



Ramsar Information Sheet

Published on 6 October 2017

Samoa

O Le Pupū Puē National Park



Designation date	2 February 2016
Site number	2313
Coordinates	13°59'S 171°43'53"W
Area	5 019,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

O Le Pupū Puē National Park (OLPP) was established in 1978 as the first ever National Park in Samoa and the South Pacific region. It is located on the southern part of Upolu Island and extends from the highest points on the island (Mt. Vaivai, 1158 m), Mt. Fito (1120 m) and Mt. Puē (1020 m) down to the rugged Le Pupū lava coastal cliffs. The Site therefore has the full range of ecosystems from the littoral forests on the rugged coastal ridges, to the lowland rainforest, extending to the ridge rainforests along the watershed area to the montane forests. The Site is home to two montane herbaceous marshes as well as Mataloa River and Vaalega River that are good representatives of such ecosystems in Samoa. The majority of the Site is made up of the Lefaga volcanic rock which has not fully weathered, making soil very infertile.

The Park's diverse habitats including the forests, montane marshes and river valleys are known to support 4 of the 8 globally threatened bird species of Samoa including tooth-billed pigeon (*Didunculus strigirostris*) and mao (*Gymnomyza samoensis*) although their populations have severely declined in the recent years. The Park also maintains large tracts of forests dominated by native plants and is considered as one of the best remaining areas of tropical forest found on Upolu Island.

The Site is an Important Bird and Biodiversity Area as well as one of the 8 terrestrial Key Biodiversity Areas established and surveyed in Samoa.

The Park area includes parts of the Togitogiga water catchment - the main water source for four villages - and also boasts waterfalls that are a prime tourist attraction. There is a visitor center in the Park that provides information on recreational facilities. The number of visitors recorded between June 2016 and July 2016 was 2,500. In recent years, however, water quality and quantity have declined and the falls are known to have significantly less flow during certain times.

The Site has never been logged or cleared for any developments. However, cyclones in 1990 and 1991 caused a lot of damage to the lowland forests, which are now mixed with secondary growth after the trees were destroyed. Reforestation with native trees is ongoing.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Elizabeth Kerstin-Yoshida
Institution/agency	Ministry of Natural Resources and Environment
Postal address	Private Mail Bag, Ministry of Natural Resources and Environment, Apia, Samoa
E-mail	elizabeth.kerstin@mnre.gov.ws
Phone	685 67200
Fax	685 23176

2.1.2 - Period of collection of data and information used to compile the RIS

From year	2008
To year	2015

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	O Le Pupū Puē National Park
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2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps	0
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Boundaries description

In 1974, a survey was conducted for the National Park area to mark its boundary. O Le Pupū Puē National Park extends from the highest points on Upolu Island (Mt. Vaivai - 1158 m; Mt. Fito - 1120 m and Mt. Puē - 1020 m) down to the rugged Le Pupū lava coastal cliffs. The original area of O Le Pupū Puē National Park was about 4234 hectares (10,457 acres). However, with the inclusion of a forestry plantation on the west coast side of the Park in 2008 and a recreational area, the Park area increased to 5019 hectares (12,396 acres). An additional land cover map is attached under the section "Additional material" (WS_lit170828.pdf).

2.2.2 - General location

a) In which large administrative region does the site lie?	Tuamasaga and Atua Districts on Upolu Island
b) What is the nearest town or population centre?	The nearest town is Apia (the Capital of Samoa), located in about 28 km south along Cross Island Road, and about 5 km east of Siumu junction.

