les îles aujourd'hui dénommées Samoa américaines. En 1914, avec le déclenchement de la première Guerre mondiale, la Nouvelle-Zélande envahit le territoire qu'elle garda sous sa tutelle jusqu'en 1962.

Les Samoa occidentales dont la devise est "Fondées sur Dieu" sont depuis 1830, année où le missionnaire John Williams débarqua à Savai'i, un Etat profondément chrétien. Actuellement, presque tous les Samoans appartiennent à une église.

La population est en grande partie d'origine polynésienne. On trouve cependant, mais en minorité, quelques groupes d'Européens et de Chinois. La langue principale est le Samoan, d'origine polynésienne.

AGRICULTURE, FORETS, ELEVAGE ET PECHE

L'économie des Samoa occidentales repose sur quatre productions agricoles : le coprah, le cacao, les bananes et le bois. Cependant, depuis peu, la production de taro et de taamu a dépassé celle des bananes.

En 1975, 19.341 tonnes de coprah furent exportées pour une valeur de 2.603.000 dollars (WS). En 1976, ces exportations portèrent sur 11.921 tonnes pour une valeur de 1.893.000 dollars (WS) et les prévisions pour 1977 sont de 18.000 tonnes pour une valeur de 5.400.000 dollars (WS).

Les exportations de cacao s'élevèrent à 1.459 tonnes pour une valeur de 1.179.000 dollars WS en 1975, à 1.644 tonnes pour une valeur de 2.230.000 dollars en 1976 et devraient être de l'ordre de 1.500 tonnes avec une valeur de 3 millions de dollars WS en 1977.

En 1975 et 1976, les exportations de bananes ont été respectivement de 18.948 caisses (de 28 kg)

(valeur : 53.000 WS dollars) et 52.880 caisses (valeur : 144.000 WS dollars). Les prévisions pour 1977 ne portent que sur 20.000 caisses (valeur : 54.000 WS dollars), cette baisse ayant pour cause essentielle les violents orages qui eurent lieu au début de l'année.

Les exportations de taro et taamu sont passées de 19.855 caisses de 36 kg (valeur : 95.000 WS dollars) en 1975 à 77.405 caisses (valeur : 364.000 WS dollars) en 1976 et devraient être de l'ordre de 80.000 caisses avec une valeur de 380.000 WS dollars en 1977.

Une des principales industries en développement dans les Samoa occidentales est l'industrie du bois. Une scierie fut créée à Asau pour tirer profit des nombreuses essences tropicales, notamment des bois durs. Gérée à l'origine par une société américaine, cette entreprise est aujourd'hui dirigée par "Samoa Forest Products", société mixte à capitaux nationaux et australiens. Depuis 1974, les cours du bois ont enregistré une hausse moyenne de 15 % et devraient encore augmenter. En 1976, les exportations de bois se chiffèrent à 65.000 WS dollars. Les revenus prévus pour 1977, année de création de la nouvelle société, sont également de 65.000 dollars mais ils devraient atteindre 300.000 dollars en 1978.

Encore peu importante, la pêche industrielle est en plein développement. Grâce à l'aide internationale, des fonds sont maintenant disponibles pour que se créent dans les villages des sociétés de pêche à participation mixte. L'intérêt international pour le potentiel de pêche des Samoa occidentales devrait se manifester à la suite de la détermination d'une zone économique exclusive qui s'étend sur 200 milles marins (322 km) autour des côtes.

Les produits de l'élevage des Samoa occidentales sont presque exclusivement destinés au marché local. Dans le cadre du projet "du bétail sous les cocotiers", le nombre de têtes de bétail est en nette augmentation. Un programme de développement des laiteries doit suivre la création de coopératives laitières dans le pays. Outre le bétail, porcs et poulets sont aussi élevés pour la consommation locale.

INDUSTRIES

Les Samoa occidentales n'ont pas d'industries très importantes bien qu'un grand nombre d'industries légères se chargent d'approvisionner le marché local. Dans la gamme de leur production figurent produits en béton, gaz industriels et domestiques, peintures et divers matériaux de construction, vêtements et crèmes glacées.

Cependant, dans le cadre de certains programmes d'aide, des industries orientées vers l'exportation sont en voie de création. Le Gouvernement des Samoa occidentales s'occupe particulièrement d'aider les investisseurs étrangers à créer des sociétés mixtes dans le pays. Parmi les mesures d'encouragement aux investissements figurent des privilèges douaniers. Avec l'accord du Contrôleur des Douanes, des abattements seront consentis sur les droits de douane à acquitter pour les composants importés par une société exportatrice. Le Ministre des Finances peut également consentir aux sociétés des taux d'amortissement particuliers. Dans le cadre de l'"Enterprise Incentives Act", le Gouvernement peut accorder à toute entreprise qui a été agréée une

période d'exonération fiscale allant jusqu'à cinq ans, et même éventuellement au-delà.

Enfin, la main-d'œuvre est relativement abondante aux Samoa occidentales et les salaires sont assez modérés.

PARTENAIRES COMMERCIAUX

Le principal partenaire commercial des Samoa occidentales est la Nouvelle-Zélande. En 1976, les exportations vers la Nouvelle-Zélande s'élevèrent à 1.987.000 WS dollars, alors que les importations en provenance de ce pays se chiffraient à 6.544.000 WS dollars.

Au cours de la même année, l'Australie importa pour 206.000 WS dollars des marchandises de Samoa et exporta vers ce pays pour 4.719.000 WS dollars. Les exportations vers l'Allemagne fédérale s'élevèrent à 1.907.000 WS dollars, tandis que les importations étaient de 422.000 WS dollars.

TOURISME

C'est depuis 1965 seulement que l'industrie du tourisme est sérieusement prise en considération aux Samoa occidentales. Un nouvel hôtel de luxe, l'hôtel Tusitala, vient d'être achevé. En 1976, 11.787 touristes visitèrent les Samoa occidentales contre 9.704 en 1975.

Tout en encourageant l'industrie touristique, le Gouvernement de Samoa est resté conscient du désir du peuple : respecter "fa'a Samoa", c'est-à-dire la manière traditionnelle de vivre des Samoans. Ainsi, la culture de la nation ne saurait en aucune façon se dégrader pour satisfaire les besoins des touristes.

Toute la vaste gamme d'objets artisanaux fabriqués dans les Samoa occidentales à partir du bois et des fibres locales témoigne d'une grande dextérité et d'une excellente qualité.

Marka



Western Samoa consists of two main islands, Savai'i and Upolu. Being volcanic in origin the islands are rugged and mountainous, covered in thick native forest. The highest peak is Mt. Silisilu, 1,658 metres, on Savai'i.

The country has a mild tropical climate with temperatures ranging from 22° - 30°C and more than 2,500 hours of sunshine as well as an average of about 3,5 metres of rain a year with most of it falling between November and April. The cooler months, May through to November, are also the driest months.

HISTORY

Western Samoa is believed to be the "cradle of Polynesia". Savai'i is identified as the legendary island of Hawaiki from where the Polynesian people, sailing in great canoes, spread across the Pacific until the day when they populated islands from New Zealand to the Easter Islands and up to modern day Hawaii. The time of the first Polynesian settlement in Western Samoa is not known but the first European, a Dutchman, Jacob Roggeveen, sighted Samoa in 1722 and called it the Navigator Islands.

At the turn of this century, Apia was the centre of an imperialistic intrigue when Germany, Great Britain and the United States plotted the control of Western Samoa. Eventually it went to Germany with the United States taking American Samoa. In 1914 with the outbreak of World War One, New Zealand invaded the territory and it was to remain in New Zealand hands until eventual independence in 1962.

Western Samoa with its motto "Founded on God" has always been a strong Christian state since 1830 when the missionary John Williams landed on Savai'i. Today, almost every Samoan belongs to a church.

The majority of Samoans today are of Polynesian stock with small minority groupings of Chinese and Europeans. Samoan, a Polynesian language is the major language.

AGRICULTURE

Western Samoa is dependent on four agricultural crops : copra, cocoa and bananas and timber. Recently taro and taamu production has exceeded bananas.

In 1975, 19,341 tons of copra worth \$ (WS) 2,603,000 were exported compared to 11,921 tons worth \$ (WS) 1,893,000 in 1976. The forecast for 1977 is 18,000 tons worth \$ (WS) 5,400,000.

In 1975, 1,459 tons of cocoa worth \$ (WS) 1,179,000 were exported as against 1,644 tons worth \$ (WS) 2,230,000 in 1976. The forecast for 1977 is 1,500 tons worth \$ (WS) 3,000,000.

In 1975, 18,948 cases (28 kilogram) of bananas worth \$ 53,000 were exported whereas in 1976, 52,880 cases of bananas worth \$ 144,000 reached external markets. The forecast for 1977 is 20,000 cases worth \$ 54,000. Heavy storms early in 1977 caused the drop.

In 1975 19,855 cases (36 kilograms) of taro and taamu worth \$ (WS) 95,000 were exported. This export volume rose to 77,405 cases worth \$ (WS) 364,000 in 1976. The forecast for 1977 amounts to 80,000 cases worth \$ (WS) 380,000.

One of the major growing industries in Western Samoa is that of forestry. A mill was established in Asau drawing on the large quantity of tropical hardwood. Originally managed by an American company, the mill is now operated by Samoa Forest Products, a company owned by Government and Australian interests. Taking a yearly average, timber prices have risen by 15 % since 1974 and are even expected to keep on growing. Timber exports were worth \$ (WS) 65,000 in 1976 and are expected to keep

the same value in 1977 when the new company was formed. Such exports should amount to \$ (WS) 300,000 in 1978.

The livestock industry in Western Samoa is aimed almost exclusively at the local market. Cattle under a "cattle under coconuts" project are increasing in number. A dairy development programme will follow the establishment of dairy cooperatives in Western Samoa.

Other livestock kept for domestic production include pigs and chickens.

The fishing industry at this time is still on a small scale but developing. With the use of international aid, funds are now available for fishing industry ventures based on villages. With the declaration of a 200 mile (322 km) exclusive economic zone around the coast, international interest in Western Samoa's fishing potential will surely follow.

INDUSTRIES

Western Samoa has no major industries although a large number of light industries are concerned with supplying the local market. Local production includes concrete products, industrial and domestic gases, paints and sundry building materials, clothing and ice cream.

However, under certain aid schemes some export orientated industries are underway. The Western Samoan Government is especially concerned with assisting foreign investors to establish ventures in the country. Among the incentives available are duty concessions. Upon the approval of the Collector of Customs, rebates will be made on duties paid on the imported components of a firm's exports.

The Minister of Finance may authorise special depreciation rates for firms. Under the Enterprises Incentives Act the Government may grant an initial tax holiday of up to five years for any approved enterprise. This tax free period can be extended.

Labour in Western Samoa is relatively plentiful and wages are rather low.

TRADING PARTNERS

Western Samoa's major trading partner is New Zealand. In 1976 Western Samoa sold \$ (WS) 1,987,000 worth of goods to New Zealand while the latter sold \$ (WS) 6,544,000 worth of imports to Samoa.

In the same year Australia took \$ (WS) 208,000 of Samoan exports while \$ (WS) 4,719,000 worth of Australian goods were imported.

Samoan exports to the Federal Republic of Germany were worth \$ (WS) 1,907,000 while imports were worth \$ (WS) 422,000.

TOURISM

It is only since 1965 that the tourist industry in Western Samoa has been given any serious consideration. A new luxury hotel, the Hotel Tusitala, has been recently completed. In 1976, a total of 11,787 tourists visited Western Samoa compared to 9,704 in 1975.

In encouraging a tourist industry the Samoan Government has been especially aware of the desire of the people to maintain "fa'a Samoa", the traditional Samoan way. As such, the culture of the nation is in no way allowed to be debased to meet tourist needs.

A wide range of local crafts are made from local timber and fibres. The quality of the crafts available is considered especially high in Western Samoa.



Explorer

Le Samoa Occidentali sono formate da due isole principali Savaii e Upolu. D'origine vulcanica, queste isole dal rilievo accidentato e montagnoso sono ricoperte da foreste molto dense. La cima più alta è il monte Sillili che tocca i 1.858 m, nell'isola Savaii.

Il paese gode di un clima tropicale temperato con temperature che variano dai 22 ai 30° ed è soleggiato per più di 2.500 ore. I mesi più freschi, da maggio a novembre, sono anche i più asciutti. La media delle precipitazioni, abbondanti soprattutto da novembre ad aprile, è di 3.500 mm l'anno.

STORIA

Le Samoa Occidentali sono probabilmente la "Culla della Polinesia". Savaii viene identificata con l'isola leggendaria di Hawaiki, da dove cioè sarebbero partiti i Polinesiani su grandi barche, per spingersi in tutto il Pacifico prima di popolare le isole che vanno dalla Nuova Zelanda all'isola di Pasqua e all'isola oggi modernissima di Hawaii.

Anche se non si sa con precisione a quando risalga il primo popolamento polinesiano nelle Samoa Occidentali, un olandese, Jacob Roggeveen, per primo scopre queste isole che chiamò "isole del navigante".

All'inizio del secolo, Apia fu la posta d'intrighi imperialisti fra Germania, Gran Bretagna e Stati Uniti che miravano al controllo delle Samoa Occidentali. La Germania vinse la partita mentre gli Stati Uniti ottenevano il sequestro delle Samoa dette oggi americane. Nel 1914, con lo scoppio della Prima Guerra Mondiale, la Nuova Zelanda invase il territorio che mantenne fino al 1962.

Le Samoa Occidentali, il cui motto è "Fondate su Dio" sono, dal 1830, anno dello sbarco del missionario John Williams a Savaii, uno stato profondamente cristiano. Attualmente, quasi tutti i Samoani appartengono ad una Chiesa.

La popolazione è in gran parte d'origine polinesiana. Si trova però come minoranza, qualche gruppo europeo e cinese. La lingua principale è il samoano, d'origine polinesiana.

AGRICOLTURA, FORESTE, ALLEVAMENTO E PESCA

L'economia delle Samoa Occidentali si basa sulle produzioni agricole: copra, cacao, banane, legname. Però da qualche tempo la produzione di taro e di taamu ha oltrepassato quella delle banane.

TURTLES

C O P I E

AG: 13/3/13
SER: 107

Department of Agriculture,
Forests & Fisheries

9 September 1971

Dr. Kiyoshi Yamazato,
Biology Department,
University of the Ryukyus,
Naha, Okinawa,
RYUKYU ISLANDS.

Dear Dr. Yamazato,

Export of Hawksbill Turtles
from Western Samoa to the
Ryuku Islands

Following upon a recent advisory visit by
Dr. John Hendrickson of the University of Arizona, the
Fisheries Division of the Department of Agriculture,
Western Samoa, has embarked upon a turtle-ranching
project aimed at supplying commercial interests through-
out the Pacific area with Hawksbill turtles for the
tourist and souvenir markets.

Dr. Hendrickson has suggested that we address our first market enquiries concerning this to you and this letter represents an attempt to establish contact with established turtle processors and retailers throughout the Ryukyu Islands.

Hopefully, our Hawksbill Turtle Rearing Farm will have an initially yearly stock of 1,000 growing turtles, which population may eventually reach 2-3000 per year.

Our plans, as we see them at the moment, would be along the following lines:-

- (a) To export to established turtle-stuffers in the Ryukyus consignments of suitably-sized Hawksbill turtles, either alive or preferably, dead, according to their specifications.
- (b) To receive as payment for such consignments
 - (i) A portion of the total price in cash.
 - (ii) The remainder in the form of mounted, stuffed Hawksbills to be returned to us for our own resale to our own tourists.

We understand from Dr. Hendrickson that such a proposal may well suit the Ryukyu turtle-dealers since supplies of local Hawksbill turtles are decreasing whilst demand for the stuffed finished product are increasing.

We would be most grateful, Doctor, if you would kindly advise us as to:

- (a) The most reputable turtle-dealer in your area.

- (b) Current prices and specifications.
- (c) Your own reaction to our proposal.
- (d) The names and addresses of any other people whom you think we should contact in connection with our project.

I trust that this request will not cause you inconvenience, but any help you may be able to give us would be much appreciated.

With best wishes,

Yours sincerely,



(William Travis)
FISHERIES OFFICER

cc: John Hendrickson,
Project Manager, SPIPDA,
Chairman, Consultative Committee, SPIPDA,
Alan Banner, Turtle Expert, W. Samoa,
Economic Development, Western Samoa.

WT:lv

COMMENTS ON THE HAWKSBILL TURTLE RANCH

PLAN PUT OUT BY: MR. A. BANNER

Immediate Action taken and suggested further work:

Commentary: (Section by section)

- I. Introduction: No comment.
- II. Overall Plan: Continuing with the hatchery: Definitely.
Cessation of releases: Agreed.
Test living conditions: Agreed.
Food Supply: Prototype reef-fish traps will be built.
Coconuts: Arrangements will be made to purchase these under Vote Item 4253 - Turtles \$620.
- Crowding: 10 tanks, hollow-brick construction, size 4 x 5, sharing common side-walls, will be constructed at once. Vote Item 4281 - Aquaria \$1500.
- Water Exchange: Concrete Culverts holding approximately 130 gallons each will be enacted 10 culverts in line with the 10 tanks. Gravity feed. Tanks to be filled by self-powered Water Pump (capacity 45 g.p.m.) now on order.
- Tanks: 44-gallon drums. Not considered necessary at this stage. However, present water-trough (originally banana dip-trough) to be cement-plastered for use as observation or test tank.

Releasings: 10% release at between 3-6 months seems good.

Shade or Sun: Point well taken. At least 2 tanks to be set up in the open, but security of these must be watched.

Data-collection Absolutely necessary.

Marketing: Fisheries Division is already in correspondence with possible market sources and ascertaining addresses in the Ryukus.

III. Conclusion: A preliminary estimate of the market-potential gives a figure of some \$WS10,000 per annum which though not enormous, could be of significant district value.

Further Work envisaged:

- (1) Additional tank construction as stocks mount up.
- (2) Construction of a "sea-pan" as acclimitisation stage for intended releases.
- (3) Enlargement of present incubator to allow for separate hawksbill/green turtle sections.
- (4) Enlargement of young-hatchling tank complex to allow separation of smaller-numbered green turtle hatchlings.
- (5) Fellowship-study visits for local personnel to turtle farms in Carribbean, Australia and possibly Japan. Applications to UNDP for this assistance are in process of preparation.
- (6) Publicity: Slide and synchronised sound-tapes in the whole project to be worked up by the Information Office (UNDP Special Project Unit). for use as publicity training and Educational material. This submission is currently in preparation.

WT:lv



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

October 21, 1971

Mr. V. T. Hinds
Co-Director, SPIFPA
South Pacific Commission
P.O. Box 9
Noumea
NEW CALEDONIA

Dear Val:

Thanks very much for your good letter of 7 September, which just arrived yesterday.

This will confirm receipt of the check for U.S. \$50.00. I will stop by the photo shop on my way home from work tonight, leaving a selection of the Mariculture turtle slides for production of duplicates. I will order four duplicates of each slide in the main series, plus possibly a few single duplicates of some extras.

R/O TURTLES
PROF -

2 copies
please


David Lodge, the veterinarian who was formally the Managing Director of Mariculture, has resigned. My most recent correspondence from there was from: Mr. M. R. Goodier, Farm Manager, Mariculture, Ltd., P.O. Box 645, Grand Cayman Island, British West Indies. I never heard of this guy before and I have grave doubts as to whether a letter of introduction from me would do any good. My present correspondence with them concerns breaking loose the draft of my FAO report on the visit to Mariculture; if David Lodge has suddenly resigned, it hints at internal problems; if there are internal problems of any description, the fact of my writing a report to FAO on them may not necessarily be a comfortable subject; from this, one might not be surprised to learn that a letter of introduction from me would be less than useful. My suggestion would be that you address a letter, well in advance of your visit, to Mr. Goodier informing him of your intent to visit Grand Cayman and expressing the hope that you might have an opportunity to talk with him and other people there. It would be quite alright, I think, to say that you learned his name from me.

Thanks very much for the revised copy of the Western Samoa turtle program description. I am sufficiently interested in this project -- and especially in young Alan Banner -- that I may continue to try to work up some help for them.

Thanks for the materials concerning my final travel claim. I'll get after this at the first possible opportunity. Thanks also for the articles from the South Pacific Bulletin and the extracts from correspondence on turtles. I think I might work up a center spread article for you, but I would not want to promise this during the remainder of this year. Try me again in a month or two!

With all best regards,

Yours sincerely,


J. R. Hendrickson

bcc: Wm. Travis

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

"for info"

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

TURTLES

September 2, 1971

Mr. V. T. Hinds
Fisheries Officer, SPIFDA
South Pacific Commission
P.O. Box No. 9
Noumea
NEW CALEDONIA

Dear Val:

Thanks for your letter of August 19th. I also regretted the fact that we were unable to meet and talk during my recent visit.

I have 29 slides of the Mariculture, Ltd. turtle farm in Grand Cayman Island which were used when I gave the talk they taped in Western Samoa. It seems to me that at least some of these might be superfluous, but it is difficult to estimate which gaps in the slide collection might cause unsuitable gaps in linking slides with the tape. There are two shots of nothing but the entrance sign to one of the two turtle farms -- surely one shot would be enough. Also, there are a number of shots of concrete pools under construction for explanation of engineering factors; of these at least two (one detail shot down a wier box showing pipe openings, and one of a bunch of pools -- more or less duplicated by other shots) might be done away with. That would leave 26 shots to a series. The cost of duplicating transparencies here is U.S. 35¢ per slide. You might want one complete set of 29 shots (just to be sure) and four more sets of 26 each -- 133 duplicates in all, or U.S. \$46.55. Or you might prefer to get a single duplicate set of 29, make up your own mind as to further duplication, and have this work done from your own duplicate set; I think that works quite O.K. Whatever you want done here, I will be happy to handle for you; however, I do not want to send the originals out there.

Thanks very much for the copy of Bill Travis's paper for the Regional Symposium. I collect all possible materials on turtles for my master library here and I always appreciate such stuff. I hope you will continue to send me anything which comes up relating to sea turtles, even meaningful private correspondence which has information worth copying. In return for being treated as a central depository, I try to supply particular items to people who need them just sent off to W. Samoa xeroxes of rare Ryukyuan report (by Hendrickson!) and translation of an old Vietnam paper on Hawksbill rearing.

Mr. V. T. Hinds
September 2, 1971
Page Two

Val, I suppose that Alan Tubb is long gone by now and you are therefore my logical contact regarding the FAO consultancy. Please tell me what I do about filing my final travel claim and finishing up the money matters. Can you send me a set of the necessary forms?

I am ashamed that the last short portion of my report (covering the few days post-Noumea in which I visited Fiji, W. Samoa, American Samoa, and Honolulu) is still in draft form. I'll really try to make time to polish this off and send it in next week. I'll post it directly to FAO, Rome (???) with copy to you.

Yours sincerely,


J. R. Hendrickson

bcc: Wm. Travis ✓

vg

UNIVERSITY OF HAWAII

Marine Programs
Sea Grant Programs

April 25, 1973

Mr. Bill Travis
Fisheries Officer
Government of Western Samoa
Apia, Western Samoa

Dear Bill:

I've gone over the "outline" of the Handbook for Pacific Marine Turtles and have a multitude of suggestions. To start, there are at least three aspects of this proposed publication. These are:

1. Scientific "key-type" information to sort one species of turtle from the other.
2. Directions on studying turtle population dynamics.
3. Information on running a hatchery operation.

For the sorts of purposes that we are really striving to serve these are of different degrees of usefulness.

As to the first, scientific "key-type" information, I don't think this adds enough to the value of the publication. In other words, I don't think it is necessary.

The matter of studying turtle dynamics has to be shown to be an activity of its own, clearly something separate, but supplementary to the turtle hatchery program. Different sorts of people and resources are needed for this. Population work would be the most important area for the traditional biologist--as one will generally know, the species of turtle with which one is working but not as much as one would like about the size and dynamics of the local population.

The third area, that of directions on the operation of a turtle hatchery is, in my opinion, the guts of this publication. It should receive the central focus of the paper.

