



**SOSAIETE FAASAO
O SAMOA
SAMOA CONSERVATION
SOCIETY**



NEW ZEALAND
FOREIGN AFFAIRS & TRADE
Manatū Aorere

Lua o Fafine Conservation Area Management Plan



View overlooking the Lua o Fafine crater towards Lepa and Vava'u villages (Faleafaga Toni Tipama'a)

Prepared by Faleafaga Toni Tipama'a and Afi'a James Atherton

October 2025

Table of Contents

Acknowledgements	iii
Acronyms	iii
Executive Summary	iv
1. Introduction.....	1
1.1 Purpose	3
1.2 Process	3
1.3 Legislative and Policy Context.....	4
2. Site Description	4
2.1 General Description	4
2.2 Geographical features.....	4
2.2.1 Geological features	4
2.3 Biodiversity	5
2.3.1 Flora and vegetation	5
2.3.2 Birds	6
2.3.3 Flying Foxes.....	7
2.3.4 Invasive Species	7
2.3.5. Threats to biodiversity.....	7
3 - Management Context.....	8
3.1- CA Values	9
3.2 - Vision Statement	9
3.3- Guiding Principles	10
3.4 - Management Objectives	10
4 - Management Strategies	10
4.1- Forest Protection & Restoration	11
4.2- Conservation of threatened Species	11
4.3- Management of Invasive Species	12
4.5- Management of forest clearance activities	12
4.6 Development of Eco-tourism activities	13
4.7- Capacity building and improvement in environmental awareness and consciousness	13
5- CA Management Rules.....	14
5.1 - Rules of the Conservation Area	14
5.2- Rules for visitors to the Conservation Area	15
6- Institutional arrangements.....	15
6.1 Lua o Fafine CA Management Committee	15
References	18
Annex 1 Letter of Endorsement of Management Plan.....	19
Annex 2. Map of archaeological sites in the Lua o Fafine Area (source: NUS Centre for Samoan Studies)	21
Annex 3. CA sign installed on Oct 2, 2025	22

Acknowledgements

This management plan was prepared by a team from the Sosaite Faasao o Samoa (SFS) /Samoa Conservation Society including Faleafaga Toni Tipama'a and Afi'a James Atherton. The management plan preparation team would like to thank the traditional landowners of the Lalomanu Village for setting aside the Lua o Fafine Crater for conservation. We especially want to express our gratitude to the *Pulega a Ali'i ma Faipule* in particular Afioga Fuataga Iakopo Faasi'i Faatiga II, for his guidance and leadership, and the community for support and assistance during our field visits. We also thank our donor, the New Zealand High Commission Apia for their support and generosity that enabled the establishment of the Lua o Fafine Conservation Area as the newest Conservation Area in Samoa.

Through your commitment and support, this land as well as its constituent natural and cultural resources will be protected for the benefit of the people of Samoa. *Faafetai tele mo la outou fesasoani i leni galuega taua.*

Acronyms

BMP	Best Management Practices
CA	Conservation Area
EIA	Environmental Impact Assessment
EPC	Electric Power Corporation
FD	Forestry Division
KBA	Key Biodiversity Area
MP	Management Plan
MFV	Manumea Friendly Village
MNRE	Ministry of Natural Resources and Environment
MOA	Memorandum of Agreement
NGO	Non-Governmental Organisation
NUS	National University of Samoa
PC	Project Coordinator
SFS	Sosaite Fa'asao o Samoa (Samoa Conservation Society)
STA	Samoa Tourism Authority
SPREP	Secretariat of the Pacific Regional Environment Programme
SWA	Samoa Water Authority
WMP	Watershed Management Plan
WRD	Water Resource Division

Executive Summary

The Lalomanu leaders, *Pulega a Ali'i ma faipule*, and Afioga Fuataga lakopo Faasi'i Fa'atiga II, wish to dedicate a part of their land to establish the Lua o Fafine Conservation Area. Their vision is for the protection and preservation of their natural and cultural resources to benefit current and future generations. The Management Plan (MP), identifies key values of the Conservation Area (CA) and a set of objectives and strategies are developed to restore, protect and safeguard those values.

O Alii ma Faipule o Lalomanu faapea le Afioga ia Fuataga lakopo Faasi'i Fa'atiga II, ua autasi ma malilie o le a tuuina atu se vaega o latou fanua e aofia ai le Lua o Fafine, e avefaa ma nofoaga faasao mo le afoaga. O le vaai mamao a'i latou, o le faasaoina ma le puipuia o le tamaoaiga o le faanatura ma le aganuu aua le manuia o tupulaga o nei ma le lumana'i. O lenei Ta'iala, e faailoa ai vaega taua o le nofoaga faasao, ma faamanino ai sini autu ma fuafuaga tataua ua tapenaina mo le faatumauina ma le puipuia o nei vaega taua.

With the steady increase of population dependence on natural resources and the threats of climate change, conservation of critical habitats and the unique native ecology of Lua o Fafine Crater is an urgent responsibility that should not be delayed. The CA management plan includes three broad concepts: (1) Protection and preservation of key important values in natural and cultural resources; (2) Management of threats and drivers of threats to those key values; (3) The empowerment of the local community residents through awareness raising and capacity building programmes, employment opportunities, alternative income generation, inclusion in decision making and conservation activities are the desired long term benefit strategies of the conservation area.

O le faatumaina o le faatupula'ia o tagata e faalagolago i le tamaoaiga o le natura faapea le a'afiaga i suiga o le tau, e tataua ai ona faasaoina loa vaega maaleale o le sisiomaga ma le natura o le Lua o Fafine, ma o se naunautai'ga vave lona puipuia ma ia aua le faatuai. O lenei tusi ta'iala e tolu (3) ni vaega ogaoga le taua, (1) Faasaoina ma Puipuia o vaega taua o le natura ma le faaleaganuu o maua ai (2) Faagaioiga ma le pulea lelei o lamatiaga, aua o lamatiaga i vaega taua nei, (3) Faamalosia o tagata nuu i a'oa'oga ma polokalame, mo avanoa faigaluega, isi auala e maua ai tupe, auai i Faiga faaiuga ma galuega faasao ma o nisi nei o auala e penefiti ai ma manuia le nofoaga faasao.

The rules and guiding principles of the Conservation Area are informed by environmental legislation and cultural norms and practices. Resource harvest restrictions and the prohibition of certain development practices, bans and limits to hunting are set with consequential actions for noncompliance as well as the promotion of sustainable practices and ecotourism.

O Tulafono ma auala talafeagai e faasaoina ai le nofoaga o loo faailoa mai i Tulafono Faasiosiomaga, faapea faaleaganuu ma ona faatinoga. O le faaititia ma taofia o le aveeseina o le natura ma le faasaina o nisi o Faiga faasolitulafono, taofia ma faaititia o fanafanaga faatasi ai ma ona a'afiaga faaletulafono, e aofia ai le faalauiloa o galuega gafatiataulima ma turisi faasiosiomaga.

1. Introduction

This Management Plan is for the establishment of the Lua o Fafine Conservation Area (CA) for a five-year period, 2025-2030. The plan contains objectives and strategies constructed from stakeholder discussions, scientific studies and reviews and technical assessments conducted between July 2023 and October 2025. Development of the plan involved stakeholder consultations and initial conservation actions including baseline surveys, community trainings and policy discussions for the new Conservation Area. The preparation of this plan was made possible with funding support from the New Zealand High Commission Apia.

Lalomanu is located on the southeast coast of Upolu Island in the Aleipata district of Tuamasaga around 40km from Apia (Figure 1). The majority of Lalomanu residents reside in the upper area of the village while tourist accommodation is located on the lower coastal area where the white sandy beautiful beaches are situated. The Conservation Area is located above the Tuialamu land slip area about 3 km from the Lalomanu village meeting house at the road junction (see Figure 1). The Lalomanu current population is shown in Table 1.

Lalomanu's geophysical and biological features are very important to the economic opportunities as well as cultural values at this site. The crater is a safe haven area for flying fox colonies. The area in the vicinity of the crater is also important culturally and with many archaeological sites such as star mounds, house foundations and signs of settlement. There are also a series of nearby craters, including Lua o Tane and others that could be protected in future as part of an expansion of the CA or an adjacent CA.

The CA work includes in its plan, capacity building in entrepreneurship, alternative generation through ecotourism and potential employment for village members or groups.

On 26 April 2025, the Lalomanu *Ali'i ma Faipule* approved the establishment of the Conservation Area and the management plan was formally approved by the *Ali'i ma Faipule* (see Annex 1).