2.2.3 - For wetlands on national boundaries only

- a) Does the wetland extend onto the territory of one or more other countries? Yes No
- b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes No

2.2.4 - Area of the Site

Official area, in hectares (ha):	5019
Area, in hectares (ha) as calculated from GIS boundaries	5006.23

2.2.5 - Biogeography

Biogeographic regions

RIS for Site no. 2313, O Le Pupū Puē National Park, Samoa

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Eastern Indo-Pacific - Central Polynesia - Samoa Islands
Udvardy's Biogeographical Provinces	The Central Polynesian Province

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

Criterion 2 : Rare species and threatened ecological communities

Criterion 3 : Biological diversity

Justification

The Park maintains large tracts of forest dominated by native plants. In the eight permanent vegetation plots (2 ha in total) established by the MNRE-JICA project in 2008, a total of 273 plant species were recorded of which 251 species are native. The total number of native plant species recorded in OLPP since its establishment is 352. 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). The total surveyed area is a very tiny proportion (i.e. <0.1%) of the National Park, so a larger number of native plant species are likely to inhabit the Park.

The Park is relatively abundant in wildlife. Found within the Park boundaries are 51 species comprising of 42 birds, five mammals and four lizards (Ollier, et.al., 1979). Of the 51 species, nine are found only in Western Samoa and American Samoa (endemic to Samoa archipelago) and twelve are restricted to Samoa. Furthermore, three species are found only on Upolu Island.

Forty two (42) bird species have been found within the Park: 7 seabirds and 35 water-fowl, marsh, and land birds (Ollier et. Al, 1979). OLPP is one of few areas where the endangered tooth-billed Pigeon (*Didunculus strigirostris*) and mao (*Gymnomyza samoensis*) were recorded in the MNRE 2005-2006 survey though neither was recorded in a survey in November 2009 (Butler 2009).

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*). However, the Park saw a severe decline in the population of these mammals after the cyclones in 1990 and 1991, as well as possibly hunting. The 1996 survey (Schuster et al. 1999) recorded the only two flying foxes at mixed roosts within the Park. The sheath-tailed bat has not been sighted in the Park in recent years and may now be extinct in Samoa.






























An entomological survey in 1996 found 24 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 from Upolu as endemic to Samoa (*Phalanta exulans* and *Hypolimnas errabunda*).




Criterion 4 : Support during critical life cycle stage or in adverse conditions

3.2 - Plant species whose presence relates to the international importance of the site

Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
<i>Clinostigma samoense</i> 	Niuvao	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EN 	<input type="checkbox"/>		A palm confined to Upolu Island, Western Samoa

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence ¹⁾	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA/ AVES	 <i>Anous stolidus</i>	Brown Noddy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Recorded rarely in 2009 survey; Crit 4: Supports breeding and nesting habitats for the species such as intact montane forests.
CHORDATA/ AVES	 <i>Aponis atrifusca</i>	Samoa Starling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa and American Samoa	Recorded very commonly in 2009 survey (individuals encountered frequently almost everywhere) in all habitats, in particular, in relative open areas with larger native trees.
CHORDATA/ AVES	 <i>Aponis tabuensis</i>	Polynesian Starling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa and American Samoa	Recorded rarely in 2009 survey in the coastal forest.
CHORDATA/ AVES	 <i>Didunculus strigirostris</i>	Tooth-billed Pigeon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	2005-2006		CR 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Not recorded in 2009 survey, 1 was recorded by at 311 m asl on the southern edge of the Park during the 2005 - 2006 survey by MNRE.
CHORDATA/ AVES	 <i>Erythrura cyaneovirens</i>	Red-headed Parrot-Finch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa, Vanuatu	Not recorded in 2009 survey, but a high chance of being missed.
CHORDATA/ AVES	 <i>Gygis alba</i>	White Tern	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14	2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Recorded uncommonly in 2009 survey; Crit 4: Supports breeding and nesting habitats for the species such as intact montane forests.
CHORDATA/ AVES	 <i>Gymnomyza samoensis</i>	Mao	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	2009		EN 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Not recorded in 2009 survey (Nov), but a pair was seen in July. Crit 4: The population has declined dramatically and it is now only found in a few areas largely at higher altitudes or in the upper parts of major river catchments.
CHORDATA/ AVES	 <i>Lalage sharpei</i>	Samoa Triller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	2009		NT 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Recorded uncommonly in 2009 survey mostly in more open areas including secondary forest and the river valley.
CHORDATA/ AVES	 <i>Myiagra albiventris</i>	Samoa Flycatcher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	2009		NT 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Recorded uncommonly in 2009 survey; the littoral forest of the Park is the most significant area for the species.
CHORDATA/ AVES	 <i>Pachycephala flavifrons</i>	Samoa Whistler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Recorded very commonly in 2009 survey throughout most of the Park.
CHORDATA/ AVES	 <i>Phaethon lepturus</i>	White-tailed Tropicbird	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Recorded rarely in 2009 survey; Crit 4: Supports breeding and nesting habitats for the species such as intact montane forests.
CHORDATA/ AVES	 <i>Rhipidura nebulosa</i>	Samoa Fantail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Recorded commonly in 2009 survey throughout the Park.
CHORDATA/ AVES	 <i>Sterna sumatrana</i>	Black-naped Tern	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>		Recorded rarely in 2009 survey; Crit 4: Supports breeding and nesting habitats for the species such as intact montane forests.
CHORDATA/ AVES	 <i>Todiramphus sanctus recurvirostris</i>	Flat-billed Kingfisher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20	2009		LC 	<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	Recorded quite commonly in 2009 survey mostly in areas of native forest and particularly along the valley of the river above Peapea Cave.
Others																		
ARTHROPODA / INSECTA	 <i>Hypolimnas errabunda</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2008			<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa	