Before I get into the little details of this particular publication, let me bounce a bit more philosophy off you. I had a brief talk with George Balazs who is doing the nutrition work at Coconut Island. We have gone over your outline together. But it occurred to me that we are about to put out a publication that is a bit of a departure from the current orientation of traditional biologists, i.e., at the fringes of acceptable practice regarding endangered species.

April 25, 1973

That is to say, we assume that through an active program of hatchery and allied field operations we are going to more than try to conserve the turtles--we are going to restore them. So, since there are some similarly inclined people elsewhere in the world and a lot of other people that are in desperate need of "re-education", perhaps we should consider this the first in a continuing collection of up-to-date guides and pertinent research results that have a direct bearing on restoring sea turtle populations. What comes to mind is a newsletter that carries problems and solutions. Perhaps organized along the lines of a cookbook with each piece going into definite categories, such as nesting sites, natural hatching, egg handling, incubating and managed hatching, feeds and nutrition, facilities and equipment, rearing systems, handling and release, and measures of success for the hatchery-type information. On the population work with wild stocks these might be nesting sites, locations and characteristics, use patterns and seasons, fate of eggs and hatchlings, tagging programs and methods, life history information, growth rates, world populations and migrations, population dynamics, predation, and governmental programs.

On the technical, structural side of this publication there are just a bunch of improvements that one could make ranging from the order of presentation to details such as footnotes. Also, we need to get a few very good photos together, and so on.

What I'd suggest is that you supply, from your staff, the hatchery input, that we rely on George for some nutrition and other information, that I then assemble the pieces and language, and that we have the thing reviewed with an eye to avoiding the direct wrath of the traditional biological community.

I'd then suggest that we all participate in getting credit and abuse for proposing the program. The program of communication that followed would be very brief abstracts of work and milestones along the way.

What do you think? I have a bunch of other suggestions that we can work on downstream sometime. I'll have our people type this and get it out as soon as possible so that you might get your staff's reaction.

Talofa,

John Ball
Acting Coordinator
Sea Grant Advisory Services

cc: George Balazs ✓



GOVERNMENT OF WESTERN SAMOA

July 14, 1972

John L. Ball
University of Hawaii
Dept. of Marine Sciences
Honolulu, Hawaii 96822

APIA, WESTERN SAMOA

Dear John:

In reply to your letter dated June 13th to Bill Travis.

The Western Samoa Turtle Project is primarily concerned with the re-stocking of Samoan waters with the hawksbill turtle, the turtles are kept in concrete tanks for 1 month prior to releasing. During this month the turtles are fed fresh sea food only, the average hatchling weight is 12.8g and 25.5g after a month.

I experimented with sun dried banana/fish meal cakes and found them satisfactory provided certain improvements were made. The cakes are hand cut into small squares, they are dry and sink. If not eaten quickly the cakes disintegrate and discolor the water, preventing feeding to continue.

I hope this sufficiently answers your letter to Travis.

tofa,

W.N. Witzell
turtle manager

sharon,

Please send zeroes to:

Dr. Ross, Animal Sciences

✓ George Baldes

and return original to me.

George: I'll keep you informed. Makalo,
Ernie

UNIVERSITY OF HAWAII

Department of Zoology

March 26, 1973

Mr. Edwin Jansa, Jr.
Jansa Foundation
100 Thousand Oaks B lvd.
Thousand Oaks, CA 91360

Dear Ed:

What can I say? I was flabbergasted when I opened the really outstanding portfolio of your underwater photographs. They are in a word beautiful and in a second word interesting. I sincerely thank you for this wonderful gift. Ilze and I can't decide whether we should leave the portfolio intact or have them framed so that I could have a few in my office at the University, a few more in my Coconut Island office, and our favorites in our cozy nook - cocktail den at home. At the risk of sounding awfully presumptuous, I am now more than ever anxious to interest you in the displays of coral reef fishes. I think the theme of art and science could be beautifully illustrated through your lens on this subject.

I gave the article to John Bardach saying that you thought he would get a kick out of it and couldn't give it to him in person as your stay in Honolulu was delayed and therefore very hurried. I trust I did not put words in your mouth unfairly.

Regarding Bill Travis' turtle work which you asked me to comment on, I have done a little reading and have talked with one of our graduate students, Mr. George Balaza, who is working on the nutrition of of hawksbill turtles. He wrote the short resume on turtle research which I have enclosed. He also showed me the article by Bob Bustard on turtle farming. I think you will find it very interesting. I know Bustard rather well having met him at Heron Is. on the Great Barrier Reef when I spent 4 months there in 1968. Bustard was there too working on turtles. I can write to him for further details. As I said to Dick and you in Western Samoa, I think Balaza would be interested in participating in any program on turtle farming that should develop through your support. I feel his knowledge of diet and nutritional requirements would be of great value. In summary, then, I think that the work which Travis has started on hawksbill turtles is of value and worthy of continued support.

Best greetings to Ann and you and I hope we see you out here in the Islands again very soon. Please let me know if I can be of further help to you.

Aloha,

Ernie

Ernst S. Reese

A critical need presently exists to conduct research on marine turtles wherever they occur. Drastic reductions in population numbers over the past 100 years have placed the continued viable existence of these salt water reptiles in an undetermined state. Governmental restrictions on exploitation have been initiated in many areas of the world, however, whether or not the protective measures are adequate, enforceable and soon enough in coming in certain areas remains to be seen. Efforts to increase population numbers have been mainly directed at preventing the high mortality of hatchlings, which inevitably occurs on the nesting beaches. Man, rodents, birds, crabs and reef fish are known to prey on the small turtles and/or the eggs causing as high as 99% mortality. Moving the newly deposited eggs to protected surroundings, hatching, and subsequently raising the animals for short periods of time before releasing them into the wild, greatly reduces this early mortality. Several projects of this nature have been carried out with the Green turtle (Chelonia sp.). The only conservation work of this type with the Hawksbill (Eretmochelys sp.), carried out on a regular basis, has been in Western Samoa.

Some researchers have expressed concern over the possibility that maturation and reproduction could be affected by rearing the young in captivity for extended periods. However, this concern has mainly been directed at the Green turtle because of its long distance migratory life cycle. It is believed that the Hawksbill does not migrate long distances for reproduction, thus this animal is a more logical choice for restocking efforts. Preliminary data from Western Samoa indicates that short term, captive reared turtles have survived and grown rapidly

during the first year after release.

A great potential exists for the aquatic husbandry of marine turtles, especially the Hawksbill, provided several basic biological problems can be resolved. Inexpensive and nutritionally complete diets need to be developed, in addition to devising methods of stimulating egg production in captivity.

The marine turtle facility located in Western Samoa is a promising site for both the research and the conservation work that is necessary for the successful culture of this valuable resource.

PROPOSAL AND PLAN FOR A TURTLE RANCH AT ALEIPATA TO
DETERMINE THE FEASIBILITY OF DEVELOPING AN EXPORT
INDUSTRY FOR HAWKSBILL TURTLES

By: Alan C. Banner.

I. Introduction:

Research completed at the Aleipata Turtle Hatchery during the first half of 1971 has shown that the primary nesting turtle in that district is the Hawksbill turtle, a species valued for the high quality of the shell. Although a full year's cycle has not yet been completed, it appears that diligent collecting of turtle eggs can probably produce at least 4,000 hatchlings yearly. This does not include the collection of eggs in the other areas of Western Samoa.

Although the Hawksbill is a slow growing turtle with poor tasting flesh, there is a considerable world market for its shell and, indeed, its whole body as mounted by a taxidermist. The possibilities of marketing young hawksbill turtle was recently emphasized by a SPIFDA turtle expert in turtle cultivation, Dr. John Hendrickson. Dr. Hendrickson inspected the Aleipata Turtle Hatchery during the first week of August, 1971, and was quite enthusiastic about the possibilities of developing a consistent, though small, turtle ranching industry in Western Samoa. He felt that the government should continue collecting and hatching eggs, and then raise the young to a point where they are marketable size. A certain percentage should be released back into the ocean to insure the propagation of the natural stock. According to Dr. Hendrickson there is a considerable market for stuffed Hawksbill turtle in the Ryuku Islands of Japan, for this species of turtle has certain traditional symbolism to the Japanese people.

On the strength of Dr. Hendrickson's recommendations, it is hereby proposed that the Fisheries Division establish an experimental turtle ranch in an effort to determine if this would be a suitable "cottage industry" to introduce to Western Samoa. In the following section the overall plan of the ranch will be discussed.

II. Overall Plan:

Continue Hatchery

The work of collecting the eggs, transplanting them into the hatchery, and then holding the hatchlings, should continue. The research associated with this work i.e. tagging adult turtles, collecting data on the position, size, and fatality rates of the clutches, etc., should be continued.

Stop releases

Beyond this, the program of releasing the hatchlings after a week or so of captivity should be discontinued. However, 10% of all hatchlings should eventually be released in the open ocean in order to perpetuate the wild stock. The special care and treatment of these will be discussed later.

Test living conditions

In order to determine the best way to raise the

young turtles a variety of conditions should be experimented with, keeping in mind the fact that eventually it is hoped that a technique will be devised which will allow private persons to raise turtles at their homes for fun and profit.

Three important aspects of the turtles' environment can be altered: food, crowding, and water exchange.

Food Supply Fish

The biggest problem facing this project is that of food supply. Hawksbills are carnivorous throughout their life cycle, and in all probability will need to be fed fresh protein. The first protein to come to mind is fish, but, unfortunately, fish protein is very valuable in Western Samoa. It is possible that this problem may be solved by trapping small reef fish, which have little economic value. This could be done by placing wire fish traps in different areas outside of the reef where they would not be readily subject to poaching by fishermen.

Molluscs, drabs

Also available for food the razor clam, called foai in Samoan. Other molluscs, such as faisua (Tridacna) are also available, as well as crabs. Turtle grass, the primary source of food for the Green sea turtle in Samoa, is abundant.

Coconuts

Another food which the turtles readily eat and is probably for them is fresh coconut. Experiments already performed have shown that mature coconut meat put through a meat grinder is readily eaten by hawksbill which are several months old. For the young turtles, however, the pieces appear to be too large and hard to eat when using mature nuts, but they don't appear to have a problem with younger nuts, just past the "spooning" stage. As coconuts are rich in protein, it could very well be that turtles would thrive on a diet of only coconuts. One additional factor to consider here, however is that unless the coconuts can be taken from Government land somewhere, in Western Samoa, they will have to be purchased.

To sum up the food problem, there is food available for the project. It remains to be seen, however, whether or not this food can be procured cheaply enough to make the project financially sound.

Crowding

The question of crowding the young turtles is not a pressing concern at this point, although it should be investigated. Dr. Hendrickson stated that the more crowded the turtles are the more they nip each other, and this obviously would be undesirable if they are to be sold for their good looks. At present it would probably be easiest to assume the optimum condition is one where all turtles have room to sleep on the surface at the same time. A newly hatched turtle takes up about 6 square inches; one 6 months old about 30 square inches, a five fold increase. In order to hold 100 baby turtle we would need a tank

with 600 square inches of surface area, i.e., a tank approximately 1 foot by 5 feet. At 6 months we would need 5 such tanks, and presumably at 1 year 10 such tanks - assuming that this is the optimum condition.

Water Exchange - x2/day

The third major environmental factor is water exchange. Turtles are quite dirty creatures, and their water has to be changed often. At present their water is changed once daily, but that is not often enough. The best system would be to set up large water holding tanks, using concrete cess pool tanks, fill them using a gasoline engine pump, and then have them distribute water to the holding tanks by a gravity feed system. A daily turn over of twice the volume of the tank is probably optimum.

Tanks-44 gallon drums

As for the tanks, at present there are several 44 gallon drums available which could be cut in half along the long axis, thus providing two twenty gallon tanks. The total surface area of one of these tanks would be 748 square inches. Thus it could hold a total of 123 young turtles. According to Dr. Hendrickson, a layer of cement could be applied to the inside of a metal container such as this is thus protecting the metal surface from oxidation by the sea water. Drains could be installed in the bottom of the tank to drain off any sediment, and also provide for a constant circulation.

Cement tanks

Cement tanks could also be used, for an attempt should be made to find which type of tank or container would be most suitable for a villager to use.

Stands

If the Half- $\frac{1}{4}$ gallon drums are used, it would be best to make stands for them, and this would probably require the purchase of some lumber.

10% hatching release

As mentioned earlier, approximately 10 percent of the hatchlings should be released in order to insure the survival of the wild stock. It is the recommendation of Dr. Hendrickson that these turtles be raised to an age where they can find for themselves in the ocean. Judging from the hawksbill which are presently being raised at Aleipata, the best age for release would probably be somewhere from 3 to 6 months of age. These turtles, according to Dr. Hendrickson, should not receive treatment which will make them entirely accustomed to living in a tank. Efforts should be taken to see that their diet is constantly varied, that they don't become used to feeding only at specific times, and that they don't always associate human presence with feeding time. Perhaps even a sea-pen could be established where they could be allowed to spend some of their time - but not all, due to the difficulty of stopping poachers.

Shade or Sun

In setting up these turtle tanks, an effort should

be made to find in the turtles are affected by living in shade as opposed to living in sun light. That is to say some of the tanks should be set up outside of the Banana shed, where they are all kept at the moment. This means also that a fence will have to be build around the tanks in order to protect them.

Data

The data to be kept should include diet, weekly measurements of growth in length and weight, daily temperature readings, and any behavioral observations made.

Marketing

As for the marketing end of the project, an effort should be made to contact a buyer in the Ryukus, and to get an estimate of the price per head for turtles supplied, as well as conditions under which they would be wanted (i.e. size, condition of specimen, wanted dead or alive, etc.) Dr. Hendrickson recommended that instead of selling all of the turtles at right a condition of the contract should be that we received back a certain percentage of the specimens after they have been stuffed, and these should be then sold on the tourist market in Hawai'i, when a much better price could be obtained, as well as providing publicity about Western Samoa. A contact on the Hawai'ian market should also be sought.

III. Conclusion

Due to the size of the natural turtle population in Western Samoa, a hawksbill turtle ranching industry will never provide more than an interesting sidelight to the national economy. However, if it does prove feasible - and there is every indication that it should - it could provide an export product which will help to build the economy in its own small way. Also, and perhaps this is even more important, it will provide Western Samoa with a product that is definitely going to add to the tourist appeal of the country.

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ACB:lv

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A-6

Saturday, December 25, 1976

W. Samoa Increases Contacts with World

Western Samoa's admission this month as the 147th member of the United Nations is symbolic of some significant internal changes within that 15-year-old island nation.

Though it was the first Pacific island nation to become independent, it regarded UN membership as an expensive luxury and chose to pursue a policy of aloofness from world affairs. It allowed Fiji and Papua New Guinea to join the UN while it held back.

This year, however, the Western Samoa parliament broke with its past practice of choosing its prime ministers from the royal Tamasese and Malietoa families.

It turned to Tupuola Efi, 38, a New Zealand-trained lawyer. This was a generational change as well with Efi installing a young cabinet to replace one with a much higher average age.

The application for UN membership is only one part of a transformation that has seen Western Samoa step up its contacts with the big powers. It has won air rights in New Zealand for its national airline, Air Polynesia. It has increased its contacts with the U.S. while Russia has come by to bid for a fishing fleet base at Apia.

Western Samoa's message to the UN on joining was that it indorses the UN's recent shift of concern to fighting hunger and illiteracy. In Polynesia, it said, the condition of the people, physical and spiritual, is of first importance: it should be the same for the world.

By applying to the UN, Western Samoa has recognized that today's world has become so interdependent that even a small nation of 160,000 people cannot advantageously keep itself isolated from the international scene.

9 April 1972
Aleipata, WS

George Balazs
HIMB
PO Box 1067
Kaneohe, Hawaii 96744

Dear George,

I was glad to hear that the 20 young Hawksbill turtles which we shipped from here arrived safely in Hawaii.

Our project here is primarily concerned with restocking the Hawksbill population by attempting to eliminate the high fatality rate young turtles are presumed to experience during their first few days of life. We carefully remove the nests which we find from the nesting beaches, transplant them to our hatchery, and then raise the hatchlings for a month after emergence. They are then released beyond the reef in deep water where they will hopefully be safe from the reef fish.

The specimens that you have are unique in that they were from a clutch that hatched out naturally on the nesting beach and was discovered just prior to emergence. This occurred on 14 February 1972 on Nuulua Is., Western Samoa. Of 213 eggs, there were exactly 200 hatchlings, 2 deformed embryos, and 11 infertile eggs. The incubation period is not known for this particular clutch, but one that had ~~xxxxxxxxxxxx~~ hatched on the same day back at the station had an incubation period of 64 days. The measurements we took for the turtles of the clutch you have represented are as follows:

Carapace length:	Range	30-42.5 mm	Aver.	40.8 mm
"	width:	" 28.5-33.0	"	29.9
Plastron length:	"	30.5-33.5	"	32.3
Head width:	"	14	"	14

These measurements were recorded by my co-worker, Wayne Witzel. Weights were not taken due to the lack of a scale.

The turtles you have were fed chopped fish and razor clam (Penna) until shipment, which is the standard feed at the moment. Obviously this is a rather expensive way to achieve our ends, and we are presently experimenting with a biscuit made of mashed ripe bananas and fish meal that has been dried in the sun. We have used this as a feed for some older turtles which we have kept for a year, but have yet to try it on the young turtles. As bananas are plentiful here, and fish meal is imported as pig feed, we find this to be a cheap source of turtle feed. Unfortunately, it tends to foul the water in the tanks quickly, and as we can't afford to have constantly circulating sea water, this presents a severe handicap. We also plan to experiment with fish meal suspended in gelatin, which would probably not foul the water as quickly, but also would be too expensive for us here.

I feel certain that we will eventually work out a diet which consists primarily of the banana-fish meal biscuit, which, with the right proportions of each ingredient, will not quickly disintegrate in the water.

For a while disease was a problem with a group of turtles which

we had kept for several months. Due to pump problems, their water was not changed as often as necessary, and this may have been one of the causes of the disease. However, no doubt the diet was also partially responsible. The disease took the form of ulcers on the head, neck and flipper regions. It was either a fungus or a bacteria, possibly the latter as the ulcers appeared to improve with the application daily of the penicillin cream Neosporin.

It was this disease which caused us to abandon of hopes of establishing a turtle ranch, where we had hoped to raise turtles for export to Japan as a tourist item. We could envision this disease as a recurring problem which, due to our isolation from institutions which could conveyably help us combat it, would continually deplete the numbers of turtles, thus making the project both cruel to the turtles and uneconomically feasible to the government or private investor. Also, this project will soon be turned over to local personnel, who would have a much more difficult time combating this problem.

This problem could possibly be eliminated if the turtles were kept in pens in the lagoon, but that is an entirely different proposition. For Samoa, in particular, it would probably not work out well as Samoan tradition decrees that anything which is in the sea is community property, so theft would be a considerable problem.

All the hatchlings that we release are marked by removing one of the marginal plates. Each year we plan to remove a different marginal plate; last year it was the 8th plate on the ~~left~~ right hand side; this year it is the 8th plate on the left side. If you ever hear of anyone recovering a turtles som marked we would greatly appreciate it if you could inform us about it.

We hope to hear from you again soon,

~~esp. about any nutritional aspects of turtle raising~~
you should come up with

Sincerely yours,

al

Alan C. Banner
Fisheries Division
Agriculture Dept.
Apia, Western Samoa

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OUR REF
YOUR REF

GOVERNMENT OF WESTERN SAMOA

Department of Agriculture
Forests & Fisheries

APIA - WESTERN SAMOA

5 May 1972

Mr John Ball,
C/- Marine Programs,
University of Hawai'i,
Honolulu,
HAWAII.

Dear John,

I understand from Steve Ritterbush that you are in need of some information regarding our turtle-hatchling programme. To wit:

1. Taking of eggs: Always taken within 1 day of laying, usually 4 hours. Extra clutch removed as near intact and undisturbed as possible, Pear-shaped egg-mass loosely glued together with clear mucus. This we try and break-up as little as possible. Eggs reburied in similar sand within 2 hours, at same depth. Hatchery sand same height above M.S.L. as original nest. Well-drained. Fenced to keep out ghost-crabs, and rats. Fencing taken down 2 feet below ground level to prevent crabs etc. digging-under. Pit-traps for crabs placed inside hatchery compound.
2. Pens: Made of rows of hollow-brick placed on cement slab and plastered on inside. Rows of pens 8' x 5' x 2'. Water level. 1' 6". Section as under. Water changed daily (minimum) A pen 8' x 5' can accommodate up to 400 hatchlings up to 1 month old.

3. Equipment: Butchers meat grinder. Chopping board. Pellet-machine for 85% dried fish-meal cake, (cake an additive to raw fresh fish flakes and shell-fish diet). An automatic food dispenser set to a random Operations would be a very good investment. Human/food association built-up in a mere 4 days unless care is taken.

4. Release Age: 1 month. Two reasons:

- (a) Not enough staff, funds etc, to raise turtlelets beyond this point.
- (b) Fear of 'domestications' and possible reduction of their survival capabilities.

Released off beaches of original laying. One or two comparative samples kept from each batch. All releasings marked by clutch-ident nicks in costal margins.

5. Results: Overall hatchery hatchlings = 86% (including infertile eggs) out of some 13,000 to date.

This is better than natural rate on a protected, fertile 'wild nest.

6. Reclaims: Since we have only been in operation 14 months little information on this aspect, in fact, only 1 definite.

Original batch hatchling release = 8 February 1971.

On March 16 1972 fishermen some 18 miles NW of original release point

MAY 11 1972

observed some 54 to 72 small turtles, all of similar size swimming outside reef in a scattered group. Largest 'flock' locals had ever seen. Speared one only (since small size) Ate it. By happen chance I saw the shell next day. Coastal ident. nicks showed it to be one of batch of 73 released on 8th February. Shell showed 27% greater growth than that of its captive batch sibling. From above it appears that:

1. Hatchlings survive.
2. Hatchlings stay together.
3. Released hatchlings have better growth and all-round condition than captive.

There you are John that's all I can say at present.

Yours sincerely,



for: (W. Travis)
FISHERIES OFFICER

ADVICE TO VISITORS

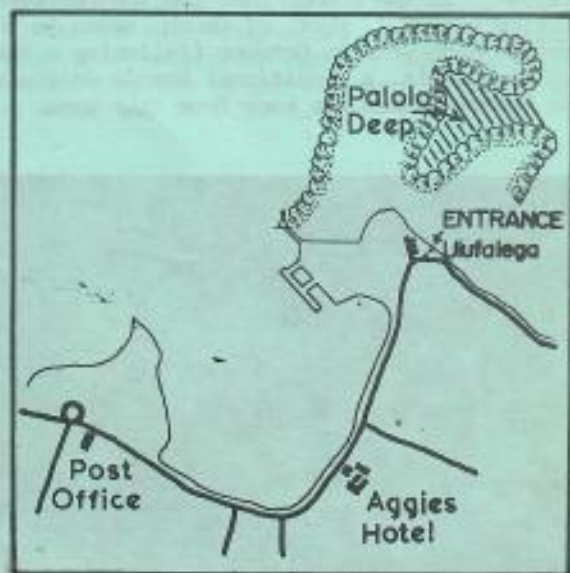
- * Palolo Deep is best enjoyed by swimming with a mask and snorkel. Flippers are an advantage.

At low tide the level of water around the edge is about 300mm (1ft), while at high tide it is about 1.4m (4' 6") deep.

- * Choose a calm day to get the best conditions for viewing the marine life.
- * Wear sandals to protect your feet from cuts while walking out to the Deep at low tide.
- * Ensure that you have adequate protection against sunburn. Wear a shirt to protect your back while swimming.
- * Some corals, shells and sea urchins are poisonous—you are advised not to touch them.

For further information apply to:

National Parks and Reserves Section,
Forestry Division,
Department of Agriculture and Forests,
P.O. Box 206,
APIA.



