



Ministry of Natural Resources and Environment



# O le Pupū Pu'ē National Park Management Plan (Ramsar Site)

2020 - 2030





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2020 - 2030

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**25<sup>th</sup> February 2021**

Prepared for

**The Ministry of Natural Resources and Environment in Samoa**

By

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The O Le Pupū-Pu'e National Park Management Plan is dedicated to Lotomaulalo Tuita'alili who was the Senior Forestry Officer and Manager for the O Le Pupū-Pu'e National Park but passed-on during the preparation of the Management Plan.



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# CONTENTS

Acknowledgements: .....	2
<b>Foreword</b> .....	<b>5</b>
<b>SECTION 1: INTRODUCTION</b> .....	<b>6</b>
Purpose of the Management Plan .....	6
Process of the Management Plan Formulation .....	6
Background. ....	6
<b>SECTION 2: LEGISLATIVE AND POLICY CONTEXT</b> .....	<b>7</b>
National Parks and Reserves Act 1974. ....	7
Lands Survey and Environment Act 1989 .....	7
Forestry Management Act 2011.....	7
Protection of Wildlife Regulation 2004 .....	8
National Policies and Plans relevant to the Park .....	8
Park Classification .....	9
Ramsar Site. ....	9
Queens Commonwealth Canopy .....	9
<b>SECTION 3: O LE PUPŪ-PU'E NATIONAL PARK</b> .....	<b>10</b>
3.1 BOUNDARIES .....	10
3.1.1. Park Boundaries.....	10
3.2. PHYSICAL ENVIRONMENT .....	11
3.2.1 Geology, Landforms, and Soils: .....	11
3.2.2. Watershed .....	11
3.3. BIOLOGICAL ENVIRONMENT .....	13
3.3.1. Flora. ....	13
3.3.3. Littoral Vegetation .....	13
3.3.4. Forests of the Lowland. ....	13
3.3.5. Forests of the Foothills and Valleys...	14
3.3.6. Forests of the Highlands.....	14
3.3.7. Vegetation of Montane Craters .....	14
3.3.8. Fauna .....	14
3.3.9. Birds .....	15
3.3.9. Mammals: .....	16
3.3.10. Reptiles:.....	16
3.3.11. Insects:.....	16
3.3.12. Fish and Crustaceans:.....	16
3.4 RECREATIONAL USE FACILITIES.....	16
3.4.1 Trails .....	16
3.4.2. Togitogiga Waterfall and Recreational Reserve .....	18
3.4.3 South Upolu Forestry and Park Headquarters.....	19

3.5. DEVELOPMENTS WITHIN THE PARK ... .. 19

    3.5.1. Forest Plantation. .... 19

    3.5.2 Samoa Water Authority Intake and Treatment Plan... .. 19

    3.5.3 Electricity Lines and Proposed EPC Windmill Farm ... .. 20

    3.5.4 Telecommunication Towers... .. 21

    3.5.5. Saleilua village water intake. .... 21

    3.5.6. MAF Livestock Farm. .... 25

**SECTION 4: MANAGEMENT OBJECTIVES FOR THE PARK: ... .. 24**

**SECTION 5: MANAGEMENT PLAN.. ... .. 25**

Objective 1: Conservation. .... 25

Objective 2: Boundaries and Development Uses for the Park ... .. 25

Objective 3: Park Facilities and Management ... .. 26

Objective 4: Strengthen Educational and Research Value of the Park ... .. 26

Objective 5: Improving Recreational Use of the Park ... .. 27

Objective 6: Financing the Park ... .. 27

**Work Plan and Monitoring Framework . ... .. 28**

**References . ... .. 31**

**Table of Figures**

Figure 1: Classification of Categories of Protected Area Management ... .. 9

Figure 2: Aerial photo of the Park ... .. 10

Figure 3: Watersheds within the Park... .. 12

Figure 4: Catchment replanting Program ... .. 13

Figure 5: Ecosystem Map of O Le Pupū-Pu'e National Park... .. 15

Figure 6: Coastal Trail ... .. 17

Figure 7: Ma Trail.. ... .. 17

Figure 8: Recreational Sites.. ... .. 18

Figure 9: Togitogiga Falls Reserve ... .. 19

Figure 10: South Upolu Forestry/OLPPNP Headquarters ... .. 19

Figure 11: SWA Water Treatment Plant... .. 20

Figure 12: Pole lines .. ... .. 21

Figure 13: Developments within the Park.. ... .. 22

Figure 14: MAF Livestock farm ... .. 23

## FOREWORD

O Le Pupū-Pu'e National Park was the first Park established in Samoa at a time when the environment movement and concerns for our unique biodiversity and natural features was still only a passing thought.

As Samoa continue its efforts to conserve and sustainably utilise its natural resources, as well as building resilience against the impacts of climate change, managing the OLPPNP and other protected areas throughout Samoa before was vitally important.

It has been forty-two years since OLPPNP was established and the evidences of these actions are more important than ever before as the Park remain as one of the few areas of Upolu Island that has extensive protection from the ridge to reef where native biodiversity is protected and easily accessible for all to observe and experience.

In spite of this, several outstanding issues continue to limit the full realisation of the contribution that the Park can make to the economic, socio-cultural and environmental future of Samoa.

This third Management Plan proposes actions to resolve these issues including the boundary, while also focussing on improving the delivery of services to protect the biodiversity and improve the experiences for the public visiting the Park. Furthermore, the Plan proposes some important actions to ensure developments within the Park are done in a sustainable manner, and generate necessary financial resources to maintain and improve the quality of the Park.

I look forward to the continuous support and partnerships of the existing and future partners working with the Ministry to implement this Management Plan.



# INTRODUCTION

## Purpose of the Management Plan

The purpose of this management plan is to set objectives and policies that will guide the Park Management with its implementation programs in accordance with the Lands, Survey and Environment Act 1989, Section 116.

This is the third Management Plan produce since the designation of the area as a National Park in 1978. This first Plan was produced in 1981, while second one was produced in 2011.

## Process of the Management Plan Formulation

The Management Plan was formulated under the “SMSMCL funding”. The following was the process undertaken in the formulation of this Management Plan

- a. Review of the existing literature on OLPPNP including the previous management plans, restoration plan, ecological surveys, corporate and annual plans of MNRE
- b. Review the relevant polices and legislations that govern the management of the Park Consultations with various stakeholders that currently utilise and/or involved with the management of the Park
- c. Conduct field assessment on the ecology and Park facilities
- d. Compile analysis on the Park with potential action actions for the new Plan
- e. Conduct workshops for the public to present current issues and proposed actions for the Management Plan
- f. Review and finalise Plan having incorporated inputs from stakeholders

## Background

The name of the Park derives from its boundaries to the north which is Mt Le Pu'e all the way to the south coast along the Pupū (blowholes), thus making up O Le Pupū-Pu'e National Park.

The O Le Pupū-Pu'e National Park was designated and set aside by the Government of Samoa in 1978 as a National Park following a recommendation from the UNDAT sponsored report “A National park System for Western Samoa” by Floyd and Holloway in 1974.

The original area of O Le Pupū Pu'e National Park was about 4234 hectares (10,457 acres). However, with the inclusion of the Forestry Plantation on the west coast side of the park (2008) and the recreational area, the Park increased to 5019 hectares (12,396 acres)

## LEGISLATIVE AND POLICY CONTEXT

Although still not formally gazetted, the Park is protected through the powers under the National Parks and Reserves Act 1974 following the declaration given by the Head of State for the establishment of the Park

### National Parks and Reserves Act 1974

#### Establishment of National Parks –

- (1) The Head of State, acting on the advice of Cabinet, may by order declare to be a national park any public land:
  - (a) that is not set aside for any other public purpose; and
  - (b) that is not less than 1,500 acres in area, or that is an island.
- (2) An order under this section shall designate the national park so established by a distinctive name,

**Status of National Parks** – A national park shall be preserved in perpetuity for the benefit and enjoyment of the people of Samoa, and shall be administered so that:

- (a) it is preserved as far as practical in its natural state; and
- (b) the flora and fauna in the national park are preserved as far as possible; and
- (c) its value as a soil, water, and forest conservation area is maintained; and
- (d) subject to the provisions of this Act, ....., the public shall have freedom of entry and access to the park so that they may receive in full measure all the benefits, .....

### Lands Survey and Environment Act 1989

The preparation of the Management Plan is in accordance with the Lands Survey and Environment Act 1989

#### 116. Management Plans -

- (1) The Director shall from time to time prepare one or more draft management plans for the protection, conservation, management, and control of:
  - (a) National parks;
- 3) The Board shall give due consideration to any representations so made, and may alter, amend or vary the proposed management plan.
  - (a) In the case of a national park, the protection, conservation, and management of wildlife and natural features, and the encouragement and regulation of the appropriate use, appreciation, and enjoyment of the park by the public;

### Forestry Management Act 2011

#### PART VIII PROTECTED AREAS

#### 56. Forestry operations affecting national parks and reserves-

- (1) No licence or permit granted under this Act shall authorise any forestry operation that is inconsistent with:
  - a. any law relating to the declaration or management of national parks or reserves, or to the protection of places of national, historic, legendary or archaeological interest; or
  - b. any provision of any management plan approved under any law relating to the management of national parks and reserves.
- (2) The obligations to act in compliance with any law or management plan referred to in subsection (1) shall be deemed to be conditions of any licence or permit granted under this Act.

**57. Protected areas on forest lands-**

- (1) It may be a condition of any licence or permit granted under this Act that no forestry operations be undertaken within the boundaries of any land designated under the licence or permit to be protected areas.
- (2) Lands may be designated as protected areas under this section for the purposes of:
  - (a) protecting the biodiversity of Samoa;
  - (b) providing protection for endangered species;
  - (c) otherwise implementing international conventions applying in Samoa, and which require that steps be taken to provide protection and conservation measures relevant to the forestry resources;
  - (d) providing for the protection of any area determined to be of national, religious, historic, legendary or archaeological significance; or
  - (e) protecting any water catchment or water resource; and
  - (f) preserving sites of significance for tourism or public recreation.
- (3) The Ministry may establish a system for government ministries and agencies, resource owners and landowners, nongovernment organisations and individuals to request that areas of significance be noted on the maps of the forestry resources maintained by the Ministry.

**58. Land may be declared protected land-**

- (1) The Head of State, acting on the advice of Cabinet, may by proclamation, declare any land of any class to be protected land under the provisions of this Part for a period not exceeding five (5) years.
- (2) Lands may be protected under this section for the purposes of:
  - (a) protecting any particular forestry resource;
  - (b) permitting scientific research to be undertaken into any forestry resource;
  - (c) propagating any species of the forestry resource, or undertaking field trials; or
  - (d) protecting the genetic resources of Samoa's forests and regulating access to them; or
  - (e) any other forestry related practice or development.

**59. Status of protected land -** Land which is declared to be protected land under section 58 shall not become State forest land or vest in the State by force merely of the declaration, but the declaration shall not be any impediment to the land becoming State forest land through acquisition in accordance with due legal process.

**Protection of Wildlife Regulation 2004**

The Protection of Wildlife Ordinance provides guidance for the protection of significant and endangered wildlife in Samoa including those found within the National Park

**National Policies and Plans relevant to the Park**

- Samoa Development Strategy
- National Biodiversity Strategy and Action Plan
- Environment Sector Plan
- National Policy on Forestry and Sustainable Development 2007
- National Adaptation Programme of Action

**Park Classification**

The International Union for Conservation of Nature (IUCN) has defined a series of six protected area management categories, based on primary management objectives shown in Table 1

The definition of a protected area adopted by the (IUCN) is “A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the longterm conservation of nature with associated ecosystem services and cultural values.”

In the World Database on Protected Areas (UNEP/IUCN), the O Le Pupū Pu’e National Park is classified under Category II as a National Park.

Figure 1: Classification of Categories of Protected Area Management

Categories	Descriptions
Category Ia	Strict Nature Reserve: protected area managed mainly for science
Category Ib	Wilderness Area: protected area managed mainly for wilderness protection
Category II	National Park: protected area managed mainly for ecosystem protection and recreation
Category III	Natural Monument: protected area managed mainly for conservation of specific natural features
Category IV	Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
Category V	Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
Category VI	Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

## Ramsar Site

O Le Pupū-Pu'e National Park was officially designated as a Ramsar site in October 2017. By this designation, Samoa as a Ramsar Party under Article 3.1 of the Convention specifies that "Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List" as well as promoting the wise use of all the wetlands in their territory.

O Le Pupū-Pu'e National Park meets 3 of the main criteria for Ramsar Site designation which include

- Criterion 2: Rare species and threatened ecological communities
- Criterion 3: Biological Diversity
- Criterion Support during critical life cycle stage or in adverse conditions

OLPPNP has two watershed areas that provide functions for southern Upolu and the country. These include the Saaga river which supports that Saaga independent water scheme, the Mataloa river which supports the Togitogiga Waterfall that is amongst the most popular tourist sites in Samoa. Part of the Mataloa river system also supports the SWA intake and independent water scheme for part of Saleilua village.

Resolution 5.7 of the 1993 5th Meeting of Ramsar and Resolution VIII.14 of the 2002 8th Meeting of Ramsar called for the development of management plans for all Ramsar Sites, with appropriate support and funds for implementation and training of staff, and including a monitoring programme with indicators on the Site's ecological character

## Queens Commonwealth Canopy

The Queen's Commonwealth Canopy (QCC) is an initiative begun in 2015 as a network of forest conservation programmes throughout the 53 countries of the Commonwealth of Nations. By 2016, 16 countries had become involved, and by 2019 the number was 46. O Le Pupū-Pu'e national Park was officially accredited in June 2018 to the Queens Commonwealth Canopy.

As a member of the Queens Commonwealth Canopy, OLPPNP unites with other Commonwealth countries to save one of the worlds most important natural habitats. It will also use the Commonwealth network to facilitate knowledge exchange activities, share best practice and create new collaborative initiatives that contribute to forest conservation across the globe.

# O LE PUPŪ-PU’E NATIONAL PARK

## 3.1 BOUNDARIES

### 3.1.1. Park Boundaries

The original area of O Le Pupū Pu’e National Park was about 4234 hectares (10,457 acres). However, with the inclusion of the Forestry Plantation on the west coast side of the park (2008) and the recreational area, the Park increased to 5019 hectares (12,396 acres). The Togitogiga Watershed Area is not currently included within the Park area; thus, the Park Management is unable to provide adequate protection for activities further upland that affects the quality of the Mataloa river for which the Togitogiga waterfall sit upon.

Land for the Park is part of Government land under Court Grant 220 but have not been surveyed for the proper boundaries. Therefore, the boundaries as currently defined are part of the initial areas under the Park designation. Due to the actually lands not having been gazetted or survey yet, encroachment along the borders of the Park continues and as such urgent action is needed to resolve it.

Following the review undertaken as part of the preparation for the Management Plan, recommendations are made for the realignment of the Park boundaries and the process to be undertaken by the Forestry Division, the Spatial Information Division and the Land Management Division of the Ministry of Natural Resources and Environment to ensure this critically important issue is resolved.

Figure 2: aerial photo of the Park



## 3.2. PHYSICAL ENVIRONMENT

A detailed survey was conducted in 1978 under the United National Development Advisory Team (UNDAT) for the Pacific (Ollier, et al, 1979) for the establishment of the Park. The survey covered natural features such as geology, soils, and land forms along with biodiversity for the Park. This information formed the basis of subsequent surveys and the assessment for the preparation of this Management Plan.

### 3.2.1 Geology, Landforms, and Soils:

The land within the Park was geologically formed through several volcanic flows that made up the island of Upolu. Mt. Le Pu'e located in the north-west corner of the Park, is a well preserved cinder cone of the Salani volcanics whilst the lower areas of the Park are from the Pu'apu'a volcanics flow which upon reaching lowland areas spread into a massive sheet covering the older lava, filling in old lagoons and flowing over the coral coast well beyond the present coastline. The sea has since cut the rocks back to the present line. Due to the lava's relative recentness, very little weathering of the rock has occurred. This gives the O le Pupū area its characteristically rough look and poor soil formation (Ollier et.al.,1979).

The lava tubes found throughout the National Park vary in size, height and length are formed when hot liquid lava drains from beneath a cold, solid crust. An excellent example of a lava tube is the Pe'ape'a Cave, which is located near the centre of the park.

Ten different soil types have been identified in the Park and only one of these types is suitable for sustainable agriculture, which is found in isolated patches. The rest of the soil types are not suited for development and in fact several soils are prone to erosion if the forest is cleared. Most of the soil in the Park is formed from weathered basalt. Some soil variation arises from slight differences in the chemical composition of basalt, the age of parent rock, the nature of base rock and leaching.

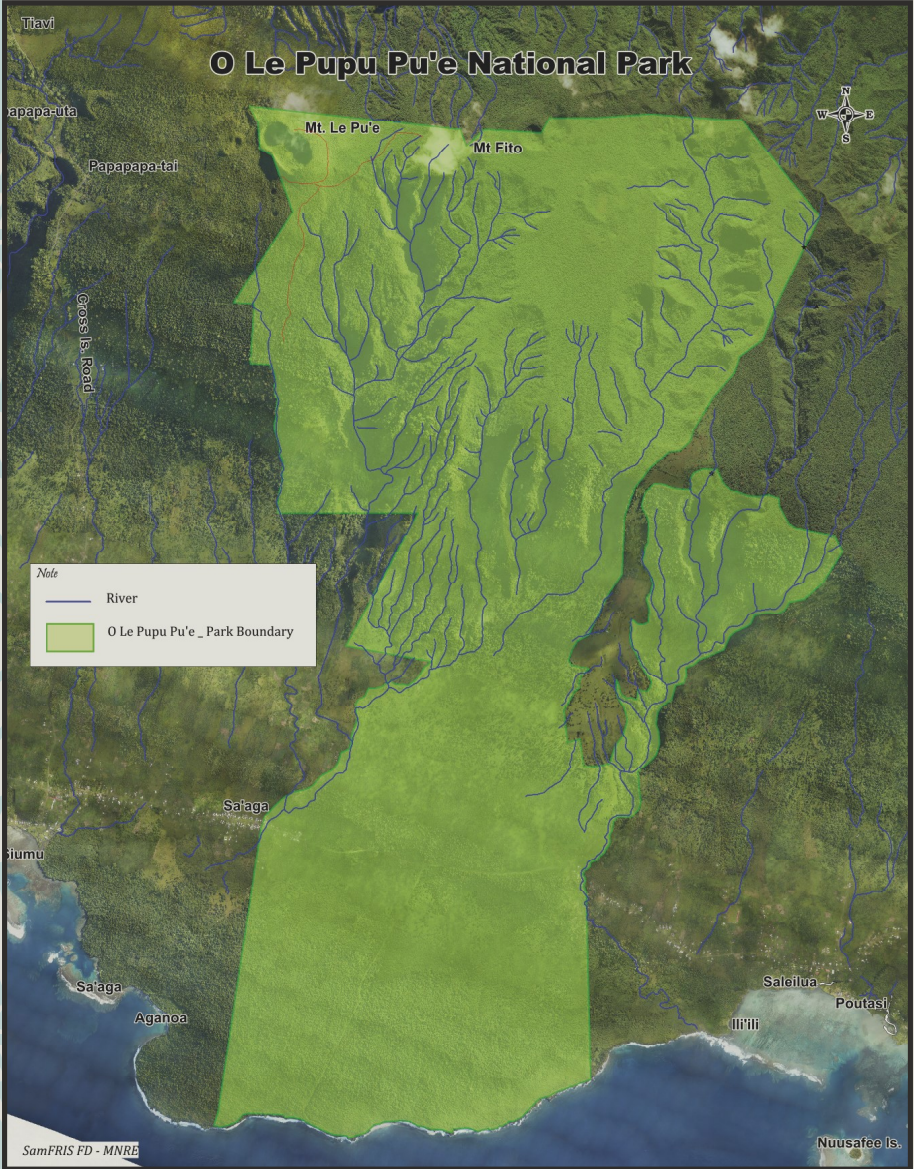
### 3.2.2. Watershed

Three catchment areas are located within the OLPPNP as noted in Figure 4. These include the Togitogiga Watershed outside the current Park boundaries but the Mataloa river flows into the Togitogiga reserve, western part of the Togitogiga watershed but separated from the Mataroa river, and the Siumu Catchment that dominates most of the Parks upland areas.

The Togitogiga Watershed, which is located in the district of Falealili, covers approximately 1,580 hectares. The catchment also includes the Mataloa stream, which empties into the Iliili estuary situated on the eastern side of the National Park. The catchment is essential for the provision of water supply for nearby residents as well as providing recreational opportunities. It has a unique riparian ecosystem, biodiversity and environment.

A smaller part of the Togitogiga catchment along eastern boundary of the Park is currently being used as an intake for SWA water supply and also as one of the independent water schemes for Saleilua village. This area of the catchment within the MAF livestock farm has been as part of forest rehabilitations programs by the MNRE.

Figure 3: Watersheds within the Park



The Saaga river catchment is the major catchment that covers most of the upland areas of the Park and drains into the Saaga river as it moves outside the Park and flows down the Saaga village and into the sea.

Figure 4: Catchment replanting Program



### 3.3. BIOLOGICAL ENVIRONMENT

#### 3.3.1. Flora

Samoa was once covered by tropical forests, commonly known as “rainforest”. However, due to pressures from an expanding population most of the lowland forest on Upolu has been cleared for logging as well as for plantations, croplands and villages. Although a large area of degraded vegetation extends into the National Park, it still contains one of the best remaining areas of tropical forest found on Upolu.

Around 352 native plant have been species recorded in the National Park since its establishment. The total vascular plant flora native to Samoa archipelago is estimated to be 770, which means the Park contains at least 46% of the native species in the archipelago (Whistler 2008, page).

Within the Park, the rainforest extends from the littoral forest on the O Le Pupū coast into the mountains. The forest is not uniform but varies in species composition related to change in elevation (which cause changes in rainfall and temperature) and differences in soil. The Park is unique in that it encompasses nearly the whole range of forest types found on Upolu. The different types of forest within the Park are described below.

#### 3.3.3. Littoral Vegetation

The “littoral” vegetation and is composed of species that grow only along tropical seashores. The plants found in this area have the ability to adapt to harsh growing conditions such as barren rock without soil, salty sea winds, and occasional splashes of seawater. Dominant tree species are fasa (*Pandanus tectorius*), a monocot tree with stilt roots and fetau (*Calophyllum inophyllum*). In some places, fuefue moa (*Ipomoea pes-caprae*), a beach morning–glory vine with large showy lavendercolour flowers and To’ito’i (*Scaevola taccada*), a spreading shrub with large waxy leaves and white flowers and fruit, are common ground covers.

#### 3.3.4. Forests of the Lowland

There are several different types of forests occurring in the lowlands of Samoa, but only the “tava lowland forest” is found within the Park. This forest, dominated by tava (*Pometia pinnata*) corresponds to the rocky Puapua lava flow covering the entire lower portion of the Park. Tava towers above the irregular canopy to a height of 30m or more. Also, common but in smaller numbers are mamalava (*Planchonella torricellensis*), mamala (*Dysoxylum samoense*), malili (*Terminalia richii*), and tavai (*Rhus taitensis*). Also, of interest is the native palm, niuvao (*Clinostigma warburgii*), which grows throughout the Park.



### 3.3.5. Forests of the Foothills and Valleys

Two main types of forests occur within the foothills and valleys of the Park. On the dissected foothills on the western edge of the Park is a forest referred to as “mafoa foothill forest”. It corresponds to an isolated area of eroded Fagaloa Volcanics, the oldest type found in Samoa. The dominant species is mafoa or lama palagi (Canarium harveyi), an introduced species and atone (*Myristica hypargyrea*) the big-leaf Samoan nutmeg.

On the intermediate-aged Salani lava flows, there is the “mamalava foothill forest”. The soil is moderately stony and is better for tree growths than either Puapua or Fagaloa.

### 3.3.6. Forests of the Highlands

In the Park, the highlands occur between 600-1100m elevations. This montane forest is sometimes called “cloud forest” because of the usual presence of clouds. The forest is always wet, allowing for a profusion of epiphytes. The tree trunks and the ground are covered with scores of species of ferns, mosses and orchids. The dominant species in this forest is maota mea (*Dysoxylum huntii*), a large important lumber tree. Also common in this forest are vivao (*Reynoldsia lanutoensis*), pipi (*Hernandia moerenhoutiana*), fogamamala (*Homalanthus acuminatus*) and many others. It is noted that a rare native niuvao (*Clinostigma samoense*) listed in the IUCN redlist is also found. This type of forest is probably richer in the number of plant species than any other in Samoa.

### 3.3.7. Vegetation of Montane Craters

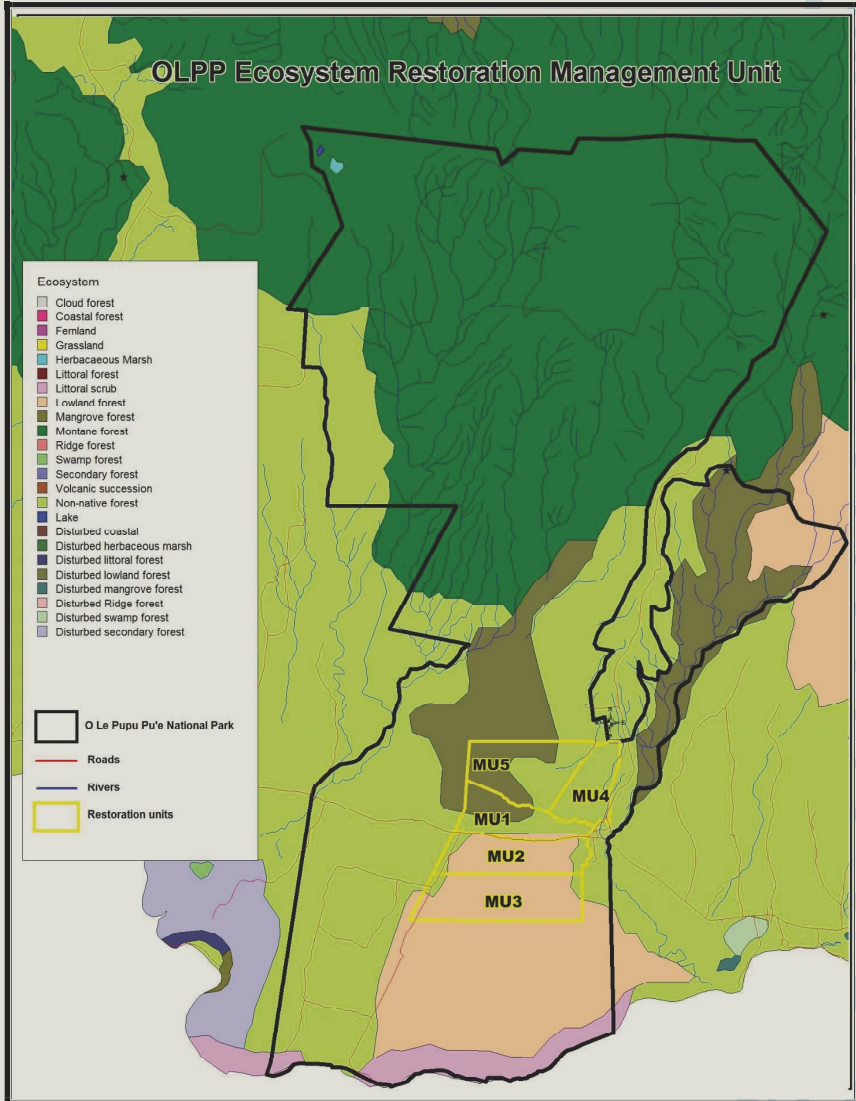
Within the Park, several montane craters are found which possess unique wetland vegetation. Two of these are found in Mt. Pu'e (which is a double cone) and a third is found at Vaivai. Around the edges of the lake is a crater marsh, usually dominated by 'utu'utu (*Eleocharis dulcis*), a leafless cylindrical sedge, and other aquatic herbs.

### 3.3.8. Fauna

The Park is relatively abundant in wildlife. Found within the park boundaries are 51 species comprising of 42 birds, five mammals and four lizards.

Of the 51 species, 21 are unique because they are found nowhere else in the world but Samoa Islands. Of the 21 species, nine are found in both Western Samoa and American Samoa (endemic to Samoa archipelago) and twelve are restricted to Samoa. Furthermore, three species are only found on Upolu Island.

Figure 5: Ecosystem Map of O Le Pupū-Pu'e National Park



### Birds

Forty-two (42) bird species have been found within the park: seven (7) are classified as seabirds and 35 are classified as water-fowl, marsh, and land birds. O Le Pupū Pu'e National Park is one of few areas where the endangered Manumea (Tooth-billed Pigeon) (*Didunculus strigirostris*) and Ma'oma'o (Mao) (*Gymnomyza samoensis*) have been recorded.

A bird survey in 2009 recorded twenty-five bird species were located comprising 21 land birds and 4 seabirds. Ten species previously found in the Park were not located, which indicates that they are either rare or absent. These include the Manumea, Tuaimoe (Friendly Ground Dove) (*Gallicolumba stairii*) and Tutumalili (Island Thrush) (*Turdus poliocephalus*) all of which are a cause for concern. The introduced species of myna and bulbuls, were only found on the edges of the Park in highly modified habitats.

### 3.3.9. Mammals:

Previously, all of the three native species of mammals were known to exist in the park: Samoan flying fox (*Pteropus samoensis*), White-naped flying fox (*Pteropus tonganus*) and Sheath-Tailed Bat (*Emballonura semicudata*). Sheath Tailed Bats were known to breed in the Pe'ape'a cave which is located at the central part of the park (Ollier, et. al., 1979). The Sheath Tailed Bat has not been sighted in the Pe'ape'a cave in recent years and may now be extinct in Samoa.

Introduced mammals recorded in the park include pigs, Polynesian rats, dogs and wild cats, mice, Ship and Norway-rats are also probably present.

### 3.3.10. Reptiles:

Four species of lizards have been recorded within the park: all skinks, and the Pacific Boa snake is also expected to be found. The skinks are the snake-eyed skink (*Cryptoblepharus boutonii*), azure-tailed skink (*Emoia cyanura*), Samoan skink (*Emoia samoensis*) and an unidentified species (*Emoia* species) (Ollier et al, 1979). The most common species is the azure tailed skink (*Emoia cyanura*), which prefers open areas with direct sunlight and is common along roads, trails, streams and cleared areas.

### 3.3.11. Insects:

An entomological survey in 1996 found twenty-four taxa of insects from eight families in disturbed montane forest in the park. (Schuster et. al, 1996). There are 28 species of butterfly known in Samoa and at least 15 species are expected or recorded in the Park (Edwards 2009). Hopkins (1927) named two Nymphalid butterflies *Phalanta exulans* and *Hypolimnas errabunda* were rediscovered in O Le Pupū Pu'e National Park during the butterfly survey in 2008. The most common butterflies found in the Park include the Blue Tiger (*Tiramula hamata melittula*), Monarch (*Danaus plexippus*), and Crow Butterfly (*Euploea algae schmeltzi*).

### 3.3.12. Fish and Crustaceans:

A survey of Mataroa River found only four fish species and two macro-crustacean species). The survey was obviously not comprehensive enough because eels (*Anguillidae*) commonly seen at this river were not recorded. (Jenkins et al. 2008).

## 3.4 RECREATIONAL USE FACILITIES

### 3.4.1 Trails

The Park has since its establishment developed several areas for recreational use including several walking trails, and the Togitogiga waterfall for swimming and picnics

#### Coastal Trail

The Coastal Walk is situated approximately 3km south of the Southern Coast Road and about 4.5km east of the junction with Cross Island Road. The access road from Southern Coast Road to Coastal Walk is not sealed and a 4WD vehicle is recommended. The walk, which takes about 30 minutes, starts from the car park and ends at the cliff edge and the Pupū (blow holes).

Figure 6: Coastal Trail



### Peapea Cave

The cave, which is about 850m long, is situated near the north western edge of the Puapua lava field. The size of the cave is apparently about 10m wide and 8m high and it is dark for the most part. Access to the cave is by foot track from the National Park Visitor Centre a distance of about 3.5km or from the Ministry of Agriculture and Fisheries livestock next to the Park. The trail is not regularly used so is not well maintained

### Ma Tree Walk

The Ma Tree Walk begins from the southern coast road and runs for about 700 meters north and takes about 30 minutes to complete. This trail takes visitors to the big ma tree (*Heritiera ornithocephala*) with a huge buttress. It is also an interesting site to visit because of its beautiful natural forest dominated by tava (*Pometia pinnata*).

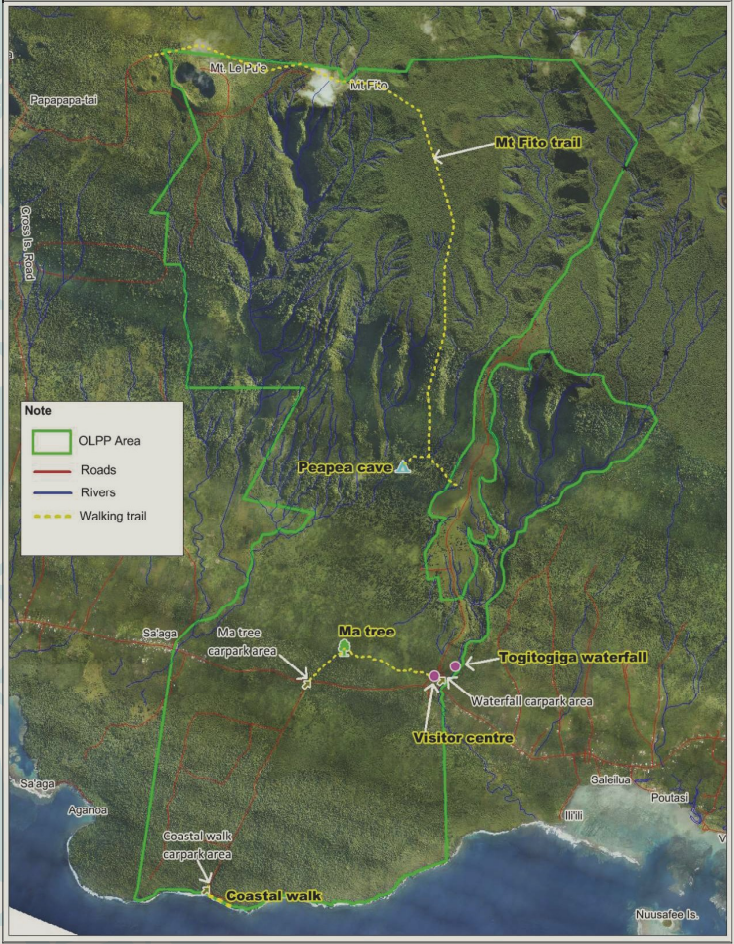
Figure 7: Ma Trail



### Mt. Fito Trail

This 12km trail provides magnificent views of geological features such as volcanic craters, steep ridges, deep valleys and waterfalls. Hikers can enjoy vegetative succession from montane cloud forest to lowland tropical rainforest. A variety of native flora and fauna can be commonly seen and heard. The trail runs north, across the slope of Mt. Pu'e, and passes through Mt. Vaivai (1158m), the highest peak in Upolu Island. It then, runs south across the slope of Mt. Fito (1120m) and descends a narrow ridge to Pe'ape'a Cave (250m) where hikers can choose to either continue walking to the National park Visitor Centre or take a short walk to Livestock station to the vehicle pick up place. This trail is also not in use due to lack of maintenance

Figure 8: Recreational Sites



**3.4.2. Togitogiga Waterfall and Recreational Reserve**

The Togitogiga Waterfall is part of the Mataroa River that runs as a series of falls and pools into the National Park. It is about 5-minute walk from the Visitor Centre heading north east. The waterfall runs heavily during rainy seasons and dries up during the dry season.

Figure 9: Togitogiga Falls Reserve



### 3.4.3 South Upolu Forestry and Park Headquarters

The Headquarters for the South Upolu Forestry Operation is located together with the Offices for the OLPPNP in Togitogiga. The Headquarters was once responsible for all the forestry replanting program covering Lefaga and Saanapu villages as well as the forest plantation within the Park area. When the forestry plantations were given back to the villages, the main functions now are assisting families and villages with community reforestation along south Upolu and replanting programs within the OLPPNP.

Figure 10: South Upolu Forestry/OLPPNP Headquarters



## 3.5. DEVELOPMENTS WITHIN THE PARK

Many development activities have been implemented within the Park that have impacted the status of biodiversity and the physical environment of the Park as identified in Figure 3. The developments are operated and maintained by the developers without much linkages with the Park Management, or using any guidelines that will minimise impact on the Park. Furthermore, none of the leases or permits for these operations are identified as income for the Park.

As a way forward, it is important that the present and any future users will need to recognise the Park and the management authority and as such, any lease or permits as well as the necessary guidelines for using the Park will need to be negotiated and agreed with the Park Management.

### 3.5.1. Forest Plantation

The western end of the Park along the main south coast road has a forest plantation that is mainly covered by exotic species of eucalyptus, mahogany, teak and other species. Since the seizure of the reforestation program, this area has been returned under the Park management for maintenance but with no set plans for its logging as it was initially intended to augment the logging of local forest species.

### 3.5.2 Samoa Water Authority Intake and Treatment Plan

The SWA has an intake and WTP located within OLPPNP that current provides water supply for part of the Falealili district. This operation although within the Park is not under the Park so the Park Management are unable to effectively control the use and maintain the status of the biodiversity and physical environment.

Figure 11: SWA Water Treatment Plant



### 3.5.3 Electricity Lines and Proposed EPC Windmill Farm

The EPC has its electricity grid lines running along the main south coast road and to the telecommunication towers located within the Park. Currently, the EPC's contracts companies to prune the trees along the electricity lines but with little communication or control by the Park Management. The EPC is also planning on installing windmills along the top of the Park but with limited input and communication with the Park Management.

Figure 12: Pole lines



#### **3.5.4 Telecommunication Towers**

Some telecommunications towers are located within the Park and currently monitored and maintained by the relevant operators, without much input from the Park Management.

#### **3.5.5. Saleilua village water intake**

Parts of Saleilua village use a village-based water supply intake that is located within the Park. The village does regular maintenance and clean-up work at the intake and surrounding area without input or supervision from the Park Management.





### 3.5.6. MAF Livestock Farm

The Ministry of Agriculture and Fisheries operates a livestock farm on the eastern border of the Park. This farm has been in existence for a long time but stretches all the way to the Togitogiga river edges. A recent replanting program was implemented along the western end of the livestock farm bordering the Park. The impacts of the farm on the Park is mainly on the Togitogiga waterfall recreational area as it is amongst the more popular swimming areas for tourists and locals alike.

Figure 14: MAF Livestock farm



## MANAGEMENT OBJECTIVES FOR THE PARK:

O Le Pupū Pu'e National Park is managed in accordance with National Parks and Protected Areas Act 1974 which notes that "A national park shall be preserved in perpetuity for the benefit and enjoyment of the people of Samoa", and shall be administered so that:

- (a) it is **preserved as far as practical in its natural state**; and
- (b) the **flora and fauna in the national park are preserved** as far as possible; and
- (c) its **value as a soil, water, and forest conservation area is maintained**; and
- (d) subject to the provisions of this Act, ... the public shall have freedom of entry and access to the park so that they may receive in **full measure all the benefits, including inspiration, aesthetic appreciation, enjoyment, and recreation, that may be derived from the natural features of the park.**

As such, the Park Objectives therefore are

- 1 Conservation: Protection and preservation of indigenous flora, fauna, and ecological associations and natural features, landscapes and scenic qualities
- 2 Education: Encourage educational awareness and scientific research enhancing appreciation of Samoa's biodiversity and concepts of conservation
- 3 Recreational Use: Facilitate public access and activities for the public to receive all the benefits, including inspiration, aesthetic appreciation, enjoyment, and recreation, that may be derived from the biodiversity and natural features of the park.
- 4 Sustainable Use: facilitate access and use of the Park for activities that will not cause irreversible harm to the Park biodiversity and its natural features while supporting sustainable development

## MANAGEMENT PLAN

### Objective 1:

**Conservation:** *to protect the natural biological diversity and landscapes of the park, coordinate and implement ecological restoration activities for degraded areas and minimize soil loss and erosion*

O Le Pupū Pu'e national Park holds a rich biodiversity of flora and fauna. Most vegetation types occurring in Upolu Island can be seen in the Park and a wide variety of native fauna including endangered species inhabit it. The Park is one of the largest key biodiversity areas in Upolu Island and effective biodiversity conservation in the Park is critical to management of biodiversity in the country.

Cyclone damage has caused much damage throughout the Park's vegetation with the Montane Forest and lowland forest most affected. Many sections of the Park are infested by the spread of invasive species such as ***Merremia vine, mile a minute, Tamaligi, African tulip, rubber trees, and noxious weeds.***

Furthermore, several of human based activities that are occurring within the Park are impacting the natural biodiversity and as such, coordinated actions are needed to control the impact of human induced pressures along with actions to preserve the natural features and biodiversity within the Park.

Therefore, continue actions are needed to ensure the protection and preservation of important, biodiversity and natural features

#### *Protect physical environment, flora and fauna in natural state,*

1. Develop and implement program to control the spread of invasive species
2. Strengthen Park enforcement patrol to stop forest clearing, hunting and disposal of rubbish within the Park

Forests play an important role in watershed management and preventing soil erosion. Forests in the Park contribute to maintaining the living standard of the people in communities in many ways such as the provision of a stable water supply, flood prevention and reef protection. With the existing replanting programs carried out by the Forestry Division and its partners including Samoa Conservation Society, the Poutasi Foundation Trust and others, better planning and coordination is needed to ensure all the identified areas in the Restoration Plan are covered.

#### *Maintain value as a soil, water, and forest conservation area*

1. Implement replanting program in Togitogiga Watershed, within Saleilua and SWA intake catchment area
2. Stop cattle from livestock farms bordering the Park and Togitogiga reserve from polluting the river and recreational reserve.
3. Implementation of the replanting programs in both lowland and upland forests of the Park according to the Restoration Plans already developed.
4. Prepare reports for the OLPPNP Ramsar site by aligning the information produced from the Management Plan with the Ramsar Site requirements.

### Objective 2:

Boundaries and Development Uses for the Park

The Park has yet to be properly surveyed and gazetted. As such, many of the necessary actions to protect the Park boundaries from encroachment through settlements, plantations and farms cannot be enforced by the Park staff. Opportunity now exists with the development of the Samoa Land Use Registry to have O Le Pupū-Pu'e National Park and other National Parks and Protected Areas in Samoa can be legally designated.

**Realign the Park Boundary**

1. Realign the Park boundaries.
  - a. according to the proper Court Grant 220 boundaries along the western end
  - b. Include the south eastern end bordering Saleilua lands
  - c. Include Togitogiga reserve and Togitogiga river
  - d. Include the Forest Plantation on the western part of the Park
  - e. Negotiate to extend the Togitogiga reserve area to west to the ridge of the cattle-farm and include house at the car park area
  - f. Include the replanted of the Watershed (SWA intake) as part of the Park
2. Register and survey the realigned Park boundaries with the Land Use Planning Commission and have it gazette

**Develop Guidelines for utilisation of the Park**

3. Develop guidelines for development initiatives that intend to use areas within the Park, including
  - a. Permanent installation of infrastructure within the Park (eg. electricity power lines, telecommunication towers, windmills, water treatment plants, etc.)
  - b. Temporary use of the Park (eg. Filming, camping, etc.)
  - c. Sustainable use developments (plantations, livestock farms, forest plantations, etc.)
  - d. Scientific research (identification, collection and extracting of biodiversity from within the Park)

**Develop Zoning for Land Use of the Park**

1. Review and implement zoning for the Park to identify areas for strict protection, areas for replanting, areas for recreational use, areas for watershed protection, and areas for sustainable use development.

**Objective 3:****Park Facilities and Management**

The South Upolu Forestry and Park Headquarters consists of an office, nursery and a few old accommodation buildings reserved for staff working in the area. This office is currently overseen by a Senior Officer and supports a number of officers and casual workers to implement forestry activities for the communities of the South Upolu region. Improved maintenance of the compound facilities is a necessity for proper operation of the station's work and in particular for the effective servicing of the Park and its visitors.

**Upgrade Facilities and equipment**

1. Conduct a thorough inventory and needs assessment is to be undertaken for the Park and Forestry Offices to identify and supply the resources needed to effectively provide the required services for the Park.
2. Implement a program to upgrade the Park facilities and equipment

**Upskill Park Staff**

1. Develop a long-term staff training needs for different areas of Park ranging from biodiversity surveys and monitoring, trail development and maintenance, education and awareness, management, customer service,
2. Identify and implement staff upskilling programs through on-site training, secondments, short term overseas training
3. Identify and establish sister Park relationship with overseas Parks that could support staff and Park development.

**Objective 4:****Strengthen Educational and Research Value of the Park**

The facilities such as the Visitor Centre that are supposed to provide education and awareness role for the Park are not in very good conditions and are in need of major renovation. The visitor centre is only a house with a couple of posters. The facilities are away from the normal route for people going to the waterfall or even using the trails, so it is in need of improvement. Furthermore, the little is available within the Park to highlight Samoa's natural environment and biodiversity. Therefore, actions are proposed to improve facilities and services that can promote the educational and awareness values of the Park

**Strengthen the education and awareness activities within the Park.**

1. Establish a botanic garden for nursery to preserve native biodiversity in a controlled environment
2. Upgrade the Information Centre with more information and materials highlight Samoa biodiversity and the Park's natural features such as the caves, blowholes and lava fields.
3. Continue and expand existing educational activities (i.e. public tree planting, workshops and education tours for schools) and to consider targeting a wider range of the public, by inviting neighbouring communities to education tours.
4. Conduct 'Visit O Le Pupū Pu'e Campaign' to promote more interest and motivation for the general public to visit the park.

**Strengthen scientific research work within the Park**

1. Develop and maintain a biodiversity database and map of the Park
2. Develop and implement regular biodiversity surveys and monitoring program
3. Develop guidelines for research conducted within the Park that includes intellectual property rights, utilization of information and incorporation of information into Park management and implementation

**Objective 5:****Improving Recreational Use of the Park**

The park offers a variety of recreational opportunities that highlight Samoa's physical and natural environment. At present, the Park offers trails along the coast, and lowland forest that visitors can see and experience natural features such as caves, blowholes, lava fields, as well as birds, native trees and other biodiversity. Furthermore, the Togitogiga recreational reserve which is amongst the most popular site is available for swimming at the waterfall and picnics.

Basic facilities such as resting fales, toilets, changing rooms, car parks and trails are available, however improvement of the facilities for serving people is necessary to accommodate more local and international visitors. The current practices with most recreational activities are self-guided, although special arrangements can be made upon request for camping and guided tours.

**Upgrading the Recreational facilities and services**

1. maintain and improve recreational facilities (i.e. resting fales, toilets, changing rooms, car parks and trails)
2. provide maps for the different trails and install labels with important information along the trails on biodiversity
3. develop birdwatching facilities along the trails
4. Develop a camping site using the old south Upolu Forestry Headquarters
5. Promote the Park recreational activities with the Samoa Tourism Authority
6. Monitor the impact of recreational activities on the surrounding environment from time to time

**Objective 6:****Financing the Park**

Maintenance of the Park depends on the availability of appropriate financial resources. Unfortunately, the Park has not been viewed as a source of revenue both for the MNRE and Government, but is more viewed as an important function for the protection of the environment and its services. With this view, the Park has not been properly financed in the past and missing on the opportunities to showcase its various values. To fully realise the Parks potential, more financing opportunities need to be developed to ensure its maintenance and improvement.

**Increasing Funding Opportunities**

1. Increase Budget Allocation for staff and maintenance for the Park
2. Establish leases for Park lands used by other stakeholders for use such telecom towers, SWA intake and renewable energy and other users
3. Establish Partnerships and Friends of the Park Program that can support with fundraising, Park works and advocate for needs of the Park
4. Develop Regulations (a)imposing fees for admission to any national park or reserve; and levies for visitors and tour operators visiting the Park, or outsources to a private company
5. Assess the viability for logging the forest plantations and replanting the area with native biodiversity
6. Assess and develop program to register the Park on the carbon credit trading market.

## WORK PLAN AND MONITORING FRAMEWORK

Activities	Timeframe	Implementing Partners
<i>Protect physical environment, flora and fauna in natural state</i>		
1. Develop and implement program to control the spread of invasive species	On-going	OLPPNP staff
2. Strengthen Park enforcement patrol to stop forest clearing, hunting and disposal of rubbish within the Park	On-going	OLPPNP staff
<i>Maintain value as a soil, water, and forest conservation area</i>		
1. Implement replanting program in Togitogiga Watershed, within Saleilua and SWA intake catchment area	Year 1-4 and maintain for rest of the time	OLPPNP, WRD
2. Stop cattle from livestock farms bordering the Park and Togitogiga reserve from polluting the river and recreational reserve.		(FD, Land Division, Legal Division) MNRE
3. Implementation of the replanting programs in both lowland and upland forests of the Park according to the Restoration Plans already developed		OLPPNP and partners
4. Prepare reports for the OLPPNP Ramsar site by aligning the information produced from the Management Plan with the Ramsar Site requirements	On-going	FD
<i>Realign the Park Boundary</i>		
1. Realign the Park boundaries. <ol style="list-style-type: none"> <li>according to the proper Court Grant 220 boundaries along the western end</li> <li>include the south eastern end bordering Saleilua lands</li> <li>include Togitogiga reserve and Togitogiga river</li> <li>include the Forest Plantation on the western part of the Park</li> <li>Negotiate to extend the Togitogiga reserve area to west to the ridge of the cattle-farm and include house at the car park area</li> <li>include the replanted of the Watershed (SWA intake) as part of the Park</li> </ol>	Year 1-3 follow by monitoring over the remaining years of the Management plan	FD, Land Division and Legal Division of MNRE, Spatial Information Division
2. Register and survey the realigned Park boundaries with the Land Use Planning Commission and have it gazette	Year 1	FD, Land Division and Legal Division of MNRE
<i>Develop Guidelines for utilisation of the Park</i>		
1. Develop guidelines for development initiatives that intend to use areas within the Park, including <ol style="list-style-type: none"> <li>Permanent installation of infrastructure within the Park (eg. electricity power lines, telecommunication towers, windmills, water treatment plants, etc.)</li> <li>Temporary use of the Park (eg. Filming, camping, etc.)</li> <li>Sustainable use developments (plantations, livestock farms, forest plantations, etc.)</li> <li>Scientific research (identification, collection and extracting of biodiversity from within the Park)</li> </ol>	Year 1-2	FD, DEC, and Legal Division of MNRE: MWMTI (PUMA), MAF

SECTION 5

<i>Develop Zoning for Land Use of the Park</i>			
1.	Review and implement zoning for the Park to identify areas for strict protection, areas for replanting, areas for recreational use, areas for watershed protection, and areas for sustainable use development.	Year 1	FD
<i>Upgrade Facilities and equipment</i>			
1.	Conduct a thorough inventory and needs assessment to be undertaken for the Park and Forestry Offices to identify and supply the resources needed to effectively provide the required services for the Park.	Year 1	FD
2.	Implement a program to upgrade the Park facilities and equipment	On-going	FD and OLPPNP staff
<i>Upskill Park Staff</i>			
1.	Develop a long-term staff training needs for different areas of Park ranging from biodiversity surveys and monitoring, trail development and maintenance, education and awareness, management, customer service,	On-going	FD
2.	Identify and implement staff upskilling programs through on-site training, secondments, short term overseas training	On-going	FD
3.	Identify and establish sister Park relationship with overseas Parks that could support staff and Park development.	Year 1-2 than on-going	OLPPNP and FD
<i>Strengthen the education and awareness activities within the Park.</i>			
1.	Establish a botanic garden for nursery to preserve native biodiversity in a controlled environment	Year 2-10	OLPPNP/FD and DEC of MNRE; STA
2.	Upgrade the Information Centre with more information and materials highlight Samoa biodiversity and the Park's natural features such as the caves, blowholes and lava fields.	On-going	OLPPNP and STA
3.	Continue and expand existing educational activities (i.e. public tree planting, workshops and education tours for schools) and to consider targeting a wider range of the public, by inviting neighbouring communities to education tours.	On-going	OLPPNP
4.	conduct 'Visit O Le Pupū Pu'e Campaign' to promote more interest and motivation for the general public to visit the park.	On-going	OLPPNP
<i>Strengthen scientific research work within the Park</i>			
1.	Develop and maintain a biodiversity database and map of the Park	Year 1-2 than on-going	OLPPNP, FD and DEC of MNRE with information collected from partners and all research that have been conducted within the Park
2.	Develop and implement regular biodiversity surveys and monitoring program	Annually on-going	DEC, OLPPNP staff and additional information from partners
3.	Develop guidelines for research conducted within the Park that includes intellectual property rights, utilization of information and incorporation of information into Park management and implementation	Year 1	FD, Legal Division and DEC of MNRE
<i>Upgrading the Recreational facilities and services</i>			
1.	maintain and improve recreational facilities (i.e. resting foles, toilets, changing rooms, car parks and trails)	On-going	STA, OLPPNP



SECTION 5

2. provide maps for the different trails and install labels with important information along the trails on biodiversity	On-going	FD and DEC of MNRE; STA
3. develop birdwatching facilities along the trails	On-going	FD and DEC of MNRE; STA
4. Develop a camping site using the old south Upolu Forestry Headquarters	Year 3	OLPPNP
5. Promote the Park recreational activities with the Samoa Tourism Authority	On-going	STA, OLPPNP
6. Monitor the impact of recreational activities on the surrounding environment from time to time	On-going	OLPPNP and DEC
<i>Increasing Funding Opportunities</i>		
1. Increase Budget Allocation for staff and maintenance for the Park	On-going	FD
2. Establish leases for Park lands used by other stakeholders for use such telecom towers, SWA intake and renewable energy and other users	Year 1-2	FD, Legal Division and Land Division of MNRE
3. Establish Partnerships and Friends of the Park Program that can support with fundraising, Park works and advocate for needs of the Park	Year 1-5	OLPPNP
4. Develop Regulations (a) <i>imposing fees for admission to any national park or reserve</i> ; and levies for visitors and tour operators visiting the Park, or outsources to a private company	Year 2	Legal Division and FD of MNRE
5. Assess the viability for logging the forest plantations and replanting the area with native biodiversity	Year 3	Legal Division and FD of MNRE
6. Assess and develop program to register the Park on the carbon credit trading market	Year 2	Climate Change Division and FD of MNRE; partners

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