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
ARTHROPODA / INSECTA	<i>Phalantia alcippe exulans</i> 		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2008			<input type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa		
CHORDATA / MAMMALIA	<i>Pteropus samoensis</i> 	Samoan Flying Fox	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	2009		NT 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Endemic to Samoa, American Samoa and Fiji		

1) Percentage of the total biogeographic population at the site

Also found is *Thaumatodon hystrikeloides*, endangered and endemic to Samoa species. <http://www.iucnredlist.org/details/21717/0>

The table above was compiled mostly using the Nov 2009 preliminary bird survey that provided a brief snapshot of the birdlife of OLPP 18 years after the cyclones. However, the survey was entitled 'preliminary' as it involved a fairly rapid walk through to provide a general picture of the birdlife. More work would be needed, including surveys at different times of year, to provide a more accurate assessment of the numbers and distribution of all species in the Park. For more information please see the preliminary bird survey under the section 'Additional Material' (WS_lit170912.pdf). In the survey,

'Recorded rarely' means less than 10 individuals seen, usually at only one or two locations;

'Uncommon' means 10 - 20 individuals seen covering several locations;

'Quite common' means 20 - 50 individuals seen at a wide range of locations;

'Common' means more than 50 individuals and found at most sites;

'Very common' means individuals encountered frequently almost everywhere.

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The topography of the OLPP varies significantly from the relatively flat coastal plain to the rugged interior in the north of the Park at over 1100 m. The topography is closely linked to the geology with the youngest lava flows (eg Puapua volcanics) on the coastal plain being quite flat, while the older rocks of the Salani and Fagaloa volcanics being more highly weathered and with steeper slopes (Kear and Wood 1959).

There are two river systems in the Park both arising in the centre of Upolu and flowing southwards. To the east of the Park is the Mataloa River which is an intermittent river flowing for a short section through the Park at the Togitogiga Waterfall and discharging at Illili estuary. The main catchment in the Park is the Vaalega River which rises in the vicinity of Mt. Fito and Mt. Vaivai and flows through the centre of the Park exiting it at Sa'aga fou.

Other wetlands in the Park include a herbaceous marsh at Mt. Puē (Mt. Puē Lake and Marsh) and a small lake at another un-named crater west of Mt. Vaivai at the northern edge of the Park, which are representative of montane wetlands in Samoa.

Very little is known about freshwater biodiversity of Samoa. Only four fish species and two macro-crustacean species were recorded during a survey at Mataloa River in the Park in July 2008. However, the survey was obviously not comprehensive enough because eels (Anguillidae) commonly seen at this river were not recorded. In general, the river biodiversity is low as first, the mouth of Mataloa River is a cliff and no estuary is developed, thus limiting species movement between sea and the river and second, the river dries up several times during the year.