Table 1: Population of Lalomanu by gender (2021 and 2025)

Status	Years	Total	Male	Female
Projected population	2025	1059	545	514
Census population	2021	733	379	354

Source: Government of Samoa 2022. Population and Housing Census, 2021

The CA project is committed to preserving the many values of the crater as well as supporting ecotourism to benefit the village. The *Ali'i ma Faipule* of Lalomanu decided to keep the *Lua o Fafine* in its current condition but open it up for regulated tourism, managed by the village council. Local tour guides can be trained by the Sosaite Fa'asao o Samoa (SFS) in collaboration with Samoa Tourism Authority (STA) and seek partners to

assist in conservation solutions and seeking funding. Project partners are the Samoa Tourism Authority and the National University of Samoa (NUS).

Figure 1. Location of Lua o Fafine Crater Conservation Area

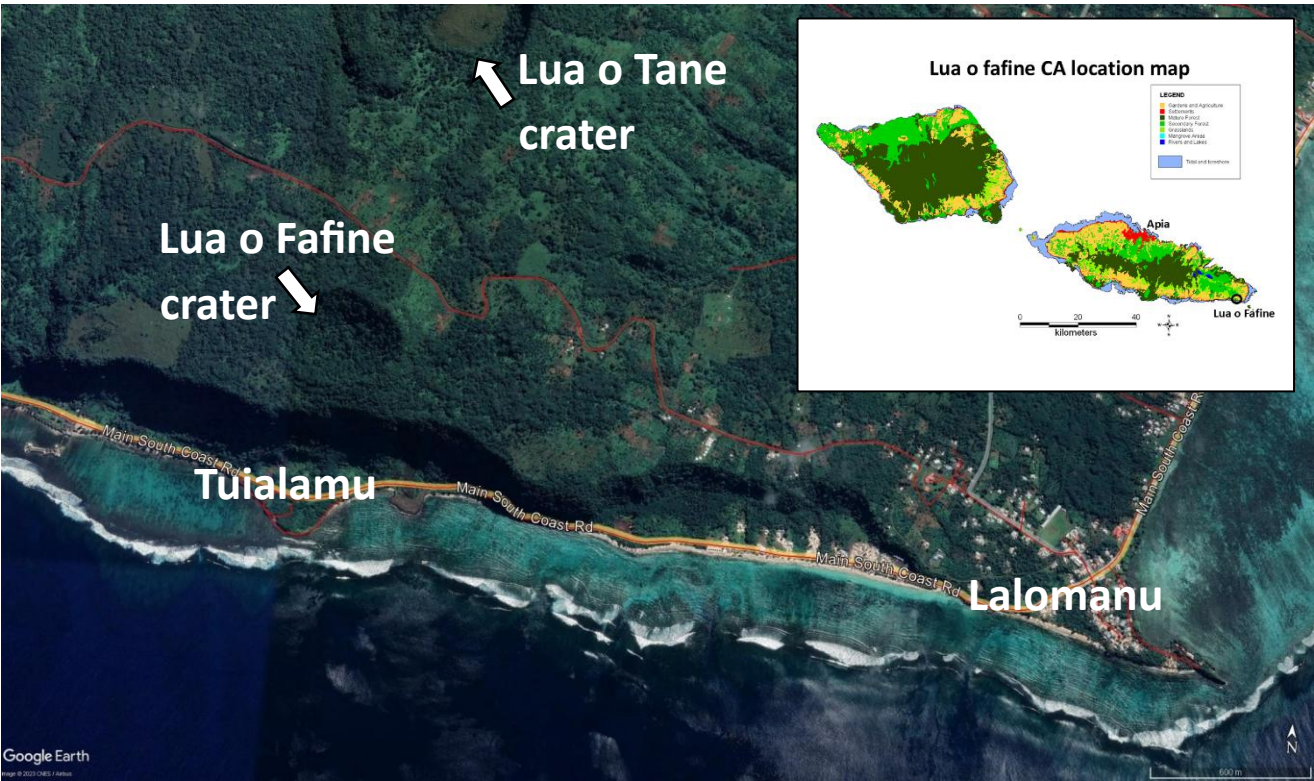
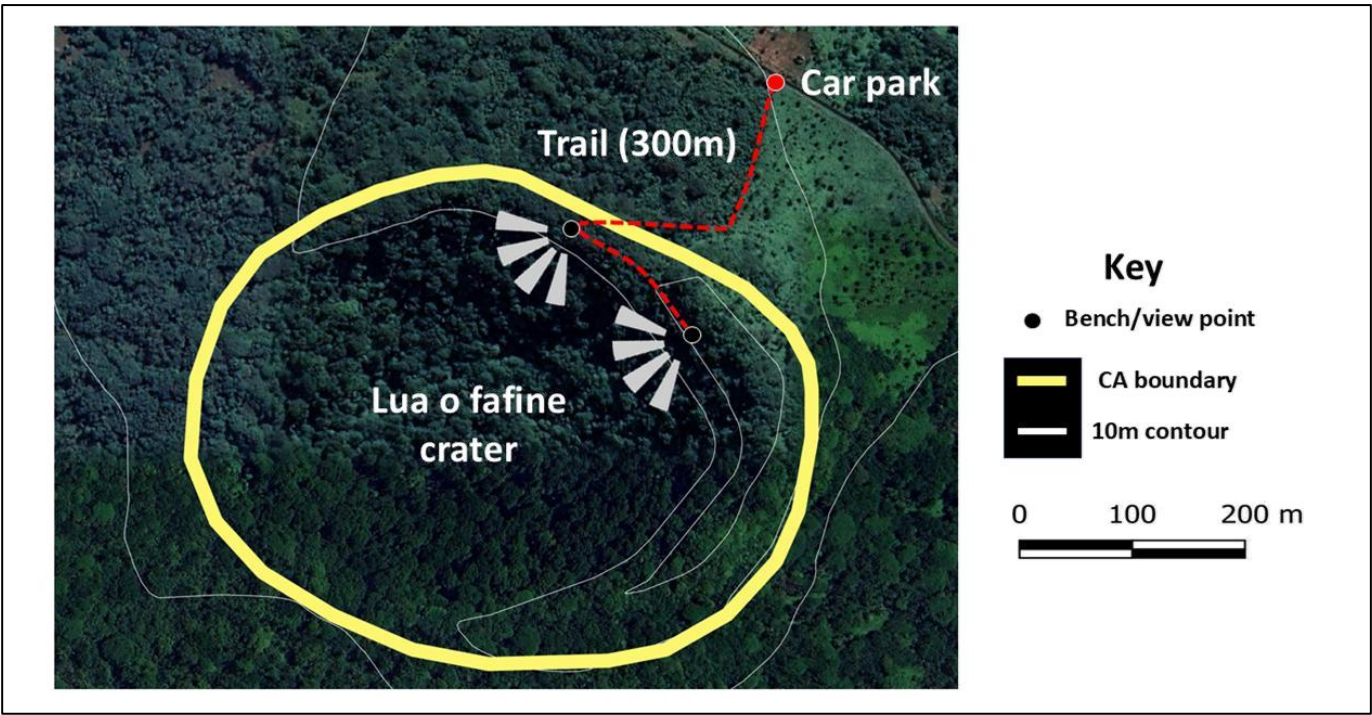


Figure 2. Lua o Fafine Conservation Area Boundary Map



The High Chief of the village, Fuataga Iakopo Faasi'i gave permission to the SFS team to develop the proposal to the New Zealand HEF funding for this project.

Important geophysical and biological, economic and cultural values:

- Native Flora and Fauna including native birds, flying foxes and many native plants
- Geological volcanic features
- Star mounds and other archaeological sites

The plan recognizes three broad stakeholders and interest groups whose collective goal is to sustainably manage the natural resources of the CA: (1) the interest of the government of Samoa as stated in its laws and policies; (2) the individual interests of the landowners; (3) and the community interests and collective concerns and responsibilities. The plan mediates between the three stakeholder groups by developing mutually agreed rules that promote sustainability.

1.1 Purpose

The purpose of the Lua o Fafine Conservation Area is for the conservation of the Lua o Fafine crater and rainforest and reconnecting Lalomanu people with their natural and historical heritage. This Management Plan describes the vision, targets, threats, objectives and proposed strategies for conserving the forest and biodiversity within the designated CA. The plan will also serve as a Best Management Practice (BMP) manual for all activities in the CA including workplans, monitoring schedules, maintenance, restoration projects and capacity building.