PALOLO

DEEP

MARINE

RESERVE

ENGLISH COPY



Samoa i Sisifo
National Parks
and Reserves

O Malae ma Fanua Faaagaaga
o le Atunu'u

THE MARINE LIFE OF PALOLO DEEP

Coral reefs are very complex communities supporting a great variety of marine life. Apart from the coral itself and its predators (e.g. some starfish and the parrot fish) the reef provides a habitat for many plants and fishes. Each organism occupies a particular place or niche in the community, helping either to establish or break down the community. While the balance between building and destroying is maintained, the reefs and their communities will continue to flourish. When one element gets out of control, or the balance of nature is upset, the community can be quickly destroyed. For example, heavy infestations of Crown-of-Thorns starfish are known to have destroyed coral communities.

CORAL

Coral islands and reefs are so called because they are formed from vast numbers of coral animals. These coral animals are closely related to the familiar sea-anemone, and occur in all the oceans of the world whether warm or cold. However, it is only in the tropics that these animals (called polyps) are able to form reefs, because only where the sea temperature seldom falls below 22°C (72°F) and there is a good supply of sunlight can the polyps form a limestone skeleton. When the polyp dies its skeleton remains and provides a firm base for other polyps to grow on.

Over many thousands of years all these skeletal remains, together with those of associated organisms (like coralline algae) form an underwater mound or reef.

INTRODUCTION

Coral reefs surround much of Western Samoa, protecting the coastline and forming shallow lagoons. Within the reef's protecting walls many deep, irregularly-shaped "holes" can be found on the lagoon's floors. These "holes" provide an ideal environment for the growth of fragile corals, which in turn provide a home for many varieties of tropical fish. Palolo Deep is one such "hole", which because of its accessibility and close proximity to Apia, gives the visitor a wonderful opportunity to easily and safely view tropical marine life in its natural state.

Palolo Deep is a Marine Reserve, so all marine life and natural features in the Deep are protected from damage or destruction.

This protection (under the 1974 National Parks and Reserves Act) is designed to ensure that the visitor's enjoyment of the Deep is not spoilt by careless or thoughtless use, and the Deep continues to remain undisturbed as a spawning ground and food source for the many varieties of corals, fish and plant life in the lagoon.

Visitors must ensure that:

- * they do not destroy or break pieces off the living coral. As some corals are very fragile, take care not to stand on them.
- * no fish or other marine life, or other natural features are removed.
- * no rubbish is deposited in the Deep.

In other words, please leave Palolo Deep as you found it.



THE MARINE LIFE OF PALOLO DEEP

Coral reefs are very complex communities supporting a great variety of marine life. Apart from the coral itself and its predators (e.g. some starfish and the parrot fish) the reef provides a habitat for many plants and fishes. Each organism occupies a particular place or niche in the community, helping either to establish or break down the community. While the balance between building and destroying is maintained, the reefs and their communities will continue to flourish. When one element gets out of control, or the balance of nature is upset, the community can be quickly destroyed. For example, heavy infestations of Crown-of-Thorns starfish are known to have destroyed coral communities.

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Over many thousands of years all these skeletal remains, together with those of associated organisms (like coralline algae) form an underwater mound or reef.



Some corals have both male and female sex organs in the same polyp while others exist as either male or female. In either case, the fertilised eggs develop as embryos inside the adult's body before being released as larvae into the sea. Once the larvae mature they explore the sea-bed in order to find a suitable spot to develop and begin to form their limestone skeletons.

The polyp will feed on the food swept around it by ocean currents. Food consists of plankton, the developing larvae of a variety of animals and an algae which lives inside the coral. This particular algae gets its nourishment from the coral's waste products.

Most reef building corals are "colonial". This means that when the polyp reaches a certain size (size varies according to the species) new polyps will develop by budding from it. These new polyps will in turn mature and further polyps will bud from them. Each polyp contributes to the bulk of the colony by forming its own skeleton.* In this way the distinctive shapes of the various species of coral are formed.

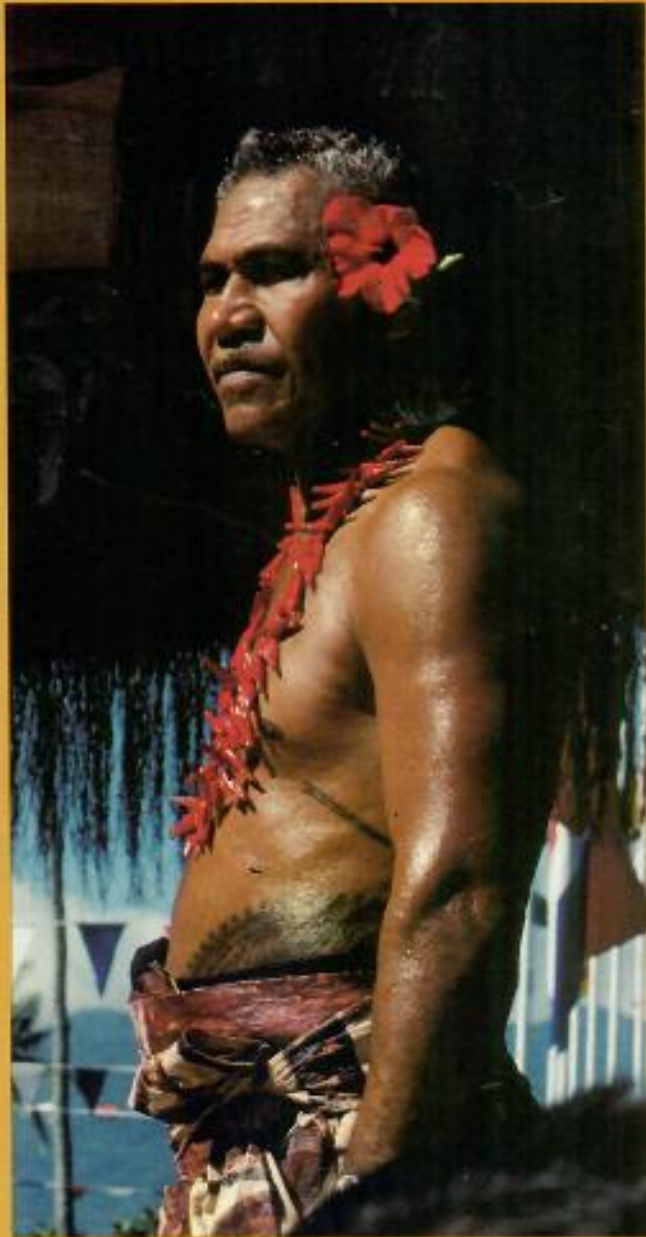
PALOLO

'Palolo' is the common name for the reefworm (*Eunice viridis*), part of which swims to the surface each year in October (following a lunar cycle). It is a traditional Samoan delicacy. The Reserve takes its name from this worm.

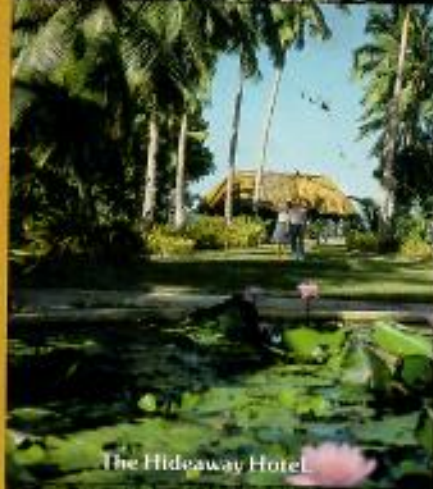


Western Samoa

The cradle of Polynesia



Western Samoa's annual Independence Day Celebration attracts



The Hideaway Hotel



Father and son in



Coral formations in a hidden lagoon



Polynesian horseman

With an open mind and an open heart

Come, smile with us. Kick your shoes off and stroll an empty, golden beach. Feel the sun warm your back and the surf curl round your toes. Pluck mangoes for a snack and lie flat on your back, counting green coconuts in a blue sky. Rise early, stay up late, and nap at noon. Learn to dance, Polynesian style, to rhythms that pound like your heartbeat. Take the time to watch an entire sunset that dips the world in bronze.

Come do these things for that is what is right to do in Western Samoa. Come to Western Samoa with an open mind and an open heart, for this is how you will be welcomed.



In Samoa there is a proverb. "*Ua sunisani fa'amanuaa.*" The joy of the welcome is like birds greeting the dawn.

The cradle of Polynesia

The Dutchman, Jacob Roggeveen, first sighted Samoa in 1722. Later the French navigator, Bougainville, named them the "Navigator Islands." But for 2000 years these islands had already been known . . . as Samoa by the Samoans.

One island is also thought to have been known as the legendary "Hawaiki." This, say the Polynesians, was the beginning, the origin of the great, ocean-crossing migrations that colonized Tahiti, Tonga, New Zealand, and Hawaii. Many anthropologists agree. This Hawaiki . . . Samoa . . . is the cradle of Polynesia.

Today, the state of Western Samoa is the first independent nation in the South Pacific. It is comprised of nine islands. Savaii is the largest. Upolu, the next in size, is the most populated and is where the capital, Apia, is located.

The world's largest group of full-blooded Polynesians still resides here in Samoa. They enjoy a balmy climate, cooled by gentle tradewinds, with over 2500 hours of sunshine a year. Their islands are volcanic in origin. In the interior, green clad mountains, plumed with waterfalls, rise to 6000 feet. Out at sea, a black line of coral reefs soothe the surf and form brilliant emerald-blue lagoons fringed with white sand beaches. The water visibility here is often several hundred feet. Looking beneath the water is like looking into a kaleidoscope . . . blue bonito, yellow parrotfish, red snapper . . . the lagoons teem with life.

This abundance of the sea is matched by the fertility of the soil. Mangoes, coconuts, taro, avocados, bananas, pineapples, papayas (known as "paw paws") all grow happily without needing much encouragement.

Amidst this generous environment, the Samoans have preserved their customs and their heritage. At the same time, they have availed themselves of the best of the 20th century. The politically stable government is a blend of western democracy and the traditional leadership of the village chiefs, called *matais*. The Samoan airway, Polynesian Airlines, serves much of the South Pacific. In the capital of Apia, there's tennis, lawn bowling, golf and luxury hotels offering such things as air-conditioning and gourmet dining. English is spoken and understood almost everywhere.

But just outside Apia, the Samoan people still build their *fales* from hand-hewn timber and coconut cord. They live much as they always have. Close to the sea. Close to the sky. Observing their ceremonies. Recounting their history. Respecting their chiefs. Loving their children. Welcoming their guests.

Daily decorations . . . threading flowers on palm frond stems.



Fine continental dining at the Hotel Tusitala in Apia.

The adze is metal instead of stone, but a man's canoe is still carved from one solid tree trunk.



Public tennis courts near Robert Louis Stevenson's old house.



Annual boat race draws thousands of spectators to Apia's harbor.



The waters around Western Samoa are the clearest in the world.



Splash!



Policeman in Apia.



Two caddies per golfer.



Secluded beaches all to yourself.



Unique banyan.



When the dancing and festivals go on for hours, the proverb is "Ua pefo falo," the mat is warm. Here spectators watch Samoan Independence Day.

In the footsteps of Robert Louis Stevenson

The famous author of *Treasure Island*. Robert Louis Stevenson, is perhaps the best known traveler ever to explore Samoa. Stevenson chose to spend the last five years of his life here. Today, he lies buried atop Mt. Vaea overlooking the city of Apia. His immortal "Requiem" is carved on the monument, "Home is the sailor, home from sea, And the hunter home from the hill."



As you explore these islands, you might think of Stevenson from time to time. Did he too, rest beneath the tree you've chosen? Did he watch Apia harbor, sparkling like a million mirrors and let his eye follow the cool, green-blue outlines of the mountains? Think of your solitary footprints in the sand of some pristine beach. There, ten million waves ago, he might have walked.

Live with a legend

There are a number of fine hotels and inns in Apia, but one is a legend. It is Aggie Grey's. Once it was a ten-room grass and bamboo structure, short on everything but hospitality. Today it has 108 air-conditioned rooms, a freshwater pool, fine dining . . . and it's still long on hospitality. Gary Cooper stayed here when he made "Return to Paradise." James Michener stayed here too. Many say that Aggie Grey was the original for Michener's character "Bloody Mary." You can ask Aggie about it. She'll deny it.

Samoaan Modern

The newest hotel in Western Samoa — and throughout much of the Pacific — is the Hotel Tusitala. It is named after Robert Louis Stevenson. "Tusitala" means "teller of tales." Hotel Tusitala incorporates the best of old and new Samoa. The basic structures are the traditional Samoaan *fales*. These enormous, open air "roofs" were all built from wood, shingle, and coconut cord by the men of the surrounding villages. But beside the *fales* are 96 rooms and suites, air-conditioned and with modern baths. Hotel Tusitala also features a uniquely stepped swimming pool, a cocktail lounge, dining room, and meeting rooms ideal for small groups.

In Apia

The capital of Apia is your base for exploring Western Samoa. It's interesting, relaxing, and fun enough that some people never get any further. There's golf, tennis, swimming and lawn-bowling. At the hotels and night clubs, there's great eating and fine entertainment.

Shopping is a great outdoor sport. At the handicraft center and the open market you can find beautiful tapa cloth. It's still made in the traditional way from pounded mulberry bark. You can also find intricate baskets and finely woven mats. (A truly exquisite mat of heirloom quality can take six years to weave.) Fans, hats, purses, jewelry and colorful leis fashioned from shells and parakeet feathers are also to be found at inexpensive prices.

You can rent a car in Apia for a drive-it-yourself tour of the island. Guided tours are also available and can be arranged through your hotel or your travel agent.

A pilgrimage to Robert Louis Stevenson's monument above Apia is a pleasant half-day journey. You'll travel along the "road of loving hearts." It is named after Stevenson's friends who first cut the trail to the top of Mt. Vaea.

In the Village

Somewhere in Western Samoa, you will find your special village. There will be a special way the children run to greet you, a special warmth in the handshakes and a recognition in the smiles. If you are fortunate, your village may invite you to a "fia fia" feast with roast suckling pig, chicken, crab, fish steamed in coconut milk, mangoes, papaya, avocado . . . and afterwards they'll ask you to dance.

If you're very fortunate, there will be a welcoming ceremony, and the chief's daughter will prepare *kava*, straining it through hibiscus bark into the ceremonial bowl. A talking chief will rise and deliver a speech of compliments and welcome. The women will dance to the rhythm of Polynesian chants.

You are especially likely to have this rare experience if you journey to the big neighbor island of Savaii. Western Samoa is one of the very few places in the world where you can experience intact, the traditional Polynesian lifestyle.



The chief's daughter prepares kava.



Lawn bowling in Apia.



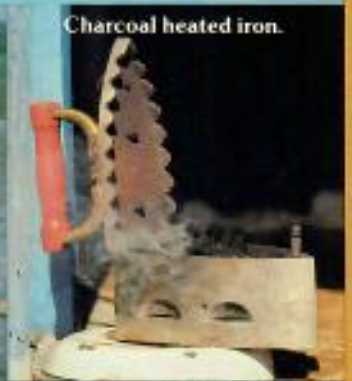
Chocolate begins as cocoa pods.



Fresh water swimming pool at the new Hotel Tusitala.



Proud of his first canoe.



Charcoal heated iron.



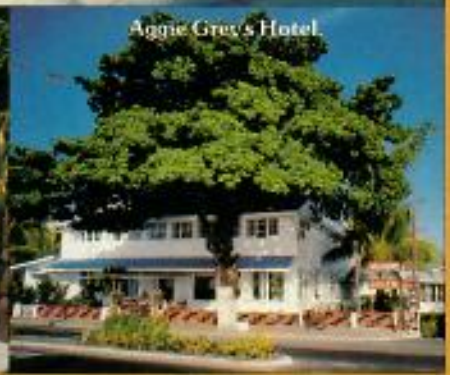
Temperature of the air, 82°. Temperature of the water, 72°. Go for a walk and leave your wristwatch at home.



Exploring the lagoons in an outrigger canoe.



Aggie Grey

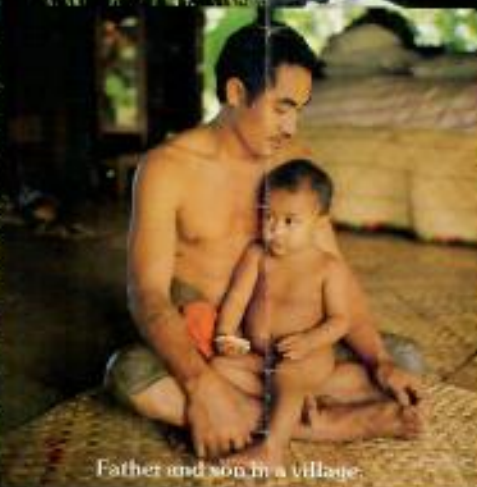


Aggie Grey's Hotel.

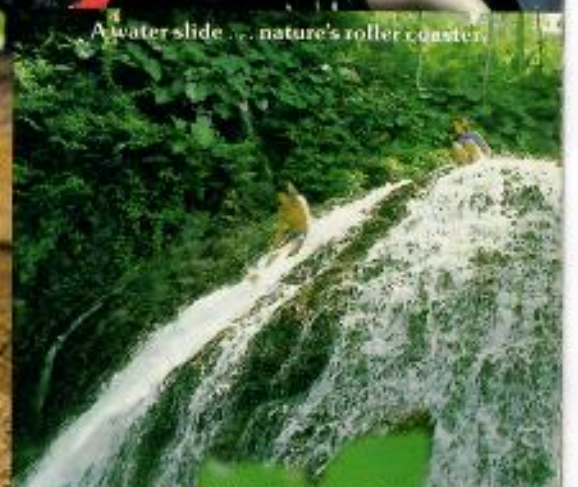
Western Samoa's annual Independence Day Celebration attracts dancers from throughout the Pacific and visitors from all over the world.



The Hideaway Hotel.



Father and son in a village.



A water slide ... nature's roller coaster.



Coral formations in a hidden lagoon.



Sunday morning in Western Samoa.



Polynesian horseman.



Tattoo.



Photo trophies for home.

"... for travelers of taste and character."

If you come to Western Samoa, you will be one of a select number. Certainly you will be treated as a very special person. Western Samoa Minister of Economic Affairs expressed it best in an address to a recent gathering of international travel industry representatives in the South Pacific – "The people we are seeking to attract", he said, "are travelers of taste and character."

People such as you will appreciate, enjoy, and respect the customs and heritage of Western Samoa. Knowing a few rules of etiquette will also enable you to have a closer relationship with the people. Here are a few simple good manners to remember when you visit the villages.

Ask permission for whatever you might like to do in a village or take from it.

In a fale, speak only while sitting. And sit cross-legged as it is impolite to point your feet at anyone.

Don't eat while standing in a fale or walking in a village.

Walk past open fales . . . don't drive or ride. And if you should be carrying an umbrella, lower it in respect for the chiefs.

When you are offered kava in a kava ceremony, tip a little of its liquid out in front of you before drinking.

Be particularly quiet on Sundays and during the vesper hours. The motto of these islands is "Western Samoa is founded upon God."

And one more thing to remember in the city. Don't tip. Tipping is neither customary nor expected in Western Samoa.

With these simple rules and your own "taste and character," you will have a truly rare experience in Western Samoa. The poet Rupert Brooke (so many famous writers have found their way here), wrote about it well.

"You lie on a mat in a cool Samoan hut, and look out on the white sand under the high palms, and a gentle sea, and the black line of the reef a mile out, and moonlight over everything . . . And then among it all are the loveliest people in the world, moving like gods and goddesses, very quietly and mysteriously, and utterly content. It is sheer beauty, so pure that it's difficult to breath it in."



Modern traditions, pomp and ceremony

Grandmother

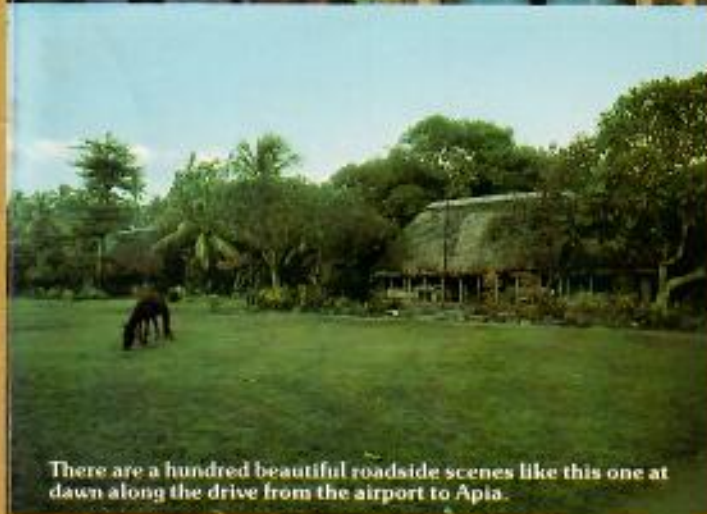


The open market has mangoes, bananas, papayas, . . .



Coconut milk for sale

Coconut for sale



There are a hundred beautiful roadside scenes like this one at dawn along the drive from the airport to Apia.

With an open mind and an open heart

Come, smile with us. Kick your shoes off and stroll an empty, golden beach. Feel the sun warm your back and the surf curl round your toes. Pluck mangoes for a snack and lie flat on your back, counting green coconuts in a blue sky. Rise early, stay up late, and nap at noon. Learn to dance, Polynesian style, to rhythms that pound like your heartbeat. Take the time to watch an entire sunset that dips the world in bronze.

Come do these things for that is what is right to do in Western Samoa. Come to Western Samoa with an open mind and an open heart, for this is how you will be welcomed.



In Samoa there is a proverb. "*Ua sanisani fa'amanuaa.*" The joy of the welcome is like birds greeting the dawn.

Ben Wood's

WHEN POPULAR Danny Kaleikini opened at the Kahala Hilton way back in 1967, his three hula dancers were **Kaipo Prejean, Darlene Hutchinson** and **Leinaala Teruya Drummond**. These three



have proved they have more than good looks. Kaipo worked her way through UH and was in the law school's first graduating class. She is now a lawyer in Kona. Darlene is making big money in the real estate business in San Diego. Her specialty is buying older homes,

remodeling and refurbishing them, and then reselling them. Leinaala, Miss Hawaii in 1964, now gives speeches to community groups and organizations on how she found Jesus. She is also seen in commercials. However, there is some difference of opinion as to whether some of those early, hard-hitting, ear-shattering Tire Warehouse commercials were a plus or minus for her. Thankfully, those Warehouse TV blasts have been toned down. Two of Danny's later dancers—**Martha Carrell** and **Leilani Petranek**—also hula-ed their ways through the university.

Martha earned a masters in speech and went on to become an executive with KCET, LA's public TV station, and is now a producer with the American

Film Institute. Leilani, who has a degree in Hawaiian studies, is one of Tokyo's top models . . .

OVER AT THE CAPTAIN'S Table Lounge at the Holiday Inn Waikiki, **Sydetta Sakauye** and her quartet were surprised the other night when **Greg Field**, drummer for **Count Basie**, dropped by and sat in with the group. Three of **Jim Nabors'** men—**Gordon Uchima**, sax; **Jim Howard**, flute; and **Jeff Henriksen**, bass—also came in one night and worked out



Sakauye

. . . The **Ebony Wahine Models of Hawaii** will present **Rapture in Fashion, Part 3**, this evening in the **Ala Moana Hotel's Hibiscus Ballroom**. Fashions from **Alan Akina, Edwards**, the **Royal Men's Shop**, **Direct Line Fashions** and **Things Japanese** will be modeled by 14 black models. The third annual fashion frolic, organized by **Florette Morgan**, will get under way at 6:30 p.m. with a dinner show

TALK ABOUT DEVOTED FANS: **Rob** and **Rubie Lee** think the **Lopaka Trio**—**Bobby Larrison, Hiram Olsen** and **Kalani Fernandes**—is the greatest. So when the **Halekulani** closed for rebuilding, they followed the trio to the **Ala Moana Hotel** where the threesome teamed with steel guitarist **Jerry Byrd**. When the group wound up its engagement last night, the Lees invited the singer-musicians and their fami-

Hawaii

lies up to their penthouse for a champagne supper. Those Lees are all right . . . Dr. Norm Goldsteln, who tried so hard but failed to save the the Alexander Young Building from the wrecker's ball, will be happy to note that the Alexander Young still lives—at least in an old Hawaii Medical Service Association commercial that popped up on television last week. The spot has a pedestrian (Pat Herman) making a call for an ambulance from a card shop in the building . . . If you've driven past the Young site lately, you'll see half a block of prime downtown property stripped bare—a rare sight . . .