The Park is unique in that it encompasses nearly the whole range of forest and vegetation types found on Upolu Island including large tracts of montane forest which is the dominant land cover of the Park followed by lowland rainforest. The forests support a range of native flora and fauna. See Criterion 3 justification for more details on fauna and flora.

Forests in the Park were severely damaged by two consecutive cyclones (Cyclone Ofa in 1990 and Cyclone Valerie in 1991). Invasive plants spread vigorously in the destroyed forests and several management actions were undertaken to address this.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks	Vaalega River	0		Representative
Fresh water > Flowing water >> N: Seasonal/ intermittent/ irregular rivers/ streams/ creeks	Mataloa River	0		Representative
Fresh water > Marshes on inorganic soils >> Tp: Permanent freshwater marshes/ pools		0	2.34	Representative

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Disturbed lowland forest	266.78
Lowland rainforest	614.66
Montane rainforest	2638.66
Littoral forest	104.39

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Calophyllum inophyllum</i>		Dominant littoral vegetation
<i>Canarium harveyi</i>		Dominant in the forests of the foothills and valleys
<i>Clinostigma verburgii</i>		Native, common in the forests of the lowlands
<i>Dysoxylum huntii</i>		Dominant in the forests of the highlands
<i>Dysoxylum mollissimum molle</i>		Common in the forests of the lowlands
<i>Hernandia moerenhoutiana</i>		Common in the forests of the highlands
<i>Homalanthus acuminatus</i>		Common in the forests of the highlands
<i>Ipomoea pes-caprae</i>		Littoral vegetation
<i>Myristica hypargyreae</i>		Dominant in the forests of the foothills and valleys
<i>Pandanus tectorius</i>		Dominant littoral vegetation
<i>Planchonella torricellensis</i>		Common in the forests of the lowlands
<i>Polyscias lanutoensis</i>		Common in the forests of the highlands
<i>Pometia pinnata</i>		Dominant in the forests of the lowlands
<i>Rhus taishanensis</i>		Common in the forests of the lowlands
<i>Scaevola sericea</i>		Littoral vegetation
<i>Terminalia richii</i>		Common in the forests of the lowlands

Invasive alien plant species

Scientific name	Common name	Impacts
<i>Albizia chinensis</i>		Actually (minor impacts)
<i>Cestrum nocturnum</i>		Actually (minor impacts)
<i>Clerodendron hirta</i>		Actually (minor impacts)
<i>Falcataria moluccana</i>		Actually (minor impacts)
<i>Funtumia elastica</i>		Actually (minor impacts)
<i>Lantana camara</i>		Actually (minor impacts)
<i>Merremia peltata</i>		Actually (major impacts)
<i>Spathodea campanulata</i>		Actually (minor impacts)

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	Aerodramus spodiopygius	White-rumped Swiftlet		2009		Common
CHORDATA/AVES	Anas superciliosa	Gray Duck; Pacific Black Duck		2009		Rare
CHORDATA/AVES	Columba vitiensis	Metallic Pigeon		2009		Rare
CHORDATA/REPTILIA	Cryptoblepharus rutilus					
ARTHROPODA/INSECTA	Danaus plexippus					
CHORDATA/AVES	Ducula pacifica	Pacific Imperial Pigeon		2009		Common
CHORDATA/ACTINOPTERYGII	Eleotris fusca					
CHORDATA/REPTILIA	Emoia cyanura					
CHORDATA/REPTILIA	Emoia samoensis					
CHORDATA/AVES	Foulehaio carunculatus	Wattled Honeyeater		2009		Very common
CHORDATA/AVES	Gallinolumba stairi	Tongan Ground Dove				
CHORDATA/AVES	Gallirallus philippensis			2009		Rare
CHORDATA/AVES	Lalage maculosa	Polynesian Triller		2009		Very common
ARTHROPODA/MALACOSTRACA	Macrobrachium lar					
CHORDATA/AVES	Myzomela cardinalis	Cardinal Myzomela		2009		Very common
CHORDATA/AVES	Petroica multicolor	Pacific Robin		2009		Common
CHORDATA/MAMMALIA	Pteropus tonganus	Pacific Flying Fox		2009		Common
CHORDATA/AVES	Ptilinopus perousii	Many-colored Fruit Dove		2009		Rare
CHORDATA/AVES	Ptilinopus porphyraceus	Crimson-crowned Fruit Dove		2009		Common
CHORDATA/ACTINOPTERYGII	Sicyopterus lagocephalus					
CHORDATA/ACTINOPTERYGII	Sicyopterus pugnans					
CHORDATA/ACTINOPTERYGII	Stiphodon elegans					
CHORDATA/AVES	Turdus poliocephalus	Island Thrush				
CHORDATA/AVES	Vini australis	Blue-crowned Lorikeet; Blue-crowned Lory		2009		Uncommon