The overall goal of the Management Plan aims at improving decision making at local settings regarding sustainable management policies in the CA, by fostering working partnerships between the Lua o Fafine crater Conservation Area and donors, government agencies and the technical community in incorporating existing management recommendations previous studies of biodiversity baseline surveys, ecotourism plans to create a cohesive integrated action-based strategy for Lalomanu (Park *et al* 1992). Equally important, effective conservation in a country with strong connections to its culture and traditional values requires the collection and application of traditional knowledge to support sustainable resource management policies and safeguard historical sites and customs for future generations. Such wisdom is an integral part of Samoan everyday life therefore an important management tool.

Conservation involves the maintenance of the ecological components of volcanic soil, fauna and flora, the ecological processes including carbon cycles, connectivity between land and sea including species movements as well as the ecosystem services including all the human benefits provided by the Conservation Area.

1.2 Process

The management planning process was conducted over a 6-month period. It began with numerous discussions with key landowners starting in early 2024 and with a Lalomanu village consultation on April 26, 2025 when the plan was endorsed (see Annex 1). The CA was formally opened at an event on October 2, 2025. Project goals, objectives, benefits and opportunities were presented to *Ali'i ma Faipule* for discussion and approval.

The Management Plan ensures compliance with two main pieces of legislation: (1) Lands, surveys and Environment Act 1989, (2) The Forest Management Act 2011.

1.3 Legislative and Policy Context

The rules and conditions for the Lua o Fafine Crater CA are based on Samoa's environmental laws and Lalomanu village rules. There are a number of passed laws that contain provisions for environmental protection and preparation of management plans for the conservation of protected areas. The existing legislations such as *the Land Survey and Environment Act 1989* contains a provision for the conservation and protection of the environment, the establishment of National Parks and other forms of protected areas. *The Forest Management Act 2011* for sustainable management of forests, the *Water Resource Management Act 2008* for water usage and watershed management and the *Waste Management Act 2010* for land protection from pollution and hazardous waste. The last appropriate piece of legislation is the *Village Fono Act 1990* which allows communal land to be set aside for conservation. Furthermore, the *fa'asamoa* contains rules that guide community policies including the protection of natural resources and the land. Therefore the CA rules are set with careful consideration of traditions as well as compliance with Samoa's laws.

2. Site Description

2.1 General Description

Lua o Fafine Crater is located on the southeast of Upolu in Aleipata which is part of the traditional district of Atua (refer Figures 1 and 2 above). It lies within the Eastern Upolu Craters Key Biodiversity Area (CI 2010). The CA is culturally significant since many star mounds surround the Lua o Fafine Crater (see Annex 2). Annex 3 shows the sign that was installed at the CA in October 2025.

Generally, Lalomanu is known as a single village, however the census bureau recognizes Lalomanu as the urban part of the Aleipata district.

2.2 Geographical features

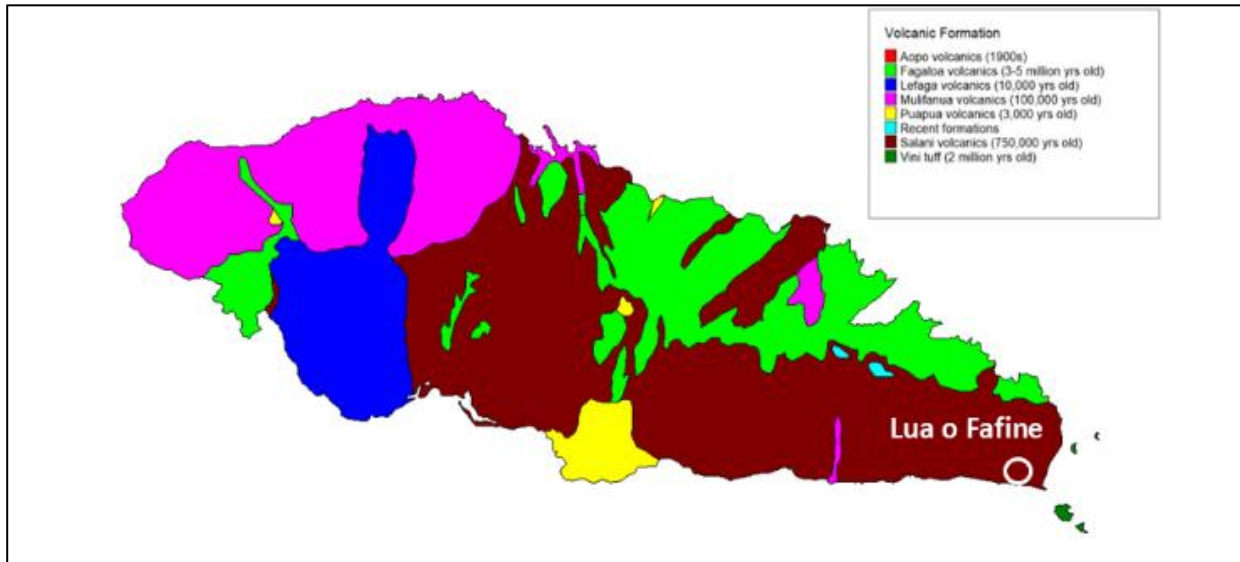
The Lua o Fafine Crater sits on a plateau at around 250m that has been mostly cleared for agriculture (mostly for cattle and lower down, coconuts). The elevation range of the crater rim is around 250m to 300m.

Only the steep sided craters of Lua o Fafine, Lua o tane, Lua o Moa and others are forested. The 10km long steep cliff to the south of the crater was formed from erosion of the lava flows and a fault or slip along the coast (Kear 1967).

2.2.1 Geological features

The geology of the Aleipata district is dominated by Salani volcanics estimated to be around 750,000 years old. This is relatively old rock (for Samoa) and in places is highly weathered and with deep canyons and craters (Figure 3).

Figure 3. Geological map of Upolu, showing Lua o Fafine Crater at Lalomanu



2.3 Biodiversity

2.3.1 Flora and vegetation

There have been no recent vegetation studies of the Lua o Fafine Crater since the 1992 lowland forest survey conducted by Park et al. According to the report, there are two types of secondary forest found inside the crater, one dominant on the inner crater slopes and the other on the crater floor. The dominant tree species of the crater slopes is *Pometia pinnata* (tava) with lesser amounts of *Inocarpus fagifer* (Ifi), *Fagraea berteriana* (pualulu) and *Dendrocnide harveyi* (Salato). There are numerous native ferns and ground orchids and very few invasive weeds. The vegetation of Samoa was mapped by Pearsall and Whistler in 1991 including the Lalomanu area (Figure 4).

Figure 4. Vegetation of Aleipata District (Pearsall and Whistler 1991)