A FREE TREAT: One of Hawaii's great musical talents, Alvin Kaleolani Isaacs, will make a rare public appearance when he heads a free concert at Ala Moana Park's McCoy Pavilion Saturday at 7:30 p.m. Isaac's sons, steel guitarist Barney and slack-key guitar star Atta, will try to appear with their dad before going to their nightclub jobs . . . Others expected to perform are Alfred Apaka Sr., Sterling Mossman, Bill Lincoln, Patricia Lei Anderson, Mel Peterson and Paul Page. Moroni Medeiros of the City's Park's Department will emcee and sing a couple of numbers. Former Sen. Hiram Fong, who grew up with Isaacs and was his classmate at McKinley High, will be there to honor his longtime friend

HIGH CHIEF Tavara and Ioteve Puhituhetine, a Marquesan entertainer in Tavara's Polynesian extravaganza at the Moana Hotel, have recently returned from Samoa where they went through the

painful process of body tattoos. Puhituhetine had a full Marquesan body tattoo from neck to ankles. Tavara has researched the subject and said such a tattoo has not been done since 1850. A Marquesan tattoo is done with finely chipped boar's tusks made into needles and the dye is made from kukui nut. This tattoo took two years to complete in the old days because the body would swell up. Tavara discussed the project with his doctor here and penicillin was prescribed to prevent swelling so the tattoo



Tavara

could be completed in six months. Tavara also was tattooed. His was from navel to ankles and in a Tahitian pattern. Doing the tattooing was Lie Moli Tufunga Lefa, a respected Samoan priest. Tavara said they were treated royally by the Samoan government and people for having this rare, historic tattooing done there

MY APOLOGIES TO Phyllis Spalding Bowen and Alice Spalding Bowen, whose first names I mixed up Thursday. Phyllis, repeat Phyllis, not Alice, is married to Capt. John Bowen. I had Alice instead of Phyllis returning from a European trip with John, which prompted Cobey Black to call Phyllis and say: "The next time John takes Alice to Europe, you come to the Orient with me." The joke's on me, folks





Published by: A. FORSGREN APIA



Welcome to Samoa, Aleipata beach, East coast of Upolu.

F.I. 42

Photo: Andy Forsgren



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Mr. George H. Balazs
Institut of Marine Biology
University of Hawaii

Kaneohe Hawaii 16744

USA

Zürich, den March 16, 1982

Ho/fh

Dear George

Further to my short note of February 17, 1982 I can give you an additional information on the proposed crocodile farm in Western Samoa.

Nobody of the German reptile trade association and the people involved there know of such plans, nor does Mr. Karl-Heinz Fuchs, member of the IUCN crocodile group and one of the world's leading tannery technologist.

Sorry to be negative. All the best

sincerly yours

René E. Honegger
Curator of Herpetology

WESTERN SAMOA LAUNCHES

A NATIONAL PARK PROGRAM

by Ian G. Trotman

In 1974 the government of Western Samoa passed legislation to provide for a National Parks and Reserves System. However, little progress was made until March, 1978, when approximately 7,000 acres (2800 ha) on the southern central portion of the island of Upolu were set aside as the first national park, O Le Pupu-Pu'e. This Samoan name means "The Cliffs-Mountain."

Unfortunately, over the intervening years progress had been limited for reasons which are well known to other developing nations, namely, a lack of expertise and trained staff, and inadequate financing for the purchase of land and park development. There was also the added complexity of land being held under customary ownership, that is, communally owned by a family but with the title held in trust by an elected chief (Matai), a common situation in the South Pacific. Although this has not been a problem in establishing O Le Pupu-Pu'e, since it lies on government-owned lands, the development of national parks on non-government lands needs to be reconciled to the question of customary ownership. For this reason it is hoped that the O Le Pupu-Pu'e National Park will serve as a demonstration area, and there by foster wider public and political support for the concept of national parks and conservation in general. This will not be an easy task in a largely subsistence society.

A report prepared in 1975 by the International Union for Conservation of Nature and Natural Resources (IUCN) and a United Nations Development Advisory Team (UNDAT) considerably assisted Western Samoa by outlining a basis for a system of national parks and reserves. Reservation of approximately 6 percent of the land area was proposed to provide permanent protection of all major ecosystems and for a range of historic sites for aesthetic, educational, cultural, economic and recreational purposes. Staffing requirements were outlined and the formation of a National Parks Authority was recommended. The latter recommendation has not been implemented as

alternatives, such as a National Conservation Trust, are being considered.

In early 1977 responsibility for administering National Parks and Reserves was transferred to the Department of Agriculture and Forests. A reorganization of the Forestry Division enabled a small but enthusiastic staff to commence activities leading to the first park.

The skeletal staff now handling national parks and reserves work is headed by an Acting Superintendent who combines this responsibility with Forest Extension (encouraging public awareness of forest values and the planting of small scale woodlots). He has received valuable training under the regular International Training Course sponsored by the Australian Government. A national parks trainee is presently gaining field experience before going overseas, probably to New Zealand, for training as an information officer. A junior forest assistant, who will also be visiting New Zealand for training, completes the existing professional staff. However, approval recently has been received to double this number. A labor force of three caretakers and a fluctuating number of up to about 15 workers completes the local staff. All are assisted by one U.S. Peace Corps volunteer, a natural resources graduate. A senior park ranger from New Zealand will arrive early in 1979 to spearhead park development.

In this first whole year of operations a small budget of \$WS 30,000 has been allocated. It is hoped this will increase to \$WS 200,000 in 1979. Our aim for the next few years is to deliberately progress slowly by developing only one or two of each of several recommended classes of reserves so that they can serve as demonstration areas to arouse interest and support for the concept. These areas will also allow staff to get practical experience of operating in the local situation before trying to expand. Most initial areas would be on land controlled by the Government as legislation does not readily permit such use of customary communally owned land. It is hoped that as a

result of these demonstration areas there will be willingness to consider some form of dedication of lands for parks and reserves with the local people participating in management in a somewhat similar manner to the approach being used in Papua New Guinea.

Goals of the Park are to: 1. Conserve a large representative area of the land forms, vegetation and wildlife in a largely unmodified state. 2. Conserve water supplies for current and future use. 3. Communicate to the public the concepts and values of the natural history of the country and their natural heritage, providing an outdoor classroom. 4. Provide tourist attractions containing features of outstanding interest and representation of the natural environment.

One of the largest parks likely to be established in Western Samoa, the O Le Pupu-Pu'e National Park contains a range of ecotypes found on Upolu. The

Geology

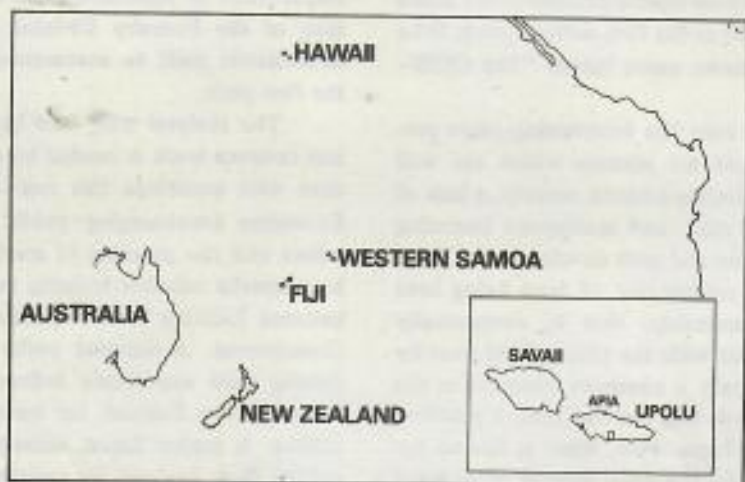
Western Samoa is wholly volcanic in origin. Six different periods of volcanism, ranging from Pliocene to recent, have occurred here.

The youngest volcanics within the park, the Puapua volcanics, began erupting when the sea level had risen to nearly its present position following the last glacial period.

An example of Puapua cinder cone (Mt. Fito) is found in the park and it is well preserved. On the coastal lowlands the Puapua lava are low gradient, ropy pahoehoe flows.

Rocks from the oldest volcanic period, the Fagaloa, are also found in the park, as are Salani volcanics. Variations in the surface structures caused from these volcanics have resulted in some notable waterfalls in the nearby Togitogiga Recreation Reserve.

Although there are 90 different named soils in



Central Pacific location of Western Samoa, and the O Le Pupu-Pu'e National Park on Upolu Island

park is buffered on one side by a block of State Forest being used for a reforestation project and on the other side by an experimental demonstration farm. Both are controlled by the Department of Agriculture and Forests.

Physiography

The park is bounded on the south by the cliffs of the "iron bound" coastline which were formed by the marine erosion of the relatively recent pahoehoe lava which poured over the existing coral reefs into deep water. Extending inland, the park continues to the highest point on the island, Mt. Fito, a cone situated on the central mountain range. The park is unique in including the only area on the south coast where three of the major volcanic formations from which the island is formed are found close together, with the consequent and varied range of soil types which have formed over them.

Western Samoa, they are mostly formed from basalts. Variations in soil types reflect the composition of the parent material.

Vegetation

Near the coast the pahoehoe lava of the Puapua volcanics remains bare and grades back into a littoral belt of scrub, demonstrating the effect of salt wind shearing the coastal vegetation.

Continuing inland, the area is characterized by poor quality lowland forest. This is the only remnant of an extensive tract which spread along the south coast of Upolu before agricultural clearing. It is now restricted to the harsher edaphic sites of the Puapua volcanics.

At higher elevations in the park the foothill forest occurs on the rolling to moderately steep terrain, extending approximately from 750 to 1,800 ft. (228 m to 548 m). These foothill forests have a some-

what higher proportion of tree ferns, and there is greater growth of moss and lichen on tree trunks than is evident in lowland situations.

Many of the species prominent at lower elevations persist and may even be locally common in the higher elevations in the montane and cloud forest. The proportion of ground and tree ferns increases markedly on the upland plateaus and many of the trees are clothed in lichens, mosses and epiphytes. The largest trees in the canopy are often the same as those of the foothills. The montane cloud forest trees have an average height of about 80 feet (24 m).

Proposed Development

In the North along the central island mountain range the park includes an upland plateau flanked by deeply dissected canyons. This area is the only remaining tract of relatively inaccessible wilderness type high forest on the island of Upolu.

A UN sponsored survey by a team comprising a geologist, botanist and wildlife expert has just been completed, adding to the knowledge of the park. Their report, expected early in 1979, is eagerly awaited. The survey has revised the geological map, as it affects the park, by discovering that the Puapua lava actually erupted from Mt. Fito, following an indirect course to the coast. A long lava tunnel (1800 meters) which contains colonies of bats and swiftlets has been discovered. Forty two species of birds have been observed in the park along with three species of lizards, one previously unrecorded. The vegetation has also been described and related to the landforms. A series of excellent diagrams have been prepared showing the origin of geological features and currently active processes. Once the survey team's report is available, zoning will be considered but this is likely to be very simple, possibly involving a small central upland wilderness area, and a more intensive development zone around the main information center and headquarters. The bulk of the area would be left as protected natural environment.

The main visitor center will be located on the coastal road which bisects the park. This will provide information on the park as a whole. A second, small information center will be located on a peninsula of bare lava and will contain information specific to that area, for example, on the nature of the lava and the littoral vegetation belt. These centers will encourage public understanding of the values contained within the park and will be very important for educational purposes.

Other developments completed include a nature trail around a portion of coast to the bare lava peninsula. Plants will be labelled and there will be stops at points of particular interest. Literature will be used

to explain these features. A similar nature trail will eventually be developed to the lava cave. A trail from the coast to Mt. Fito is under construction and will have a descriptive leaflet prepared on the landforms and vegetation through which the trail passes, together with an indication of wildlife likely to be seen. Information centers will contain display boards, a range of brochures and booklets, hopefully models, and eventually slide/tape shows. In the longer term we have visions of fostering cultural activities at the main center including Samoan singing, dancing and handicrafts. It may also be possible to encourage tours of the reforestation project and demonstration farm with the National Park as part of a more varied tourist package. Other ideas await publication of the survey team's report and the secondment of the senior park ranger to spearhead the development. At present our major limitation is likely to be adequate staff. We do not wish to risk damage to some of the major attractions by inadequate supervision, and until this is available such areas are likely to be opened to the public on a restricted basis only.

Western Samoa is fortunate in having a larger land mass than many of the other islands of the South Pacific. It is expected that the O Le Pupu-Pu'e National Park will be an important reserve in accord with the principles enunciated in UNESCO's "Man and the Biosphere Programme," typifying islands of volcanic origin. The benefits should be of international and regional importance, reflecting a national asset of high social and educational value.

Tusitala Reserve—the burial place of Robert Louis Stevenson

Arising from a gift of land to the people of Western Samoa from descendants of Robert Louis Stevenson and his wife Fanny, the Administration of Western Samoa passed an Ordinance in 1958 setting aside a small area containing Stevenson's tomb as the Robert Louis Stevenson Memorial Reserve, and approximately 120 acres (48 ha) as the Mt. Vaea Scenic Reserve.

Following the establishment of a National Parks and Reserves Section within the Department of Agriculture and Forests, the Government brought these two Reserves into the System under the new name of the Tusitala Historic and Nature Reserve. Tusitala was the name given to Stevenson by Samoans and means the "Teller of Tales." At the same time, additional Government land was added to bring the area up to approximately 320 acres (129.5 ha).

The famous Scottish author, a frail man, travelled to many parts of the world seeking an area where he could live more comfortably with his poor health. After visiting various parts of the Pacific, he and his

wife Fanny arrived in Western Samoa in 1889. Charmed by the tranquility of the islands and the friendliness of the people, together with the considerable improvements to his health, they decided to buy land and build a house. Their plot of land was over 300 acres (121.5 ha) on the side of Mt. Vaea, which rises behind Apia, Samoa's capital and chief port. Waterfalls and streams tumbled down the hillside giving rise to the Samoan name Vailima, which means 'five streams'. This name was given to the Stevensons' elaborate home. This building with a number of additions forms the basis for what is now Government House. It was occupied by the Administrator during the period when Samoa was a New Zealand Trust Colony and since Independence it has been the Official Residence of the Head of State.

At first there was only a rough track up to Vailima but the local people laid a broad road and called it the "Road of Loving Hearts" in recognition of their devotion to Stevenson who helped them during a period of political unrest.

Stevenson died in December, 1894, and was buried on the summit of Mt. Vaea.

Eventually a large tomb was built over his grave, on the side of which was carved on a plaque the words of his immortal poem, "Requiem," which he had written 15 years before. It includes these famous lines:

*Here he lies where he longed to be;
Home is the sailor, home from the sea,
And the hunter home from the hill.*

Mt. Vaea, an outlier of the foothills rising to the central island mountain range, juts almost into the city of Apia. It is largely unmodified, except to the north where a few residences have been built overlooking the city. The mountain is covered by lowland and hill country forest, some of which was badly damaged by hurricanes in past years. Since the eastern

faces of the mountain form part of a water catchment area, exotic trees were planted on the most severely damaged sites to protect the soil. With the increasing pressure of urbanization, some villages have unfortunately cleared parts of the land for food crops. An educational campaign has been undertaken to prevent further clearance and it is intended to restore forest to the reserve as the food crops mature.

Renovations so far undertaken include the upgrading of the track to the summit, the construction of a round house there for picnics, the provision of toilets and rubbish receptacles, the surveying and fencing of the public access to the reserve, the formation of a car park and the clearing up and improving of a swimming pool built into the stream flowing along the foot of Mt. Vaea. Development plans include the preparation of a map table at the summit, the formation of two or three trails to other parts of the reserve, the labelling of plants, the preparation of brochures and, in association with educational authorities, booklets which will describe the natural history of the reserve and encourage its use for outdoor education.

Recently the Head of State announced that a portion of the Vailima grounds would be linked with the Reserve and a forest aboretum for development as a botanical garden.

Currently, more than 150 people visit the area each month.

from Parks, Jan.-Feb.-Mar. 1979

Ian G. Trotman has just concluded a tour of duty in Western Samoa as the Chief Forest Officer in the Department of Agriculture and Forests. He was seconded to this position under the New Zealand Bilateral Aid Programme.



O Le Pupu-Pu'e National Park's iron bound coast was formed during the Puapua Volcanic period when lava buried the reef and plunged into deep water.

Note the bare lava and sheared littoral shrub zone grading into forest.

(Photo: I.C. Trotman)



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

15 April 1981

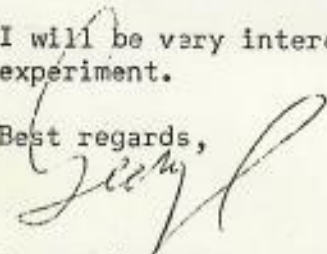
Mr. A.L. Phillip
Chief Fisheries Officer
Economic Development Department
P.O. Box 832; Fisheries Division
Apia, Western Samoa

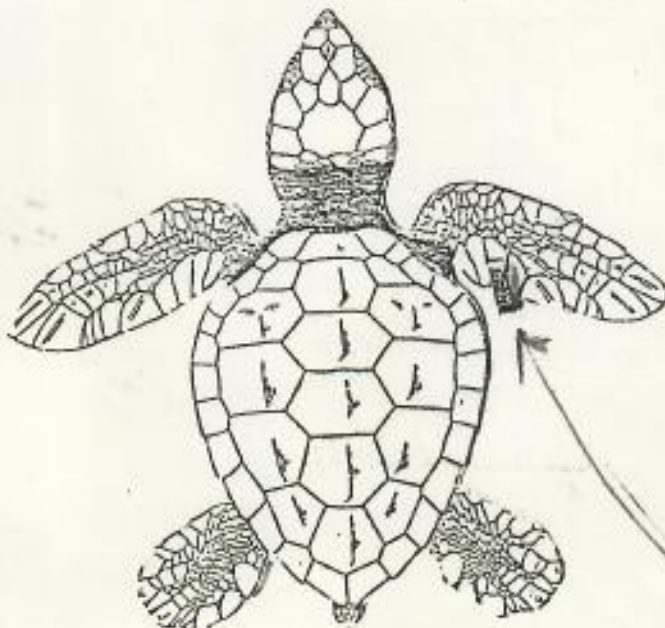
Dear Mr. Phillip:

Enclosed are 2000 small turtle tags for use on your hatchling hawksbills at Aleipata. I have also sent two applicator pliers in the event that one gets lost or misplaced. As I mentioned in my earlier letter, I recommend that the tags only be placed on the turtles just before they are released into the wild. A line drawing of a hatchling (sealed in plastic) has been enclosed so that Viliamu can see where the tag should be attached. As illustrated, the tag should be put on so as to allow some room for growth of the turtle to take place. If the tag is put on too tight, the area of the flipper will soon become necrotic and the tag will fall off.

I will be very interested to learn of the results obtained from this tagging experiment.

Best regards,


George H. Balazs
Fishery Biologist





GOVERNMENT OF WESTERN SAMOA
ECONOMIC DEVELOPMENT DEPARTMENT
FISHERIES DIVISION

APIA, WESTERN SAMOA

Address: P.O. Box 832
Apia, Western Samoa

Cable: Fisheries, Apia
Tel: 20 369

16th December 1980

Mr. George H. Balazs,
Fishery Biologist,
National Marine Fisheries Service,
P.O. Box 3830,
Honolulu, Hawaii 96812,
HAWAII.

Dear Mr. Balazs,

I am in receipt of your letter dated December 8, 1980.

The time of your intended visit is in order.

You will have no problem in obtaining a place in which to live at Aleipata. This is a remote area and you may have to live in a Samoan house. The hatchery Manager may be able to put you up at his house. There are a few four wheel drive vehicles here for plantation use. If you intend to travel only between Apia and Aleipata - the roads are good and a four wheel drive vehicle is not necessary.

Let me know time of your arrival.

Yours sincerely,


(A.L. Philipp)
CHIEF FISHERIES OFFICER

December 8, 1980

F/SWC2:GHB

Mr. Alphonse Philipp
Fisheries Division
Government of Western Samoa
Apia, Western Samoa

Dear Mr. Philipp

The purpose of this letter is to ask for your assistance in making the necessary arrangements for me to visit Western Samoa during early February 1981 to study the hawksbill hatchery at Aleipata. Mr. Richard Shomura has informed me that he previously discussed this matter with you, and that you were highly receptive to the idea of conducting such a study visit.

I anticipate that approximately 10-15 days will be needed to accomplish my work. Most of this time would be spent at Aleipata talking with hatchery personnel, studying written records, observing procedures, and visiting the offshore islets where nesting occurs. I would therefore need a small place to reside near the hatchery facility. In addition, I would like to rent a 4-wheel drive vehicle for a few days in order to survey other coastal areas to gather current information on sea turtles.

I am considering the possibility of having a Samoan from the Office of Marine Resources in Pago Pago accompany me on this visit, both to further his knowledge of sea turtles and to act as my field assistant. I would, of course, need your approval before a final decision is made in this matter.

I look forward to hearing from you at your earliest convenience.

Sincerely,

George H. Balazs
Fishery Biologist

bc: Balazs
HL

GHB: iht

January 7, 1981

F/SWC2:GB

Mr. A. L. Philipp
Chief Fisheries Officer
Fisheries Division
Government of Western Samoa
Apia, Western Samoa

Dear Mr. Philipp:

Many thanks for your letter of 16 December 1980 concerning my proposed visit to Aleipata. The schedule has now been finalized and I will be arriving in Western Samoa at 10:15 a.m. on 6 February. Please do not go to the trouble of meeting me at the airport, as I can easily take a taxi into Apia. I will contact you at your office shortly after arriving in town.

The matter of bringing an assistant with me from Pago Pago is still pending due to a question of our available funds. You did not voice an objection in your letter to this suggestion, therefore I assume that a second person could be accommodated.

I am looking forward to accomplishing a successful study visit.

Best wishes for this New Year.

Sincerely,

George H. Balazs
Fishery Biologist

GHBalazs:ey
cc: Balazs ✓
HL

December 8, 1980

F/SWC2:GHB

Mr. Alphonse Philipp
Fisheries Division
Government of Western Samoa
Apia, Western Samoa

Dear Mr. Philipp

The purpose of this letter is to ask for your assistance in making the necessary arrangements for me to visit Western Samoa during early February 1981 to study the hawksbill hatchery at Aleipata. Mr. Richard Showara has informed me that he previously discussed this matter with you, and that you were highly receptive to the idea of conducting such a study visit.

I anticipate that approximately 10-15 days will be needed to accomplish my work. Most of this time would be spent at Aleipata talking with hatchery personnel, studying written records, observing procedures, and visiting the offshore islets where nesting occurs. I would therefore need a small place to reside near the hatchery facility. In addition, I would like to rent a 4-wheel drive vehicle for a few days in order to survey other coastal areas to gather current information on sea turtles.

I am considering the possibility of having a Samoan from the Office of Marine Resources in Pago Pago accompany me on this visit, both to further his knowledge of sea turtles and to act as my field assistant. I would, of course, need your approval before a final decision is made in this matter.

I look forward to hearing from you at your earliest convenience.

Sincerely,

George H. Balazs
Fishery Biologist

bc: Balazs
HL

GHB:iht

NATIONAL MARINE FISHERIES SERVICE
HONOLULU LABORATORY
P. O. BOX 3830
HONOLULU, HAWAII 96812

February 24, 1981

F/SWC2:GHB

Mr. A. L. Philipp
Chief Fisheries Officer
Economic Development Department
P. O. Box 832
Apia, Western Samoa

Dear Mr. Philipp:

I am writing this short letter to thank you once again for making all of the arrangements that allowed for our successful study visit at Aleipata. Both William Pedro and I greatly appreciated the hospitality and help that we received. In the near future, I will be sending you some of my ideas on how the hatchery project might be improved upon. I want to stress at this point, however, that I consider the project to be an extremely worthwhile endeavor which hopefully will continue to receive the support of your government.