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
A: Tropical humid climate	Af: Tropical wet (No dry season)

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Some parts of the O Le Pupu Pue National Park to the east are part of the Togitogiga Catchment. The Togitogiga Catchment covers approximately 1580 hectares. The Catchment also includes the Mataloa Stream, which empties into the Illiili Estuary situated on the eastern side of the National Park.

4.4.3 - Soil

- Mneral
- Organic

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes No

Please provide further information on the soil (optional)

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. Soil variation arises from slight differences in the chemical composition of basalt, the age of parent rock, the nature of base rock and leaching.

4.4.4 - Water regime

Water permanence

Presence?
Usually permanent water present

Source of water that maintains character of the site

Presence?	Predominant water source
Water inputs from rainfall	<input type="checkbox"/>
Water inputs from surface water	<input type="checkbox"/>

Water destination

Presence?
Marine

Stability of water regime

Presence?
Water levels fluctuating (including tidal)

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

Significant accretion or deposition of sediments occurs on the site

Significant transportation of sediments occurs on or through the site

Sediment regime is highly variable, either seasonally or inter-annually

Sediment regime unknown

(ECD) Water turbidity and colour	.10
(ECD) Water temperature	22.6

4.4.6 - Water pH

Acid (pH<5.5)

Circumneutral (pH: 5.5-7.4)

Alkaline (pH>7.4)

Unknown

4.4.7 - Water salinity

Fresh (<0.5 g/l)

Mxohaline (brackish)/Mxosaline (0.5-30 g/l)

Euhaline/Eusaline (30-40 g/l)

Hyperhaline/Hypersaline (>40 g/l)

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

Mesotrophic

Oligotrophic

Dystrophic

Unknown

(ECD) Water conductivity	79
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4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar ii) significantly different site itself:

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

The National Park shares boundaries with villages and several farms (cattle, agriculture, etc) owned by both government and locals. It is necessary to set up more permanent boundary marks on the ground, especially in the easily accessible areas of the Park, and to inform the communities on the boundary marks and signs.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium
Fresh water	Drinking water for humans and/or livestock	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	High
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High
Hazard reduction	Flood control, flood storage	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Recreation and tourism	Picnics, outings, touring	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes No Unknown

4.5.2 - Social and cultural values

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland
- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland
- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
- iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland

<no data available>

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Other

Category	Within the Ramsar Site	In the surrounding area
Commoners/customary rights	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Forest Management Section of South Upolu, Forestry Division, Ministry of Natural Resources and Environment, Samoa

Provide the name and title of the person or people with responsibility for the wetland:

Moafanua Tolusina Pouli, ACEO and staff of Forest Management Section of South Upolu, Forestry Division

Postal address:

Private Mail Bag, Ministry of Natural Resources and Environment, Apia, Samoa

E-mail address:

tolusina.pouli@mnre.gov.ws

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Gathering terrestrial plants	Low impact	Medium impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Problematic native species	High impact	High impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Invasive non-native/ alien species	High impact	High impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Storms and flooding	High impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Droughts	High impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Park	O Le Pupū Puē National Park		whole

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve

Ib Wilderness Area: protected area managed mainly for wilderness protection

II National Park: protected area managed mainly for ecosystem protection and recreation

III Natural Monument: protected area managed mainly for conservation of specific natural features

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Re-vegetation	Implemented
Improvement of water quality	Proposed

Species

Measures	Status
Control of invasive alien plants	Implemented

Other:

A zoning system has been introduced dividing the National Park area into two comprehensive zones: Conservation Zone (99%) and Utilization Zone (1%). The management of the Conservation Zone focuses on the conservation of the natural ecosystems of the Park while that of the Utilization Zone serves the public's leisure and nature viewing needs and provides facilities for tourism. However, the boundaries of the zones need to be clearly delineated and mapped.