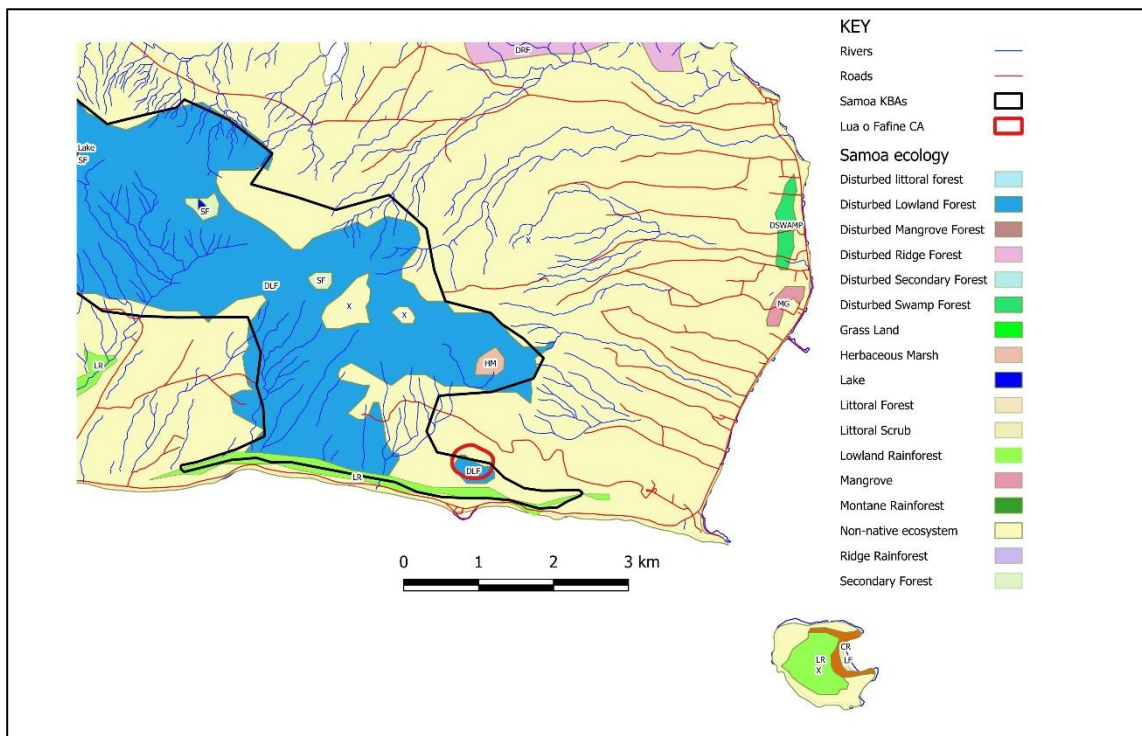


Table 2. The following table lists the significant biodiversity of Lua o Fafine

Scientific name	Samoan Name (English Name)	Taxonomic Group	Reason for inclusion
<i>Clinostigma warburgii</i>	Niu vao (Samoan bush palm)	Plants (Palms)	Endemic
<i>Gallicolumba stairi</i>	Tuaimao (Friendly Ground Dove)	Birds	Locally threatened
<i>Columba vitiensis</i>	Fiaui (White throated pigeon)	Birds	Locally threatened
<i>Ducula pacifica</i>	Lupe (Pacific pigeon)	Birds	Locally threatened
<i>Emoia samoensis</i>	Pili lape (Samoan skink)	Reptiles	IUCN Vulnerable
<i>Pteropus samoensis</i> and <i>Pteropus tonganus</i>	Pea vao (Samoan flying fox) and Pea fanua (Tongan flying fox)	Flying Foxes (Mammals)	IUCN Near Threatened (Endangered in Samoa)

2.3.2 Birds

The Imperial Pigeon or Lupe (*Ducula Pacifica*) was routinely hunted by villagers during the months of August to October but has been banned altogether. According to the High Chief of the village Fuataga lakopo, the village now prohibits the hunting of any native bird or wildlife in the CA and guns are not allowed in the CA. Fifteen bird species were recorded in the CA during a survey on October 9, 2025. A number of rare Tuaimao or Friendly Ground Doves (*Gallicolumba stairi*) were also observed in the crater in September 2025 (Guy Dutson pers.comm). Additionally, many sea birds and potentially Tropical Shearwaters (Karen Baird pers.comm) are likely to be present.

Table 3. Bird list of Lua o Fafine crater seen and heard on 9 October 2025 survey

Common name	Scientific names	Conservation Status	Habitat/range	At Lua o Fafine crater (y/n)
Introduced birds				
Common Myna/ maina fanua	<i>Acridotheres tristis</i>	Inv	Open areas/low to mid altitude	y
Jungle Myna/ maina vao	<i>Acridotheres fuscus</i>	Inv	Open areas	y
Red-vented Bulbul/ manu palagi	<i>Pycnonotus cafer</i>	Inv	Open areas	y
Native birds				
Pacific Imperial Pigeon /lupe	<i>Ducula pacifica</i>	Vu	Mature forest	y
White-throated Pigeon/ fiaui	<i>Columba vitiensis</i>	Vu	Mature forest	y
White-rumped Swiftlet/ pe'ape'a	<i>Aerodramus spodiopygius</i>	LC	Caves/open areas/mature forest	y

Common name	Scientific names	Conservation Status	Habitat/range	At Lua o Fafine crater (y/n)
Wattled honeyeater/ iao	<i>Foulehaio carunculata</i>	LC	Open areas	y
Samoa Starling/ fuia	<i>Aplonis atrifusca</i>	LC	Open area	y
Samoa Broadbill/tolaifatu	<i>Myiagra albiventris</i>	NT	undergrowth	y
Samoa Fantail/se'u	<i>Rhipidura nebulosa</i>	LC	Open areas	y
Crimson-crowned Fruit-dove /manutagi	<i>Ptilinopus porphyraceus</i>	Vu	Mature forest	y
Polynesian Triller/ miti tai	<i>Lalage maculosa</i>	LC	Open areas	y
Polynesian Starling/ fuia vao	<i>Aplonis tabuensis</i>	NT	Forest areas	y
Flat-billed Kingfisher/ tiotala	<i>Todiramphus recurvirostris</i>	LC	Open areas	y
Cardinal honeyeater/ segasegamau'u	<i>Myzomela cardinalis</i>	LC	Open areas	y
Totals				15

2.3.3 Flying Foxes

SFS is continuing to monitor the flying fox population since the study conducted by Loieuse Shilton in 2009 recorded almost 14,000 flying foxes in the Lua o Fafine crater, making it the biggest flying fox colony in Samoa at that time. Currently only 50-2000 flying foxes reside in the crater, mostly Pe'a fanua (*Pteropus tonganus*, Tongan flying fox), with smaller numbers of Pe'a vao (*Pteropus samoensis*, Samoan flying fox). The numbers seem to oscillate a lot as colonies move in and out of the crater. An approximate 200 Tongan flying foxes are also consistently observed at the roost in a large Pulu (*Ficus benghalensis*) tree in Lalomanu village.

2.3.4 Invasive Species

The Lua o Fafine CA has very few invasive plants except for the Koster's curse weed (*Clidemia hirta*) that is emerging in the undergrowth of the forest area. However, there are likely to be rats and feral cats and pigs. Managing these invasive species may be an important goal in the future if they are found to severely impact native biodiversity.

2.3.5. Threats to biodiversity

The threats to biodiversity of the Lua o Fafine CA are shown in table 4 and include habitat loss for farming, invasive species, hunting and climate change.

Table 4. Threats to the biodiversity of the Lua o Fafine CA

Indirect threats (or Drivers)	Direct Threats-(Problem)	Values Impacted
Local need for food and cash crops Local need for cattle ranches	Forest Clearing & Soil erosion Habitat loss Lowland deforestation	Forest health & native habitats & species population Rare & endemic wildlife Undisturbed soil Pristine environments

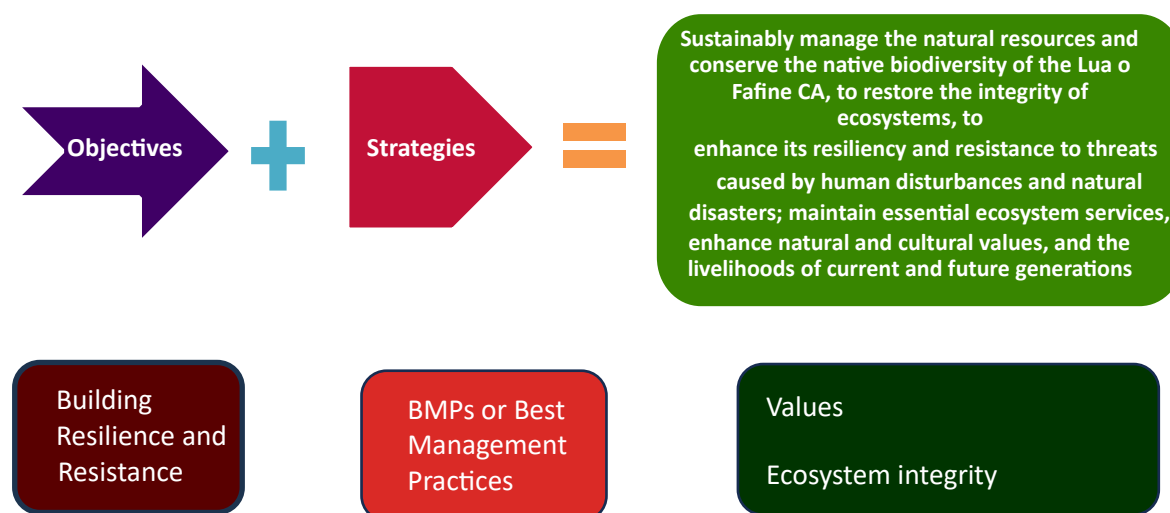
Indirect threats (or Drivers)	Direct Threats-(Problem)	Values Impacted
Clearings caused by human disturbance Natural disaster disturbance Human introduction, direct (live animals and plants) and indirect - unintentional	Invasive Species	Native ecosystems and species reduction Archaeological sites damaged or destroyed Ecotourism values reduced Transformation of natural sites
Subsistence food Cash income	Hunting	Lupe, other native birds, flying foxes
International greenhouse emissions and global warming issues	Increasing and intensifying cyclones with strong winds and heavy rain	Environment, community, food supplies, infrastructure, livelihood

3 - Management Context

The management plan follows a logical process and hierarchy down from a clear identification of the important **values** of the CA, a long-term **vision** to maintain and enhance those values, a set of intermediate **objectives** that are milestones on the way to achieving the vision as well as the **strategy** that outlines the actions and steps to be taken to achieve the objectives. Finally, a set of CA **rules** established and enforced by the CA management committee for the use of the natural resources in the CA supports the strategies.

The relationship and flow between all these elements can be illustrated diagrammatically as in Figure 5 below. This diagram illustrates the trajectory of the management of the Lua o Fafine Conservation Area. The values have been combined in one concept, **ecosystem integrity**. Building a **resilient** ecosystem that is healthy and fit to bounce back from threats is the overarching objective. Equally important is the ability of an ecosystem to absorb, defend itself or **resist** threats. Enhancing the **resiliency** and **resistance** of Lua o Fafine Conservation Area is the basis for objectives while implementing **best management practices** to define and implement the strategies.

Figure 5: Conceptual Model of Conservation Processes

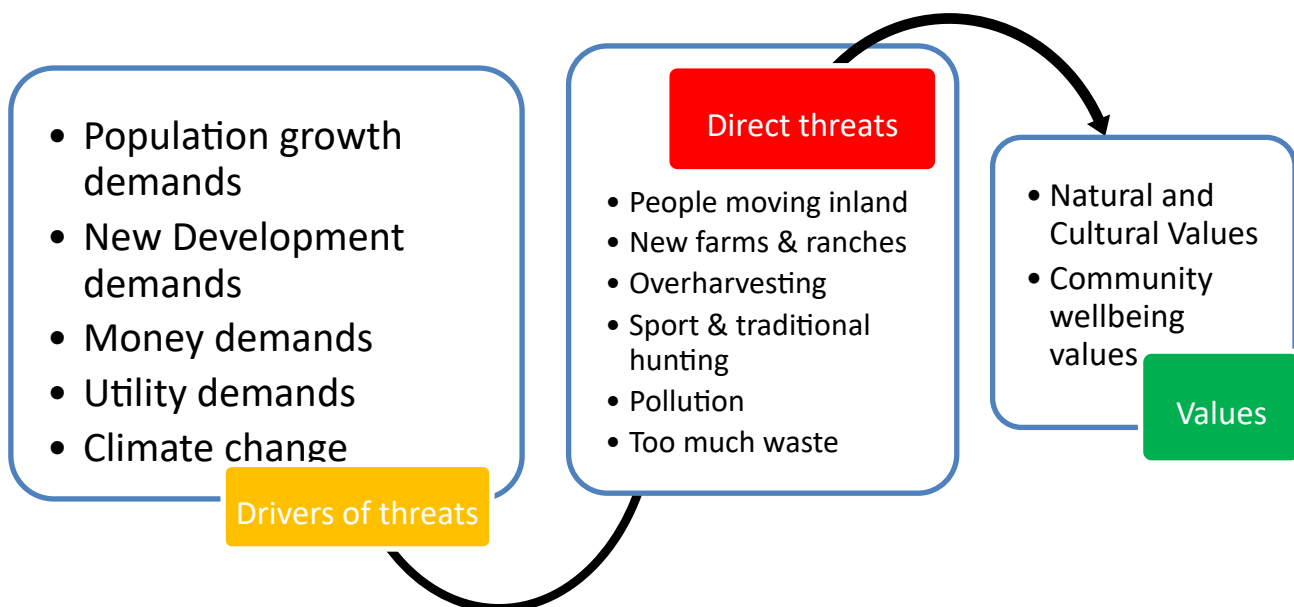


3.1- CA Values

Values Management should be a balancing act. As shown in the flow in Figure 6. The following are considered the values, or important features of the Lua o Fafine CA, as identified by community groups and advisers. Increased threats result in decreased values, and decreased values means dirty water, polluted air, hotter temperatures, flooded roads, contaminated soil, scarce food, less fish and overall low quality of life for human and animals alike. Levelling the scale **should be** the minimum outcome any conservation efforts aspire to.

- **Biological values**- the unique flora and fauna and ecosystems of the CA.
- **Geophysical values**- the unique geology, landform and soils.
- **Cultural values**- the unique cultural practices, legends, archaeological sites and aesthetic values.
- **Economic values**- supporting the livelihoods of local people – from harvesting natural resources for subsistence, ecotourism income for village, income earned from funded conservation field work
- **Capacity building values** - Learning opportunities through project implementation, hands on site training, ability to attend tour guide workshops and trainings

Figure 6- Drivers and threats to values



3.2 - Vision Statement

English: Sustainably manage the natural resources and conserve the native biodiversity of the Lua o Fafine Conservation Area: to restore the integrity of its ecosystems, to enhance its resiliency and resistance to threats caused by human disturbances and natural disasters; for the maintenance of essential ecosystem services, the enhancement of the natural and cultural values, and the livelihoods of current and future generations.

Samoan: Ia fa'aauuina le puleaina tatau o alaga-oa fa'alēnatura atoa ai ma le faasaoia ma le puipua o le ola fa'alēnatura o meaola i laufanua ma vaomatua o Lua o Fafine : ia toe fa'afo'i le malosi o le siosiomaga i lona tulaga sa iai, ina ia faaititia ai a'afiaga mai matagi malolosi atoa ai ma atina'e a tagata; ia toe totoina o

vaomatua ma le fa'aleleia o nofoaga taua fa'ale aganuu aemaise o le tulaga i le soifua manuia o auga tupulaga mo nei ma le lumanai.

3.3- Guiding Principles

A number of guiding principles have been identified that guide the implementation of the management plan.

- All Lalomanu residents are stakeholders in the management of the CA.
- All residents of Lalomanu and visitors to the CA have responsibilities for the management of the CA.
- All actions and developments in the Lua o Fafine CA should adhere to the management plan.
- The Government of Samoa and non-government organizations (NGOs) and other partners will help build the capacity of Lua o Fafine CA to implement the management plan.
- Management of the Lua o Fafine CA shall be supervised by the Lua o Fafine CA Management Committee which will have the legal authority to conduct its role.
- The CA management committee will have the power to set all rules and fines in the CA.
- The CA management committee shall have transparent and accountable processes as well as established mechanisms for grievances and dealing with disputes.
- The Lua o Fafine CA will be managed in an *adaptive management* approach, whereby management strategies, actions, rules and fines will be revised as required based on changing circumstances or new information.

3.4 - Management Objectives

Management objectives are the milestones, intermediate results or **desired changes** that are necessary to achieve the vision. The objectives specify the desired changes in the factors (direct and indirect threats and opportunities) that need to be achieved in the short and medium-term. A good objective meets the criteria of being results oriented, measurable, time limited, specific, and practical.

Two main types of objectives have been identified for Lalomanu: a conservation objective and a human wellbeing (or socio-economic) objective, reflecting the close inter-relationships between environmental conservation, improving livelihoods and maintaining culture and traditions (Table 5).

Table 5. Management Objectives for the Lua o Fafine CA

Conservation Objective	Community wellbeing Objective
Conserve critical habitats and restore ecosystem integrity to rebuild its resistance to human and natural threats	Empower community groups and individuals through capacity building, identify sustainable alternative income generating activities, start ecotourism and create jobs

4 - Management Strategies

A strategy is a **set of actions** with a common focus that work together to achieve project objectives and to deal with threats. Implementation of many of the strategies can commence immediately. Six strategies have been identified for the achievement of CA objectives and to manage current and anticipated future threats, including climate change. Critical habitat conservation, invasive species management, significant species conservation and recovery, tree planting, capacity building and alternative income generation schemes.

A major assumption in these strategies is that by dealing with current threats to the Lua o Fafine will restore the integrity of ecosystems which will enhance the resiliency and resistance of the CA to combat future threats from natural disasters and human influence. Many strategies can influence multiple objectives and strategies - for example, increasing environmental awareness helps achieve all objectives and contributes to all strategies while dealing with invasive species promotes site and species conservation. Some key immediate actions are shown in table 6 while table 7 is a summary of key strategies and actions.

Table 6. Key immediate actions for the Lua o Fafine CA

Activity	Action/Comment
Launch of Conservation Area	Lua o Fafine Conservation Area was opened on 2 nd October 2025
Tour Guide Training	A 2-day training of tour guides was held at Lalomanu on 1 st and 2 nd October 2025. Further training is planned for 2026
Trail construction and maintenance	A 300m long trail has been prepared with 2 viewpoints and park benches. A trail right around the crater rim is planned
Restoration/invasive species management	Forest restoration of degraded areas is needed at the site and to suppress any invasive plants found (eg Koster's curse). Future management of other invasive species such as cats, rats and pigs may be warranted if they are shown to cause serious harm
Prioritise actions to be completed under the Kiwa Foundation grant for 2026	A grant has been awarded to SFS to work at Lua o Fafine and 6 other CAs in 2026. There are funds for hiring a CA ranger and for conservation actions such as restoration that will be determined in collaboration with Lalomanu village

4.1- Forest Conservation

The principal threats to the sustainable land management status of these forests over the next 30 years and more are:

1. Deforestation (moderate threat).
2. Forest degradation (significant threat).
3. Continuation of non-forest area (significant threat)

Forest conservation rules have now been agreed which ban any further degradation of the forest within and around the CA and boundary signs have been put up around the boundary of the CA.

4.2- Conservation of threatened Species

The project aims to conserve all native species in the CA. However, some species have been identified as specific targets because of their rarity or threat including the Friendly Ground Dove (Tuameo), native bush palm (Niu Vao) the native pigeons (Lupe, Fiaui) and flying foxes (Pe'a). Further surveys and ongoing monitoring is needed to determine the populations of these species and to survey for other species such as Tropical Shearwaters.

The Lua o Fafine forest contains many of Samoa's endemic and threatened bird species. Cyclones, and increased warming temperature have caused major damages to the flora which directly impact their habitats. Conserving these species must include forest restoration, biodiversity conservation and protection from hunting and unsustainable developments. Lalomanu village has sets rules that supports species conservation and are incorporated into the CA rules.

Samoa has laws banning the hunting of native birds (pigeons in particular) and flying foxes but there is little effort to enforce these laws. Village authorities (*Ali'i ma faipule*) and *tapu* (bans) are sometimes the best way to enforce conservation policies. *The Animal Ordinance 1960* and the *Protection of Wildlife Regulations 2004* contains regulations and restriction of the use or exploitation of threatened species. Much greater effort needs to be placed on raising awareness of these laws and why they are important and should be adhered to.

There are a number of nearby volcanic craters (eg Lua o Tane 1 km away, see Figure 1) that could potentially be protected as part of a broader conservation area in the Eastern Upolu Craters KBA (CI 2010). Volcanic craters tend to be critical refugia for biodiversity as they are protected from strong winds. A survey of the biodiversity of these craters should be conducted and the potential for expanding the CA to include these craters should be investigated.

4.3- Management of Invasive Species

An effective way to manage invasive weeds is via habitat restoration. Areas planted with fast growing native species quickly shade out weeds. If the right species is planted and in the right density, weeds can be suppressed within 2 years.

The recommended immediate actions for managing invasive species are as below:

- Raise awareness on the impacts of invasive species and the importance of their management;
- Manage the spread of invasive plants by physical removal and restoration
- Replant only plants that are native to the site

4.4- Forest Carbon, tree planting and forest restoration

A forest restoration awareness programme should be initiated that includes empowering the community through knowledge of the benefits of trees, tree biology, tree identification, planting, and maintenance including proper pruning techniques. The small area around the northern side of the crater rim that was accidentally cleared in 2024 for a cattle farm should be restored first.

4.5- Management of forest clearance activities

There has been a deterioration in the ecological value of the forest in Aleipata as a result of decades of low scale tree cutting mostly for farming, including along the northern rim of the Lua o Fafine crater where forest was cleared for a cattle farm right up to the crater edge. As a priority, the clearing of any further forest should cease and forest conservation should be promoted through education and awareness raising and restoration efforts. Such actions require political support and incentives to assist the development of improved land use management methods and continued monitoring by rangers and SFS staff.

A full list of recommended actions to protect the forest are as follows:

- Ban any commercial logging;
- Raise awareness and educate villagers on the benefits of intact native forest (water catchment protection, wildlife, eco-cultural tourism, and other values);
- Support and integrate with local and regional political initiatives to stop the clearing of native forest and protect biodiversity values;

- Establish alternative income generating activities (e.g. ecotourism, forest carbon offset) and traditional gardening opportunities to offset the potential impact of the cessation of clearing.

The proposed rules related to infringements are shown in section 5. The recommended immediate actions to manage forest clearance activities in the CA are as below:

- No new gardens allowed in the CA;
- No commercial logging or clearing allowed in the CA;
- No resource harvesting for commercial or subsistence in the CA;
- No unauthorized entry;
- CA is closed on Sundays.

4.6 Development of Eco-tourism activities

Ecotourism development has long been promoted in Samoa as a form of sustainable and appropriate development in Samoa.

The recommended immediate actions to improve the development of ecotourism in the CA are:

- Expand the CA to include the nearby star mounds and other ancient sites
- Restore or improve accessibility to the star mounds
- Continue the trail around the entire crater rim
- Develop a costed strategy and workplan for the further development of the CA including trails, viewpoints, bird hides and signage
- Develop promotional material to promote the CA amongst local and overseas visitors- e.g. website, facebook page, brochures etc.
- Conduct training and capacity building of local communities in sustainable ecotourism

4.7- Capacity building and improvement in environmental awareness and consciousness

The Lua o Fafine CA community must be trained to implement this MP. Training will be needed in forest restoration, nursery development, tree planting as well as in site surveys, signage and trails development. SFS will facilitate the training in collaboration with MNRE and partners.

There is a general lack of public environmental awareness or appreciation of the critical values of native biodiversity and habitats in Samoa (as elsewhere in the Pacific), as well as the linkages and relationships between species and ecosystems, the threats to species and the steps needed to enhance natural heritage and thereby safeguard cultural heritage and promote sustainable development.

However, Samoa has a rich oral tradition which is the basis of decision makings and everyday life. The many legends and stories contain tapus, forbidden trees or animals and sacred lands that are to be left undeveloped.

The recommended immediate actions to build capacity and improve environmental awareness in the Lua o Fafine CA are to:

- Develop hands-on awareness programmes to reconnect people to the environment.
- Develop specific awareness programmes that connect traditional values and environmental conservation principles.

- Develop environmental awareness programs that improve the community understanding of the values of Conservation and the importance of the CA rules.
 - For women's committee
 - For youth
 - For Lalomanu schools
- Provide training for community members in CA management, forest conservation, restoration, identification of fauna and flora and implementation and monitoring of project activities.
- Develop awareness material on the project and on the value of the CA- such as posters, brochures, postcards for sale etc.
- Identify storytellers in the village and plan sharing sessions

5- CA Management Rules

5.1 - Rules of the Conservation Area

Not allowed

1. No visiting on Sunday
2. No logging or tree cutting of any kind allowed in the CA
3. No activities allowed that will cause degradation to ecological, hydrological, geological, cultural or scenic features in the CA
4. No new gardens or livestock to be introduced to the CA
5. No harvest of native species protected under law in the CA (i.e. pigeons, flying foxes)
6. No hunting allowed in the CA
7. No taking of seedlings, medicinal plants, decorative plants,
8. No illegal dumping and no littering in the CA
9. No new plant or wildlife species to be introduced to Lua o Fafine CA
10. No commercial activities such as tours, tour facilities, trails etc in the CA to be developed without the permission of the CA management committee

Allowed

1. Visitors to the Lua o Fafine by permission from the Alii and Faipule of Lalomanu
2. Cars are allowed on the road and designated parking area only
3. Collection of medicinal plants with permission from Alii and Faipule of Lalomanu

Tulafono mo le Eleele Fa'asao o o le Lua o Fafine

1. Tapunia i Aso Sa
2. Faasa le tatu'uina i lalo o la'au i totonu o le Fa'asao mo so'o se mafuaaga
3. Fa'asa ona faia ni atina'e po'o ni fuafuaga e fa'aono fa'aleagaina ai le laueleele, o punavai, le ola fa'anatura ma nofoaga taua fa'aleaganuu.
4. Fa'asa le faia o ni ma'umaga po'o lafu manu i totonu o le Faasao
5. Fa'asa ona fa'aaoga e tagata pe fa'atama'ia ola fa'alenua o lo'o puipua i tulafono a le malo Samoa e pei o pe'a, lupe. manutagi ma isi manu Samoa.
6. Fa'asa tutuliga ma fanafanaga o so'o se ituaiga i totonu o le Fa'asao
7. Fa'asaina le ave'esea mai o ni la'au toto, la'au fai vai, la'au fai teu
8. Fa'asa ona lafoa'i so'o se ituaiga o otaota i totonu o le Fa'asao

9. Fa'asa ona fa'aulufale mai ni la'au po'o manu e ese mai i manu ma la'au o Lalomanu
10. E le fa'atagaina asiasiga, po'o se malaga fa'apisinis, poo le fausia foi o ni auala ma fale-talimalo i totonu o le fa'asao e aunoa ma le fa'atagana a Alii ma Faipule o lalomanu.

Fa'atagaina

1. E fa'atagaina tagata asiasi mai i le Lua o Fafine i lalo o le fa'atagana a Ali'i ma Faipule
2. E fa'atagaina ta'avale i auala ma paka fa'atulagaina
3. E fa'atagaina ona ao la'au fai vai i lalo o aiaiga mai le Komiti

5.2- Rules for visitors to the Conservation Area

- All visitors must contact the landowner or village committee before planning a visit
- Visitors must respect Samoan customs including appropriate attire, no entry day such as Sundays, and respect no trespassing on sacred grounds and loud music or noises
- Respect all Conservation Rules

6- Institutional arrangements

6.1 Lua o Fafine CA Management Committee

SFS has secured funds under the Kiwa Foundation to support the governance and further conservation of 7 CAs in Samoa, including the Lua o Fafine CA during 2026. This grant will include the hire of a ranger who will coordinate conservation activities at the Lua of fafine CA.

A CA Management Committee will to be appointed to oversee the management of the CA. The committee should have representation of all the landowning communities in the CA and must also reflect traditional governance arrangements. Ideally all sectors of society including women and youth as well as chiefs would be represented in the committee. The specific functions and implementing rules and regulations of the committee and the duties and responsibilities of committee members need to be determined, but the proposed roles of this committee are to:

- Supervise the CA ranger and the implementation of the management plan with the support of project partners
- Make decisions on all management plan strategies, actions, rules, laws and fines in the CA
- Mediate, arbitrate and to decide in any complaints or grievances
- Manage any funds raised for the implementation of all CA management activities
- Assess the possible expansion of the CA to include surrounding archaeological sites and even to include other nearby craters like the Lua o Tane crater

Table 7. Summary of Strategic Actions for Lua o Fafine CA.

Strategy and Action	Responsibility	Timing	Priority	Status (October 2025)
1. Forest Conservation				
Develop and agree on the rules for the management of the CA	Community with support of SFS and partners	Immediate	High	Consultation completed. Rules have been endorsed
Place signs in the CA explaining the management rules	SFS and Community	Immediate	High	Installed (see Annex 3)
2.Conservation of threatened species				
Conduct a survey for seabirds such as Tropical Shearwaters	SFS and MNRE	Immediate	High	Rules agreed
Conduct monitoring for rare and threatened species such as Tuaimeo (Friendly Ground Dove) and Pe’a (flying foxes)	SFS and MNRE	Immediate	High	
Conduct surveys and investigate the potential for the expansion of the CA to adjacent craters in the Eastern Upolu Craters KBA	SFS and MNRE	Mid term	Medium	
3. Management of invasive species				
Raise awareness on the impacts of invasive species and the importance of their management	SFS and partners	Immediate	High	Investigate under Kiwa grant
Manage the spread of invasive weeds by physical removal and forest restoration	Community with support of SFS and partners	Immediate	Low	Investigate under Kiwa grant
4. Forest Carbon, tree planting and forest restoration				
Develop a native tree nursery in the CA to propagate the relevant native trees for later planting out	Community with support of SFS and partners	Immediate	High	Investigate under Kiwa grant
Implement restoration and weed management in degraded areas (i.e. planting with native trees)	Community with support of SFS and partners	Immediate	High	Investigate under Kiwa grant
5.Management of forest clearance activities				
No new gardens allowed in the CA	Community	Immediate	High	Approved
No commercial logging allowed in the CA	Community	Immediate	High	Approved
Tree cutting and plant harvesting not allowed in the CA	Community	Immediate	High	Approved
Encourage improved agroforestry techniques in the CA	Community with support of SFS and partners	Mid term	Medium	Investigate under Kiwa grant
6. Development of ecotourism				

Strategy and Action	Responsibility	Timing	Priority	Status (October 2025)
Expand the CA to include the nearby star mounds and other ancient sites	Community	Immediate	Medium	
Develop trails with interpretive signage in the CA to explain the biodiversity in the CA	SFS and Community	Immediate	High	Installed. Further trail work around the crater is planned
Develop a costed strategy and workplan for the sustainable development of Lua o Fafine crater	SFS, NUS and STA	Immediate	High	Investigate under Kiwa grant
Develop promotional material to promote the CA amongst visitors eg website, facebook page, brochures etc	SFS, NUS and STA	Mid term	Medium	Investigate under Kiwa grant
Conduct training and capacity building of the community in sustainable ecotourism	SFS and STA	Mid term	Medium	Training completed Oct 2025 and to be continued in 2026 under the Kiwa grant
7. Capacity building and improvement in environmental awareness and consciousness				
Provide training for community members in CA management, forest conservation, restoration and monitoring of project activities	SFS and partners	Immediate	High	Investigate under Kiwa grant
Develop an environmental awareness program to improve the understanding on the importance of the CA rules with a focus on youth	SFS and partners	Immediate	High	Consultations completed. Investigate under Kiwa grant
Develop awareness material on the project and on the value of the CA- such as posters, brochures etc	SFS and partners	Immediate	High	Investigate under Kiwa grant

References

- Atherton, J. 2023. *Malololelei CA Management Plan*. Samoa Conservation Society, Apia, Samoa
- 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.
- Government of Samoa 2022. *Samoa Population and housing census 2021*. The NUS Library CIP data Samoa Census Surveys and Demography Division, Samoa Bureau of Statistics. Apia Samoa
- Government of Samoa 2018. *Review of Natural Resources and environment related regulations*. Apia. Samoa: SPREP
- IUCN. 2022. *IUCN Redlist for Samoa*. <https://samoa-data.sprep.org/dataset/iucn-redlist-samoa>
- Kear, D. and Wood, B.L. 1959. The Geology and Hydrology of Western Samoa. *NZ Geological Survey Bulletin* 63.
- Kear, D. 1967. Geological notes on Western Samoa. *New Zealand Journal of Geology and Geophysics*, 10:6, 1446-1451
- Pearsall, S. H. and Whistler, W. A. 1991. *Terrestrial ecosystem mapping for Western Samoa*. Report to the Government of Samoa by South Pacific Regional Environment Programme and East-west center, Environment and Policy Institute, Honolulu, US. 72pp
- Park, G., Hay, J., Whistler, W.A., Lovegrove, T and Ryan, P. 1992. *The National ecological Survey of Western Samoa: the conservation of biological diversity in the coastal lowland of Western Samoa*. New Zealand Department of Conservation.
- Shilton, L. 2009. *Building community capacity to achieve conservation outcomes for priority bat species in the Polynesia-Micronesia Hotspot: A pilot study on Samoa*.
- SPREP 2012. *Guidebook to Conservation Laws in Samoa*, Apia. Samoa. 56pp

Annex 1 Letter of Endorsement of Management Plan



Endorsement Letter by Alii and Faipule of Lalomanu to conserve the Lua o Fafine Conservation Area

O le aso lenei **26 Aperila 2025**, sa matou feiloai ai ma le atoatoa mo lenei malilie ma le Afioga i le Tuiatua Faanofonofo, le Tofa ia Fuataga lakopo Faasi'i Faatiga II ma le afioaga o Lalomanu, e avea ai le Lua o Fafine ma lona siosioaga e amata mai i le vaega maualuga o le lua e o'o atu i le 20 mita lona fua, e puipuia ma Faasao o le Vaomatua o le Lua o Fafine.

On this day the 26 April 2025, we present with full support this agreement by the Afioga

Tuiatua Faanofonofo, Fuataga lakopo Faasi'i Faatiga II with the village council of Lalomanu to commit the Lua o Fafine crater and its surrounding environment, from the crater rim outwards 20 meters for the protection and conservation of natural resources as the "Lua o Fafine Conservation Area".

Ua i ai le faamoemoe, o lenei faasao e avea o se alamanuia mo le lumana'i o tupulaga lalovaoa o Lalomanu, ma le itumalo o Aleipata, i le puipuia lea o le ola faanatura ma le siosiomaga, silafia o eleele ma lona fausaga, ituaiga papa ma suiga, ma le taua o la latou aganuu. E aofia ai a'oa'oga ma su'esu'ega o le siosioaga, o le vaomatua ma meaola (manu fetolofi ma manulele).

We believe that in the future, this conservation area will provide many benefits for the future generations of Lalomanu and the Aleipata District by safeguarding the biodiversity, geological and cultural values as well as allowing for the study and research of the environment of the forest and animals (insects and birds)

O lenei tusi ta'iala ua tuuina atu mo le silafia ma le malamalama o tagata uma o Lalomanu ma e i ai fo'i le faamoemoe, o le a avea lenei Ta'iala e maua ai ni alamanuia mo le afioaga, i tulaga tau turisi e maimoa ina lenei Faasao.

This Management plan is presented for the awareness and understanding of the people of Lalomanu, and will guide the protection of the site, the management of threats as well as used to secure resources for the village and to promote sustainable development, such as through tourism in the conservation area.

Ia tumau pea le Faiga pa'aga a Alii ma Faipule o Lalomanu ma le Sosaiete Faasao o Samoa (SFS/SCS), Univesete Aoao o Samoa (NUS), Faletalimalo mo Turisi i Lalomanu ma le Ofisa o Tagata Tafafao mai Fafo (STA) i le puipuia ma faasaoina lenei alagao'a, faapea le galueina pea o lenei faasao i le lumana'i.

We hope to continue our partnership of the Alii and Faipule of Lalomanu with the Sosaiete Faasao Samoa/Samoa Conservation Society (SFS/SCS), the National University of Samoa (NUS), Tourism

Accommodations of Lalomanu and the Samoa Tourism Authority (STA) to protect and conserve our precious natural resources for the future.



Sainia,

Fuataga Iakopo Faasi'i Faatiga II

Tapagai'a Taupega

Sa'o o Lalomanu

Witness/Motimauina,

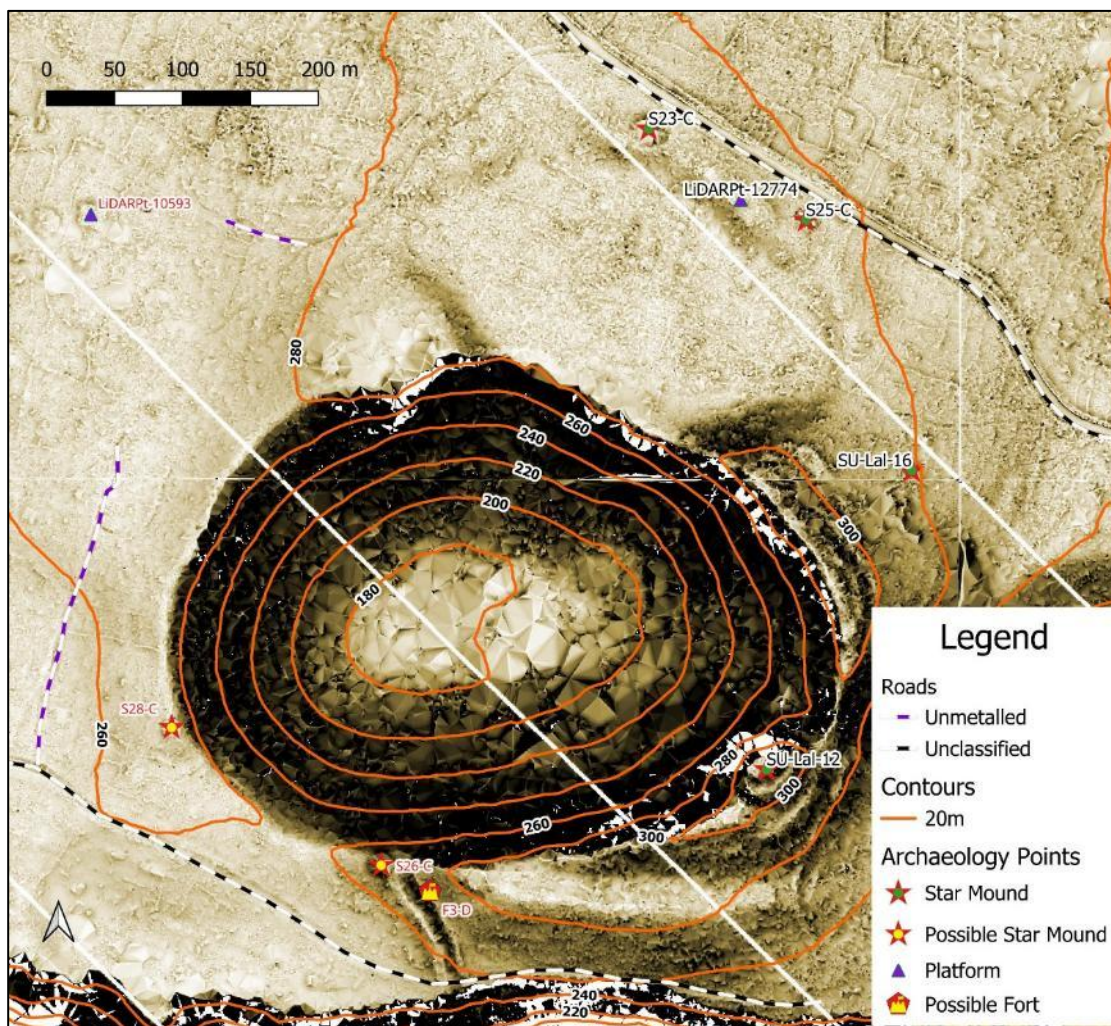
Afi'a James Atherton
Peresitene SFS/SCS

Pulenuu o Lalomanu

TAPAGAI'A TAUPEGA.

Falafesiita'i Toni Tipama'a
Ta'ita'i Poloketi SFS/SCS

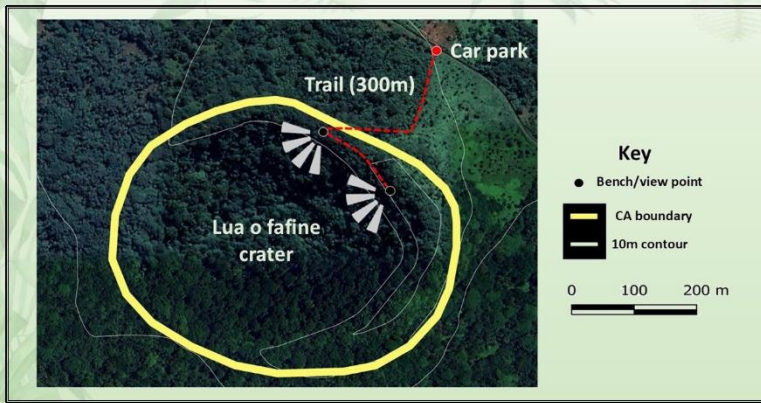
Annex 2. Map of archaeological sites in the Lua o Fafine Area (source: NUS Centre for Samoan Studies)



Annex 3. CA sign installed on Oct 2, 2025



Lua o Fafine Conservation Area



Trail to the Crater

The 300m long trail (approximately 5-6 mins walk) to the crater edge is marked with orange plastic trail markers. The trail continues along the crater edge to a viewpoint at the highest point of the crater. The crater is steep so please be careful and wear sturdy shoes. We recommend you carry water.

Entrance Fees

The crater is on customary land and permission from the landowners must be granted. Guided Tour: \$30 tala/person for one, \$20 tala pp for groups; Non guided tour- please contact the landowner. Points of Contact: Fuataga (Landowner) – 7672665 or 7711431; Litia Sini Beach Fale- 7516700

Lua o fafine Management Rules

- No smoking, No littering, No dogs
- No hunting of native birds and bats
- No collecting native plants or cutting down trees
- Please don't disturb the flying foxes
- Leave only footprints and take only photographs!

Tulafono mo le fa'asaoina o le Vanu

- Fa'asā le ulaula, Fa'asā le fa'alapisi, Fa'asā ta'ifau
- Fa'asā le fanaina o manulele ma pe'a
- Fa'asā le ave'esea o la'au pe tatu'u foi
- Taofi le fa'alavelave i nofoaga o nonofo ai pe'a
- Aua le ave'esea meatotino mai le fa'asao, tapu'e na'o ata








We hope you enjoy your visit!
Talitonu ua fa'amalieina lau silasila!
Fa'afetai, Pulega Ali'i ma Faipule Lalomanu

Scan here for more information →



7575300
info@samoaconservation.org
facebook.com/conservesamoa/
facebook.com/SaveTheManumea/

Pe'a fanua, Tongan Flying Fox (*Pteropus tonganus*)



Photo: James Atherton



Credit: Fa'asao Sava'i Society

Pe'a vao, Samoan Flying Fox (*Pteropus samoensis*)



Photo: Lavita Togia



Credit: Fa'asao Sava'i Society



SOSAIETE FAASAO O SAMOA
SAMOA CONSERVATION SOCIETY



22