Under separate cover, I am sending a new stainless dive knife to Viliamu (in care of your office) to replace the one that he lost when we swam ashore to Nuulua.

Best personal regards.

Sincerely,

George H. Balazs
Fishery Biologist

bc: Balazs /
HA

GHB:iht

March 11, 1983

F/SWC2:GHB

Mr. James R. Hollyer
Peace Corps Fisheries Biologist
Department of Economic
Development
P. O. Box 862
Apia, Western Samoa

Dear Jim:

Enclosed are several copied pages from a sea turtle "research and conservation manual" I am currently co-editing to be published within the next few months. I'll be sure and send you a copy when it is completed.

I'm not certain what the chances will be of obtaining outside funds to "restart" the headstart/hatchery project. Along with a copy of this letter, I will make serious inquiries on your behalf. I estimate that ca. \$5,000 per year would be more than adequate to cover the expenses of what you described. If this is wrong, please let me know as soon as possible.

The plan to raise the hatchlings in individual containers in an outside tank near the Fisheries building sounds worthwhile. However, depending on their rate of growth, they would probably have to be held a minimum of three to four months. I don't really feel there would be much advantage in just keeping them for one month.

I strongly advise against transporting eggs from Aleipata to Apia for hatching. Cooling of the eggs, as well as embryonic mortality, is likely to result from this long transport. Consequently you will end up with a very low hatch rate that consists mostly of males. Hatch the eggs in Aleipata, then transport the hatchlings, which are then easily moved around without damage.

Tuna is a fine food source for the hatchlings. However, other obtainable items (i.e., clams) fed every so often will give nutritional balance, plus stimulate appetite. There is no "correct feed to body weight ratio" that I can give you. Simply offer all they will eat during several feeding bouts each day. It can be cut back to two feedings per day when they are one to two months old.

I will write to you again within a month when I have something concrete to report. In the meantime, please write to me immediately if there is any change in plans or administrative interest in pursuing a reconstituted turtle project.

Mr. Philipp may recall that one of my principal recommendations for the turtle project was to recruit and assign at least a half-time Peace Corps person to Aleipata to guide Viliamov. I still view this as the better course of action. However, I certainly can understand the funding and personnel constraints now being experienced.

Sincerely,

George H. Balazs
Fishery Biologist.

cc: Mr. Alphonso Philipp

bc: HL
Balazs

GHB/11



OUR REF:

YOUR REF:

GOVERNMENT OF WESTERN SAMOA
FISHERIES DIVISION

APIA, WESTERN SAMOA

11 February 1983,

Dr. George Balazs,
National Marine Fisheries Service,
Honolulu Laboratory,
P.O. Box 3830,
Honolulu Hawaii 96812.

Dear George,

Good day, I hope that things are going well for you so far in 1983. Things in Apia are pretty good despite the many problems that exist here.

George, I relayed your thoughts (on the possibility of funding to restart our turtle program) to our minister, and he was quite interested. Could you please do me a favour and elaborate on our chances and spending areas. Also, could you comment on my plan as it relates to practicality and funding. Additionally, Alph would like to know if it would be possible to collect the eggs in Aleipata, transport them to Apia and then bury them in sand that has been previously shipped to the office from Aleipata. Then when the turtles hatch, raise them here (under the direction of Viliana and in conjunction with the proposed new set up), and then release them in Aleipata?. Could we also reduce the holding time, to say 1 month?. We also need to know the correct feed to body weight ratio to set up a proper maintenance schedule for the workers to follow. Is tuna a suitable food for Hawksbills - fisheries would catch or buy the fish. Sorry about the barrage of questions but I thought it wise to get some answers before the issue cooled off.

We really appreciate your continuing support and concern. Hope to here from you soon.

Regards,

(James R. Hollyer)
PEACE CORPS FISHERIES BIOLOGIST



GOVERNMENT OF WESTERN SAMOA

DEPARTMENT OF ECONOMIC DEVELOPMENT
FISHERIES DIVISION

Address: P.O. Box 862
Apia, Western Samoa

Telephone 20-369

Dec. 21, 1982

Dear George,

Please find the item that was intended to be
inclosed in my previous letter. Please excuse the
inconvenience.

Regards,


James R. Hollyer



GOVERNMENT OF WESTERN SAMOA

DEPARTMENT OF ECONOMIC DEVELOPMENT
FISHERIES DIVISION

Address: P.O. Box 862
Apia, Western Samoa

Telephone 20-369

20 December 1982

Mr. G.H. Blass,
U.S. Department of Commerce,
Honolulu,
Hawaii 96812.

Dear George,

Good day. I'm sorry I've been so truant in writing but things have been rather hectic here, and I've had to do some extra planing to complete this letter. Unfortunately at this time I must convey the bad news that the Aleipata facility has been closed as of September. This governmental decision was based on the following factors:

- 1) unsettled land dispute.
- 2) lack of funds.
- 3) poor working performance by Viliamu and crew especially in the areas of attendance, record keeping, consistant and sufficient feedings and proper sanitary procedures.
- 4) reduced hunting pressure.

At this time I don't feel its as great of a loss as originally expected - in light of the afore mentioned reasons and that the turtle's safety and well being was being compromised in reason No.3. I also felt that the facility was ill-equipped to handle the great number of hatchlings. However, I'm still as determined as ever to see that there is a proper conservation program here, whether it be through legislation or another facility. To me the former would be much more difficult as I learned how really simple the other process could be from a Public T.V. programme I saw back in the states in September. Dr. Pritchard was the key note speaker and they were showing the set ups of facilities in Mexico and Texas. They had their turtles in individual buckets thus solving untold problems. I feel we can do that here also. We have at the Apia office, outside concrete tanks that could be ridged up (see enclosure) to handle about 1500 turtles a year. It would not turn out the numbers reported by Viliamu, but I view those figures with caution anyway. I can definately see that

there would be an increase in the survival rate from the egg to the releasing stage. The turtles could be caught and hatched by a family in Aleipata, transported to Apia, raised outside (they would have flowing sea water and a good supply of fresh fish from the market). They could then be transported back to Aleipata where they would be released as before. Of course, the equipment would take some funding, but the labor is here as are the fresh fish. By the way the Aleipata project was not the only project to fall because of the drastic budget cuts, my own project - Vaitoloa Baitfish Project has also been shelved. This country and it's economy is in ~~a~~ deplorable shape and everyone is going to feel it, unfortunately.

Well, I would be interested to hear your thoughts on my proposal when you get a moment. Again please accept my apology for this late letter.

George, have a good christmas and even a better new year.

Regards,



(Jim Hollyer)

U.S. PEACE CORPS FISHERIES BIOLOGIST

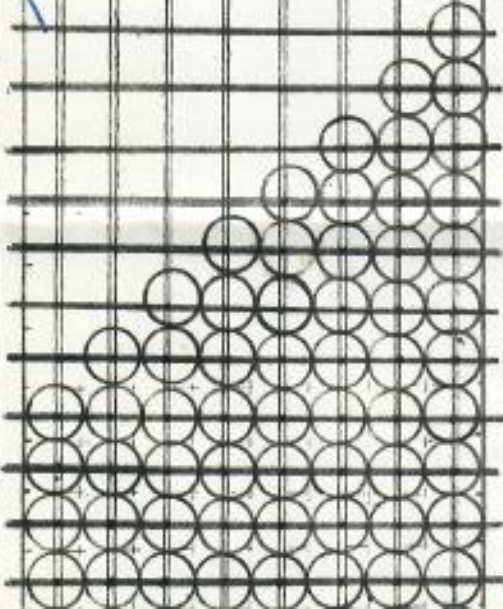
cc: Mr. Philipp,
Chief Fisheries Officer.

Raising Turtles at the Apis Facility

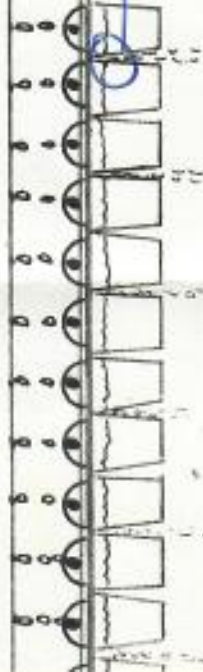
Using a 9" bucket = a total of 344 buckets (8 x 43)
" 13" pair " = " " " 145 " (5 x 29)

9" dia x 9" Depth

Steel bars to hold up buckets

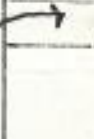


11" dia
5' deep
with holes
to hold
buckets



Side of each bucket to have an overflow hole to facilitate the circulation of water.

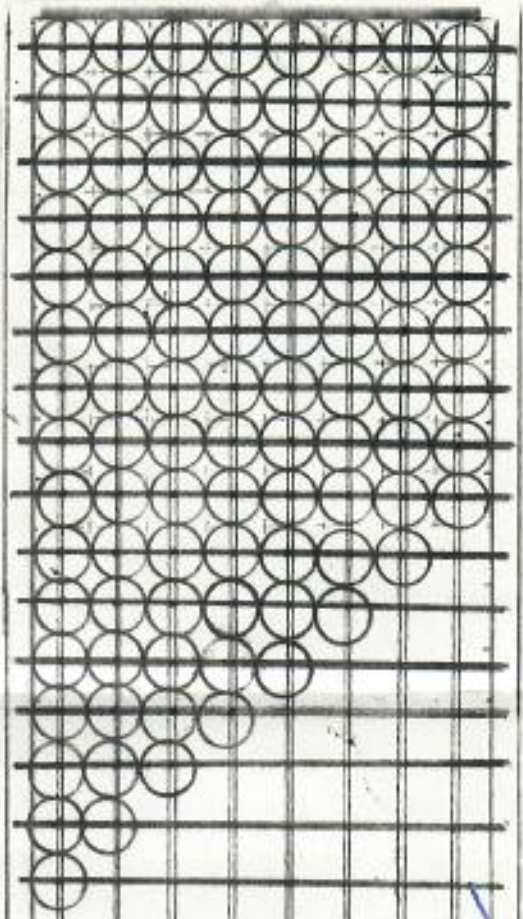
out



Raising Turtles at the Apis Facility

len = 1 foot
Emk Bucket 9" dia x 9" depth

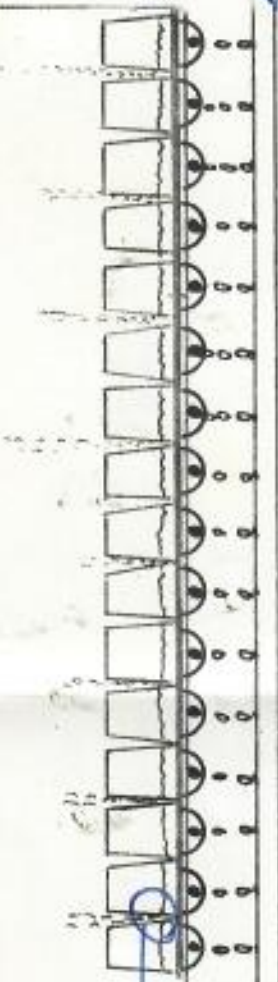
using a 5" bucket = a kind of 3 1/4 buckets (8 x 10)
" " 13" pin " = " " " 145" " (5 x 22)



Steel bars to hold up buckets



1 1/2" P



SIDE of each bucket to have an over flow to facilitate the circulation of water.

IN
Sea water



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

December 13, 1982

F/SWC2:GHB

Mr. A. Philipp
Chief Fisheries Officer
Department of Economic Development
P. O. Box 832
Apia, Western Samoa

Dear Mr. Philipp:

Last week I had the opportunity to meet Lui Bell while he was visiting the Hawaii Institute of Marine Biology. I was sorry to learn from him that the turtle hatchery in Aleipata was closed down during September. This is an unfortunate occurrence, in my view, and I would be interested to learn what factors brought about this decision. If you would be kind enough to explain the circumstances to me, perhaps there is some way that I can be of assistance. If the decision to stop the hatchery was based solely on funding considerations, it may be possible to obtain supplemental support from one of the international conservation organizations concerned with sea turtles.

I hope to hear from you about this important matter at your earliest convenience.

Sincerely,

George H. Balazs
Fishery Biologist



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

November 9, 1981

F/SWC2:GHB

Mr. A. L. Philipp
Chief Fisheries Officer
Economic Development Department
Fisheries Division
P. O. Box 832
Apia, Western Samoa

Dear Mr. Philipp:

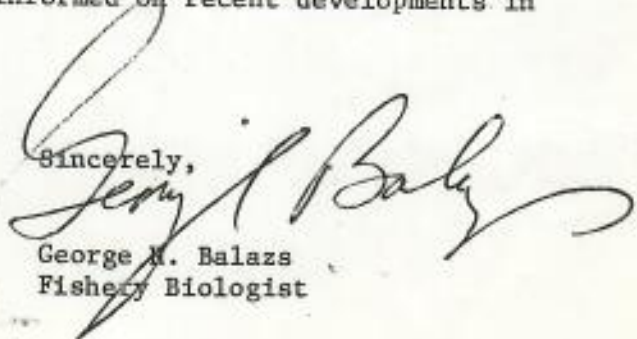
I am writing to tell you that after I met with you in your office on October 28 I spent 2 productive days visiting with Viliamu at the Aleipata Turtle Hatchery. He once again graciously welcomed by assistance and discussions on how to enhance the workings of the facility. During this trip we tagged approximately 200 post-hatchlings present in the rearing tanks and released 33 4- to 5-month old turtles that had grown to a mean carapace length of 7 cm. I was impressed with the overall health and condition of these animals, and the vigor they exhibited when tossed into the offshore waters from a moving boat.

One new and serious problem that both Viliamu and I identified during my visit was the gross invasion of a multitude of fine rootlets into the sand area where the eggs are transplanted for incubation. Two complete egg clutches failed to develop because of this adverse factor. The culprit seems to be a large "pua" tree that is adjacent to this fenced area. Viliamu suggested that a new incubation area be constructed more toward the entrance to the rearing tanks. This seems to be an excellent idea because it will also eliminate shade that now results from a number of trees present along the shoreline. Excessive shade can result in the lowering of incubation temperatures. We now know for certain that the sex of a sea turtle embryo is temperature dependent, and just a few degrees lower temperature results in many more males being produced than females. This is obviously undesirable, so we need to do everything possible in hatchery projects to avoid such a problem. Lower incubation temperatures can also result when eggs are reburied at a greater depth than would occur naturally on the nesting beach.

I will continue writing to Viliamu every few months to give him the opportunity to ask questions and stay informed on recent developments in hatchery techniques.

Best regards.

Sincerely,


George H. Balazs
Fishery Biologist



GOVERNMENT OF WESTERN SAMOA
 ECONOMIC DEVELOPMENT DEPARTMENT
 FISHERIES DIVISION

APIA, WESTERN SAMOA

SSC
 Address: P.O. Box 332
 Apia, Western Samoa

Cable: Fisheries, Apia
 Tel: 20 369

11 January 1984

Dr. George Balazs,
 U.S. Department of Commerce,
 N.O.A.A.,
 National Marine Fishery Service,
 Southwest Fisheries Center,
 Honolulu Laboratory,
 P.O. Box 3830,
 Hawaii 96812.

Dear Dr. Balazs,

Good day Sir, My name is Jim Hollyer and I am the New Peace Corps Fisheries Biologist assigned to the Fisheries Department in Western Samoa. I've heard many good things about your work from Alfonso, Viliamu and just recently from Dr. Robert Johannese. Viliamu mentioned that your future trip here had been canceled, so I am writing to ask if there is anything I can do from our end concerning data taking and such which might be helpful to the "Turtle Community". Dr. Johannes felt that Viliamu had a good deal of mental notes that needed to be cataloged. So if this is the case - what data is needed and what would be the best way of collecting and presenting it? Do you have our yearly capture and release records?

Aside from this, another P.C.V. in our department and one in the Rural Development department are looking into the possible construction of a windmill - powered water pump for the hatchery. This is in light of the poor care taken of the gasoline pumps. However, Alfonso feels that the 2 casuals could carry the water from the sea (as they do now because the pumps are broken). Everyone seems to have a valid point and we don't want to build it "just to build it"-what do you think?

Is there anything else that can be done to improve techniques or facilities at Aleipata as I will probably be there sometime in February and would truly like to assist this project.

Thank you for your time. I hope your New Year will be a good one. I look forward to your earliest reply.

Regards,

James R. Hollyer
 (JAMES R. HOLLYER)

Peace Corps Fisheries Biologist



Bralaya

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

January 22, 1982

F/SWC2:GHB

Mr. James R. Hollyer
Peace Corps Fisheries Biologist
P. O. Box 880
Apia, Western Samoa

Dear Jim,

Many thanks for your letter of January 11. I was very pleased to learn of your interest and willingness to assist the turtle hatchery project. I wish that a PCV, such as yourself, could be assigned to the project on a full-time basis.

As you may know, I stayed with Viliamu in Aleipata for 2 weeks during February of last year, and was again with him for 2 days during late October on my return from Tokelau. The project is coming along well, in my view, and I have copies of most all of the data that have been recorded over the past 10 years. There are several areas where improvements can be made, as in all endeavors, but for the present you could focus some attention on the following points:

1. Make sure that the fenced incubation area is moved out from the shade of adjacent trees and away from invading roots. Also, try to have the egg clutches reburied at the same depth as they are laid on the natural beaches. I estimate that the top of the clutch should be not more than 8 inches (20 cm) beneath the surface.
2. Following my visit in February, I sent down a supply of small numbered metal tags suitable for hatchlings. Please make sure that all turtles released have a tag attached to them in addition to the notch being cut into the edge of the carapace.
3. Try to gather some information on the number of turtles and egg clutches that are being taken off the islets by villagers to be eaten or sold.
4. If your time and energy permit, try to determine how many different turtles per night are nesting on each islet during the middle of February. You should do this by staying on the islets overnight for 2-3 nights, or by counting tracks on the beach in the morning before the tide erases them.

With ample time and interest, there are many worthwhile things that one living in Western Samoa could do to study sea turtles. I anticipate being able to get down there again this year, and certainly look forward to meeting you at that time. In the meantime, let us continue to correspond on matters of common interest.

Oh yes, in response to your question about a windmill-powered water pump, it is difficult for me to form an opinion not knowing much about the difficulties of building and maintaining such a pump. If there is not much involved, it may certainly be worth a try.

Please give my warm regards to Viliamu, Malo, and children.

\ Sincerely,

George H. Balazs
Fishery Biologist



OUR REF:

YOUR REF:

GOVERNMENT OF WESTERN SAMOA
DEPARTMENT OF ECONOMIC DEVELOPMENT
FISHERIES DIVISION

APIA, WESTERN SAMOA

29 January 1982

Mr. George H. Balazs,
U.S. Department of Commerce,
National Oceanic and Atmospheric Administration,
National Marine Fisheries Service,
Southwest Fisheries Center,
Honolulu Laboratory,
P.O. Box 3830,
Honolulu,
Hawaii 96812.

Dear George,

Thank you for your letter, pictures and information. It is always exciting to get up-to-date materials! I have a lot of questions at this writing, I only hope I get the answers before I leave for Aleipata. So please bear with me:

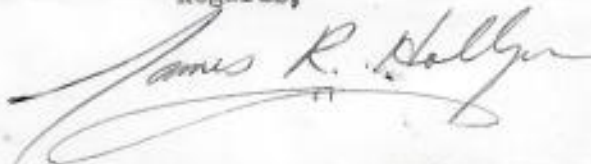
- 1) We have that white fungus killing the turtles - how do we stop it? I've read that sunning them in an outside tank will help - so I'm going to build one in Feb. Also I've read 1% KMNO₄ kills the fungus but they did not qualify the treatment methods.
- 2) Viliamu thinks the new pen that was built has too high of a temperature and is hindering incubation - what are the tolerable ranges for greens and hawksbill? I will test this by implanting a 2" p.v.c. pipe in the pen and dropping a thermometer (attached to a string) down there. I will use $\frac{1}{2}$ the nests depth as my reading point.
- 3) I've tried to compile data on eggs collected, turtles hatched and turtles released and nothing is consistent - could you please send me any information you have so I can get a handle on the operation.
- 4) Have you left any instructions with Viliamu to record the actual number on the turtles as they are released?
- 5) You mentioned notching the carapace - I've read about Bob Davidson doing it, but I haven't seen it on our turtles. Is this done just before releasing and does it have a set pattern as per years?
- 6) What is the best cleaning solution for the tanks - also I think that any other fungus or bacteria is kept in the pond at all time even after washing, because of those rags Viliamu uses to plug up the drains - I'll be looking for something more suitable soon.

- 7) Is it possible to receive a copy of your "Synopsis of Biological data on the green turtle in Hawaiian Islands" We will be happy to cover any costs. Also, H.F. Hirth's 1971 paper on the same topic - only if there is something not covered in your papers.
- 8) Why do they not use nylon tags?- as it seems even non - corrosive tags might collect some ions that might be hazardous to the flipper.

Well, I believe these questions will take up more time I am worthy of but I really do appreciate the help. I will also be taking pictures at Alesipata so if I come up with anything interesting I'll send it along with any data.

Thank you again George and I will be anxiously awaiting your reply.

Regards,



James R. Hollyer
PEACE CORPS FISHERIES BIOLOGIST

Mr. Jim Hollyer,
Fisheries Division
P.O. Box 862,
Apia, Western Samoa.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

February 11, 1982

Mr. James R. Hollyer
Peace Corps Fisheries Biologist
P. O. Box 862
Apia, Western Samoa

Dear Jim,

In order to answer your questions of January 29th as quickly as possible (as requested), I am taking the liberty of sending you correspondence recently exchanged between my colleague, Jack Woody, and a Peace Corps worker in Honduras. Jack put in considerable effort composing this lengthy letter, so there's no reason for me to duplicate the points he has explained. I agree with most everything he has set forth. I hope that it will be helpful to your own efforts to understand, and improve, the turtle project in Samoa.

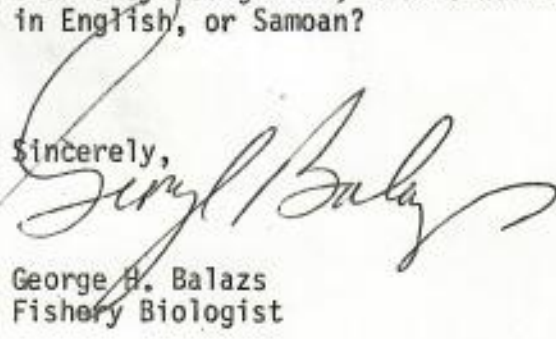
For your questions that need more specific information, I will try to answer them as follows:

1. The white lesions that occur at times on turtles raised in captivity can be caused by a number of factors, such as dirty water, or biting due to inadequate food supply or crowding. Topical treatment with gentian violet solution will help, but you really need to get to the cause of the problem. Scrub the tanks good with bleach, change the water often, feed often, reduce crowding, etc.
2. Why does Viliamu think the incubation temperature is too high in the new pen? Significant hinderance of incubation was taking place in the old pen - it could only improve in the new pen. The idea to implant a 2" pipe in the pen to insert a thermometer for the temperature probably won't give an accurate reading. The 2" airspace created would have a considerable effect. In order to take an underground reading you need a telethermometer where the remote probe can be buried right in the ground.
3. Yes, there are problems for the data on eggs collected, turtle's hatched, and turtles released. I'm still trying to work it out myself, so there's really nothing concrete I can send you at this time.
4. Yes, Viliamu knows that the actual numbers of turtles released are suppose to be recorded on the forms that have been in use now for many years.
5. I believe that Viliamu has been notching the turtles a day or two before release. He should also now put a tag on each turtle.

As I mentioned earlier, the project really would benefit from a full-time Peace Corps person with a biology background. I suggested this to Mr. Philip when I met with him. It would not be an easy assignment, but it would be rewarding. Do you speak to Viliamu in English, or Samoan?

Best regards,

Sincerely,



George H. Balazs
Fishery Biologist

cc Mr. A. Philip

Enclosures

Correspondence between Jack Woody and PCV Cynthia Minarik

Status of sea turtles in the Central Pacific Ocean, by GHB (in press)



GOVERNMENT OF WESTERN SAMOA
 ECONOMIC DEVELOPMENT DEPARTMENT
 FISHERIES DIVISION

APIA, WESTERN SAMOA

Address: P.O. Box 832
 Apia, Western Samoa

Cable: Fisheries, Apia
 Tel: 20 369

12 March 1982,

Dr. George Balass,
 U.S. Department of Commerce,
 National Oceanic and Atmospheric Administration,
 National Marine Fisheries Service (F142),
 Hawaii Area Fishery Research Center,
 2570 Dole Street - P.O. Box 3830,
 Honolulu Hawaii 96812.

Dear George,

Well, I'm finally back from Aleipata and have finished a delightful week of discussions with Wayne Baldwin on the mollie project. I really appreciated your speedy reply and I took immediate action on cleaning out the turtle tanks with bleach. However, in my two week stay I accomplished next to nothing. Mostly this was caused by Viliamu's disappearing act the day after I arrived. We went out collecting only one day and got one nest off Nu'u and one off of Nuutele. I found out later from Viliamu that the nests were about 3 days old, thus according to the letter from Dr. Wood we killed off alot of turtles by removing them after the crucial 12 hour period. Also, the sores increase with no relief and if the six clutches we have now, hatch - we'll have intolerable stress conditions. What is the recommended stocking rate per sq. foot for a hatchery?.

The feeding system is also inadequate and the diet is not only shellfish everyday (if that!) but at very small quantities. What is the feeding rate per oz. or gm. of turtle?.

I have also received information that some of our tagged turtles are being held in little containers in nearby villages. I don't know how they got there but I plan to find out on my next visit.

George, I hate to lay all this negative information on you, but I need your advice on what should be the future of the project. I cansee no way that our system is better or less cruel than nature. Maybe legislation is the key or hiring one person to go out to the islands and sweep over the nests. As you can see I'm without a good solution. I truly feel however, that stationing another Peace Corps permanently at the hatchery will only benefit the turtles for a short time. As it is, I'm the fifth P.C. that has been there and Viliamu evidently still hasn't learned proper hatchery techniques.

On the brighter side, I plan to take age, weight and carapace length measurements next week for a group of turtles being let loose - What is the optimum time to keep turtles in captivity - surely it can't be 3 months as Viliamu states. That's got to make them too dependant. Also, I plan to begin building the hand powered pump for the hatchery soon. What kind of pumps are other small hatcheries using?

That's about the latest from here. Let me assure you that I've done a lot of thinking about the turtle project and I am honestly dedicated to their survival, but not if our project is doing more harm than good - the turtles deserve better!

Thank you again for the information and the Turtle Newsletter. A word on tags - have they tried making tags out of ceramic material with stainless steel poprivet - like pins? - Maybe it's too costly and heavy? Please keep in touch.

Regards,



(James R. Hollyer)

PEACE CORPS - FISHERIES BIOLOGIST

cc: A.L. Philipp
Chief Fisheries Officer

NATIONAL MARINE FISHERIES SERVICE
HONOLULU LABORATORY
P. O. BOX 3830
HONOLULU, HAWAII 96812

February 26, 1981

F/SWC2:GHB

Mr. Gene Feldman
1404 NE 42nd Street, #3422
Seattle, Washington 98105

Dear Gene,

You will undoubtedly recall that we met in Apia during March of 1977 on my return from a "sea turtle consultancy" in Fiji and the Cook Islands on behalf of the South Pacific Commission.

For many years now I have been exceedingly interested in the Western Samoa hawksbill hatchery project. I am therefore pleased to say that between February 4 and 19th I was able to visit Aleipata and live with Viliamu to study the project. While at the facility, I was able to sort through all of the records and data that still exist. There was a surprising amount of written information available. Eventually I will be preparing a report on this work which will include suggestions to help improve the operation (and effectiveness) of the facility. I should tell you, however, that, on balance, I am convinced that this is a worthwhile conservation endeavor. I want to see it continued, with whatever guidance I can provide.

Gene, there are a couple of areas in which you can probably help me to clarify some historical information.

- 1) How many nights did you spend on Nuulua (or the other islands), what were the dates, and how many turtles came ashore each night? Did you tag any turtles with the "Samoa Fisheries" metal tags?
- 2) Can you provide me with the details of your recoveries of "notched" turtles, including numbers, age classes, and notch appearance?
- 3) Do you know approximately how many adult turtles per month were being killed while nesting on the islands by residents in order to obtain tortoise shell for sale to merchants in Apia? Were there any residents that you identified as being the prime turtle catchers?
- 4) Did you know that apparently a sizable aggregation of green turtles periodically forages on the sea grasses inside the reef at Aleipata? Did you ever see these turtles being caught in fish traps constructed in the area?

I want to thank you for any and all information that you are able to give me on these matters. If you are ever in Hawaii, please be sure to contact me.

Sincerely,

George H. Balazs
Fishery Biologist

bc: Balazs
HL

GB:iht

February 10, 1986

F/SWC2:GHB

Mr. Veta Faasili
Fisheries Division
P. O. Box 832
Apia, Western Samoa

Dear Mr. Faasili:

I am writing to request your assistance in learning more about the tagged sea turtle found in Western Samoa by Mr. Maoluma Salima. Mr. Salima's brother-in-law, Mr. Lavatai Mailagi, originally described the capture of the tagged turtle to Mr. Robert Iversen of the National Marine Fisheries Service. The attached letters were subsequently sent to Mr. Mailagi care of Aggie Grey's Hotel, but unfortunately no response was ever received. Since your office is just a short distance from Aggie Grey's, would it be possible for you to personally contact Mr. Mailagi to see if the tag can be obtained? We are very anxious to examine the tag to determine exactly what is printed on it.

Your help in this important matter would be greatly appreciated.

Sincerely,

George H. Balazs
Zoologist

cc: Balazs ✓
HL

Sent w/poster

November 27, 1985

F/SWC2:GHR

Mr. Lavatai Mailagi
Samoa Scenic Tours
c/o Aggie Grey's Hotel
P. O. Box 669
Apia, Western Samoa

Dear Mr. Mailagi:

I originally tagged the sea turtle that your brother-in-law recently caught with the metal tags. I was pleased to learn from Mr. Bob Iversen that you will try to obtain one of these tags and mail it to me for careful inspection. It is very important that we learn exactly what is printed on the tag--the full identification number and the return address. Several different tags have been used in past years, so we need this information to determine precisely when and where the turtle was tagged. I will pay a reward of US\$10 for one of the tags.

I have enclosed a booklet about sea turtles that you and your family may enjoy. Thank you for your kind help in this important matter. I look forward to hearing from you soon.

Sincerely,

George H. Balazs
Zoologist

bc: HL
Balazs



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
Western Pacific Program Office
P. O. Box 3830
Honolulu, Hawaii 96812

November 26, 1985 F/SWR1:RTBI

Mr. Lavatai Mailagi
Samoa Scenic Tours
c/o Aggie Grey's Hotel
P.O. Box 669
Apia, Western Samoa

Dear Mailagi:

Enclosed is a photograph I took of you and your family during my visit to the fish market at Apia two weeks ago. You have a lovely wife and children.

Regarding the turtle with the tags that was captured by your brother in law, Mr. Maoluma Salima, that recapture has drawn a great deal of interest at the Honolulu Laboratory, National Marine Fisheries Service. My office is located in the same building as the Laboratory, and I passed the information to Mr. George Balazs, the scientist in charge of turtle research.

His comments to me are given on the attached sheet. He is very keen on getting more information, and is prepared to offer a reward of \$US10 (=20 Tala) for the return of one of the tags.

Anything you can do to obtain one of the tags would be appreciated. He suggests sending him the tag via the Fisheries Division Office in Apia. Mr. Ueta Faasili is the Acting Director of that office, and his telephone number in Apia is 20-369.

The tag should be sent to:

Mr. George Balazs
Honolulu Laboratory
National Marine Fisheries Service
P.O. Box 3830
Honolulu, Hawaii 96812
U.S.A.

Thank you again for all your help.

Sincerely yours,

Robert T.B. Iversen
Special Programs Officer

Enclosures

cc: ✓ G. Balazs (w/memo)
Ueta Faasili (w/memo)

November 26, 1985

TO: Robert Iversen
FROM: George Balazs
SUBJECT: Tagged Turtle from Western Samoa

There is no question that the tags found on the turtle in Western Samoa were ones I used from about 1973-1977, while working for the University of Hawaii. However, more information is needed to determine exactly when and where this turtle was tagged.

This is an exceedingly valuable recovery.

We have never before had a recovery from Samoa. It is therefore very important to obtain more information, as soon as possible. We need to know exactly what numbers were printed on each of the two tags. Each tag would have a different number. I question the accuracy of "555". Something may have been confused when the information was passed from one person to another. Or perhaps the tags were corroded and the numbers difficult to read.

I feel very certain that someone still has the tags. The ideal solution is to obtain one or both of them.

I will authorize a US\$10 reward for one or both tags being sent by air mail to us. They must be wrapped securely to prevent loss. Ideally they should be given to Western Samoa Fisheries Division, and they should properly wrap and air mail them to us.

Again, one tag would be fine, as the fisherman may want to keep one as a prized souvenir.

Chief Fisheries Officer
P.O. Box 832
Apia, W. Samoa
Fisheries Division

Samoan Islands Bibliography

Compiled and Edited by
Lowell D. Holmes

Samoan Islands Bibliography is the product of 30 years work by Lowell D. Holmes, Professor of Anthropology at Wichita State University, and author of three books on Samoa. The bibliography, consisting of 335 pages, 8½ x 11, is the first ever published on this island group. This comprehensive reference volume will prove to be an invaluable aid to researchers and librarians with interests in the following subject areas:



Agriculture	Hydrography
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This book may be purchased in hardcover for \$85.00 (U.S.) plus postage and handling* from

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3-4-85
H.C. No. 170000
Fuel shortage feared

SUVA, Fiji — Tonga and Western Samoa face a potentially devastating fuel shortage. A University of the South Pacific researcher says both countries are running out of wood for cooking fires. Randy Thaman, head of USP's Social and Economic Development Department, said only drastic conservation and an aggressive reforestation program could save the situation.

TV eyed for Fiji

SUVA, Fiji — A senior executive of an Australian commercial network is in Fiji to study the feasibility of introducing television. Paget Blackburn, vice president of the Channel Nine Network, will spend a month in Fiji evaluating technical and financial considerations. The study will also look at staffing and training and the social impact of television.

West Samoa Plagued by High Suicide Rate and Mass Emigration

By Peter O'Loughlin

APIA, Western Samoa (AP) — Traditional lifestyles on this South Pacific island nation are under siege by mass emigration, teen-age suicide and urbanization.

Henry Adams, the 19th-century author, once called Samoans "the happiest, easiest, smilingest people I ever saw." Robert Louis Stevenson said Samoa was "a simple and sunny heaven."

But today Western Samoa's biggest export earner is its people, and the World Health Organization says the suicide rate of Samoans is among the highest in the world.

There are about 160,000 people on Savai'i and Upolu, the two main islands of Western Samoa, which became independent from New Zealand trusteeship on Jan. 1, 1962.

Almost 200,000 Samoans live in Australia, the United States and New Zealand, which is about 1,600 miles southwest of Western Samoa.

Overseas Samoans sent home \$31.8 million last year, 30 percent more than the country earned from coconut products, its biggest export. Much of the money is sent to families that have remained behind.

life, access to house sites and farmland.

In addition, only matai vote in elections for the national Parliament.

A study by researchers at Auckland University on Samoan suicides concluded that with better education introducing young islanders to new ideas, the traditional prohibition on challenging matai authority has caused frustration and despair.

The appeal of the U.S. overseas territory American Samoa — just 80 miles away — has also increased discontent among youths in Western Samoa.

Some residents of the western islands speak with an American accent picked up from watching television programs such as "Magnum P.I." and "Miami Vice" broadcast from Pago Pago, capital of the American islands.

Others get the American drawl from working in the tuna canneries in American Samoa.

ABOUT 30 percent of American Samoa's 35,000 people came from Western Samoa, said American Samoa's Lt. Gov. Paleomavaega Ent Hunkin Jr.

"They come to work here because our average hourly rate of \$3.12 is more than the daily rate they get in Western Samoa," he said.

WESTERN SAMOA, which has been called the cradle of Polynesia, has a natural population growth of 2.9 percent annually. But the real population growth is only 0.6 percent because of emigration, according to government statistics.

The statistics also show that 45 percent of the population is younger than 15.

Increasing urbanization, emigration, lack of opportunities for young Samoans and the traditional chief or matai system have been cited as possible causes for the high suicide rate.

The most recent study, done in 1984, showed that suicides among males ages 20-24 reached 167 per 100,000 in 1981, compared with 25 per 100,000 for the United States.

"Nothing's been done since then," said Dr. Tin Maung Maung, who heads the WHO regional office in Apia, Western Samoa's capital, "and there's no reason to believe the rates are falling."

The favored form of suicide is drinking paraquat, a weed killer, according to other reports on Pacific suicides.

OTHERS JUMP over waterfalls, leap from trees, hang or shoot themselves.

Under the Samoans' lifestyle of communal ownership, called "fa'a Samoa" in the Samoan language, 16,000 powerful elected matai or chiefs control village

Western Samoa has a per-capita income of \$940. In American Samoa it is \$4,280.

In addition, the American islands received \$82.3 million in U.S. grants last year, more than three times Western Samoa's \$25 million.

The two Samoas, divided in 1900 in a deal between the United States and Germany, are now talking about closer cooperation, although leaders from both sides say political union is not on the agenda.

The two governments signed a memorandum of understanding on economic and social cooperation last July.

WESTERN SAMOAN Economics Minister Le Tagaloa Pita said in an interview he hoped it would lead to closer cooperation in tourism, communications, education and justice, "everything except political union."

Pita said President Reagan had been invited to the country's 25th independence anniversary next year.

He said Apia wanted closer ties with the United States, including a consular office, which would solve one anomaly between the two Samoas.

"Although American Samoa is only 80 miles away, at the moment to get a visa to the U.S. we have to apply to the U.S. Embassy in Wellington (New Zealand) 1,600 miles away," he said.



REGIONAL FISHERY SUPPORT PROGRAMME



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TELEX: 2512 "FAOFIS" FJ
TELEPHONE: 22489, 315677

7 July, 1987

Dear George,

Recently I was involved in compiling a fisheries bibliography for Western Samoa. I came across a fair number of turtle references having some bearing on Western Samoa and I attach a listing for your information. Can you suggest any corrections or additions to the list?

Yours sincerely,

Robert Gillett
Fisheries Development Adviser

Mr. G. Balazs
SWFC Honolulu Laboratory F/SWC2
U.S. National Marine Fisheries Services
2570 Dole Street
Honolulu, Hawaii 96822
U.S.A.

Hawaii.

Attc.

cc: Mr. M. McCoy, FA, FD, Apia

Western Samoa Turtle References
Compiled by R. Gillett
July 1987

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Box 5167
Ma'atutu-uta
Apia, W. Samoa
20 August 1987

George,

One of the local hams dropped by to say you were on from Johnston Is.. Didn't realize you took your gear with you, but now could keep in touch if you're in this part of the world again in the near future (be sure to take a 40 meter dipole or long wire).

We have been here about 8 months, and I'm trying to get wheels moving which have been stuck for 4 or 5 years. USAID is helping tremendously with project money; the largest will be a bottomfish assessment program for 3 years including provision of a suitable vessel. For this, I'll be in Hawaii in late October on my way to Fish Expo. I've already written Bob Skillman, and hope to meet with Shomura and others on this. — OCT 20-21-22 at Mercantile

Not much to relate on turtles. A few, very few (like 3 or 4) in the market since my arrival. Samoans seem to eat anything that swims, crawls or hops across a reef. (and a few that pop out of the sand...). We are just now commencing a complete review and rewrite of the Fisheries legislation, including 200 mile EEZ, local regulations, fish dynamiting, etc. etc. It will take better part of a month, with FAO and FFA (Honolulu) each providing a legal eagle to help.

Lui Bel is the best contact within our dept. for turtle work; although he's not doing anything at present, his interest in things biological is high and he's a very reliable sort. Thus, things having to do with turtles should be put to his attention (just something to put into your file for future use).

Hope all is well with you & family. Are you still living up in the 'holler' or canyon behind Hawaii Kai? I rarely stay in Honolulu when passing through; mostly over to Kona to visit parents when I have the chance. I'd rather spend the cost of a plane ticket than another night in the Papeete...did that much.

I'm happy to be out of the 'fisheries negotiation' business. The excitement is behind me with that stuff, its just too taxing and too much travel. But I left behind a very competent person in Pongpe, and of course Mike Gavel is there, probably for ever.

Write or call (HF) if you get a chance. I try once in a while to check into Poo in arisland net, but not very punctual about it. The net controllers are go bad, giving their little asides and having a chat with each station, that what should take 15 minutes usually takes an hour. I've got better things to do than sit around waiting for them to call 5W1... Now have a vertical as well as broadband dipole. I'm not investing anything in antennas; I had to leave too much behind in Pongpe and besides import duties are so high its not worth it. Still, if conditions are good I have no problem. Now using Icom 751 which I got last year when they were at low price just before they brought out new models. With no more trips to Japan I don't have the opportunities to check out gear like I used to. And since I spent about \$5 grand of my own money to ship my fishing boat here, I spend alot of time with it rather than on the radio... so much for excuses.

Adios

Mike

ES: have you seen a book called the Last Navigator? it was written by a yachtsman who spent 2 trips to Oatawal and is supposed to be about Piaiug, although it gets lost sometimes. The navigation part might interest you as well. But there is a very good description of going to Fimelet and seeing the waste of the Puluwat people in killing turtles, and how this leads to a ban (again) at Oatawal on taking eggs. Also a plea from Piaiug to the chiefs to start up the turtle hatchery again. So, aside from the Hokuks stuff, we both can take some satisfaction that the exposure Piaiug got to turtles while in Hawaii with me 15 yrs ago has paid off...

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Adios

Mike

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UNIVERSITY OF HAWAII
Hawaii Institute of Marine Biology
Honolulu, P. O. Box 1246, Kamahele, Hawaii 96714

Please Return
LIBRARY OF
GEORGE H. BALAZS

THE Samoa Times

VOL. X NO. 10 P.O. BOX 1160, APIA, WESTERN SAMOA. 11th MARCH, 1977 Price 10sene

Secrecy Shrouds Aust Talks

The subject of next week's talks between the Prime Minister, Tupuola Efi, and Prime Minister Malcolm Fraser of Australia has been kept a very close secret.

Before he left for Suva early Wednesday, on the first part of his trip which would take him after a medical check-up in New Zealand to Canberra, the Prime Minister told the Samoa Times that he had been invited to discuss issues which are likely to come up at the London meeting of the Commonwealth Heads of Government in June this year.

However, there is still some doubt whether the Prime Minister will attend that meeting. He had already turned down an invitation to attend the celebration of Queen Elizabeth's jubilee and her twenty-

relationship between the two countries that he wanted to talk to the Australian leaders about.

Tupuola will be the third Commonwealth Prime Minister to meet Mr Fraser over recent months. He has already met with Prime Minister Lee Kuan Yew of Singapore and the Prime Minister of Papua New Guinea, Mr Michael Somare, and will shortly have discussions with the Prime Ministers of Fiji, Tonga and New Zealand.

Australia regards the forthcoming London meeting

to be very important. So much that the government has set up a special departmental task-force to prepare Australia's brief for the meeting.

In a speech given in Port Moresby during his visit to Papua New Guinea last month Mr Fraser indicated that one of the major issues would be the developments in Africa. Close observers however, do not think that would be of the utmost importance in next week's talks in Australia but believed the more relevant matters would involve de-

velopments, if any of relationship between the South Pacific Island countries and the Soviet Union and Communist China.

The Prime Minister will be accompanied to Australia by the Attorney General, Neroni Sile, the Assistant Secretary to Government, Rod Gates, and the First Secretary in the Samoan High Commission in Wellington, Afamasaga Faamatala Tolosafoa.

While the Prime Minister is away the Minister of Health, Tofaeono Tili, is the acting Prime Minister.

Court Convicts Power Corporation

The Electric Power Corporation (EPC) was recently convicted and discharged in the Magistrate's Court for failing to pay overtime to a former employee, Tau Vaillhi, who filed shortly after lodging his claim.

The court also ordered the EPC to pay \$100 costs but informed sources understand that the corporation's counsel, Tuula Karaitia Emani, is appealing to the Supreme Court against the decision.

In evidence, the prosecution stated that Vaillhi had started work with EPC as a watchman in 28 October, 1973, and up until the complaint was lodged in late 1973, he had never been paid for the overtime hours he had worked.

The court hearing was postponed a number of times as EPC continued to

(From Page 15)

NEW NZ MAN IN

Govt Sells Food Aid

...ent concerning the Head of State, Malletoa Tanumafili II, in London last year.

Tupuola said that he was quite willing to hear what Mr Fraser has to say even if he finally decided not to go to London. Further, there were a number of matters concerning the bilateral re-

Minimum Wage Rice

Labourers in the private sector will get a 25 senese an hour minimum wage from 1 April, 1977, in terms of an order signed yesterday by the Head of State, Malletoa Tanumafili II, on the advice of Cabinet.

The five senese increase, according to the Commissioner of Labour, Mr Martin Kleis, makes the minimum wage for labourers in and out of the Public Service the same but those outside the Public Service also enjoy other conditions not given to labourers of the government. They are entitled to paid public holidays, annual leaves and sick leaves and notice of termination of service. Government labourers are not, he said. Cabinet's recommendation to the Head of State is

(Continued on Page 15)

be sold to the merchants and other buyers at reasonable prices. Proceeds from the sale will be spent on rural development projects. These developments will include village access roads and the maintenance of similar village projects.

"It has been agreed that this will produce more lasting and worthwhile results than if the foods were given out to villagers who might not make the best use of them," Tuilaepa said.

The first shipment is expected to arrive on Monday and then the next one in July. Tuilaepa said that he had already made arrangements with the Australia

(Continued on Page 15)



His Highness the Head of State, Malletoa Tanumafili II receiving the new Zealand High Commissioner Mr Don Harper's credentials at Vaialina Wednesday morning.

Mr Harper arrived Tuesday afternoon after his flight from New Zealand was delayed for a few hours.

The shipment of skim milk powder that has been in one of the wharf sheds for seven months.

Part of the stock has collapsed and some of the bags have been damaged. Only seven loads have been delivered since the bags arrived.

(Full story on page 2)



NEWS IN BRIEF

The Lions Club of Apia raised \$140 Wednesday night for desks and chairs for the Pre-School Centre at Tamaliga.

The club provided 54 desks with chairs for the centre before but there is still a need for 44 more.

.....
The Lands and Titles Court is expected to deliver its decision on the hearing over the title Tuimalealiifano. A preliminary hearing was heard in January, 1977 to clarify points relating to a court decision in 1949.

Public Works Department has been charged with theft as a servant with the other two accused of paying out money to non-existent members of the department.

Crichton is charged for stealing \$558 and sources said police arrested him on Monday, but was due to leave for the United States on Wednesday.

Members of Tamamano village denied the Samoa Times report last week that one of the two men was from their village.

The Samoa Times report-

Six parties took part in this week's hearing.

Polynesian Airlines has applied for a fare increase because of increased fuel costs and is awaiting government's approval.

No details are available yet but sources said that included in the application is the extension of the validity of the excursion fare ticket from six days to 12 months between the two Samoas.

Ald Crichton of the

ed the details continued in the information filled at the court office.

The Polynesian Airlines VIP flight which took Prime Minister Tupuola Efi to Suva on Wednesday taxied back to pick up a passenger from a SPIA flight from Faleolo.

PAL General Manager Cedric Wisely said that the captain asked the Prime Minister for permission to wait even though the aircraft was ready for take off.

ZAP started its second sports programme a week last night.

The programme has been put on to cover schools'

sports and othersports during the week, a spokesman said.

Details for the acrobatic team from the Republic of China to perform here in June are not available yet, according to the Chinese Embassy's interpreter Chang Hsi Lin.

He said that there were many teams in China and they did not know which was coming but that a representative would arrive two weeks before the scheduled date with the details.

France has been holding nuclear tests every month since they switched to testing underground, a Tahitian newspaper reported.

The latest test was on the 19th of last month on Mururoa Atoll and the newspaper said that the French officials said they did not have to comment on the underground explosions.

The South Korean government handed over \$50,000 for aid in the development of Papua New Guinea after a three-day visit by south Korea's Foreign Affairs Minister Mr Tong Jin Park last month.

A Port Moresby newspaper reported that Park said his country had gone through a period of development as

mes reported.

It was alleged that the policemen confined and had unlawful sexual intercourse with a young woman in Suva on December, 13, 1975.

The Chief Magistrate remanded them on bail for trial on April 28, the Fiji Times said.

Podiatz's senior vice-president, Mr Steel, is arriving here this Sunday to finalise discussions on the US timber mills' withdrawal from Asau.

Mr Hutchison, the government's representative in the discussions said arrangements have been made to ensure a smooth changeover of the mill. According to him, no present employee will lose his job.

The group of seven parliamentarians left Wednesday afternoon for Communist China via Pago Pago, Honolulu, Tokyo and then Beijing. In addition

to the six MPs named last week Leiatua Josefa was added late last week.

World Minister Letin Tamatoa left with his special adviser on Friday for a winter conference in Argentina. The director of works George Meredith, was supposed to go but he has been



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shared Papua New Guinea's efforts towards development.....

Five Fijian policemen, a corporal and 4 constables, pleaded not guilty in a Supreme court last month, to a charge of rape and wrongful confinement, the Fiji Times.

partment. Fuimaono Mialo, the Minister of Agriculture, is looking after PWD while Justice Minister Talamalo is acting. Minister of Education, Tofaono Tila, the Minister of Health, is acting Prime Minister.

Milk Powder Goes Bad

Over 1000 bags (about 5 tons) of skim milk powder have been in one of the wharves for seven months and some of the bag's contents are beginning to go bad.

Port Administrator Teo-oletelesulu Sin Toalepaili said the shipment arrived in August last year together with milk biscuits from the World Food Programme for the Nutrition Project.

All the biscuits have been distributed but only about seven truckloads of the skim milk have been taken away.

The port administrator said he wanted the bags out of the shed because they had been there for so long. His department was not responsible for their safety and condition, he said.

Solis Tapeni confirmed the shipment was for the Health Department but said that they were keeping the bags at the wharf while they were counting the number of district people before distribution.

He said that they had distributed some of the bags to district centres at Leulua and Tuasivi and his staff were working on the figures for the next distribution.

One Wharfinger claimed that in this country, shipments to be given out free stayed much longer at the wharf than the ones for sale.

Sources said the milk powder was to be distributed for pregnant mothers, babies and children under 12 in consultation with women's committees.

Please Return

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THE SAMOA TIMES

MANAGING-EDITOR.....Fa'alofo F. Pito
ADVERTISING MANAGER.....Lagi Leavai A.P. (Mrs)

MINIMUM WAGE

From 1 April labourers will earn 40 sene more a day. In these days of soaring prices these workers would no doubt be overjoyed by the prospects of having \$2 more to spend a week.

To those making plans for the disposal of the new riches come April we suggest that a pound of mutton flaps is about the hottest investment item in town. At \$1.40 lb and rising by about 10 percent a week prudent investment now should realise handsome dividends by Christmas.

For those who would prefer to enjoy their wealth as soon as possible we suggest that a pound of mutton flaps at Aggie's is about the best buy because the children can have two packets of chewing gum from the 10 sene left over.

Drinkers must work two days for an extra full bottle of imported beer if they can take the bus to Motootua for a full 30-sene bottle of home-brew. The only advantage is that if they have to come back to town they would have to walk.

Or they can also walk up and save 10 sene for some aid rice or flour that government will be selling in July.

EEC Funds Power Studies

The European Economic Community (EEC) has agreed under the provisions of the Lome Convention to grant \$2.5 million towards hydro electric power develop-

ments here over the next 3 years, the Financial Secretary, Mr. Alastair Hutchison said.

In an agreement signed last week (Continued on page 16)

COMMENT

By Pati Tuao.

Nearly all my relatives go to church.

Nearly all my relatives who all have numerous children and other dependents, contribute generously to the various churches they attend.

Even when they have no money to contribute they will borrow the money.

I admire their faith, their proud determination not to appear ungenerously poor in front of other parishioners and their pastors and God.

When I ask them why they contribute to their already over-comfortable church and pastor at the expense of their dependents they tell me they are contributing to God's work.

The most generous of my relatives are those who attend the Congregational Christian Church of Western Samoa. The church demands more visible generosity from its generous members than any other church I know:

Offerings for the pastor and his upkeep, offerings for the upkeep of church schools and colleges (and now a university glimpsed in a dream by one of its degraded leaders), and

Relatives, Pastors, the Church

selfish political ambitions. His anger will smoulder but not burst into a purging flame because of his upbringing and his respect for authority and God.

Some of my relatives are pastors in the C.C.W.S. They are all good men:

they will not harm anyone deliberately; they believe in justice and equality, and in loving their neighbours.

Yet they cannot see that because of the excessive demands their church is making on the people that church has become an unreasonable burden, a force for oppression.

One of them sees the burden but says that because it is God's burden it is therefore a burden we should be proud to bear.

Nearly all my pastor relatives and their wives suf-

fer from either diabetes or high blood pressure or both. The most diabetic is the one who demands that his congregation contribute generously and all the time to his upkeep.

A small and brave minority of pastors sees the illnesses of their church clearly, honestly. Most of the group are young and idealistic.

They see clearly: they see naked greed in many well-established church leaders and elders; they see rampant nepotism, worldliness, and intolerance of new ideas.

They see clearly: they see naked greed in many well-established church leaders and elders; they see rampant nepotism, worldliness, and intolerance of new ideas.

They see the Church they love being manipulated and used by ruthless individuals to launch and support their political careers.

They must as their Church has become a vital ingredient of our way of life, and, for that way to remain honest, generous, strong, and wholesome, their Church must once again be made incompatible and worthy of the Christ and the people it purports to serve.

LETTER TO EDITOR

many committees to investigate the Samoan but 1/er against the foreign bosses? Why are the members of Parliament so involved in these committees? Haven't they had enough things to do in Parliament, to stir in the dirt where some people think is there? Instead of Government concentrating

into 5 percent;

(2) We have universal suffrage here in W. Samoa since we became independent for only one percent, and I don't see any taint in it at all.

(3) Do not judge others and who are you to sit in

(From Page 8)

believed to have followed the recent initiatives by the

Government Sells Food Aid

(From Page 1)

raising the minimum wage from \$1.65 to \$2 a day. In promoting the increase the Chamber's president, Mr. Herman Retzlaff, also suggested that government should cut all duties on basic foodstuffs and carry out a review of the dut rate structure. He pointed out that it was anomalous that pigpoo could be allowed in at 42 percent while toothpaste draws a whopping 72%.

"Economic and social disruption will cause increased loss of respect for property if the cost of living increases caused by imposed inflation is not promptly dealt with," Mr. Retzlaff said.

The Public Service is expected shortly to follow the lead of the private sector.

My relatives continue to contribute and contribute. Many of my relatives' children don't go to school - not even to the church schools my relatives financed and are financing; they cannot afford the school fees!

Many of my relatives' children who do go to school go with empty bellies - no money for food.

Many of my relatives cannot afford the medicine their children need when they are sick.

In short, many of my relatives neglect the basic needs of their dependents in order to contribute to God's work (as interpreted by God's Servants and His well-paid hired help!).

One of my most treasured relatives is in his 60's. He has spent all his life caring for his numerous children and the numerous children of his numerous relatives. He is a poor man who works hard. Yet he has been faithful and generous all his life to his church. Now he is angry in his own quite smouldering way because his church is demanding that he gives to fulfill some church leader's dream of a university, and he sees well-fed and ambitious individuals and their supporters battling to use his church to further their

Court Convicts Power Corporation

(From Page 1)

time during the two years he had worked for EPC, for which he had never been paid.

During weekends, Vailli had to work the 24 hours a day.

"We are particularly concerned about those who get 80 much per day during the week but will continue to get the same amount for working 24 hours in the weekends," he said.

Asked if any compensation has been arranged for the deceased's family, Mr. Kleib said the Public Trustee has now taken over Vailli's interests.

David Pong, the Public Trustee, said a civil claim would be lodged when the Commissioner of Labour's report was received in his office.

He did not know for sure how much the claim would be until the report arrived but "it would be a little less than \$2000, the amount that had been underpaid Vailli."

The Department of Labour is believed to be considering other court action over the same subject.

because of fear of his alga? You also insult our MPs by using the term "float with the tide to what ever shore it surges."

It is incredible to believe that you are trying to persuade the country that you have the majority of the people on your side, that the country doesn't want to be Samoa any more.

Universal suffrage is a foreign practice to my way of life, and I will not accept it on this principle.

You seem to be an educated man, and yet you fail to notice the problem that countries like Africa have been facing ever since they introduced universal suffrage. Creating new matai is only a joke compared to the power game that will come with universal suffrage.

I know in fact that the power game have been here since the first foreigner set foot on Samoan soil.

The truth is that three main powers had their political football game here long long before you and I were ever thought of but, it was only because the matai and our way of life that you and I were able to see Samoa as it is today. The independent state of W. Samoa. That same power game have spread from government to government department and why create so

Pick up the

TIMES ACTION

HOTLINE

for Times Action Classifieds



Rotary gives sewing machines

Apa Rotary Club members presented two used sewing machines for the leprosy patients at Motoouta Hospital Wednesday afternoon, and the club is also paying for half of a patient's fare for New Zealand tomorrow.

President Allen Grey said the machines were donated by Mr Roskill Rotary in New Zealand and they were presenting them on the

overseas club's behalf.

Acting Health Director Dr Sofia Tapsen accepted the machines and thanked the Rotarians for them and for half of the patient's fare.

Dr Sofia said that the patient was a boy whose artificial leg was too small and had to go to New Zealand to fit a new one.

The policy was that go-

vernment would pay for half of the fare while the family paid the other, and this was where Rotary helped he said.

Two mobile dental vehicles for Savaii and Upolu were donated by Rotary some years ago which, according to the acting director, were important assistance in the health services general.

SPORTS

Men's Golf

The official opening of the 1977 Golf season was held last Saturday afternoon in which over 70 golfers took part with nice members and friends arriving late in the afternoon to help make the event a very successful one. The President of the Club Norman S. Paul welcomed His Highness the Head of State also the Hon. Tupoua Eff to the members and made a short speech

outlining the various tasks that lie ahead for the present Committee to solve and urged the support from all the members to cooperate

grabbed a 6 and struck. The ball soared away straight and true. It went towards the green, left the green and kept on going, hit the large kapok tree high and bounced back, over the green again and sank into the right-hand bunker. The old man appeared to be monose as he picked up his wedge and backed at the deeply sunk ball. The ball rose up in a perfect arc, came down and dropped into the holes for a birdie.

"Great shot," his companions shouted, but the old man wasn't listening. He had his gaze fixed somewhere up by the top of the kapok tree and they clearly heard him say: "Thank you very much, but if you don't mind I'd

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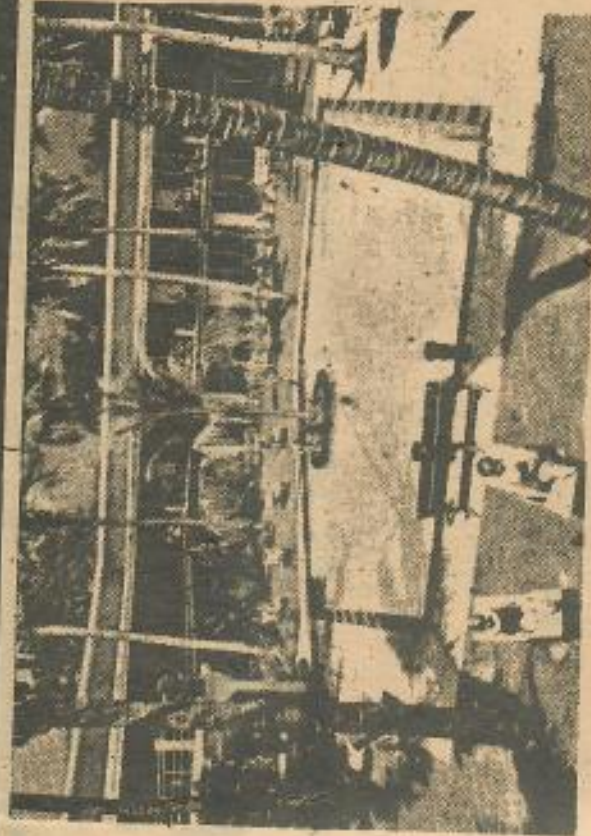
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'SAMOA'S PIONEER HOTEL'

The Samoa Times, March 11th, 1977 - 3



Prime Minister Tuvaluola Effi stands on tip toe to mark the Head of State's drive, the first of the season, at the opening of the 1977 Golf Season on Saturday. Club president Norman Paul looks on from behind.

rate whenever possible and are free to put forward any suggestions they may have for the betterment of the Club as a whole.

The Club President then asked His Highness the Head of State, accompanied by the Hon. Prime Minister towards the first tree on which His Highness then drove off the first ball this opening of the 1977 Season.

The first four off was led by His Highness the Head of State. The Club Captain Tommy Schwaughen then announced the rest of the group in fours to follow.

The competition was a straight out eighteen-hole medal. At the completion of the game a draw was then made in the Club house to determine the winners for the mixed four-

low.

GOLF JOKE.

Here is the promised joke. A very pious clergyman arrived with friends to play at Fagali one day and freely admitted that he was not a good golfer. The school teacher off and the old man hit his drive off No 1. The ball took off nicely but then veered off sharply to the left, in what observers thought was closer to a Russian scythe than a Japanese half sun, hit the big tree on the roadside and disappeared into the leaves before dropping in the middle of the fairway some 200 yards from the tee. Other members of the group applauded but the clergyman looked pensive.

For this second shot, in the 300-yard hole, the man

like to play this game myself."

Members are reminded all subscriptions are due for payment on or before 31st March 1977.

The competition for Saturday 12th March 1977 is an 18-hole Medal towards the Samoa "heares Tankard."

MEN'S DRAW SATURDAY 12 MARCH 1977.

12.00 F.E. Betham, Carlwell, Drury, Dore; 12.05: Barlow, Waterhouse, Hankins, Faalogo, 12.10: Peters, Ripley, Slade, Taylor; 12.15: Cain, Duggan, A.P. Hunter, Lome; 12.20: Schuster, Tauave, Sali, H. Meredith; 12.25: R.E. Meredith, Westerlund, Usala, Tupua; 12.30: Tos.

(Continued on page 4)

Situations

Talita Tuamasaga

Mafafau fauga i mea i nei ona po

I lenei va'aso, sei tatou mafafau i mea ua tuputupu ai i le lalolagi i nei ona po. Ua tatou iloa i tala o le fa'alelei Pasaalau; ua iloa ai le tulaga vevesi, ma le afafai ona toa filemu o le lalolagi. O Taitai o Malo a femalagasi solo i ki Malo. Atou po o le fia malinca ma tagatagai i ki Malo ma mea ua latou fai. A le o mea, po o le fia talanoa i nisi mataupu tau Malo. Po ai mea fol o feseese ai ai Malo, ma tautua ai ina fa'atutunua ato'a ma nisi mea e tele fa'apena.

A ua le getsi i fa mea e pei ona tsua i luga; a ua ma'ua fa'apopolocina lava nisi itu o le lalolagi; ona o Galu-ega matautasi a le Atua ua lavea ai nisi atunuu, e pei o Ma'afu ma Lolova; o mea e le mafafa e tagata ona taso'i i sa latou pule. O lea ua matua fememe ai ai tagata ma us maua i pu'apuga e tele. O mea sa atitine mo le olaga o le tino; po o mea foi sa eli ae ai le ma'i le manava o le eleele, ua matua fa'alegaina la'ava. E pei o mea e eli ai auro ma ardo ma koale; uatania ona va lepetia i mafufe ma ua le aoga. A Hiliu atuu foi i le Sami; e matua faigata lava tala eseese i le matautia i mea us tupupu i le Sami; ona o Mata'agi afa. O ia lava mea ua vevesi ai nei le lalolagi.

I le va'aso nei foi, ua sauni atu ai nei se tasi mala'aga a lo tatou Malo, e sefa nisi Malo i fafo. Atou e tele foi nisi Fono faanoemo'eina o le a fa'atasi atu i ai o lo tatou Malo. Atou o le tau satiliga lava o ni auala mo se manuia o lo tatou atunuu. A o tatou mafafau la i na mea e pei ona tana i luga. Pe le o se mea lelei ea ona sei tatou va'ai atu, po o le a se fiba-galo o le Atua i nei mea ua tatou oo i ai? E moni lava ua tatou ona tatou va'ai atu po o le a le fa'agalo o le Atua i nei mea ua fese'esi ai ma le lalolagi i nei ona po. Atou o le a tatou ma'ua le mea ua tatou maua ai pe

mai pea i tatou i laasaga uma ua tatou faia. I le e le taumate e faano'ona ma mafatia lena fa'agalo, pe at-tou tuma o ia.

Sei tatou va'ai atu ia i le fa'afese'esi o le Atua ma le nuu o learele ananua. O upu ia fa ua taua mai i le Tusil Pala e faasino i lenel mea. Ieremia 32: 32-33. "Ona o amiole'ega uma a le fanauaga a learele, ma le fanauaga a lita, ua latou faia e faano'ono ai ia te au; o i latou, o latou tupu, o latou ali'i, o latou fa'aulaga, ma o latou perofeta, ma tagata luga sopo ma e o nofo i Ierusalem. Ua u mai ia te au o latou tuma, a e le o latou mata, ua ou aoso atu ia te i latou, ua ouala aoso atu ai lava ia te i latou, a ua latou le mai lava ina ia talia mea ua aoso'ina atu ai."

Talofa i le fa'agalo mafatia o le Atua. O lenel ua tatou iloa, fai mai ua u atu tui; a e le o latou mata. Talofa i le Atua. Se a so tatou manatu ia te i tatou pe afai o i tatou ia ua tatou faia fa'apea i lo tatou Atua. O le mea lava e tasi e so ina tatou foi i ai, o le fa'aula ma le lotu salamo ma fa'atose atu i le Atua, i mea ua tatou sese ai, a e mafae lava i nei ona po.

Ia alofa mai le Atua ma ia toe amafa i tatou i filemu o lona lava Alofa ia i tatou.

Ia Sotufaina lava le stumua peleina.

Inisinia Taitoatasi

Se tasi ali'i fa'apisi'ina mai se nuu i raitio o A'pia, o loo tau fa'afesoatal nei se Lefa e logo i ai le pelogia.

O le 1976 na faasina ai le talita e le au lakapi a Levi Saleimos, na fa'atou tatou ese ina ua toe amata le taumafasaga lakapi i Tuamasaga, ma ua lusa nei va'aso tahi ai ona tatou le fa'amalocaga a lez lina, tu mau pea le talita ia Levi, amata ona luli e Lotocofa i le va'aso matua i Salei-moa lava, e le malole, ona e le mafafa e le Old Blacks tuma o le Liaona. Aso Toonai talu ai na luli'ina ai e Utualili, ma sa mamamalo pea Levi, na lalloa e Utualili le mea o le a fai ina

le taitai lava malole le talita. Taese ia i Saleimos, o le a luli ai le au e igoa o "Malie Taufeu" mai le nuu o Malie tana o le "Liona Taufesi." Afale mamulu le talita, ua tatau ai, leaga e masautele le asu a le malie, a e afai a e le malole, ia ona pau lava o loo tumau pea le fe'ai o le Liaona. Ua lusa nei taaloga a le au lea a Malie e lei oo lava i laloifo o le 20 ni ai e mamamalo ai, atou se mataina o le talita a taese.

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The Samoa Times, March 15th, 1977

nia tusa us silia nei i le masina o pelopelo mai i lana taavale o loo fai ai mea sa leaga.

Fai maiise \$50, tu i ai, e le taulia ai tupe o tau o totoga ua tupa mai e avatu

e le taulia ai le silia i le 10 o faatomi mai e shi atu o le a tupa, faeso, uma sifa, ma ahi lava i ai, a e nuua sina mea o vaaia faapea ua fai. O le tala e tautu i ai - "o loo tusi mea i fafo e sumai e le vaselele, e le maua fingsi."

Ututau mo le 200

Fasalia e se tasi matai (Fai V. Beeher) sa pule tinte, faapea a ia fia maua loa se \$200 i le taimi nei, ua ona tugo lava ile ututau e tasi, laa i le lotou, vaai se povi, pa, palasi, ave lua maua le \$200. A ia maua ni \$200 e lua, e lua foi ututau e fafao i lana taga.

O lona talitonga, po o a lava nisi pisinisi tupe tele, e maose tupemaua. Soo se tagata, e so ina faigalua egi i le malo po o lona maua ni fa maua tupe fititi e fausia ai tura tute.

a tatou vaka atu 20 i le galo o le Atua. Ai e lelei pe a tatou sumala le upu ua tusia i le Tusi Salamo. 2: 1-3. "Se a le mea ua faamamumu ai nunu ese, ma mafafau ai nunu mea e le aoga? Ua tutu mai tupe o le lalolagi, ua pulega faatasi foi ahi, e tete e atu ia leova ma le na ia faamisinai. Sei tatou monai ese a lana noataga ma lafoalesina a lava maea. E sobol le o alio ile lagi e taumuu le'afi i te i latou."

O ia upu ua taus i luga, o upu festili ia i le lalolagi e aafia ai ma i tatou. Se a le mea ua faamamumu ai mel le lalolagi e oo mai lava i Samoa? I le ma lea, Se a le mea ua pulega faatasi ai ahi e tete e atu ia leova ma le na ia faaunina? O ia lava festili e lua sei tatou tali atu ia i ai. O le festili ia ua taua musamus mai e faapea, Se a le mea ua faamamumu ai nunu ese - O le tali, Ua faamamumu i mea a la lalolagi. O le a lau fa'itau i Samoa nei? Ua fetefesi e pel o se va'itafe. O le mea lava o loo popole ai nei, lua nei avea ia mea ua vevesi ai nei, ma mea e mauu ai le tiapolo i o tatou loto ona amata loa lea ona fiafia le tiapolo, ua maua Samoa mo ia. Ia manatua lava le upu a Iesu ia Simon, Fai mai: Simona e, ua manao tele Satauni e lulu ia te outou, ia lulu ia te outou pei o le satauni, a ua ou faatoga mo oe lua nei mavae lou faatutua. Luka 22: 31-32. O le taimi lava lena ua namanu tele ai letiapolu, ia avea Samoa ma nunu e mullimuli atu ia te ia. A ia manatua lava lena mea, E le fisingalo le Atua, ia ia toe foi atu i tatou e mullimuli atu i le tiapolo. E leai se mea e te le o maua mai lo tatou Atua. O loo matua

PIGA I NIU SILA

Faafofoga Samoa a e sei ou faapatata; Le manafa o lena foi faaagatama; A e talofa i nai o tatou tama; Lui Leta, Samoan Joe, Tui Fou, ma Siya-afi - Taogaga.
.....
O le Hawaii o King Curtis lona igoa; O le itaiga ia o

HANDBOOK FOR PACIFIC MARINE TURTLES

¹V.N. Witzell and ²William Travis

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The purpose of this handbook is to help concerned organizations assess marine turtle resources in the Pacific Ocean. Also included are suggestions for building and operating a small scale turtle hatchery for those areas where the turtle stocks have been depleted through human interference.

Key to Pacific Marine Turtles:

- 1.a. One pair of prefrontal scales; lateral laminae 4 pairs.....
.....Chelonia mydas (green turtle)
- 1.b. Two pairs of prefrontal scales; laterals 4-5 pairs.....2
- 2.a. Laterals 4 pairs; precentral not in contact with first
laterals; snout narrow and elongated.....Eretmochelys imbricata
(hawksbill turtle).
- 2.b. Laterals 5 or more pairs; precentral in contact with first
laterals; snout broad and short.....3
- 3.a. Bridge with 4 enlarged inframarginals, each perforated by a pore;
shell broad and flat; color grey to olive green.....
Lepidochelys olivacea (ridley turtle)
- 3.b. Bridge with 3 enlarged inframarginals, each poreless; elongated
shell; color brown or reddish brown....Caretta caretta (loggerhead
turtle).

¹U.S. Peace Corps, Fisheries Division of Western Samoa.

²Chief Fisheries Officer, FAO/CPAS Western Samoa.

SPECIES SUPPLEMENT TO KEY:

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GEORGE H. BALAZS

Dermochelys coriacea (leatherback turtle)

This species is recognized by the smooth, scaleless, black skin of its back and the 7 narrow ridges that extend down it, by the five longitudinal ridges on the plastron, and by the immense size the adults attain, 1.5-3m. overall

Population Dynamics:

From the processes of measuring, tagging, careful note keeping and a little patience one can gather much information about marine turtle population dynamics. Some of the more useful material which may be gathered thusly is:-

- (1) Size of female nesting population
- (2) Nesting beach selectivity preferences
- (3) The number of times a turtle nests in a given year
- (4) The number of years between individual turtle nesting seasons
- (5) Rates of growth
- (6) Migratory patterns
- (7) Estimation of the size of the entire turtle population.

No. of marked turtles
recaptured

Total No. of marked
in population

Total number of turtles
captured

Total number of turtles
in population

¹ Key classification adopted from Carr 1952

1 Tagging:

The tools needed for tagging are the tags and the applicator pliers. Firmly clip the tag on the thin back edge of the foreflipper. It should be placed through the large scales, out towards the tip of the flipper a few centimeters from the body, to avoid piercing the fleshy portion of the upper arm and causing unnecessary bleeding. The tags are designed with a number on one side and a legend on the other. One side should consistently be placed on the top preferably the number, of the flipper to help prevent confusion during field work. Either the right or left flipper should also be consistently tagged in order to reduce confusion.

Although measuring usually accompanies tagging a nesting turtle should not be disturbed more than necessary. Loud noises, much movement and lights flashed into the eyes may cause a traumatic experience resulting in abnormal changes in behaviour.

Measuring:

To make accurate measurements of a turtle a pair of large and small calipers plus a tape measure will be necessary. The large calipers can be made out of light wood strapping and held together with wing nuts for easy adjustment. All distances measured should be the greatest distance encountered along the particular axis one is measuring. Weights can be taken with an ordinary heavy duty spring scale mounted from a wooden tri-pod with the turtle slung underneath in a rope harness.

1

Tags and applicator pliers may be obtained from:-

National band and tag Co., Newport, Kentucky, U.S.A.

Measurements such as plastron length and weight are useful but should not be performed on nesting turtles due to the traumatic experience the turtles undergo. This would only limit these measurements to turtles caught while swimming or turtles found in the market, hence an adequate sample.

To avoid eventual confusion, the units of all measurements should be kept consistent.

Note Keeping:

Perhaps the hardest aspect of studying marine turtles is keeping orderly notes. Everything done and observed must be written down in such a way as to be easily accessible, neat, and completely accurate. Many field notes can be collected upon selected data sheets. Those notes requiring lengthy paragraphs and less organization can be kept in blank hardbound note books under descriptive headings such as:-

- (1) Beach descriptions
- (2) Turtle "
- (3) Behavioral "
- (4) Operational descriptions.

Whenever possible, drawings and photographs should accompany all aspects of the various descriptions.

Field notes take patience and much practice before local untrained personnel become competent. A person with some practical field experience should temporarily supervise the locals and check for discrepancies in the data. A reward system may be worked out with the locals to aid field activities but it must be remembered that each Pacific culture is different and the supervisor must be remembered that each Pacific culture is different and the supervisor must be sensitive to these differences and yet inventive enough to maintain a successful research program.

HATCHERY MANAGEMENT FOR CONSERVATION OF PACIFIC MARINE

TURTLES:

Choice of Hatchery Site:

Since many turtle populations nest on small offshore islands or obscure beaches the hatchery may not be situated on the actual nesting beach. In either location it should be in a sheltered area as near the beach as possible without interfering with the nesting turtles i.e. lights and noise will frighten away the turtles.

The largest complicating factor in initiating a turtle hatchery is that of selecting an adequate location. Some important things to consider when choosing the hatchery site are those pertaining to road accessibility and communications with the nearest urban area.

Many problems will arise which will require immediate solutions, therefore a hatchery MUST have an available source, or easy access to a source, of supplies as well as the communications and transport to have them ordered and shipped to the site quickly. Even self-sustaining hatcheries will develop problems, and emergencies that can't be solved at the site but must be handled with the utmost speed.

The hatchery can have a wide variation of support facilities, all of which can be located in equally variable positions. The basic hatchery components consist of the following, suggested positions are included:-

- (1) Egg-incubator - located near the staff housing for continuous observation.

SUPPLEMENT TO REARING TANK CONSTRUCTION -

It is extremely important that the turtles have a generous supply of clean fresh sea water daily. Without this supply the turtles quickly become diseased. A continuous running water system is best and can be built cheaply and easily out of 6.5cm (2.5inch) plastic pipe lying parallel to the tanks with small offshoot pipes running into each tank. The main pipe can be filled by directly hooking it up to a pump or to a large storage tank fed by the pump.

If enough suitable materials are not available to construct the above scheme, the tanks may be flushed out daily with a flexible hose attached to the pump.

Clean fresh ^{sea} water may be obtained by building a pump on the beach. This eliminates the inability to pump due to tidal fluctuations, assuring plenty of water at all times. The pump is best constructed by sinking concrete cylinders 1m in diameter X 1m in length into the sand to a depth of 3-6m, depending upon the height above sea level the sit is and how fast the water is pumped out.

SUPPLEMENT 2. POPULATION DYNAMICS -

Marine turtle population dynamics are simple to study once certain biological and behavioral factors are understood. The scope of this hand book does not include these factors but a list of selected reading references is included here which will serve as a sound scholastic background for marine turtle natural history.

- (2) Rearing tanks - located near ocean for easy access to clean salt water.
- (3) Staff housing - located behind beach to avoid interfering with nesting turtles.
- (4) Tool and Supply shed - located in rearing tank shed to reduce theft as well as cost.

IX CONSTRUCTION -

Incubator:-

locate the incubation unit in a sandy area upon a topographical high to

facilitate drainage. The unit should also be in the sun and well away from all ground reverberating sources such as roads and internal combustion machinery.

The size of the unit depends upon the number of nests that will be incubating simultaneously. A plot 6X12m will hold up to 50 nests at once provided they are in staggered rows and kept in plots 60cm in diameter between plots.

Surround the unit with 2.5cm (1 inch) mesh plastic fencing using wooden support poles at 2m intervals. Erect the fencing 50cm below and 2m above the ground level. This will prevent livestock from destroying the nests. A lockable door is essential to keep out unauthorized personnel.

If a layer of clean medium grain sand does not exist to a depth of 1.5m excavate the old sand and refill with new, preferably with sand from the nesting beach.

REARING TANKS -

Before constructing the actual rearing tanks a suitable shelter must first be built for protection from weather, animals and theft. A rectangular shed 30-50m long X 10m wide with galvanized roofing, plastic fencing for walls and a concrete floor is excellent for rearing operations. A small room with wooden walls can then be built off this structure for equipment storage.

The rearing tanks are then built in rows along the concrete floor. Using pre-molded concrete blocks, tanks built 40cm deep X 130cm wide X 160cm long work well for a maximum of 250 hatchlings per tank. Include a sloping bottom with a large plastic drain in the lower end to facilitate easy tank cleaning.

In areas of extensive shallow lagoons with calm waters and little current floating cages can be built from tire inner tubes, strips of wood and 2cm (3/4 inch) plastic fencing. They must be securely moored and under observation at all times to prevent theft and breakage. There are many advantages of this system over the concrete tanks and an experimental model should first be built in suitable areas to determine the feasibility of using the cages.

STAFF HOUSING -

The style of staff housing to be built depends upon whom will be inhabiting the houses and their particular needs. Housing for the manager plus office equipment, refrigerators, radios etc. would best be a westernized style with lockable doors and windows. Native staff will probably best be situated in the local style houses.

Collection of Eggs:-

When collecting eggs from the beaches with extensive human predation pressure remove as many of the nests as possible to the incubation unit. On beaches with little or no interference some nests (20-30% of all the nests) should be concealed and left to hatch naturally. This will insure a wild turtle population.

Often it will not be possible to locate the nest by watching the turtle lay her eggs. In such cases follow the turtle tracks along the nesting area probing the sand with a sharp stick. The stick will suddenly strike a soft area and the point of the probe will be smeared with sand plus the yoke of a broken egg.

In all cases remove the eggs as soon as possible after laying, a maximum time delay of 24 hours, to prevent excessive embryo mortality. Do not rotate, jar or expose the eggs to sun light or salt water as these will also cause embryo mortality.

Quickly carry the eggs in a water proof basket, a portable plastic ice chest is fine, to the incubation unit and re-bury them. Bury the eggs in a hole of equal depth and size as the original nest and place a fine mesh wire enclosure 60cm in diameter over the nest to capture the emerging hatchlings. Mark the enclosure with an identification number to prevent confusion.

The fence surrounding the incubation unit will not keep rats and ghost crabs from destroying the nests. Small metal buckets, such as open ended beer cans, buried flush in the sand work well in reducing ghost crab populations. The most effective method of reducing rats is to have several cats on the grounds at all times. Poison and traps are both expensive and less effective.

Raising the Hatchlings:-

The primary objective of the hatchery is to release healthy well fed turtles to increase the natural population. The success of the re-stocking program depends upon this particular phase of operations which, unfortunately, revolves around the problem of conditioning the turtles to human feeding.

To prevent this conditioning feed the turtles at different times and use as large a variety of food as possible. Fish, clams, jelly fish, worms, sea urchins etc.. are but a sample of the possible foods. NEVER watch the turtles during feeding and avoid over crowding the tanks. Also reduce the exposure to the turtles as much as possible the last two weeks in captivity.

Stir the tanks periodically to make the turtles swim and throw in sea weeds.

Unclean sea water and/or diet deficiencies will result in diseased turtles. Keep a wide selection of vitamins and antibiotics on hand as both a preventative and a cure for any infections. To further reduce the possibilities of disease cleanse the tanks weekly with a strong disinfectant.

RELEASING THE TURTLES -

The age at which the turtles are to be released depends upon:-

- (1) How fast they become conditioned to human feeding
- (2) How much tank space is available
- (3) How much of a food supply is available.

Taking all these factors into consideration the maximum time in captivity will fall between 4-6 weeks. The turtles are large and strong enough by this time to forage for their own food and avoid predation.

The turtles are then taken out to sea 3-5km from the nesting beach at dusk and released in small groups with about 50 meters between groups. This reduces excessive predation from schools of feeding fishes and concentrations of sea birds.

PUBLIC RELATIONS:

Operating a conservational turtle hatchery is a waste of time and money if there is no support from the local people. The cultural difficulties that one encounters are vast and discouraging but eventually profitable with time. The people must understand the ecological balance of turtle populations, how they are thrown out of balance by man and how the turtle project is helping to correct this imbalance. All work intended to enlighten the public must be done simply, in their own language and along any cultural guide lines.

Short leaflets work well in schools if followed up with visual aids leading into possible school science projects. Variations of this also work well in adult social groups such as fishing societies and womens committees.

Radio broadcasts help immensely if they are interesting and done simply. They must, however, be rebroadcast at regular intervals if they are to have any impact on the people.

Perhaps the best communications media is the super 8mm movie with sound track depicting all aspects of the turtle program. If the movie contains some cultural material, i.e. songs and legends, in addition to the conservational message the people will respond much more quickly and with more overall understanding than any other method. As in the movie, radio broadcasts and leaflets should contain as much cultural material as possible to make them more interesting.

SELECTED READING FOR MARINE TURTLE BIOLOGY and BEHAVIOUR -

Balsingham E.,
1967

The ecology and conservation of the leathery turtle
Dermochelys coriacea (Linn.) in Malaya
Micronesia 3:37-43

Bustard H.R. &
P. Greenham,
1969

Nesting behaviour of the green sea turtle on a
Great Barrier Reef island, Herpetologia, 15:93-102

Caldwell, D.K.M
1959

et al. The Atlantic logger head sea turtle,
Caretta caretta caretta (1), in America. Bull Florida
State Mus. 4:293-348

Carr, A.&H.Hirth,
1962

The ecology and migrations of sea turtles. 5. Com-
parative features of isolated green turtles colonies.
Am.Mus.Novit. (2091): 42pp.

Carr A.H. Hirth &
L. Ogren,
1966

The ecology and migrations of sea turtles. 6. The
hawksbill turtle in the Caribbean Sea. Am. Mus. Novit
(2248); 29pp.

Cogger, H.G. &
1969

Marine turtles in northern Australia Aust. Zool; 15:150-159

Harrison T.,
1965

Notes on marine turtles. 16. Some loggerhead (and
hawksbill) comparisons with the green turtle
Sarawak Mus. J., 12:419-22

Hendrickson J.R.,
1958

The green sea turtle, Chelonia mydas (Linn.) in Malaya and Sarawak. Proc. Zool. Soc. Lond., 130: 455-535

Hendrickson J.R.,
1961

Conservation investigations on Malay turtles. Malay. Nat.J., Spec. issue, 1961:214-224.

Hirth, H.F. &
A.Carr -

1970

The green turtle in the Gulf of Aden and the Seychelles Islands. Verh. K. Ned. Akad. Wet. (Afd. Nat. Tweede Sect.), 58: 1-44

Hughes G.R.,
1970

Marine turtles: an introduction to the sea turtles of Southeast Africa. South Afr. J.Sol. 66:239-46

Pritchard P.C.H.,
1967

Living Turtles of the World. Jersey City, N.J. T.P.H. Publications, Inc., 268pp.

TURTLE DATA SHEET
(example)

TAG NUMBER.....CLUTCH NUMBER.....BEACH.....

DATE:.....TIME OF NESTING:.....TIDE:.....

MOON PHASE:.....WEATHER:.....SEA STATE:.....

CARAPACE LENGTH:.....CARAPACE WIDTH:.....HEAD WIDTH:.....

DEPTH TO TOP OF CLUTCH:.....TO BOTTOM:.....NUMBER OF EGGS:.....

EGG DIAMETER RANGE(SAMPLE):.....AVERAGE:.....

EGG WEIGHT RANGE(SAMPLE):.....AVERAGE:.....

~~REMARKS~~ -

.....
DATE EMERGED:.....NO. OF HATCHLINGS:.....
CARAPACE LENGTH RANGE(SAMPLE):.....AVERAGE:.....
CARAPACE WIDTH RANGE(SAMPLE):.....AVERAGE:.....
PLASTRON LENGTH RANGE(SAMPLE):.....AVERAGE:.....
HEAD WIDTH RANGE(SAMPLE):.....AVERAGE:.....
EYE WIDTH RANGE(SAMPLE):.....AVERAGE:.....

REMARKS:

.....
DATE RELEASED:.....TIME:.....NO. RELEASED:.....
LOCATION RELEASED:.....
WEATHER:.....SEA STATE:.....TIDE:.....
TAG:.....

REMARKS:

PICTURES TO BE INCLUDED:-

- 1 $\frac{1}{2}$ Tagging turtle
2. Tagged turtle
3. Measuring turtle
4. Incubator - with crab traps, ID tags and cages
5. Pumping water from sump
6. Nest location - using stick
7. Nest re-burial
8. Entire compound (from air?).
- 9.
- 10.
- 11.
- 12.

DRAWINGS:-

1. Turtle head(labled)
2. Turtle carapace.....(labelled)
3. Turtle plastron.....(labelled)
4. Cross section of rearing tanks
5. Schematic top view of tanks showing possible salt water system
6. Cross section of floating rearing cages
7. Top view of floating cages
- 8.
9. .
- 10.

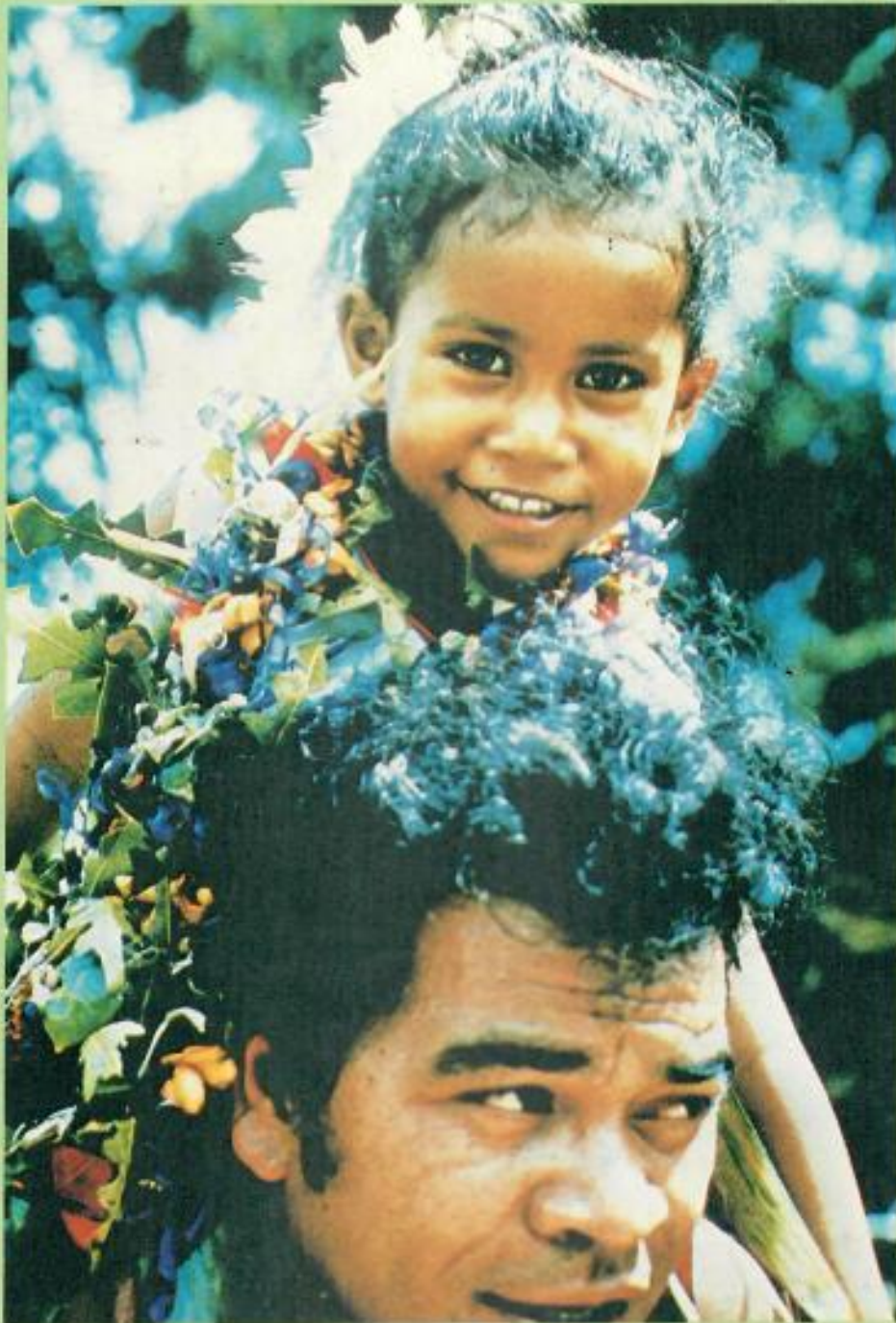
MISCELLANEOUS:-

1. Turtle key
 2. Data sheet
 - 3.
 - 4.
 - 5.
-



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This visitors guide is a complete reprint of the Samoan sections, included in the U.B.D. Pacific Islands Business and Trade Directory 1960.

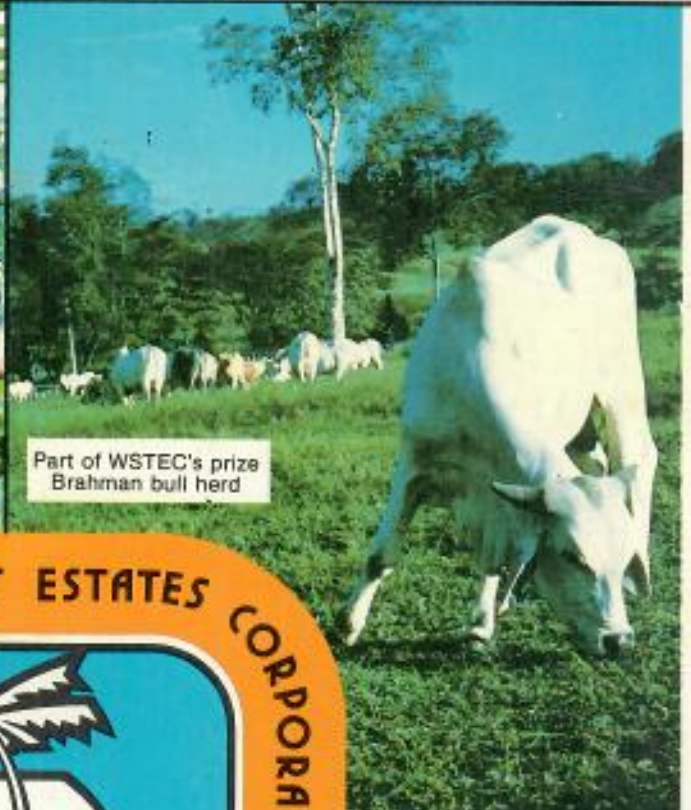


VISITORS GUIDE
TO
THE SAMOAS

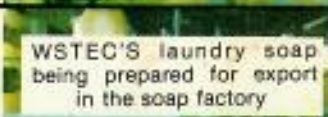
WESTERN SAMOA TRUST ESTATES CORPORATION



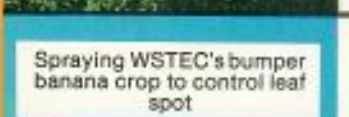
Cocoa seedlings in nursery ready for transfer to the field



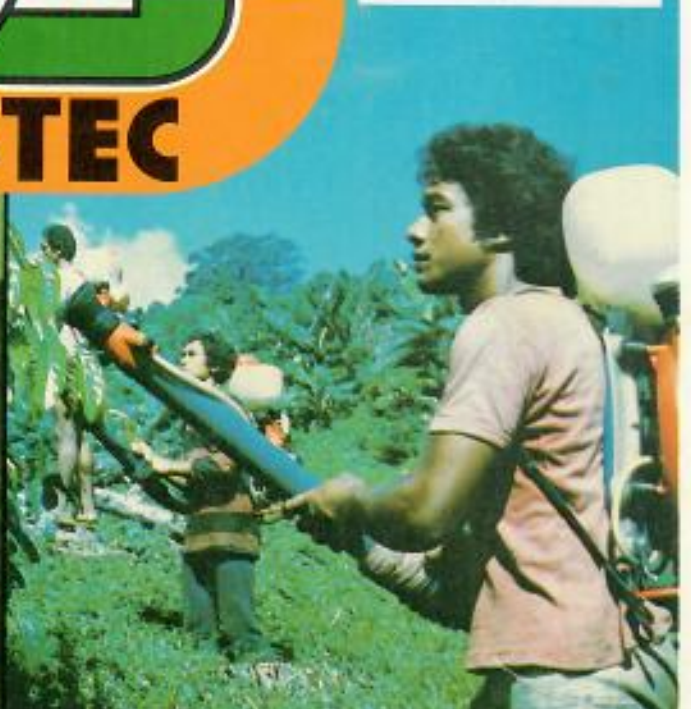
Part of WSTEC's prize Brahman bull herd



WSTEC'S laundry soap being prepared for export in the soap factory



Spraying WSTEC's bumper banana crop to control leaf spot



P.O. BOX 181
APIA, WESTERN SAMOA

TELEX:
38 'TRUSTATES' SX

CABLES: "TRUSTATES"
TELEPHONE 21515