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes No

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

There is a Visitor Center in the Park and its activities are guided by two main objectives: first, to serve visitors by providing information on recreational facilities, and second, to serve the general public by providing awareness raising materials. Currently, outreach materials in the Center are limited. There are no regular guided tours operating, but a guided hike on the Mt. Fito trail can be arranged upon request. One officer is assigned to be responsible for the management of the Visitor Center.

The 'O Le Pupū Puē National Park Local Committee' was established in 2008 during the JICA funded project. The objective of the Committee was to strengthen the partnership between MNRE and the surrounding communities. The committee is made up by representatives from the surrounding villages of Saaga, Saleilua and Poutasi. During the project the Committee used to meet regularly and support the management of the Park under the Terms of Reference set for the Committee.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

Further information

There is an ongoing carbon offset project (launched in October 2016 by the Samoan Government) through which native trees are planted extensively and maintained.

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Plant species	Proposed

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Atherton, J. (2016), Operational Plan, O Le Pupū Puē National Park Restoration Project 2016-2020, Apia, Samoa.

BirdLife International (2017), Important Bird Areas factsheet: O Le Pupū Puē National Park. Downloaded from <http://www.birdlife.org> on 27/06/2017.

Butler, D.J. and Forestry Division of the Ministry of Natural Resources and Environment (2009), Preliminary Bird Survey 10-17 Nov 2009 in O Le Pupū Puē National Park.

Conservation International - Pacific Islands Programme, Ministry of Natural Resources and Environment, Secretariat of the Pacific Regional Environment Programme (2010), Priority Sites for Conservation in Samoa: Key Biodiversity Areas. Apia, Samoa. 32pp.

Forestry Division of the Ministry of Natural Resources and Environment of the Government of Samoa (2010), Management Plan for the O Le Pupū Puē National Park.

Jenkins, A.P., Keith, P., Marquet, G., Mailautoka, K.K. (2008), A preliminary survey of Samoan freshwater macro-faunal biodiversity. Wetlands International-Oceania & Paris Museum of Natural History.

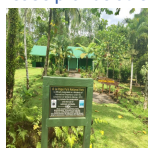
Ministry of Natural Resources and Environment of the Government of Samoa (2006), Recovery Plan for the Ma'oma'o OR Mao (*Gymnomyza samoensis*), Samoa's large forest honeyeater.

6.1.2 - Additional reports and documents

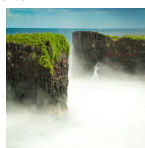
- i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>
- ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>
- iii. a description of the site in a national or regional wetland inventory
<no file available>
- iv. relevant Article 3.2 reports
<no file available>
- v. site management plan
<1 file(s) uploaded>
- vi. other published literature
<2 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



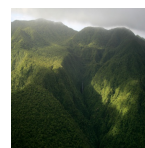
O Le Pupū Puē National Park visitor center (*Solongo Khurelbaatar, 11-12-2016*)



O Le Pupū Puē National Park coastal area (*Chikara Yoshida, 29-06-2013*)



O Le Pupū Puē National Park coastal area (*Chikara Yoshida, 29-06-2013*)



Interior of O Le Pupū Puē National Park (*James Atherton, 26-08-2009*)



O Le Pupū Puē National Park coastal area (*James Atherton, 26-08-2009*)



Mataroa River of O Le Pupū Puē National Park (*Chikara Yoshida, 29-06-2013*)



O Le Pupū Puē National Park coastal area (*Chikara Yoshida, 29-06-2013*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation