

Tina River Hydropower Development Project

Core Land Conservation Area Management Plan

PREPARED BY STANTEC FOR

TINA HYDROPOWER LIMITED | MARCH 2025



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Core Land Conservation Area Management Plan

March 2025

Prepared by Stantec New Zealand
on behalf of Tina Hydropower Limited, Honiara

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Rev.	Date	Description	Prepared by	Project Manager
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ACRONYMS

Acronym	Definition
AOMS	Aquatic Offset Management Strategy
BAG	Biodiversity Advisory Group
BMP	P-2 Biodiversity Management Plan
CAMP	Conservation Area Management Plan
CBSP	Community Benefit Sharing Project
CESMP	Construction Environmental and Social Management Plan
COD	Commercial Operation Date
CPSB	Community Benefit Sharing Programme
eDNA	Environmental DNA
E&S	Environmental and Social
ESIA	Environmental and Social Impact Assessment
GPS	Global Positioning System
HEC	Hyundai Engineering Co. Ltd.
HPP	Hydropower Project
HSE	Health, Safety and Environment
KPI	Key Performance Indicator
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MMERE	Ministry of Mines, Energy and Rural Electrification
MoFR	Ministry of Forestry and Research
NGO	Non-governmental Organisation
OE	Owner's Engineer
OESMP	Operational Environmental and Social Management Plan
PO	Tina River Hydropower Development Project Office
Qha	Quality Hectares
SI	Solomon Islands / Solomon Islander
SIG	Solomon Islands Government
SIPF	Solomon Islands Police Force
SINU	Solomon Islands National University
TBC	To Be Confirmed
TCLC	Tina Core Land Company
THL	Tina Hydropower Limited
TOMS	Terrestrial Offset Management Strategy
TRHDP	Tina River Hydropower Development Project
USP	University of the South Pacific

1. INTRODUCTION

1.1 Background

The Tina River Hydropower Development Project (TRHDP; the Project) includes a 15-megawatt hydropower facility, transmission line, access roads and related permanent and temporary infrastructure. The construction of the Project requires the clearance of large areas of vegetation and associated fauna habitat. While this clearance will be minimised to the extent possible and much of the site will be replanted, a terrestrial biodiversity offset is required to address residual impacts.

According to the Terrestrial Offset Management Strategy within the P-2 Biodiversity Management Plan¹ (Stantec 2023), the Project will result in an overall loss of 70.82 quality hectares² of terrestrial Critical Habitat due to habitat clearance and edge effects. Through a combination of averted loss oversets, active revegetation of cleared areas, and natural regeneration of remaining habitats, a total of 88.49 quality hectares can be achieved. This is 125% of the minimum offset required and represents a small net gain in biodiversity as a result of the project.

The Conservation Area Management Plan (CAMP) sets out the management and monitoring actions to achieve net gains terrestrial biodiversity through the establishment of a conservation area within Core Land. It specifies how the conservation area will be established and managed for the duration of the Project in order to achieve net gains in biodiversity.

1.2 Aim and Objectives

The aim of the Core Land Conservation Area is:

To protect and restore the terrestrial habitats within Core Land to enhance biodiversity values.

The specific objectives are to achieve this aim are:

- 1. PROTECT: to protect remaining vegetation from clearance and degradation.**
- 2. ENHANCE: to restore habitats disturbed during construction.**
- 3. CONSERVE: to monitor and grow the populations of key species.**
- 4. EMPOWER: to engage local communities in conservation and develop alternative livelihoods.**

The CAMP sets out the management and monitoring actions to achieve net gain in terrestrial biodiversity. This includes methods to protect and restore the terrestrial habitats within Core Land; establish a robust programme of biodiversity management and monitoring; specify governance arrangements to streamline delivery; and identify resources and budgets for successful implementation for the 30-year duration of the Power Purchase Agreement (PPA), with a particular focus on the first five years.

¹Available online here: <https://tina-hydro.com/project-esmps/>

²The residual impact of the Project has been quantified using the 'habitat hectares' method. Ecosystem quality is assessed within a theoretical range from zero (such as areas destroyed by a project) to 100% habitat quality (a pristine or 'benchmark' ecosystem). Quality hectares (Qha) is calculated by multiplying ecosystem quality x area of habitat.

2. BASELINE ENVIRONMENT

This section provides a summary of existing social and environmental values within Core Land including land ownership, land use, habitats, flora and fauna.

2.1 Socio-Cultural Environment

2.1.1 Land Ownership

The conservation area is located within the TRHDP Core Land. The area is located on customary land that has been acquired by the Solomon Islands Government (SIG) and held in a 50-50 joint venture between the customary landowners and government. The title to the land is held by the Tina Core Land Company (TCLC) which is an alliance between SIG and the five indigenous groups with ownership claims over the Core Land area (Table 2-1). This alliance provides a joint ownership arrangement and addresses ongoing land use and access rights. The land is leased to the Project company for a fixed term of up to 75 years (TRHDP 2021).

Part of the river and reservoir upstream of the dam falls outside of Core Land. It is understood that this is due to an error in the cadastral survey, the result of steep topography whereby survey points were taken at the bottom, rather than the top of the gorge. This area has been excluded from the CAMP.

Table 2-1: Indigenous groups with ownership claims to Core Land (MMERE 2017)

Tribe	Area claimed (ha)*
Roha Tribe	171.0 ha
Buhhu-Garo Tribe	161.5 ha
Kochiabololo Tribe	65.7 ha
Ulunua-Sutahuri Tribe	29.9 ha
Viurulingi Tribe	14.0 ha
Total area:	442.1

* Some areas have more than one traditional owner, and overlap.

2.1.2 Demographics

There are no villages, houses or other permanent settlements within Core Land, although there are a large number of villages along the access road and downstream (Figure 2-1). The Land Acquisition and Livelihood Restoration Plan identified that the five landowning tribes had a total population of 777 in 2017 (Table 2-2), however none are residents within Core Land (MMERE 2017). Most people reside in the two village clusters of Managikiki-Verakuji and Antioch-Velasala, and to a lesser extent in the riverside settlements of Choro, Koropa, and Senge (MMERE 2017).

The gender and age distribution of the Core Land tribes is shown in Table 2-3. The tribes are a youthful population with the majority (54.4%) being below the age of 25 years. There is a slightly higher proportion of males to females (55% male vs. 45% female). For males aged 15 years and over, 21.2% have completed primary education, with 6.6% and 2% having completed secondary and vocational education, respectively. For females aged 15+ only 12.6% had completed primary education, with no further education completed. This illustrates a notable gender gap in education.



Figure 2-1: Core Land (hashed) showing the location of villages and census enumeration areas (MMERE 2017)

Table 2-2: Population of the five Core Land tribes (MMERE 2017)

Indigenous groups with ownership claims over the core land area	Population
Roha Tribe	168
Buhhu-Garo Tribe	65
Kochiabolo Tribe	109
Ulunua-Sutahuri Tribe	435
Viurulingi Tribe	4
Total	777

Table 2-3: Age and sex profile of the five Core Land tribes (MMERE 2017)

Gender	Age (years)						Total	%
	0-4	5-14	15-24	25-44	44-59	60+		
Female	36	82	81	87	41	22	349	45
Male	34	108	82	137	38	29	428	55
Total	70	190	163	224	79	51	777	100
%	9.1	24.4	20.9	28.8	10.2	6.6	100	

2.1.3 Community Core Land Use

Although there are no permanent settlements within Core Land, local communities utilise the area for hunting, collection of wood, and for accessing other areas in the Tina River catchment.

According to the Land Acquisition and Livelihood Restoration Plan (MMERE 2017), hunting is predominately undertaken in the Upper Tina River catchment, often in the tribal areas near Mt. Popomanaseu. These hunting activities focus on wild pigs and typically take place over a number of days, associated with community events. It was considered that the hunting parties may, on occasion, pass through or hunt in Core Land, but typically hunting is undertaken elsewhere. Communities downstream of Core Land, closer to the Tina and Toni River confluence (Tina and Haimane/Vuramali) were said to typically perform hunting activities in the Toni River Catchment and local forested areas as opposed to the Tina River catchment (MMERE 2017). It is noted that the C-1 Cultural Heritage Management Plan identifies the Bulubolo tambu site within Core Land. This is a forest area where wild pigs are plentiful, and following sacrifices further inland, the ancestral gods release the pigs into the area and the tribesmen can hunt and catch many pigs (TRHDP 2022). Therefore, hunting does occur within Core Land, at least on occasion. This is supported by visual evidence of hunting parties coming out of Core Land with piglets during earlier stages of road construction (OE, pers. obs.).

According to the Project ESIA (TRHDP 2017), freshwater fishing is a minor activity and river fish do not feature prominently in people's diets. Fishing activities take place during fishing trips to the upper catchment, upstream from Choro Village. The main mode of fishing is by snorkel diving using a spear gun and is sometimes carried out at night (TRHDP 2017). Spear fishing is also known to occur downstream near Tina Village (OE, pers. obs.).

Households within the Core Land tribes utilise forest materials for construction of their houses and other buildings (TRHDP 2017). This includes the use of timber for walls and sago palm fronds for thatched roofs, although some buildings are now constructed from commercial timber and/or corrugated iron. The traditional construction material is obtained from local trees and accessible forests, including within Core Land, or purchased from local, small-scale sawmillers. Ongoing sourcing of construction material is required over the life of the buildings, as well as for new builds.

Households utilize wood and/or coconut husks for cooking and heating. Fuel is typically sourced from forest margins, slash, logging waste and/or small-scale sawmilling (MMERE 2017). Studies in 2013 and 2015, including an asset survey, did not find evidence of sawmilling and considered that harvesting of fuel sources from within Core Land was expected to be limited (MMERE 2017). Small-scale milling for timber and cutting of firewood has been observed regularly along the Lot 1 access road outside of Core Land (OE pers. obs.). This uses wood sourced from secondary forests, and from trees felled by the Project as part of authorised vegetation clearance.

2.1.4 Community Core Land Access

The TCLC lease agreement permits access into Core Land by members of the Benefit Share Community. The Benefit Share Community encompasses the registered members of tribes historically recognised by the Bahomea and Malango Houses of Chiefs (Figure 2-2). As of 2020, this consists of approximately 5,000 people within 80-90 villages and hamlets, within the Malango Ward in Guadalcanal Province (TRHDP 2020). No access to Core Land is permitted for people outside of the Bahomea and Malango communities.

Community access is authorised from the Commercial Operation Date (COD), currently estimated to be February 2028, until the Land Lease expiry date which is 75 years from 05 December 2019. Access is not explicitly permitted during the construction phase, although was occurring in earlier stages of road construction. Community access has now ceased following the installation of the 24-hour security post at the entrance of the Lot 2-1 access road (OE, pers. obs.).

The lease agreement allows pedestrian access to Core Land to conduct fishing, hunting, and gathering of non-wood forest products (Table 2-4). Pedestrian access is also permitted through Core Land to pursue these activities in other areas. No access by vehicle (including by boat, motorbike etc.) is permitted at any time. Activities are subject to "reasonable health and safety restrictions" (SIG 2019, 18), including around operational areas. The health and safety restrictions are not specified, but mean that visitors can be guided through and inducted at the guard post, can be restricted from to certain areas, and can be prohibited from certain activities, such as the use of firearms. Commercial activities within Core Land are not permitted under the Lease terms.

Any change in current and/or permitted access will require consultation and mutual agreement with TCLC and local communities. For example, it is proposed to ban the hunting of all native fauna within Core Land as a condition of entry, in order to achieve conservation objectives (refer section 5.3). Site security will also need to investigate how to distinguish local and non-local community members.



Figure 2-2: Map of Benefit Share Communities (from PO, June 2024)

Table 2-4: Permitted activities within Core Land under the Lease Agreement

Activity	Description	Permitted (after COD)
Pedestrian access	Access on foot, including within and through Core Land, to conduct fishing, hunting and gathering of non-wood forest products. There is no mention of where the site can be accessed, but access will need to be through the guard post for health and safety reasons. The Project must be aware of all people on site at all times, and all site visitors must be inducted.	✓
Vehicle access	Access to core land with motorised transport e.g. car, truck, motorbike, boat.	✗
Fishing	Traditional fishing methods only. Fishing in rivers and streams. Fishing within the dam and at the intake is not permitted. Use of dynamite or other noxious chemicals not permitted. Use of non-traditional methods (e.g. electric fishing) not permitted.	✓ ✓ ✗ ✗ ✗
Hunting	Traditional hunting methods only. No restriction placed on the species that can be hunted. Use of guns can be banned for health and safety reasons.	✓*
Non-wood forest products	Gathering of fruit, nuts, leaves, fungi and traditional medicines for personal use.	✓
Tambu site access	Pedestrian access to tambu (sacred) sites within Core Land	✓**
Timber harvesting	Collection of wood products including felling and milling of trees.	✗
Agriculture	Farming, livestock raising and cropping requires forest clearance and is therefore not permitted.	✗
Commercial activities	Commercial activities do not comply with the definition of traditional livelihoods as defined by the Lease Agreement and are therefore not permitted	✗
Buildings / structures	Construction of temporary or permanent buildings or structures	✗
Access to Project infrastructure	Access is not permitted within or in the immediate vicinity of: • Flow gauge site • Buildings and structures • Tanks for storage area • The dam and intake structure • Car parks	✗

*It is proposed to ban the hunting of all native fauna to achieve the conservation objectives of the CAMP. This includes banning of associated equipment including guns, traps, snares, slingshots etc. Restrictions on dogs are also recommended.

**Tambu site access is not specifically listed in the lease agreement, but is consistent with other permitted activities.

2.2 Terrestrial Ecology

2.2.1 Habitat Types

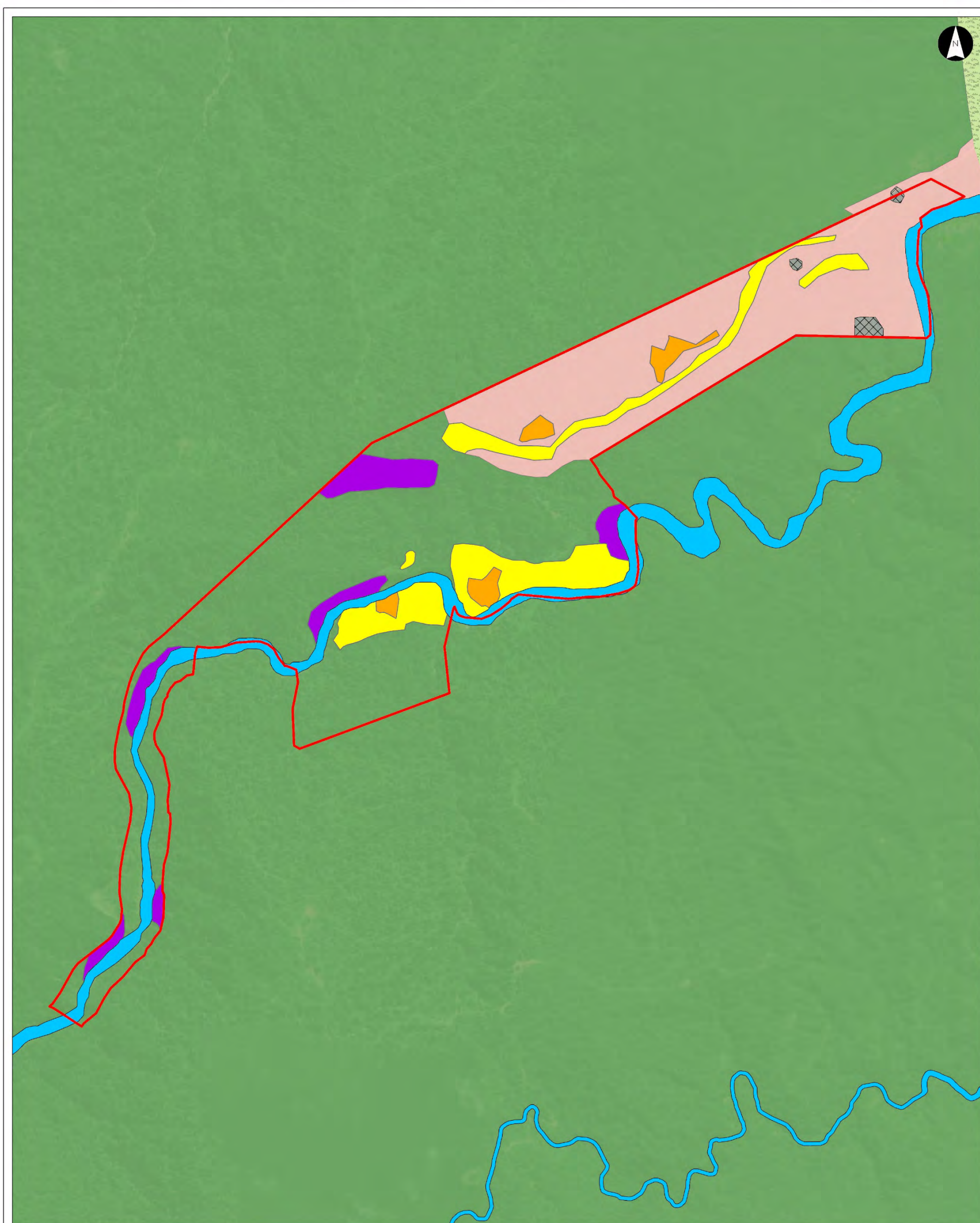
Six terrestrial habitat types were identified within Core Land as part of baseline ecological assessments (HEC 2020). These are summarised in Table 2-5 and Figure 2-3 with detailed descriptions provided in Annex A.

The Project will result in the clearance of approximately 110.87 ha of terrestrial vegetation within Core Land (Table 2-5 and Figure 2-4), in addition to 3.68 ha of grassland located outside of Core Land. A total of 106.51 ha is considered Critical Habitat under CFP policies, requiring a net gain in biodiversity to be achieved. A further 163.28 ha will be subjected to disturbance or edge effects caused by the project, of which 82.38 ha is classified as Critical Habitat (Stantec, 2023).

Table 2-5: Terrestrial habitats within Core Land (adapted from Stantec 2023)

Habitat Unit	Description	Classification	Area (ha)	Clearance (ha)
Undisturbed Primary Forest	Forested areas with intact canopy with little to no disturbance. Provides potential habitat for a range of Critical Habitat trigger species and habitats including Solomon Islands rainforest, Actinodaphne, Cryptocarya, rosewood, king rat, Guadalcanal Honeyeater, Guadalcanal Hooded-Whistler.	Natural + Critical	184.21	40.70
Disturbed Secondary Forest	Forested areas that have undergone relatively recent disturbance from human activities including logging. Supports mid-succession secondary forest with intact canopy that provides potential habitat for a range of trigger species including Actinodaphne, Cryptocarya, rosewood, Guadalcanal monkey-faced bat.	Modified + Critical	119.67	37.20
Remnant Forest	Forested areas that have undergone extensive disturbance although still support remaining large trees. Supports mature Ngali nut trees that potentially provide habitat for king rat.	Natural + Critical	44.92	23.92
Cliff Habitat	Occurs on and adjacent to very steep vertical slopes, typically adjacent to the river system. Supports unique ecosystems niche habitats and refugia for potential trigger species.	Natural + Critical	21.79	4.69
Fallow Habitat	Small areas that have been cultivated in the past but have been left to fallow. Unlikely to support Critical Habitat trigger species.	Modified	8.07	3.37
Garden Habitat	Small areas of cultivated land for cropping that are heavily modified Unlikely to support Critical Habitat trigger species.	Modified	2.05	0.99
Subtotal Terrestrial Habitats:			380.71	110.87
Riverine Habitat	Mid Riverine Reach. Supports 1 range-restricted macroinvertebrate species (<i>Prosopistoma sedlaceki</i>) in pristine and diverse aquatic habitat and surrounding native forest vegetation.	Natural + Critical	28.24*	N/A
Total Core Land:			408.97	110.87

*Core Land is 408.97 ha. An additional 6.47 ha of reservoir falls outside of Core Land and has been excluded from calculations.



Terrestrial Habitat Types

Tina River Hydropower Project
Solomon Islands
Project Code: 310103253_GS001g
Drawn By: V.C.S. Checked By: K.H.
Figure: 1 | Rev: 4
Date: 2024-10-14

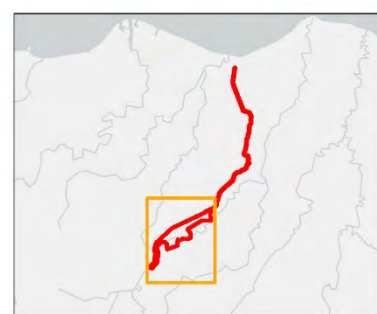


Legend

 Core Land	 Cliff Habitats
Type	 Fallow Habitat
 Undisturbed Primary Forest	X Garden Habitat
 Disturbed Secondary Forest	 Modified Lowland Forrest
 Remnant Forest	 Riverine Habitat

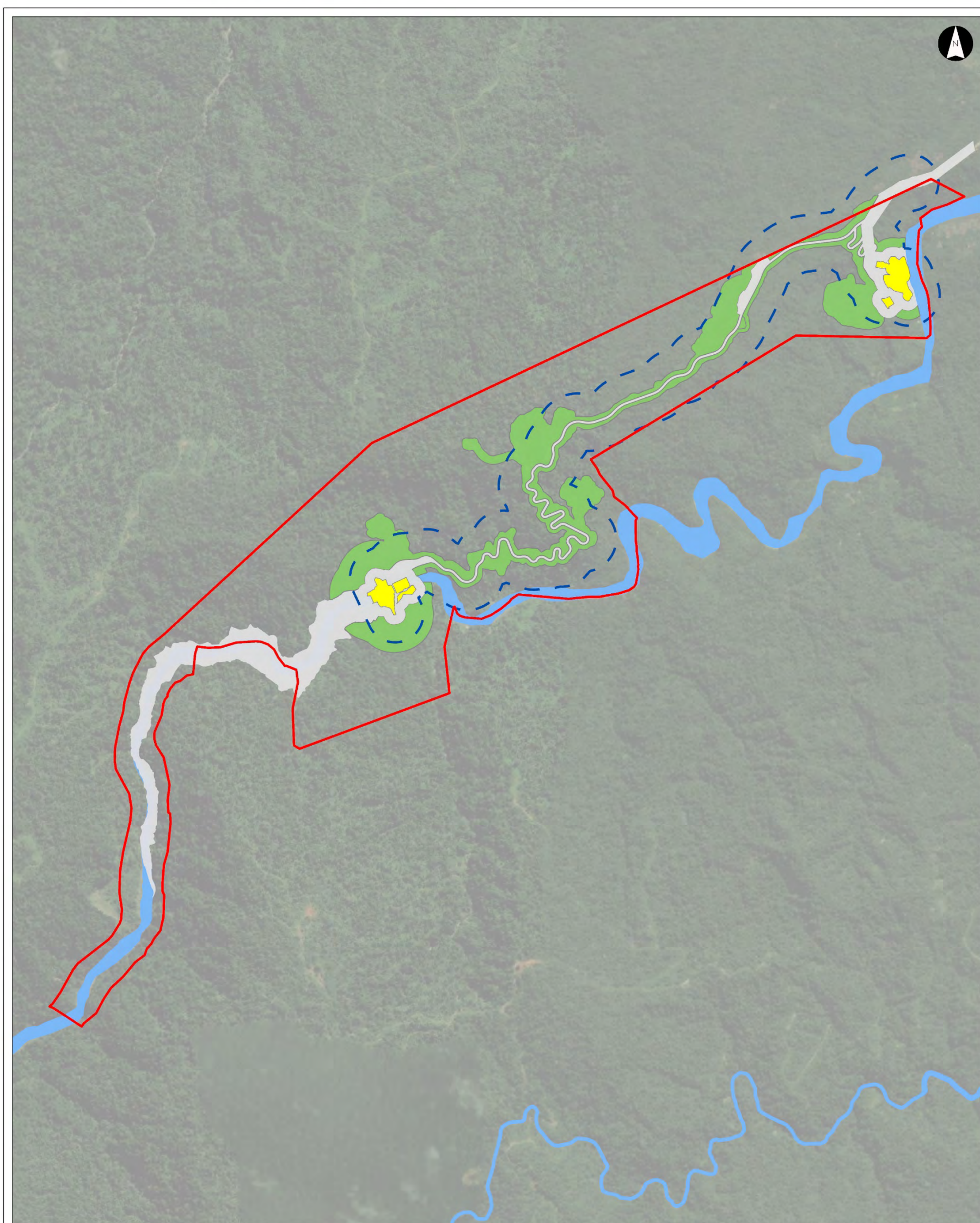
Notes:
1. Map displayed in WGS 1984 UTM Zone 57S

References:
1. Satellite imagery supplied by Esri World Imagery (February 2022)



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Figure 2-3: Terrestrial habitat types



Vegetation Clearance and Edge Effects

Tina River Hydropower Project
Solomon Islands
Project Code: 310103253
Drawn By: V.C.S. Checked By: K.H.
Figure: 2-4 | Rev: 3
Date: 2024-10-15



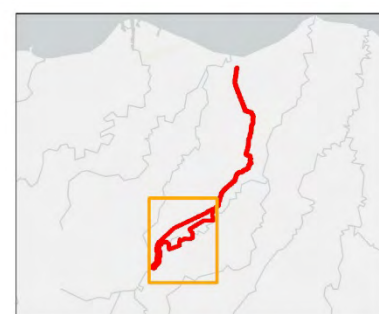
Legend

- Core Land
- Road Edge Effect
- Riverine Habitat

- Permanent Infrastructure
- Permanent Infrastructure Buffer (Operation Zone)
- Temporary Disturbance (Max. Clearance Area)

Notes:
1. Map displayed in WGS 1984 UTM Zone 57S

References:
1. Satellite imagery supplied by Esri World Imagery (February 2022)



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Figure 2-4: Maximum vegetation clearance during construction and ongoing edge effects during operation

2.2.2 Flora

The Biodiversity Management Plan (BMP) for the Project found a total of 275 terrestrial flora species that have been recorded, or are considered likely to occur, within the Core Land and Lot 1 area (Stantec, 2023). This included two species are listed as Critically Endangered, one as Endangered, three species as Vulnerable, and six species as Near Threatened. Three plant species plus one habitat type (Solomon Islands Rainforest) was considered to trigger Critical Habitat (Table 2-6). Solomon Islands Rainforest is on the tentative World Heritage list for the Solomon Islands (UNESCO, 2023) and is considered to include the Undisturbed Primary Forest habitat type with Core Land discussed in section 2.2.1 above.

The Solomon Islands have over 450 invasive plant species, of which 110 have been described as highly invasive (SPREP, 2019). There is an increased risk of the introduction or spread of invasive flora species as a result of the vegetation clearance required for the project, and increased vehicle and foot traffic.

Table 2-6: Flora within Core Land that trigger Critical Habitat (Stantec, 2023)

Scientific Name	Common Name	IUCN Threat Status
HABITAT		
N/A	Solomon Islands Rainforest	N/A
SPECIES		
<i>Actinodaphne solomonensis</i>	Actinodaphne	Critically Endangered
<i>Cryptocarya medicinalis</i>	Cryptocarya	Critically Endangered
<i>Pterocarpus indicus</i>	Rosewood	Endangered

2.2.3 Fauna

The BMP found a total of 163 terrestrial fauna species that have been recorded, or are considered likely to occur, within the Core Land and Lot 1 area (Stantec, 2023). This included 23 bat species, 10 terrestrial mammals, 77 bird species and 22 reptile species. This includes several Critically Endangered, Endangered, Vulnerable, and Near Threatened species. No targeted surveys for terrestrial invertebrates have been carried out to date. Four species were considered to trigger Critical Habitat (Table 2-7).

Table 2-7: Terrestrial fauna within Core Land that trigger Critical Habitat (Stantec, 2023)

Scientific Name	Common Name	IUCN Threat Status
<i>Guadalcanaria inexpectata</i>	Guadalcanal Honeyeater	Least Concern
<i>Pachycephala implicata</i>	Guadalcanal Hooded-Whistler	Least Concern
<i>Pteralopex atrata</i>	Guadalcanal Monkey-faced Bat	Endangered
<i>Uromys rex</i>	King Rat	Endangered

At least 10 invasive terrestrial fauna species have been recorded within the Project area (Table 2-8). This includes nine species recorded in the P-2 BMP (Stantec 2023), plus Giant African snails, with evidence that they have been present within Core Land since at least 2020 (THL pers. comm.). There are additional species of concern that have not been recorded within Core Land but have a high risk of introduction to the area through the movement of construction materials and vehicles. These include coconut rhinoceros beetle (*Oryctes rhinoceros*) and fire ant (*Wasmannia auropunctata*). As

no targeted invertebrate surveys have been undertaken, the presence of invasive invertebrates within the Project area is unknown and may be more widespread than currently indicated.

Table 2-8: Introduced and invasive terrestrial fauna identified within the Project area and surrounds (Stantec, 2023; THL pers. comm)

Scientific Name	Common Name	IUCN Threat Status
<i>Acridotheres tristis</i>	Common Myna	Least Concern
<i>Canis lupus familiaris</i>	Dog (feral)	Not Assessed
<i>Felis catus</i>	Cat (feral)	Not Assessed
<i>Lissachatina fulica</i>	Giant African snail**	Not Assessed
<i>Rattus exulans</i>	Pacific rat*	Least Concern
<i>Rattus norvegicus</i>	Norway rat	Least Concern
<i>Rattus praetor</i>	Large spiny rat	Least Concern
<i>Rattus rattus</i>	Black rat	Least Concern
<i>Rhinella marina</i>	Cane toad	Least Concern
<i>Sus scrofa</i>	Pig (feral)	Least Concern

*Pre-European introduced.

**Recorded on Lot 1 at Veraande Village in 2017 (TRHDP 2017) and at the entrance to Core Land in 2020 (THL, pers. comm.).

2.3 Aquatic Ecology

Although the focus of the Conservation Area is to protect terrestrial habitats, the management of the land will directly impact the health of the Tina River and tributaries. The riverine habitat of the Tina River within Core Land has high ecological value and is classified as Critical Habitat (refer Table 2-5 and Appendix A). It supports a wide range of species including native fish, invertebrates and amphibians. There are a number of ephemeral and potentially perennial streams within Core Land. These smaller watercourses are not known to have been surveyed but may support riparian or wetland vegetation, amphibians, and aquatic fauna. Conserving and enhancing the vegetation around these tributaries will therefore improve the terrestrial and aquatic biodiversity within Core Land and downstream.

2.4 Opportunities and Threats

The Conservation Area provides an opportunity to increase knowledge about Solomon Islands biodiversity while also addressing potential threats from factors such as land use change, over clearing, and invasive species. The project also has the potential for capacity building of local people in biodiversity management and conservation, gender mainstreaming activities, and provision of alternative sources of income.

A summary of the key opportunities and threats identified as a result of the baseline review is provided in Table 2-9. Further information on the proposed actions are discussed in chapters 3 to 6.

Table 2-9: Identified conservation opportunities and threats

Issue	Description	Opportunity	Threat	Recommendations
Knowledge of Core Land species and habitats	Surveys within Core Land have been limited and often focused on botany during pre-clearance, with less emphasis on fauna. The implementation of the CAMP provides an opportunity for the collection of additional ecological data, and for improved knowledge of Solomon Islands biodiversity.	✓	✓	- Comprehensive biodiversity monitoring programme to be implemented. - Involvement of local people and/or researchers in monitoring programmes.
Local support and buy-in	Successful implementation requires local people to respect the Conservation Area, biodiversity priorities and actions. There is the opportunity for employment and training of locals, including women.	✓	✓	- Regular engagement with local stakeholders during CAMP preparation and operation. - Training and employment of locals for CAMP activities. - Apply the GAP 30% target for female employment and training of local women.
Logging and illegal clearing by third parties	Vegetation clearance is not permitted by local communities under the Lease Agreement. Improved road access may lead to induced clearance within and immediately adjacent to Core Land. This is a particular risk given that the majority of the site is below 400 metres in elevation and unprotected under local laws. Logging and other land clearing have the potential to impact on biodiversity and increase the risk of the spread of weeds and invasive species. Incremental clearing and encroachments may also compromise the conservation outcomes of the CAMP.		✓	- Regular engagement with local stakeholders during CAMP preparation and operation. - Strong and proactive site security including 24-hour CCTV - Clear delineation and socialisation / marketing of the Conservation Area, permitted and prohibited activities. - Development and socialisation of enforcement actions alongside SIG (SIPF, MECDM, MoFR etc.). - Investigation and promotion of alternative sources of income (including CAMP activities) - Monitoring of vegetation cover through satellite imagery. - Extinguish any fires within Core Land (refer P-14 Emergency Response Plan).

Issue	Description	Opportunity	Threat	Recommendations
Hunting of native species	Locals are known to opportunistically hunt birds, bats, lizards and other native fauna.		✓	- Proposed ban on hunting of native species within Core Land, subject to agreement by TCLC and local communities. - Training and employment of locals for CAMP activities. - Strong and proactive site security including 24-hour CCTV
Over-clearance during construction	A risk during the construction phase where there is a risk that areas not directly required for the construction and operation may be cleared.		✓	- Adherence to CESMPs including staff training, strict adherence to clearance plans, and site supervision (refer C3 Forest Clearance Plan) - Consequences and fines to contractors for felling outside of approved limits.
Revegetation success	The project requires extensive native revegetation prior to COD. Limited progress has been made to revegetate sites to date. Large-scale revegetation and aftercare experience in the Solomon Islands is limited. Revegetation success can be impacted by many factors including soil quality, plant selection and propagation, planting method, after care, weather, pest plants and animals.		✓	- Adherence to CESMPs including stockpiling and reuse of topsoil, plant propagation, planting, maintenance etc. - Plant propagation based on a forward schedule of planting and maintenance. - Optional use of hydroseeding to speed up revegetation. - Contract growing of plants by the community in villages, local contractor(s), and/or MoFR. - Training and employment of locals, including women, in planting and after care.
Invasive weed and animal species	Increased movement of people, vehicles and equipment, plus ground disturbance, increases the risk of invasive species introduction and spread. Limited monitoring of invasive species has occurred to date. Hygiene controls required by the CESMP would assist in minimising spread of invasive species. Ongoing management of invasive species will be required to ensure areas managed under the CAMP achieve conservation aims. Management of invasive species during construction and operation provides opportunities for improved knowledge and control measures.		✓	- Adherence to CESMPs including security and 24-hour CCTV, installation of wash bay and wheel wash. - Biodiversity monitoring programme to be established. - Involvement of local communities and/or researchers in monitoring programmes.

Issue	Description	Opportunity	Threat	Recommendations
Invasive aquatic species	Potential for workers or locals to introduce invasive aquatic species such as tilapia³, water hyacinth etc. This includes the operational risk of fish or plants being introduced to the reservoir.	✓	✓	• Adherence to CESMPs including security and 24-hour CCTV, installation of wash bay and wheel wash. • Clear delineation and socialisation/marketing of the Conservation Area, permitted and prohibited activities. • Continuation of aquatic surveys, including eDNA, to detect invasive species.
Emergencies and natural disasters	The Solomon Islands are subject to frequent cyclones and other adverse weather conditions, along the possibility of fires, which may impact revegetation areas and planting success, soil stability, and construction efforts.		✓	• Adherence to CESMPs including erosion and sediment control, soil stabilisation, emergency management. • Extinguish any fires within Core Land (refer P-14 Emergency Response Plan). • Ongoing monitoring and maintenance of revegetation areas through the project lifecycle.
Governance and finance	Successful implementation of the Core Land Conservation Area requires the strong support of THL management, and other stakeholders, and a secure financing mechanism. Independent oversight will help to verify implementation to realise conservation goals.	✓	✓	• CAMP to be reviewed and approved by THL management and CFPs. • Budget and financing mechanism to be secured and agreed for the duration of the PPA. • Governance of the Conservation Area to include external biodiversity experts. • Involvement of local people and/or researchers in monitoring programmes • Independent auditing to be conducted. • SIG and TCLC to investigate options for long-term protection prior to the end of the PPA.

³ The potential for tilapia farming in the reservoir has been considered but not progressed by THL due to health and safety, operational and security risks, as well as potential threats to conservation activities within Core Land.

Tina River Hydropower Development Project: Core Land Conservation Area Management Plan

3. CONSERVATION AREA ESTABLISHMENT

Key Performance Indicators:

- A 342 ha Conservation Area will be created by the Project within Core Land.
- The Conservation Area will contribute to employment targets of 20% local employment, 20% local procurement, and 30% women.

3.1 Management Zones

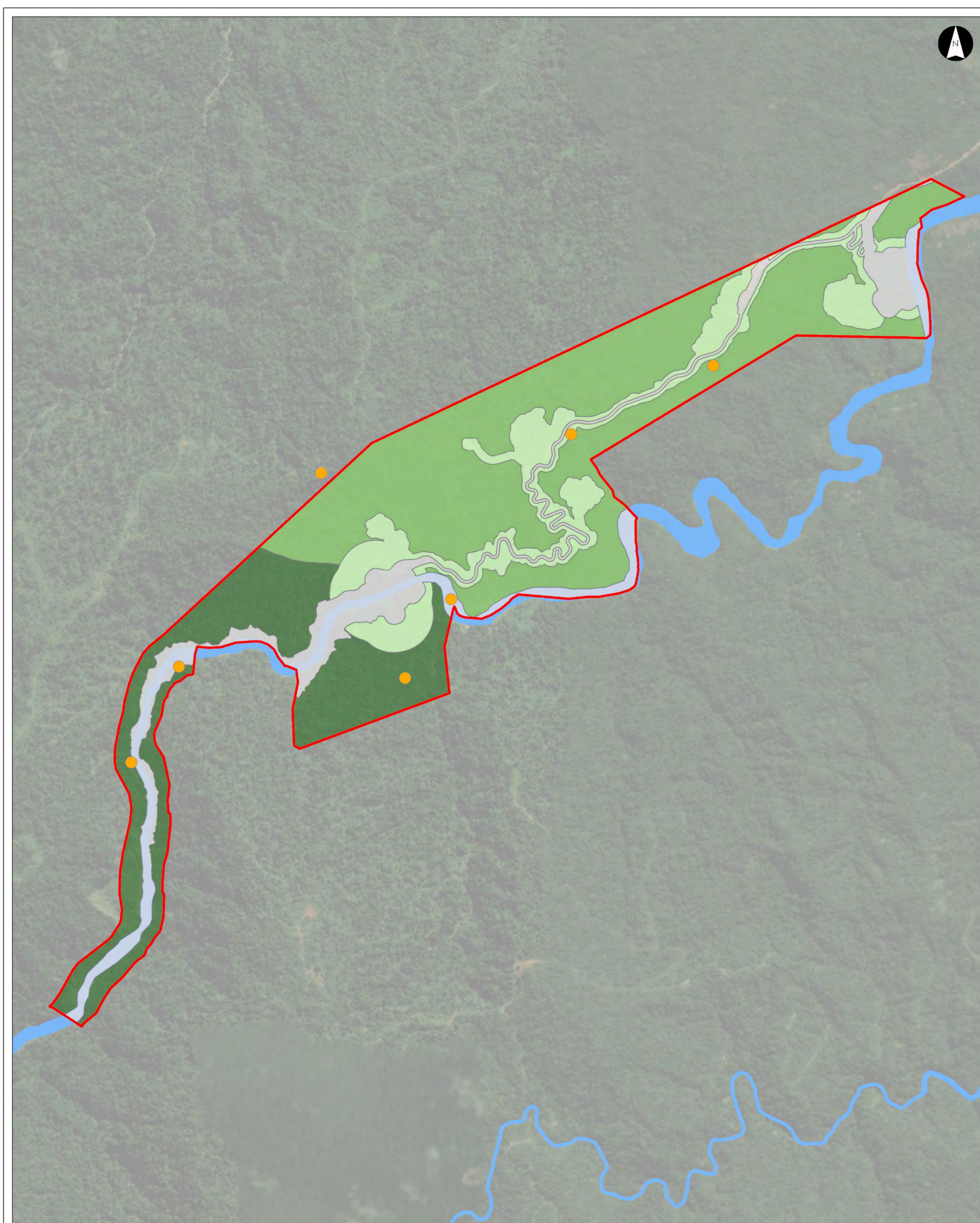
The creation of a Core Land Conservation Area will help to achieve no net loss in terrestrial biodiversity required by the Project. All areas outside of hydropower operations are to be protected, in addition to tambu sites which have a 30 m exclusion zone. In total, **342 ha** of Conservation Area is proposed (Table 3-1).⁴

Table 3-1: Management zones within Core Land

Zone	Description	Area (ha)
Protection Zone	Terrestrial habitats on the true left and true right bank of the Tina River upstream and around the dam site (excluding cleared areas). The boundary is set by the ridgeline adjacent to the dam on the true left bank, and all intact forest within Core Land on the true right bank. This zone consists of Undisturbed Primary Forest habitat and a small area of Secondary Forest which remains largely intact. This habitat type may support a different assemblage of species than downstream areas, and therefore warrants a different management zone. Access to this area shall be restricted to allow for habitat and species conservation.	93.18
Restoration Zone	Vegetated areas downstream of the dam site and alongside roads. Consists of Disturbed Secondary Forest with small areas of Primary Forest and other habitats. Has been subject to current and past human disturbance. It is regenerating from historical logging and will be subject to edge effects from Project construction and operation. The focus will be continued ecosystem restoration.	182.80
Revegetation Zone	Areas to be cleared and revegetated during the construction phase. This accounts for the maximum anticipated vegetation clearance (with large buffers), but it is expected that actual clearance will be less than this. It is expected that conservation actions will be most active in this zone. The stabilisation, revegetation, monitoring and management of this zone is essential to meet biodiversity objectives for the Project.	Up to 65.86 ⁵
Subtotal Conservation Zones:		341.84
Operation Zone	Areas within Core Land required for the operation of the TRHDP including all permanent infrastructure; the dam, reservoir and river; powerhouse; roads; and transmission line corridor. The focus for this zone is Project implementation and compliance with ESIA and ESMP requirements. Excluded from formal conservation activities. However, actions undertaken within the area (e.g. site security, vegetation clearance, weed and pest control) will directly support the wider objectives of the project and activities in other zones.	65.43
Tambu Sites	There are 8 known tambu sites. 6 are within Core Land and 1 site is outside but may require access through Core Land. One additional site is located along the Lot 1 access road and not relevant to the CAMP. All tambu sites require a 30 m buffer as per the C-2 Cultural Heritage Management Plan.	1.70
Total Core Land:		408.97

⁴ This figure differs slightly from the 360.58 ha proposed in the P2-BMP as this number included 17.19 ha of riverine habitat (included within the Operation Zone here) as well as 1.70 ha of tambu sites.

⁵ The total area to be revegetated will be up to 65.86 and will be determined by the actual area cleared during construction.
Tina River Hydropower Development Project: Core Land Conservation Area Management Plan



Management Zones

Tina River Hydropower Project
Solomon Islands
Project Code: 310103253_GS001g
Drawn By: V.C.S. Checked By: K.H.
Figure: 1 | Rev: 4
Date: 2024-10-15



Legend

- Core Land
- Riverine Habitat

- Management Zones
- Operation Zone
 - Protection Zone
 - Restoration Zone
 - Revegetation Zone
 - Tambu Sites

Notes:
1. Map displayed in WGS 1984 UTM Zone 57S

References:
1. Satellite imagery supplied by Esri World Imagery
(February 2022)



This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Figure 3-1: Core Land showing Conservation Area management zones

3.2 Delineation and Signage

A key task in the establishment of the Conservation Area is to ensure that the community is aware of and respects the protected area boundary. This will be achieved through a combination of signage and bollards, complemented by community engagement and site security.

It is proposed to erect large Conservation Area signage at key current (and future) entry points to Core Land, by vehicle, boat or on foot. These locations will include, at a minimum:

- Site entrance at the Lot 2-1 Security Post
- Tina River at the Powerhouse
- Dam site
- Upstream extent of Core Land (upstream of the reservoir).

The purpose of the signage is to map of the protected area, orientate the viewer, and clearly demonstrate permitted and prohibited activities. It will also provide contact details for the Project. Signage should be as simple as possible, with large imagery and minimal text. A “you are here” symbol will show the location of the viewer in relation to the protected area, to aid in orientation. Where text is used, it will be in both English and pidgin. An example of a protected area sign from Vanuatu is provided in Figure 3-2. It is expected that the signage for Core Land will be even simpler.

Access into Core Land is only permitted via the Security Post. If additional access points into Core Land become known, these should be investigated and closed where possible. This may require the support PO and/or RSIPF. Additional signage, fencing or other preventative measures may also be required to restrict access and to ensure all visitors enter via the Security Post.



Figure 3-2: Example of protected area signage in Vanuatu (Pascht 2022)

Fencing of Core Land is not proposed as this would cause unnecessary habitat disturbance and may adversely impact fauna movement. However, temporary fencing is to be used in areas where there is a risk that construction activities may extend beyond the permitted clearance boundary. The use of boundary pegs and/or flagging tape is a requirement of the C-3 Forest Clearance Plan (Figure 3-3). Temporary construction fencing can also be used (Figure 3-4), providing greater visibility for contractors in high-risk areas, such as steep slopes or near protected vegetation.



Figure 3-3: Danger tape being used on site, November 2022



Figure 3-4: Vegetation protection fencing (Advanced Group 2024)

Boundary markers provide a visual barrier at the edge of a protected area to limit unauthorised access. Marker posts will be placed at the edge of Core Land in locations where tracks or roads pass close to the boundary. This will include along the Lot 2-1 access road and road to the explosives store. In these locations, boundary markers will be installed approximately every 50 metres (or less) to mark the edge of Core Land and Conservation Area. Additional markers along the full extent of the Core Land boundary are not considered necessary as no people are known to access these areas. However, this should be revisited if actual or potential access points become known.

Boundary markers can be standalone posts or plaques attached to trees. They should include symbols and/or simple text to indicate no entry (Figure 3-5 to Figure 3-7) and be difficult to alter or move.



Figure 3-5: Warning sign on Njari Island, SI (Highplanesdrifter 2019)



Figure 3-6: Boundary marker for a post or tree (Nutron OSM 2024)



Figure 3-7: Clear signage showing no entry (State of NSW 2024)

3.3 Stakeholder Engagement

The Core Land Conservation Area requires the support and buy-in from a range of stakeholders. Project-wide stakeholder mapping and consultation requirements are set out in the P-3 Stakeholder Engagement and Communication Plan. The CAMP requirements fit within this existing framework.

Key stakeholders for CAMP development and implementation include local communities that access Core Land and/or may participate in conservation activities, as well as the CFPs and members of the Biodiversity Advisory Group (BAG) that will oversee implementation.

Existing monthly meetings with the community will be used to socialize the Draft and Final CAMP, discuss the conservation objectives and any access restrictions. The Draft CAMP will be issued to the CFPs, BAG members, and posted on the Project website, providing opportunities for feedback.



Figure 3-8: Engagement feedback loop

Throughout implementation, HEC and THL will train and employ local people in conservation activities. The Project is also investigating working with students and researchers from the University of South Pacific and Solomon Islands University as part of biodiversity conservation and monitoring activities. By directly employing and upskilling the community, this will bolster local employment and gender targets, build capacity on conservation management in the Solomon Islands, and will ultimately improve the long-term success of the Conservation Area.

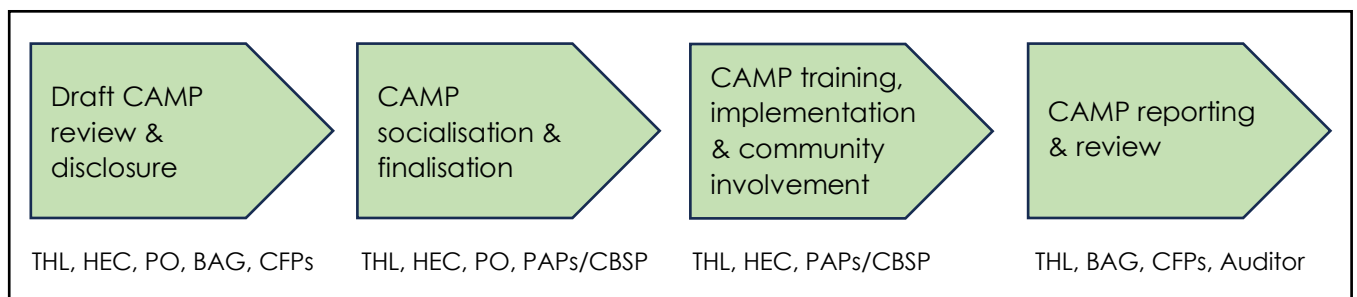


Figure 3-9: Phases of CAMP development and stakeholder involvement

3.4 Legal Protection

THL is responsible for the preparation and implementation of the CAMP for the duration of construction and operation. Beyond the PPA period, implementation falls to SIG. The Core Land Conservation Area is therefore secured for the duration of the PPA, however beyond this timeframe THL has no jurisdiction over the land. Therefore, any long-term protection will need to be investigated and pursued by SIG.

The steps to create a Protected Area in accordance with the Protected Areas Act 2010 is summarized in Figure 3-10.

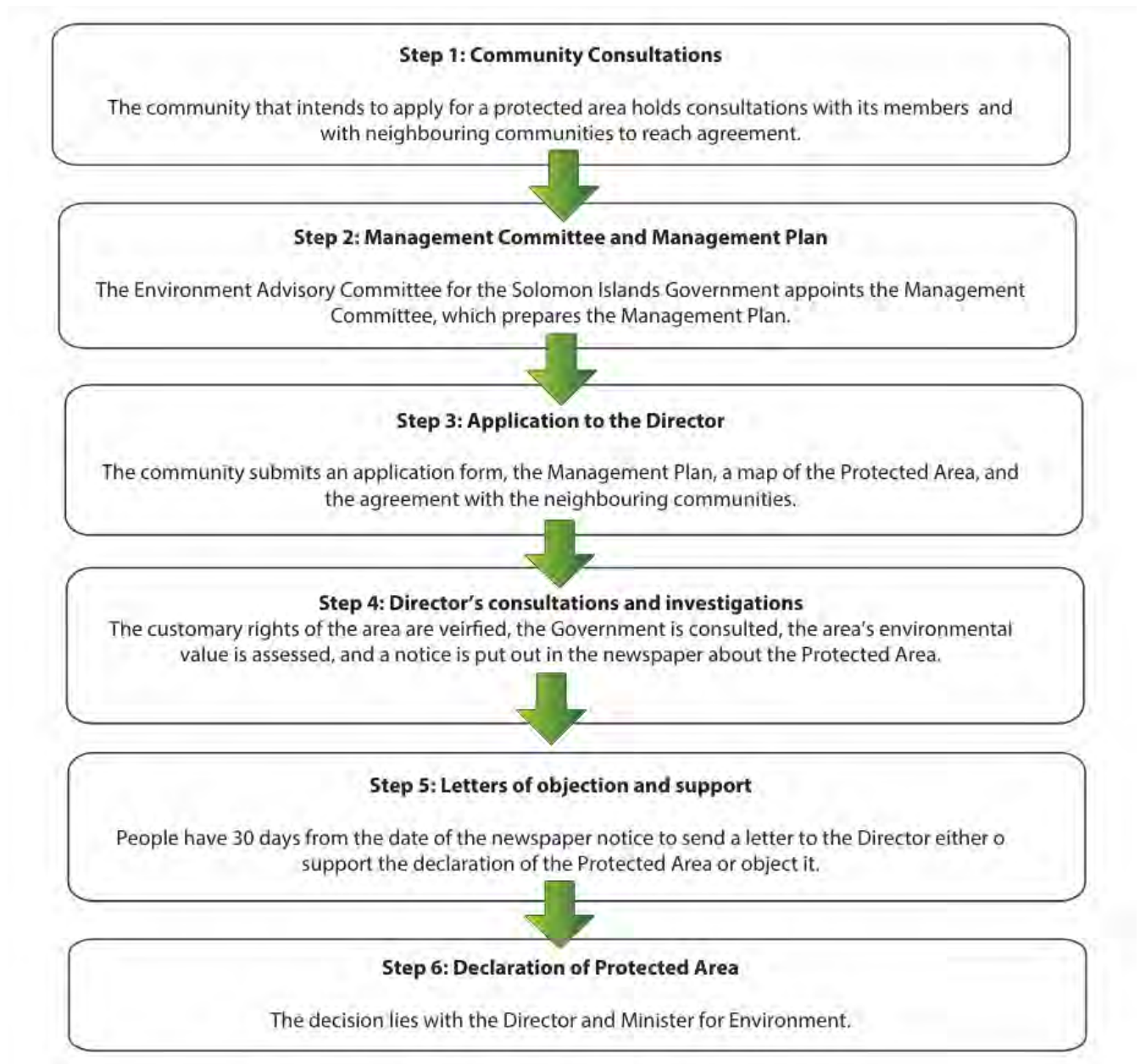


Figure 3-10: Steps to establish a Protected Area (SIG no date)

4. SITE RESTORATION AND REVEGETATION

Key Performance Indicators:

- All temporary construction sites stabilised and revegetated by COD.
- Revegetation sites will be maintained to facilitate a transition to forest habitat.

4.1 Site Principles

In accordance with the Project ESIA (THL 2019) and Construction Environmental and Social Management Plans (CESMPs), the contractor must minimise the area of vegetation clearance to the extent possible. The ESIA also requires that the site is progressively revegetated as each section of work is completed. This means that all cleared habitat associated with construction activities and temporary infrastructure needs to be stabilised and revegetated before the Commercial Operation Date (COD). This aligns with the requirements of the P-2 Biodiversity Management Plan and associated Terrestrial Offset Management Strategy which requires all temporary sites to be restored and rehabilitated by COD. These areas are to be managed throughout Project operations towards mature secondary forest.

Up to 65.86 ha of site restoration and rehabilitation is required to be completed by COD, assuming the maximum extent of vegetation clearance. This figure includes the revegetation of areas of temporary disturbance, including but not limited to spoil disposal sites, laydown areas, temporary buildings, explosive store and access road batter slopes. This figure also accounts for a construction buffer to allow for the movement of vehicles and equipment.

Following consultation with the contractor, the anticipated area of revegetation has been reduced to 52.23 ha (noting that all temporary areas must be revegetated regardless of actual numbers). If clearance is kept to the construction footprint only, required revegetation drops significantly to around 21.5 ha. It is in the best interest THL and the contractor to minimise clearance to reduce the time and expense of revegetation, aftercare and maintenance.

The key restoration principles are to:

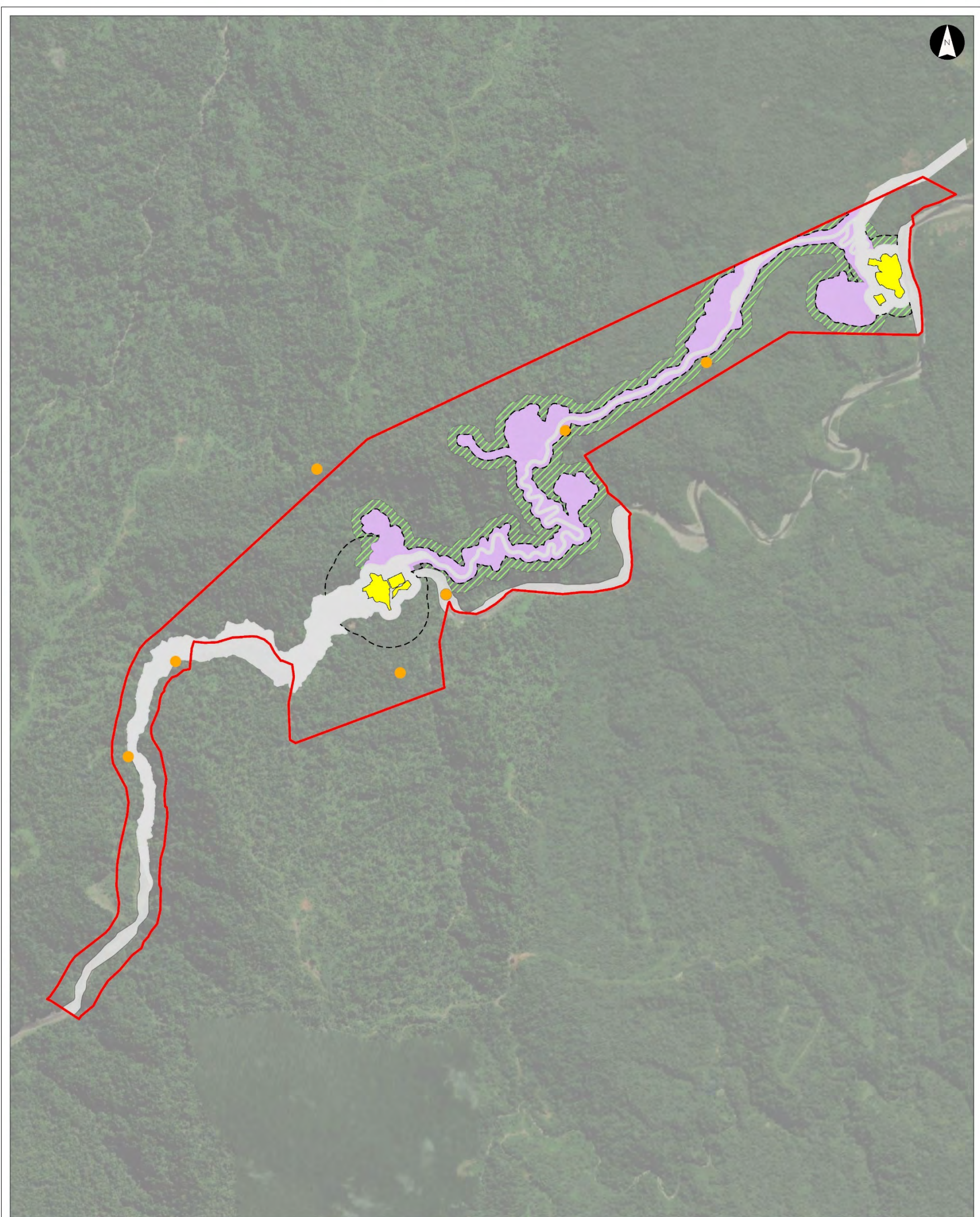
- Minimise the area of vegetation clearance and soil disturbance during construction.
- Retain topsoil for later reuse to speed up revegetation.
- Gradually stabilise and revegetate sites over time prior to COD.
- Use revegetation methods and species appropriate for site conditions.
- Provide ongoing maintenance and interplanting to facilitate a transition to forest habitat.

Following the completion of vegetation clearance, the required extent of revegetation (hectares) and associated revegetation plans will be revised up or down accordingly. Should vegetation clearance erroneously extend beyond 66.29 ha, offset requirements will be revised and increased, to ensure no net loss requirements are met.

4.2 Revegetation Plan

A Revegetation Plan has been prepared for the site. An overview plan is provided as Figure 4-1 with additional detail presented in Annex C. Plant numbers are summarised in Table 4-1 below and discussed in subsequent sections.

The revegetation methods recommended are based on site conditions. The plans assume that the anticipated area of clearance agreed by the contractor (52.23 ha) will be undertaken. Should greater or lesser areas be cleared, the resultant revegetation areas and required plant numbers will change accordingly.



Revegetation Plan Overview

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_GS001g
Drawn By: V.C.S. Checked By: K.H.
Figure: 1 | Rev: 1
Date: 2024-10-16



Legend

- Temporary Disturbance (Max. Clearance Area)
- Core Land
- Operation Zone
- Permanent Infrastructure
- Tambu Sites

Planting Zones

- Pioneer Planting
- Diversity Planting

Notes:
1. Map displayed in WGS 1984 UTM Zone 57S

References:
1. Satellite imagery supplied by Esri World Imagery (February 2022)

0 250 500 750 1,000
Metres
Scale at A3: 1:19,000



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Figure 4-1: Revegetation plan overview

If 52.23 ha is cleared, this will require the propagation of around 628,500 plants over the life of the project, not accounting for losses. Almost all of these plants need to be propagated and planted before COD. If hydroseeding is conducted first and a full groundcover is successfully established, the required number of plants drops significantly to around 87,500 pioneer and diversity plants.

The approximate number of plants required for the life of the Project is provided in Table 4-1. The actual number of plants will be determined by site conditions, including planting success and the need for infill and replacement planting.

Table 4-1: Revegetation methods and approximate number of plants required

Method	Horizontal Area (ha)	Sloped Area (ha)*	Density (plants/ha)	Spacing (m)	No. of Plants
Pioneer Planting (cleared sites)					
Cover crops (or hydroseeding)	49.63	54.10	10,000 / ha	1 m	541,000
Pioneer trees and shrubs			1,111 / ha	3 m	60,105
Secondary / diversity species			400 / ha	5 m	21,640
Passive revegetation**	3.60	3.92	-	-	-
Sub-total:					622,745
Diversity Planting (beneath canopy within 50m of cleared sites)					
Secondary / diversity species	52.40	57.12	100 / ha	10 m	5,712
Sub-total:					5,712
TOTAL PLANTS (approx.):					628,457

*Accounts for slope, averaged over the site of 1:2 (slope factor of 1.09).

**Passive revegetation has already been completed on the lower slopes of Disposal Site #3.

4.2.1 Pioneer Planting

Pioneer planting is the conventional method of revegetation by physically replanting cleared land. Pioneer planting is particularly suitable for lower gradient sites with the ability to retain a cover of topsoil and good vehicle and/or pedestrian access. This includes temporary office facilities, benched spoil disposal areas, lower gradient roadsides, and other temporary sites.

According to the C-4 Post-Construction Remediation and Revegetation Plan, sites to be replanted shall be recontoured and spread with topsoil for a depth of 0.2-0.4 metres. They shall then be planted with rapidly growing cover crops at a density of ≥ 1 plant per square metre (10,000 plants per hectare). The purpose of this is to protect the soil to minimise erosion, improve soil fertility, and minimise weed invasion. Over time, this also provides a more suitable habitat into which to plant diversity trees (refer section 4.2.2). Suggested cover crops from the C-4 Post-Construction Remediation and Revegetation Plan are presented in Table 4-2, and comprise of native legumes and non-invasive vertiver grass (*Chrysopogon zizanioides*). Alternative cover crops known to be locally available include taro (*Colocasia esculenta*), various yams (*Dioscorea alata*, *Dioscorea esculenta*) and cassava (*Manihot esculenta*). Additional species may also be available or imported, subject to confirming that they will not cause a biosecurity threat.

Pioneer plants, which are light demanding, shorter-lived shrubs and nurse trees, will also be planted within this zone. Pioneer species can be planted at the same time or shortly after the establishment of cover crops, or can replace cover crops entirely if (after trials) it is confirmed that they have good survivability. One native pioneer species is known to have been

successfully propagated by the Project so far, Moluccan albizia (*Falcataria falcata*). This large spreading tree, up to 40 m in height, can grow on a wide variety of soils, is fast-growing with nitrogen fixing ability and abundant wind-blown seeds. It can occur in a wide variety of habitats including primary forest but more often in secondary lowland forest, open forest, grassy areas and roadsides (IUCN 2024). Moluccan albizia is native to the Solomon Islands and occurs naturally on Guadalcanal, but its hardy nature means that has become a problematic weed in some countries where it has been introduced (*ibid.*). Other native species known to occur in early succession forest include tava (*Pometia pinnata*), figs (*Ficus* spp.), *Calophyllum* spp. and *Macaranga* spp. (Stantec 2023). It is highly likely that other pioneer species can be successfully propagated and planted on site. Additional information on the propagation of native plant species may be found at the Honiara Botanical Garden Nursery, run by the Ministry of Forestry.

An alternative method within this zone is to spread cover crop seeds via hydroseeding, with pioneer and diversity trees interplanted manually. More information on hydroseeding is provided in section 4.2.3.

Table 4-2: Cover crops from the C-4 Post-Construction Remediation and Revegetation Plan

Species Name	Common Name	Threat Status (IUCN 2024)	Habitat Type (IUCN 2024)
<i>Chrysopogon zizanioides</i> *	Vertiver grass	Not Assessed	Not Assessed
<i>Mucuna pruriens</i>	Velvet bean	Not Assessed	Not Assessed
<i>Neustanthus phaseoloides</i>	Pueraria / tropical kudzu	Not Assessed	Not Assessed

*Non-native to Solomon Islands, but sterile.

Table 4-3: Native pioneer trees successfully grown in the Tina River nursery (OE pers. obs.)

Species Name	Common Name	Threat Status (IUCN 2024)	Habitat Type (IUCN 2024)
<i>Falcataria falcata</i>	Moluccan albizia	Least Concern	Forest, shrubland, artificial/modified



Figure 4-2: Vertiver grass planted along Lot 1



Figure 4-3: Moluccan albizia in the HEC nursery

4.2.2 Secondary Succession and Diversity Planting

Most of the tree and shrubs present within Core Land are mid to late succession species, requiring shade to grow. The project is required to collect and propagate native seeds, seedlings and/or cuttings during vegetation clearance, however cleared areas are unsuitable habitat for these species to grow. Diversity planting is recommended in two zones to improve biodiversity and habitat values of the Conservation Area: within pioneer plantings once vegetation cover is established; and within the Restoration Zone adjacent to access roads and other areas of disturbance.

In accordance with the C-4 Post-Construction Remediation and Revegetation Plan, once revegetation sites are stabilised and the cover crop is well established, they are to be inter-planted with native shrub and tree species. It may take several years for revegetated areas to gain a canopy to allow diversity species to survive, therefore this planting will be ongoing after COD. Diversity planting will speed up succession of cleared areas to facilitate native tree cover, in line with biodiversity offset requirements. Diversity species in revegetated areas are to be planted at a spacing of ≥ 1 native tree or shrub every 5 square metres (500 plants per hectare).

Diversity planting will also be conducted within areas of remaining secondary forest adjacent to access roads and restored sites. This will help to increase species diversity in these secondary forests and address potential ongoing disturbance and edge effects. As these areas already provide canopy cover, diversity species can be planted throughout the Project, including both construction and operational phases. Diversity species in this zone are to be planted at an average spacing of ≥ 1 plant every 10 metres (400 plants per hectare).

Native trees and shrubs that have been successfully grown in the nursery are summarised in Table 4-4. A wide range of additional species can potentially be propagated, as per the species list in Appendix D. Seeds, seedlings and cuttings can be sourced from areas during vegetation clearance as well as from remaining forest within Core Land. This will ensure that a representative mix of species is used.

Table 4-4: Native forest trees successfully grown in the Tina River nursery (OE pers. obs.; THL)

Species Name	Common Name	Threat Status (IUCN 2024)	Habitat Type (IUCN 2024)
<i>Calophyllum peekelii</i> *	Koilo	Least Concern	Forest
<i>Canarium indicum</i>	Galip nut	Least Concern	Forest
<i>Pometia pinnata</i>	Dawan	Least Concern	Forest
<i>Pterocarpus indicus</i> **	Rosewood	Endangered	Forest
<i>Terminalia calamansanai</i> *	Yellow terminalia	Least Concern	Forest
<i>Vitex cofassus</i>	Vitex vasa	Least Concern	Forest
Other Critical Habitat Species to be Propagated (if found within Core Land)			
<i>Actinodaphne solomonensis</i> **	Actinodaphne	Critically Endangered	Forest
<i>Cryptocarya medicinalis</i> **	Cryptocarya	Critically Endangered	Forest

*This species has been recorded on site. IUCN does not record this species on Guadalcanal, but it is native to Solomon Islands.

**Critical habitat trigger species for the Project (refer P-2 BMP).

4.2.3 Hydroseeding

Hydroseeding can be used for steep parts of the site where physical planting may be limited due to soil type and health and safety. It can also be used on flatter areas to speed up revegetation, creating a groundcover into which to plant pioneer shrubs and trees.

Hydroseeding is a mechanical process of spraying a mixture of water, seed, fertiliser and mulch onto bare ground under high pressure. Some mixtures also include a natural fibre or polymer to bind the mixture, creating a bonded matrix to minimise seed movement and enhance erosion protection. Hydroseeding provides an efficient way to establish cover over large areas and is commonly used for large-scale infrastructure, mining and in landscape applications, and has a dual purpose of establishing a cover of low-growing vegetation (grass) and providing surface erosion control. It is particularly suited for stabilising and revegetating large areas such as is required at Tina River.

Hydroseeding can be used on a wide range of terrain. For flat and gentle gradients of up to 3:1 slope (18°), conventional hydroseeding can be used. For steeper terrain (theoretically up to 1:1-0.5:1 or 45-63°), more specialised mixes are used to create a surface mat and prevent the mixture from washing away (NAG 2017). The ingredients are combined in a tank and then sprayed onto the desired area using a truck or trailer-mounted unit (Figure 4-4 and Figure 4-5). The mulch and fibre or polymer (if used) helps to hold the grass seed in place and protect it from wind, rain and erosion until the seed has germinated. This makes hydroseeding particularly useful for erosion control and revegetation on hillsides and slopes. Once a cover of grasses is established, this can provide suitable conditions for other species to germinate and/or allow interplanting to occur.

Hydroseeding is successfully used in tropical climates such as northern Australia and Hawaii. Hydroseeding can be conducted in the Solomon Islands, using imported machinery, seed and substrate (PGG Wrightson pers. comm.) however the contractor is concerned about the time and cost that this process may take. Most tropical forage seeds and tropical legumes are available in the Pacific and would be suitable for hydroseeding, but all are exotic species. Where possible, species selected should already be present in the Solomon Islands, if known, to minimise biosecurity risks. A range of grass seeds, legumes, and other species can be included in the mix to maximise diversity and the chance of success. It is also possible to include native grass seeds, but this would require significant effort to collect seeds with unknown success. To achieve native cover, interplanting with pioneer and diversity trees can be conducted, where access permits.



Figure 4-4: Hydroseeding can be used on steep terrain (Instant Green 2024)



Figure 4-5: Equipment can be mounted on a ute, truck or trailer (Vortec 2024)

4.2.4 Other Methods

Vegetation Direct Transfer

Vegetation direct transfer is where vegetation is moved together with the subsoil to a new location. The soil is cut beneath ground level using specialist machinery and the entire sod is moved alongside the vegetation on top (Figure 4-6). This results in the direct revegetation of bare sites during vegetation clearance. The method is suitable for low-growing shrubs and groundcovers with shallow roots, and where specialist machinery is available. As much of the Tina River project requires the removal of mature trees, this method has not been considered further.

Natural (Passive) Revegetation

Passive revegetation is where plants establish via natural processes with little or no assistance. This is already occurring on some areas (Figure 4-7). The viability and speed of passive revegetation can vary significantly, dependent upon the soil type, slope, aspect and nearby seed sources. It can be most successful for lower gradient, fertile soils, and/or small sites where adjacent vegetation occurs. It is less suitable for steep, infertile areas, rock substrates, and large exposed sites where the establishment of vegetation can take years or more. Due to the need to stabilise and revegetate sites within a fixed period (by COD), this method cannot be relied upon for large scale revegetation.



Figure 4-6: Vegetation direct transfer at scale at Stockton Mine, New Zealand (Boyer, et al. 2016)



Figure 4-7: A mix of native and exotic vegetation colonising and revegetating Disposal Site 3

4.3 Planting Schedule

Revegetation planting is to be phased through construction, with diversity planting continuing during the operational phase. According to the schedule of works provided by the contractor, between 2.06 hectares and 17.18 hectares requires revegetating each year (refer Table 4-5 and Annex C). This results in two peak periods of planting in 2025 and 2028. Where possible, revegetation should be spread more evenly through the Project, however this may require early decommissioning of some areas of the site.

The phases of planting are summarised in Table 4-5, Table 4-6 and mapped in Annex C.

Table 4-5: Revegetation timeline with area (ha) to be planted per year

Location	Year and Area to be Planted (ha)				
	2025	2026	2027	2028	2029+
Pioneer Planting (cleared sites)					
Access Roads (batter slopes)					
- Lot 2-1 entrance road		7.68			
- Lot 2-2 to dam	11.41				
- Lot 2-3 base of dam			0.67		
- Lot 3-1 to powerhouse	1.53				
Disposal Sites					
- 1-1		1.69			
- 1-2			1.39		
- 1-3		3.92			
- 2	4.17			2.49	
- 3				1.14	
- 4				6.08	
Explosives store + access road				1.69	
Office site extension				2.49	
Dam site and surrounds				2.84	
Powerhouse and surrounds				0.44	
Diversity Planting (beneath canopy within 50m of cleared sites)					
Diversity planting					55.00*
Total Horizontal Area (ha):	17.10	13.29	2.06	17.18	55.00
Sloped Area (ha):**	18.64	14.49	2.25	18.73	59.95

*Assumes all diversity planting outside of the construction zone is completed after COD (optional).

**Accounts for slope, averaged over the site of 1:2 (slope factor of 1.09).

Table 4-6: Revegetation methods and approximate number of plants required

Method	Density	2025	2026	2027	2028	2029+
Sloped Area to Plant (ha)	-	18.64 ha	14.49 ha	2.25 ha	18.73 ha	78.68 ha
Pioneer Planting (cleared sites) (ha)		18.64 ha	14.49 ha	2.25 ha	18.73 ha	18.73 ha
Cover crops or hydroseeding	10,000 / ha	186,400	144,900	22,500	187,300	-
Pioneer trees and shrubs	1,111 / ha	20,709	16,098	2,500	20,809	-
Secondary / diversity spp.*	400 / ha	-	7,456	5,796	900	7,492
Sub-total:	-	207,109	168,454	30,796	209,009	7,492
Diversity Planting (beneath canopy within 50m of cleared sites) (ha)						59.95 ha
Secondary / diversity spp.	100 / ha	-	-	-	-	5,712
Sub-total:	-	-	-	-	-	5,712
TOTAL PLANTS (approx.):		207,109	168,454	30,796	209,009	13,204

*Assumes a 12 month delay between pioneer and secondary planting, to allow a canopy cover to establish.

4.4 Plant Propagation

High-quality planting stock is essential for successful revegetation. Plants must be grown to a suitable size and must be robust, growing vigorously and disease-free when the season is optimum for planting. A nursery of approximately 300 m² in size will allow the propagation of around 15,000 plants per year, given appropriate resources (Elliott, Blakesley and Hardwick 2013). This indicates that the project must significantly scale up the size and scale of the nursery to propagate the plant numbers required.

Below are some key elements required for a successful nursery, as illustrated in Figure 4-8:

- Work area or potting shed – a well-ventilated potting space with work benches for workers to plant seeds, cuttings and transfer seedlings into larger pots.
- Germination house – a sheltered, shaded area for germinating seeds and cuttings. Shade can be via shade cloth, banana leaves, bamboo slats, coarse grasses etc.
- Growing house – shade house or similar with removal shade for growing and hardening off seedlings. Alternatively, a separate shade house and open stand out space can be created. Plants need to spend a minimum of four (4) weeks in the open prior to planting out.
- Irrigation – reliable water supply for irrigation. Watering can be done manually or via an automated irrigation sprinkler system.
- Operational material – wheelbarrows, trowels, propagation trays and storage trays, planter bags, root-trainers or tubes, plant labels, growing media etc. Many items can be reused or repurposed, such as ice-cream containers as seed trays, juice cartons or cut off plastic bottles for planter bags. Growing media can be purchased commercially or mixed on site.

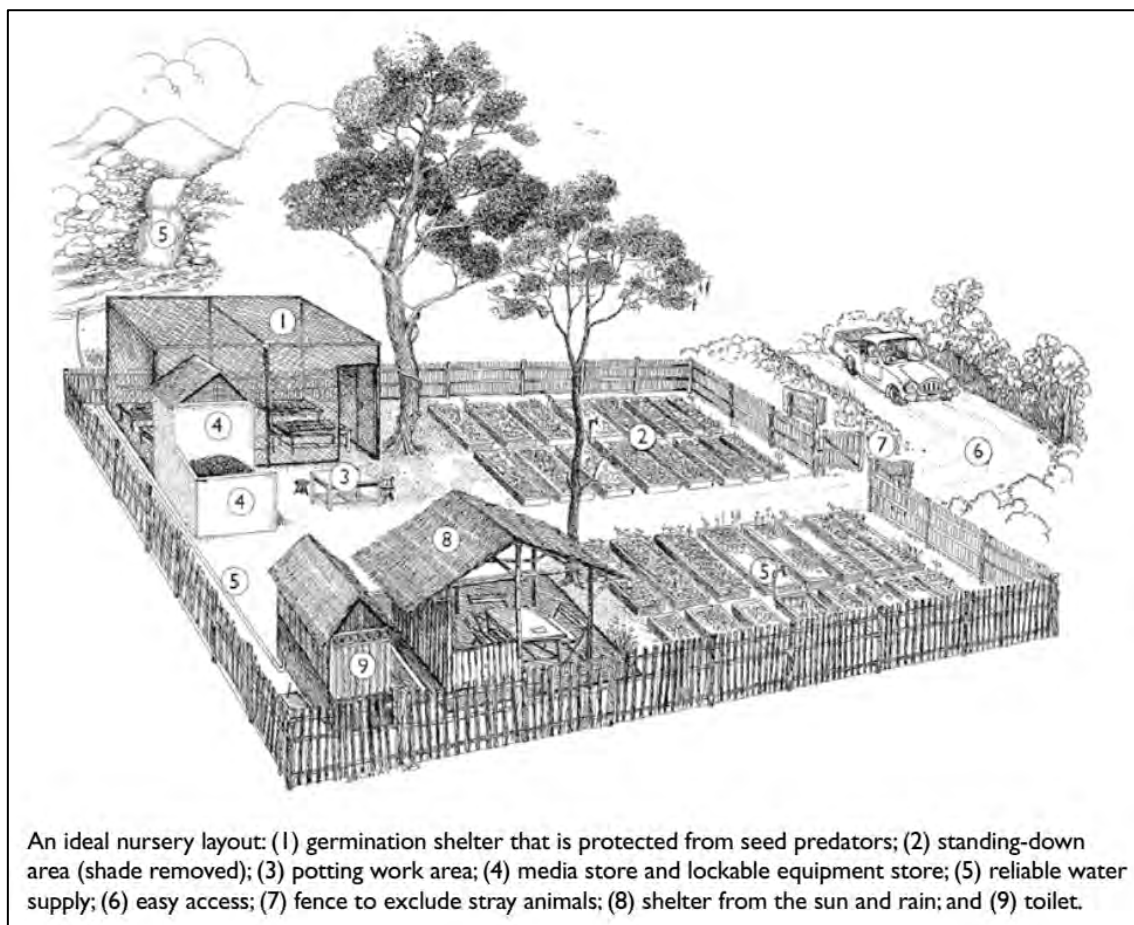


Figure 4-8: Indicative nursery layout (Elliott, Blakesley and Hardwick 2013)

A small nursery was established at the HEC Camp at the beginning of the project (Figure 4-9), however has been left to deteriorate and is too small for the number of plants required. Propagation facilities need to be expanded to allow revegetation of the site within the time required. Plant propagation could be expanded on site, outsourced to public or private entities (such as the Ministry of Forestry Research which has a commercial nursery), and/or the local community. Local women already grow and tend ornamental plants for their gardens (Figure 4-10) and are an obvious choice for plant propagation for the Project. Training locals to propagate, plant and maintain the plantings will contribute to capacity building while realising local employment and gender targets for the Project.

An indicative guide on annual nursery activities is provided in Table 4-7. For more information on tropical plant propagation and related activities, there are useful guides prepared by Kew Gardens (Elliott, Blakesley and Hardwick 2013), the Papua New Guinea Forest Industries Association and others.



Figure 4-9: Camp nursery November 2022



Figure 4-10: Ornamental plants, Tina Village (SIG)

Table 4-7: Recommended nursery activity calendar

Activity	Wet Season (Nov-Apr)	Dry Season (May-Oct)
Collection and sowing of seeds (varies per species)	✓	✓
Collection of seedlings (best when soil is wet)	✓	
Collection of cuttings (best when growth is hardy)		✓
Pricking out and potting up seedlings; division of grasses	✓	✓
Watering		✓
Weed, fungal and other pest control	(✓)	✓
Planting out (end of dry season / early wet season)	✓	(✓)

4.5 Planting Methodology

Pioneer and diversity planting will require several trained ground crews, incorporating members of the local community overseen by Project staff. Planting can be undertaken at any time of the year but is likely to be most successful in the wet season or late dry season when there is sufficient soil moisture. Outside of these times, planting can be done with

additional maintenance in the form of watering, erosion protection and/or replacement planting as required.

Revegetation success is dependent on the availability of suitable numbers and species of cover crops and native plants. Plants should be root trainer size or larger with a vigorous growth form, free from pests and disease. The growth rate of plants vary, but often three to four months from germination is required for planting. All plant material needs to be the first class specimens of nursery stock, being:

- True to name and type with well- developed and well-shaped trunk or stem and head. They need be well hardened off to cope with the climatic conditions of the site and free from pests and disease;
- The roots need have a high percentage of fibrous roots that are just touching the edge of their containers. Plants with roots that are wound round their containers in a circular fashion will need releasing prior to planting; and
- Plants need be free from disfiguring knots, bark abrasions, wind or freezing injury or other disfigurements and in a healthy and vigorous condition.

All plants need to be thoroughly watered or soaked immediately prior to planting to promote successful establishment. A hole twice the depth and width of the root ball should be dug, and the bottom of each hole shall be pierced to a depth of 200mm with the tines of a fork or similar to facilitate root penetration and free drainage.

All plants need to be placed with the main stem vertical and at such a depth that the soil when firmed down is at the same height as the earth marks on the stem from the soil level of the container. Loose roots shall be spread out naturally; the soil being carefully placed under and amongst them to fill all voids and firmed in by hand.



Figure 4-11: Good planting technique (GWRC 2021)

To reduce ongoing maintenance, cover crops are to be placed at ≥ 1 metre centres (10,000 plants per hectare). Alternatively cover crops can be replaced by hydroseeding. Pioneer trees and shrubs are then to be interplanted at ≥ 3 metre centres (1,111/ha). This spacing aims to achieve a full groundcover quickly, which will result in reduced weed control requirements. Alternatively, mulch or biodegradable weed matting can be installed for weed suppression.

Later succession diversity plant species should be planted at ≥ 5 metre centres (400 plants per hectare) once a canopy cover of vegetation is achieved. Diversity plant species are also to

be planted in adjacent secondary forest to enhance biodiversity values and reduce edge effects. These can be planted at a reduced spacing of ≥ 10 metre centres (100 plants per hectare) given the presence of an existing canopy of vegetation.

4.6 Aftercare and Maintenance

Revegetated areas will require ongoing maintenance to ensure that plants establish and achieve a mature cover of secondary vegetation. Sites will be checked every three months until a full canopy cover is established. Routine maintenance will involve:

- Replacement planting for plants that have died, been vandalised or damaged.
- Weed control via manual, mechanical or chemical methods.⁶
- Pest animal control if there is evidence of insect, animal browse or similar.
- Repairs following storm events, after prolonged dry or wet periods.

The dates and photos of maintenance visits shall be included in quarterly reports.

⁶ Use of chemical weed control shall be minimised to the extent possible.

5. BIODIVERSITY MONITORING AND MANAGEMENT

Key Performance Indicators:

- No unauthorised access or illegal activities detected within Core Land.
- No decrease in vegetation cover outside of the permitted clearance boundary.
- A gradual change in flora and fauna species composition from modified to climax habitat.

5.1 Site Security and Patrols

In accordance with the P7 Security Management Plan, the Project is required to have 24-hour security within Core Land, to maintain the safety and security of the hydropower scheme. Security also plays a key role in biodiversity conservation by enforcing access restrictions, preventing the entry or exit of contraband, minimising the spread of invasive species, and preventing illegal activities. Should illegal activities be detected, it is the role of security to engage the SIPF and other stakeholders (if required) to investigate and resolve any issues.

During the construction phase, site security will be contracted through HEC. During operations this will be done through THL.

The role of security is as follows:

- Preventing unauthorised entry:
 - Securing the entry to Core Land at the Lot 2-1 security post and ensuring only authorised personnel are permitted entry.
 - Maintaining a log of people and vehicles accessing Core Land through the Lot 2 security post.
 - Installing and monitoring surveillance cameras at potential entry sites including but not limited to the security post, powerhouse and dam site.
- Vehicle movements and inspection:
 - Enforcing site speed limits to minimise potential for accidents and fauna strike.
 - Ensuring construction and other vehicles are clean and travel through the wheel wash bay prior to entry to Core Land, to minimise spread of weed and pests.
 - Conducting random inspections of vehicles at the Lot 2 security post for contraband.
 - Preventing entry of guns, ammunition, drugs, alcohol and other contraband.
- Core Land patrols:
 - Conducting daily patrols along the Core Land access roads to detect illegal activities.
 - Coordinating with RSIPF, PO and other stakeholders to address and prevent illegal activities.

5.2 Vegetation Monitoring

In accordance with the P2 Biodiversity Management Plan, C4 Post-construction Rehabilitation and Revegetation Plan, and M5 Flora and Fauna Monitoring Plan, vegetation cover within Core Land will be monitored via satellite imagery, in addition to the site-specific revegetation monitoring. It is also recommended that permanent vegetation plots (Hurst and Allan 2007) be established to provide long-term comparative data over which to monitor vegetation structure and composition. These plots would be suitable for researchers and/or

university students to monitor as part of university studies. This could provide a comprehensive quantitative dataset from which to monitor community composition over time.

Vegetation monitoring will include:

- **Vegetation cover** – quarterly:
 - Cover: Monitoring of total vegetation cover within Core Land using remote sensing (satellite photography) to show any increase or decrease. This will also determine if construction clearance is within the maximum permitted extent.
 - Complexity: Monitoring of vegetation complexity within Core Land using remote sensing (infrared technology), indicative of vegetation structure.
- **Revegetation monitoring** – quarterly:
 - Propagation: Number of seeds, cuttings and plants propagated, by species.
 - Replanting: Area (ha) and number of plants planted, by species.
 - Photopoints: At least 10 fixed photopoints of revegetation sites.
 - Maintenance: Results of maintenance activities including replacement planting (species, number, location), weed and pest control.
 - Labour: Hours spent in plant propagation, planting, weed and pest control.
- **20x20m vegetation plots** – every 3 years:
 - Monitoring of a representative network of 20 x 20 metre permanent plots within the three main habitat types (primary forest, secondary forest and revegetation zone), with a minimum of 5 plots per habitat type monitored at least every 3 years.⁷
 - Conservation significant species presence and abundance within plots.
 - Signs and/or presence of invasive species (flora and fauna) within plots.

Should any unauthorised and/or illegal clearance of vegetation be detected within Core Land these shall be investigated, and areas will be revegetated at the Project's cost, by HEC during construction and THL during operation. The results of remote sensing and vegetation plot monitoring will also be used to inform management decisions for flora and fauna.

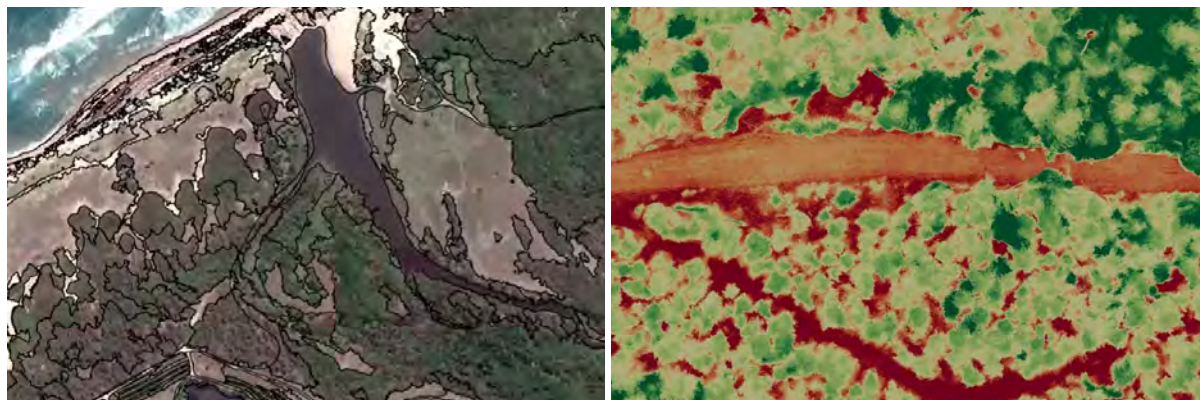


Figure 5-1: Examples of remote sensing applications for vegetation monitoring, including aerial photography (left) and infrared technology (right) (Stantec.com)

⁷ 20 x 20 metres is considered the minimum size for monitoring in tropical forests. To detect long term trends, monitoring is often done at 5-10 year intervals. A 3-year interval is considered to strike a balance between detecting change, the ability to respond to changes in management, alongside the risk of vegetation damage through repeat surveys.

5.3 Fauna Monitoring

In accordance with the P2 Biodiversity Management Plan and M5 Flora and Fauna Monitoring Plan, the fauna monitoring programme is to target threatened species of mammals, birds and bats. Focus species include king rat (*Uromys rex*), Guadalcanal monkey faced bat (*Pteralopex atrata*), Guadalcanal honeyeater (*Guadalcanaria inexpectata*) and Guadalcanal hooded whistler (*Pachycephala implicata*). Due to the inherent difficulties in detecting rare species (for example, low numbers, often cryptic nature and specific habitats), it is possible to use indicator species and other measures as a proxy for ecosystem health even if target species are not specifically recorded. For this reason, the monitoring programme has been designed to detect a wider range of species.

Fauna monitoring will comprise:

- **Fixed point counts (birds and bats):** Point counts are a standard survey technique for obtaining measures of bird species richness, abundance and population density. This method can also detect the larger species of bats, such as the endangered Guadalcanal monkey-faced bat which is a critical habitat trigger species for the project. Although durations vary, 15-minute surveys are a commonly used point-count duration in tropical forest (Robinson 2018). Detailed methods are described in Ralph et al. (1995), and can be summarized as a record of all bird and bat species seen or heard during the 15-minute period, with the option to record distance away (<50 m/>50 m). Point counts are to be established in each of the three main habitat types (primary forest, secondary forest and revegetation zone) along transects or similar. The P2 BMP recommends 4 x 2 km transects, with a total of 44 point counts, however the actual number in each habitat type should be representative of the area to be surveyed, with a minimum of 10 samples in each habitat type. Monitoring will be undertaken during still, fine weather where possible, in the early morning when birds are most active.
- **Camera traps (all species):** Camera traps are to be deployed on a rotational basis within each of the three main habitat types (primary forest, secondary forest and revegetation zone). A trap will also be placed at the fauna underpass if and when installed. Six traps are to be deployed along 2km long fixed transects at 400 metre spacings, co-located with point counts. Cameras will be deployed for a one month period, resulting in a three month deployment to cover the three main habitat types. Camera traps have traditionally been used to detect large mammals and can be less effective at small fauna. While modified camera set ups have been trialled (Figure 5-2) these can eliminate the detection of other species. Therefore for Tina River, conventional camera trapping is proposed to detect as broad a range of species as possible, with targeted monitoring for rats.
- **Monitoring tunnels (rats + other species):** Monitoring tunnels are proposed to monitor small fauna, including native and introduced rats, invasive species, and will be co-located with fixed point counts. Ink pad monitoring tunnels use a baited lure to attract small fauna across an ink pad, resulting in a record of footprints (Figure 5-3). These are relatively cheap and easy to install, can detect a wide range of terrestrial species, and allow off-site identification. The main downside is that identification to species level is not always possible from footprints. In 2024, environmental DNA (eDNA) technology has advanced to create a novel method for detecting small fauna, combining a monitoring tunnel with an eDNA filter (Wilderlab 2024). This allows

for more accurate species identification, often to species level,⁸ albeit with higher laboratory costs. The use of eDNA filters for detecting terrestrial mammals will be investigated, and could be alternated with ink pads to reduce cost and compare the effectiveness of each method.



Figure 5-2: Example of a small mammal camera trap (Littlewood, et al. 2021, Reconyx 2024)

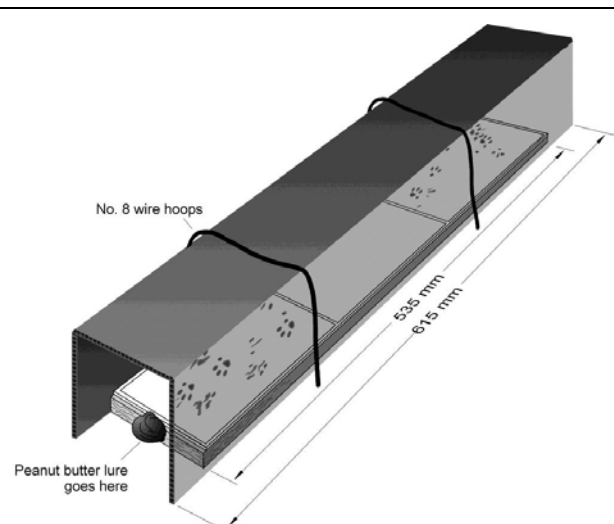


Figure 5-3: Ink pad trakka tunnel suitable for small mammals and herpetofauna (DOC 2013)

In accordance with the P2-BMP and M5 Flora and Fauna Monitoring Plan, all fauna monitoring is required to be undertaken bi-annually (twice per year), once in the wet season and once in the dry season. Where possible, monitoring should be conducted in the same months each year to allow for any changes to be assessed over time.

The results of fauna monitoring will guide conservation efforts to facilitate species protection and recovery to demonstrate net gain. While the greatest threat to terrestrial biodiversity is habitat loss, other threats include invasive species, hunting, climate change and pollution (Lavery, Pikacha and Fisher 2016). Following completion of the revegetation programme, a wider range of management actions shall commence during the operational phase.

The following actions will be investigated for the operational phase and will be incorporated into the next revision of the CAMP prior to COD:

- **Hunting ban:** Pedestrian access to Core Land is permitted for Benefit Sharing communities during the operational phase. Both native and exotic species are hunted by local people, including birds, bats, pigs and cuscus. A ban on the use of guns will be enforced by Site Security, and is in line with the Core Land lease agreement. A wider native fauna hunting ban should also be a condition of entry, if supported by TCLC, and accompanied by community education and Core Land signage. This should include a ban on associated hunting equipment such as snares, traps and slingshots. A ban on taking dogs into Core Land should also be considered, due to the risk to native fauna.
- **Invasive species:** There are a wide range of invasive species in the Solomon Islands, many of which have adverse socioeconomic and environmental effects. Invasive species can be tracked via eDNA surveys completed during aquatic ecology

⁸ Samples can be identified to species level so long as the DNA sequence is in the global database. If not identification to genus level (or higher) occurs. For some rare species and those new to science, DNA sequences may not be available.

monitoring, and via targeted monitoring. The black rat (*Rattus rattus*) is among the most widespread invasive vertebrate pest species and poses a significant threat to endemic birds (SPREP 2019). The control of invasive rats should be conducted, so long as control methods address possible by-catch of endemic rats and flow-on effects associated with predator-prey relationships. The Project should also coordinate with SIG on any national or regional initiatives to control other invasive species.

- **Habitat enhancement:** There is the potential to conduct habitat enhancements to increase the carrying capacity of Core Land. This is particularly appropriate within or near Revegetation Zones while natural habitats regrow. Habitat enhancements can include but are not limited to:
 - **Artificial nest boxes / roosts:** Wooden nest boxes and/or bat roosts can be installed to address habitat loss caused by the felling of large trees. Nest boxes are particularly suitable for cavity nesting birds, which rely on old and senescing trees. Bat roosts can replace cavities and flaking bark which provide habitat for microbats.
 - **Water sources:** The provision of water, through the installation of small troughs, bird baths or similar, can support terrestrial wildlife during dry periods. These will require regular refilling and cleaning to prevent the spread of disease.
 - **Nectar feeders:** Several avifauna species, including Guadalcanal Honeyeater, feed on nectar. To bolster populations and enhance the conservation and potential study of these species, nectar feeders can be installed. These comprise of bottles filled with sugar water or similar with a feeder only accessible to nectivorous birds. Feeders could be installed year-round, or in periods when natural food sources may be scarce. Cleaning and maintenance will also be required to prevent the spread of disease.

There is the potential to partner with national and/or international scientific experts, including from the University of South Pacific and Solomon Islands University. Both institutions have campuses in Honiara and offer courses in the natural sciences. This could be a cost-effective way to bolster the monitoring and conservation programme, including through research grants or student scholarships. There are also opportunities to publish research papers based around the Project, to inform conservation projects in other areas of the Solomon Islands and throughout the Pacific.

5.4 Aquatic Ecology Monitoring

The aquatic monitoring programme during construction is described in CESMP M-1, M-2 and M3. This covers both water quality and ecology. There are opportunities to employ locals to assist with monitoring, and for students to conduct research on aquatic ecosystems including fish migration periods, and the success of the trap and haul programme.

6. GOVERNANCE

This section specifies the proposed roles and responsibilities for implementation of the CAMP, including an indicative budget.

6.1 Roles and Responsibilities

THL have overall responsibility for the development and implementation of the CAMP throughout construction and operation. However, during construction, day to day activities will be implemented by HEC. THL will assume full responsibility for CAMP implementation once all construction, site stabilisation and revegetation activities have been completed.

A Biodiversity Advisory Group will provide oversight and act as a Management Committee for the Conservation Area. The BAG will be comprised of a small group of technical experts alongside the Project team to provide oversight of BMP and CAMP implementation. The BAG will review of biodiversity conservation activities and monitoring completed, including reviews of project documents, monitoring plans, budgets, past and proposed activities. Knowledge and experience in Solomon Islands flora and fauna, and/or experience in active conservation management is required. Independent experts will be contracted to THL, with a pre-agreed allowance for meetings and report reviews. Meetings and other participation will be virtual or in person. Any required payment for participation in the BAG will be provided by THL. An updated Terms of Reference for the BAG is provided in Annex C.

The current (construction-phase) roles and responsibilities, along with those of other parties that have implementation roles are detailed in Table 6-1. After conclusion of the PPA, THL assets will transfer to SIG who will have full responsibilities for implementation.

6.2 Key Performance Indicators

A set of Key Performance Indicators (KPIs) have been developed to track progress against each of the four project objectives (Table 6-2). There are targets set for the both construction and operational phases, acknowledging the temporary disturbance from the Project and long-term nature of conservation gains.

Table 6-1: CAMP roles and responsibilities

Organisation	Position	Responsibilities
THL	Chief Technical Officer	Overall responsibility for Project site activities including health and safety, environmental and social management, quality assurance, monitoring and reporting.
	Human Resources Manager	- Targeted recruitment, promotion, and training of local communities to implement CAMP activities. - Achieving hiring targets of 20% SI employment, 20% employment from Community and Benefit Sharing communities, and workforce gender ratio of at least 30% women.
	E&S Manager	- Ensuring that all Project staff, contractors, labourers and visitors are adequately trained and informed on biodiversity management and conservation, including under the BMP and CAMP. - Responsible for biodiversity mitigation, monitoring and revegetation activities, including coordination of E&S staff and contractors, and review of data and reports. - Ensuring required engagement with community, SIG, and other stakeholders is undertaken. - BAG Chair, convening the BAG on a six-monthly basis. - Investigation and resolution of CAMP non-compliance. - Submission of THL Quarterly HSE reports to SIG. - Responsible for CAMP implementation during operations.
	Governance Lead	- Main point of contact for the TRHDP Grievance Redress Mechanism (P-6), Gender Action Plan and related social safeguards implementation. - Maintenance of the Grievance Register where all complaints received by THL, HEC, PO and Solomon Power are recorded and tracked.
HEC	Construction Manager	- Ensure that all HEC personnel including staff, contractors and visitors are adequately trained and informed on the requirements of the CAMP. - Ensure that all temporary construction sites are stabilised and revegetated by COD.
	E&S Assistant Manager	Responsible for oversight and resourcing to ensure CAMP implementation during construction.
	Conservation Manager	- International consultant, NGO or private firm experienced in biodiversity management and conservation, responsible for CAMP implementation to achieve net gain. - Developing and implementing biodiversity management and monitoring (in association with consultant biologists, research institutions and site staff), including for indicator and threatened species. - Training of site staff and capacity building. - Participation in the BAG.
	Biodiversity Consultants x 2	Consultant biologists (2) including botanist and fauna expert to assist with species identification, monitoring and staff training
	Community Liaison Officers x 2	- Consultation, engagement and training activities with local communities and grievance investigation. - Awareness raising on the CAMP including access controls and permitted activities, sharing of monitoring results. - Investigations of illegal activities.

Organisation	Position	Responsibilities
	Biodiversity Officers x 2	- Responsible for biodiversity mitigation, monitoring and patrols. - Ensuring contractors comply with CESMPs including during clearance and restoration.
	Field team x 16	16 x local staff (4 x teams of 4) to conduct planting, weed and pest control and monitoring, with direct supervision from HEC Biodiversity Officers.
	HEC Security Contractor	24-hour Core Land security, CCTV and patrols. - Ensuring only authorised personnel are permitted entry. - Maintaining a logbook detailing vehicles and people accessing Core Land through the Lot 2 security post - Inspections of vehicles at the Lot 2 security post, including ensuring vehicles are clean and no contraband is carried into or out of Core Land. - Coordination with SIPF regarding illegal activities.
BAG	Various (refer BAG Terms of Reference)	- Undertake activities as detailed in the BAG Terms of Reference - Technical expert group providing oversight of the CAMP, BMP, TOMS and Aquatic Offset Management Strategy implementation through six-monthly meetings. - Review of biodiversity conservation activities to be completed and monitoring completed by THL/HEC in the previous six months and proposed activities for the next six months.
Owners Engineer	E&S Safeguards Lead	- Six-monthly audits of CESMP and CAMP implementation during construction phase. - Participation in the BAG.
SIG	Project Office	- SIG representative during construction phase. - Facilitating input from SIG ministries and other stakeholders. - Participation in the BAG.
	Solomon Power	- Offtaker. - Compliance with the CAMP during power line construction and operation.
	SIPF	Enforcement should illegal activities occur in Core Land.
	MECDM	- Advice and support regarding forest conservation in SI, including legal protection. - Participation in the BAG.
	MOFR	- Advice and support regarding forest restoration in SI. - Potential availability of existing nurseries and staff experienced in revegetation.
TCLC	Secretary to TCLC	- Landowner representative. - Participation in the BAG.
CFPs	Various	- Review and approval of the CAMP. - Monitoring of CAMP implementation.
Research Institutions	USP, SIU, others	- Participation in the BAG as external experts (if applicable). - Undertake CAMP biodiversity monitoring as engaged by THL and/or HEC.

Table 6-2: Summary of KPIs for the Core Land Conservation Area

Objective	KPI	Measure	Lead Agency	Timing
PROTECT: to protect remaining vegetation from clearance and degradation	A 342 ha Conservation Area is created by the Project within Core Land	Final CAMP approved and disclosed.	THL	Q2 2025
		Signage installed and maintained	HEC (installation) THL (maintenance)	Security post and munitions store by mid-2025 Other signage by COD
		Boundary markers installed and maintained	HEC (installation) THL (maintenance)	By COD (currently 2028)
ENHANCE: to restore habitats disturbed during construction	All temporary construction sites stabilised and revegetated by COD.	Areas replanted (in hectares); area (ha and %) stabilised with full canopy or groundcover; area (ha and %) where revegetation accepted by the Owner	HEC	All temporary sites revegetated by COD (currently 2028) and/or before the end of the defect liability period
	Revegetation sites maintained to facilitate a transition to forest habitat	Numbers of diversity species planted	HEC (construction) THL (operations)	Throughout construction and operation
CONSERVE: to monitor and grow the populations of key species and habitats	No unauthorised access or illegal activities detected within Core Land	Security records Satellite imagery (% change in vegetation cover)	Site Security HEC (construction) THL (operations)	Throughout construction and operation
	No decrease in vegetation cover outside of the maximum permitted clearance boundary	Satellite imagery (% change in vegetation cover)	HEC	Every 3 months
	A gradual change in flora and fauna species composition from modified to climax habitat	Results of vegetation plots, point counts, camera traps and monitoring tunnels.	HEC (construction) THL (operations)	Every 6 months (wet and dry season)
EMPOWER: to engage local communities in conservation and develop alternative livelihoods	Project targets of 20% local employment, 20% local procurement, and 30% women	HR employment and procurement records	HEC (construction) THL (operation)	Throughout construction and operation

6.3 Reporting

Quarterly and annual reporting is to be completed by HEC (construction phase) and THL (operational phase). Reports shall be submitted to SIG (MMERE Project Office and MECDM) for review and approval, with results presented and discussed during the 6-monthly BAG meetings. Final reports will be publicly disclosed on the Project website.

6.3.1 Quarterly Reporting

The CAMP activities, including revegetation, biodiversity management and monitoring actions completed in the previous three-month period will be reported in the quarterly Environmental and Social Safeguards Monitoring Reports already prepared for the Project. The existing section that covers P2 BMP activities will be expanded to include the CAMP, given that this is a related plan.

The reporting shall detail, at a minimum, activities related to:

- **Conservation Area Establishment and Communications:** CAMP finalisation and updates (if applicable); signage and demarcation; engagement activities including community meetings and training; any external presentations or papers.
- **Site Revegetation:** Progress towards full site revegetation including: site photographs; nursery and propagation activities; cumulative total of areas planted (ha); cumulative number of trees and shrubs planted, including threatened species; planting and maintenance activities (weed/pest control etc); site demobilisation.
- **Biodiversity Monitoring:** Summary of biodiversity monitoring and management activities.
 - **Site Security and Patrols:** any unauthorised access or illegal activities detected within Core Land (by workers, locals and non-locals); records of entry by members of the Benefit Share Community and other non-Project persons.
 - **Vegetation Cover:** results of 3-monthly satellite monitoring, including area of vegetation cover (vs. permitted area of clearance); areas cleared vs. revegetated; any evidence of illegal activities and subsequent response.
 - **Fauna Monitoring:** Results of monitoring, including the presence of indicator and threatened species.
- **Resourcing:** Any change in staffing related to CAMP implementation, including Project staff, consultants and researchers.

Quarterly reporting shall continue throughout construction and for at least the first five years of operation. Thereafter it can be revisited.

6.3.2 Annual Reporting

A more detailed Annual Report and Forward Workplan shall be submitted in Q4 each year and shall include the above in addition to:

- **Progress Against KPIs:** Summary of actions from the quarterly reports, along with longitudinal comparison over time, to assess trends and progress towards KPIs.
- **Annual Plan:** Proposed restoration, management and monitoring activities for the following year, presented as a calendar of activities (Gantt chart or similar).
- **Resourcing:** Review of the budget for the previous year and detailed budget for following year, including required personal and external resources/consultants.

- **CAMP Updates:** Every three years from CAMP finalisation, recommendations will be included on any changes required as a result of the review (refer section 6.3.4).

Annual reporting shall continue throughout construction and for at least the first five years of operation. Thereafter it can be revisited.

6.3.3 Six-Monthly Audits

The CAMP shall be included in the independent audits completed for the Project as a whole. The audit shall review implementation of the management and monitoring actions completed in the previous six-monthly period, through a review of site activities and reports.

During construction, this will be performed by the Owner's Engineer (OE) as part of their audit function. During operations, the nature and timing of audits will need to be confirmed but can potentially be performed by OE or a contracted third party.

6.3.4 CAMP Review and Updates

The CAMP is a live document intended to be periodically updated and amended to reflect monitoring results and progress towards KPIs, changes to ground conditions within the management zones over time, changes or improvements in data collection methods, changes to resourcing, the delivery budget, or from feedback received.

The CAMP will be reviewed by THL every three years during construction and for the first 10 years of operation, thereafter the frequency may be revisited. This review process will incorporate:

- Aims, objectives and management zones for continued relevance.
- Progress towards KPIs, including the appropriateness of revegetation, management and monitoring actions in conserving and restoring biodiversity values within Core Land.
- Efforts to ensure long-term protection of the Core Land Conservation Area.
- Roles and responsibilities including any new project roles or changes in responsibilities required to achieve effective CAMP implementation.
- Resourcing and budget allocations.

The results of the review, including any recommendations for CAMP updates (or otherwise), will be incorporated into the CAMP Annual Report and be presented to SIG and the BAG for review. If endorsed, the proposed changes will be incorporated into the CAMP by THL.

In addition to the scheduled reviews, ad hoc updates may be required if management actions, monitoring requirements or reporting has highlighted deficiencies in the annual workplan and/or CAMP that require immediate review. Should this be required the following procedure will be followed:

- Discussion with SIG and the BAG about proposed changes and other required actions.
- Prepare required changes for review by SIG and the BAG.
- Finalise and publicly disclose the updated work plan and/or CAMP.
- Conduct training with the CAMP implementation workforce and any impacted stakeholders, depending upon the nature and impact of the change.
- Document the updates in the quarterly and annual reports.

6.4 Indicative Budget

The first CAMP is required to detail the aims and objectives for the Core Land Conservation Area for the duration of the 30-year PPA and establish in more detail a 5-year plan and first annual budget (Stantec 2023).

During construction, biodiversity management and conservation activities within Core Land under the CAMP and CESMPs will be financed for by capital funds. During operation, conservation activities will be financed income generated by the hydropower scheme.

There may be alternative sources of funds that can be investigated in parallel. For example, additional biodiversity and conservation activities could be implemented through grant funding or university scholarships. Any such funds would provide additional benefit, but do not supersede the need for THL to finance the main CAMP programme.

The resourcing and delivery budget for the implementation of the CAMP over the first diver years is detailed in Table 6-3. This budget is indicative only and is based on current information.

Table 6-3: Indicative resourcing and delivery budget (years 1-5)

Budget Items ^A	Description	Budget Estimate Per Year (USD)*				
		1 (2025)	2 (2026)	3 (2027)	4 (2028) COD	5 (2029) COD+1
Project staff and resources for implementation of CAMP	Conservation Area Manager (1) overall responsibility for CAMP implementation	\$45,000	\$47,250	\$49,613	\$52,093	\$54,698
	Consultant biologists (2) including botanist and fauna expert to assist with species identification, monitoring and staff training	\$30,000	\$31,500	\$33,075	\$34,729	\$36,465
	Community Liaison Officers. Assumes 2 FTE during construction, 1 FTE during operation, to engage and work with the community and address grievances.	\$45,000	\$47,250	\$49,613	\$52,093	\$27,349
	Biodiversity officers. Assumes 2 FTE during construction, 1 FTE during operation, to oversee revegetation, maintenance and monitoring activities.	\$45,000	\$47,250	\$49,613	\$52,093	\$27,349
	Field staff. Local resources for planting, weed and pest control, monitoring and patrols, to be trained and supervised by Biodiversity Officers. Assumes 4 x 4 person teams during construction. Reduces to 2 x 4 person teams after COD.	\$198,000	\$207,900	\$218,295	\$229,210	\$114,605
	CAMP Vehicle, PPE, other field expenses.	\$100,000	\$10,000	\$10,500	\$11,025	\$120,000
Revegetation activities	Expansion of nurseries including building materials, irrigation, planting media (one off cost in 2025) Seed/seedling/cutting collection; plant propagation. Tools, chemicals etc. (some one-off costs in 2025) Assumes c.15 ha replanted per year to COD (MoFR budgets \$15,000/ ha for replanting)	\$150,000	\$100,000	\$105,000	\$110,250	\$25,000
Biodiversity management and monitoring	Targeted surveys for vegetation condition, flora and fauna as detailed in the CAMP. Biodiversity monitoring equipment (some one-off costs in 2025 + after COD)	\$50,000	\$40,000	\$42,000	\$44,100	\$60,000
Biodiversity Advisory Group	Convene technical advisory panel to review the CAMP, BMP, AOMS and TOMS implementation. Assumes one virtual meeting every 6 months.	\$10,000	\$10,500	\$11,025	\$11,576	\$12,155
Stakeholder engagement and training	Budget for community engagement, education in biodiversity conservation, and training of local field staff.	\$100,000	\$105,000	\$110,250	\$115,763	\$50,000
Research funding and scholarships	Funding for USP/SINU staff and students to undertake research and monitoring activities.	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Reporting	Quarterly reporting - submitted as part of existing Quarterly E&S Safeguards Reports. Preparation of annual report, forward workplan and budget - submitted as part of existing Q4 Quarterly E&S Safeguards Report. 6-monthly independent audits. CAMP review and updates (every 3 years from CAMP finalisation).	\$50,000	\$52,500	\$80,125	\$57,750	\$60,638
Total		\$833,000	\$709,150	\$769,109	\$780,682	\$598,259

*Allows for 5% inflation/increase per year after year 1 for most items. Assumes all site demobilisation, stabilisation and revegetation completed by 2028.

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Tina River Hydropower Development Project

Core Land Conservation Area Management Plan

ANNEXES

ANNEX A: TERRESTRIAL HABITAT TYPES

Summary of terrestrial habitat units within the Core Land, modified from (Stantec, 2023)

Project Area Habitat Type	SI Vege Type (Pauku 2009)	Description
Undisturbed Primary Forest Habitat 	Hill forest Lowland forest	Undisturbed Primary Forest habitat comprises forested areas that have almost no disturbance from human activities, are intact and considered in pristine condition. This includes Lowland (<600 m) and Montane Forest (>600 m). This habitat has high ecological and values, supporting a wide variety of species. Primary Undisturbed Forest is characterized by tall canopy trees, although regrowth species are common due to impacts from infrequent cyclones. Common species of Lowland Forest include <i>Ficus</i> sp., <i>Dysoxylum excelsum</i> and <i>Cyathea</i> sp. (Tree Fern), while Montane Forest comprises <i>Syzygium</i> sp., <i>Metrosideros</i> sp., <i>Ardisia</i> sp., <i>Ficus</i>, <i>Rhododendron</i>, <i>Dacrydium</i> spp., <i>Podocarpus pilgeri</i>.
Disturbed Secondary Forest Habitat 	Lowland forest	Disturbed Secondary Forest Habitat comprises forested areas that have undergone relatively recent disturbance from human activities including logging and timber extraction, and is not as pristine, with regenerated shrub and tree growth. Due to these disturbances, this habitat has moderate ecological values, with key functions affected by deforestation and degradation. However, regeneration of shrubs and trees occurs rapidly where soil is available. These areas are dominated by regrowth species such as <i>Ficus</i> sp., <i>Pometia pinnata</i> and <i>Calophyllum</i> sp. Shrubs include <i>Macaranga</i> sp. Common non-indigenous species include <i>Alpinia purpurata</i>, and <i>Calamus</i> sp.
Remnant Forest Habitat 	Lowland forest	Remnant Forest Habitat comprises forested areas that have undergone extensive disturbance although still support remaining large trees such as <i>Canarium</i> sp. nut trees. This habitat supports a variety of species but is modified by anthropogenic activities and has moderate ecological values. Increasing light has also modified plant composition beneath the canopy.

Project Area Habitat Type	SI Vege Type (Pauku 2009)	Description
Cliff Habitat 	N/A (not classified)	Cliff Habitat occurs on and adjacent to very steep vertical slopes, typically adjacent to the river system. This habitat may be fed by smaller tributaries and waterfalls. It has high ecological values as it hosts unique species that may utilise the cliffs for foraging and breeding. They are also relatively pristine and have not been modified. Vegetation commonly found in these areas comprises ferns, figs, palms and epiphytic orchids. Specific indicator species of Cliff Habitat includes <i>Pholidota</i> sp., <i>Macaranga</i> sp., <i>Timonius timon</i> , and <i>Alpinia purpurata</i> .
Fallow Habitat 	Grassland and other non-forest areas	Fallow Habitat are areas that have been cultivated in the past but have been left to fallow. This habitat is similar to Remnant Forest; however, has undergone complete cultivation and has subsequently been left to fallow or regrow. It has low ecological values and hosts minimal species.
Garden Habitat 	Grassland and other non-forest areas	Garden Habitat comprises smaller areas of cultivated areas for food crops. Garden Habitat is of low ecological value and is heavily modified. However, it may provide foraging habitat for opportunistic species such as reptiles and insects.
Riverine Habitat 	Freshwater swamp and riverine forests	Riverine Habitat (including Riparian Habitat) is associated with Tina River and associated waterways. This habitat has high ecological values supporting species (including insects and amphibians) that are dependent on the riverine environment, particularly in the upper catchment (considered pristine). Flows and substrates are variable in the upper catchment (large boulders and pebbles), becoming more homogenous (sand and gravel) in the lower catchment (refer to Section 3.2). These areas may support epiphytic plants and orchids, vines (climbers and creepers shrubs) as well as fern trees in limited areas of the Tina River; however, the typically steep slopes are usually characterised by forest.

ANNEX B: LIST OF CONSERVATION SIGNIFICANT SPECIES

Conservation significant vegetation communities, flora and fauna species identified and screened as potential Critical Habitat in the BMP ecology review (Stantec 2023). These species may or may not occur within Core Land.

Scientific Name	Common Name	IUCN Status ⁹	Habitat Type ¹⁰	Known Distribution ¹¹	Restricted Range ^{12, 13}	Records from within the Project Area
Vegetation Communities						
N/A	Solomon Islands Rainforest	N/A	UF, R	SI	N/A	This ecoregion includes Montane Forest and Lowland Forest, corresponding to Undisturbed Primary Forest habitat above and below 600 m asl (including Riparian Forest habitat).
Flora						
<i>Calophyllum vitiense</i> *	Calophyllum	LC	UF, DF	-	Yes, EOO ~ 23,980 km ²	Recorded during pre-clearance surveys for Access Road Lot 2-2 and Lot 2-3. *May be an incorrect species name. <i>Calophyllum vitiense</i> is endemic to Fiji whereas <i>C. inophyllum</i> is native to the Solomon Islands.
<i>Actinodaphne solomonensis</i> +	Actinodaphne+	CR	UF, DF	-	Yes, EOO ~ 4 km ²	Recorded during the ESIA 2017 biodiversity surveys at the Power Plant 2 site and recorded during Myknee Ecological Consulting's Terrestrial Biodiversity and Critical Habitat Revision Survey in 2020.
<i>Cryptocarya medicinalis</i> +	Cryptocarya+	CR	UF, DF	SI	Yes, EOO ~ 4 km ²	Recorded during the ESIA 2017 biodiversity surveys at the Power Plant 2 site and recorded during Myknee Ecological Consulting's Terrestrial Biodiversity and Critical Habitat Revision Survey in 2020.
<i>Pterocarpus indicus</i> +	Rosewood+	EN	UF	-	DD	Recorded during the ESIA 2017 biodiversity surveys at the Access Road 2, Access Road 3, Cliff 2, Upper Stream 1, Upper Stream 3 and recorded during Myknee Ecological Consulting's Terrestrial Biodiversity and Critical Habitat Revision Survey in 2020 and HEC 2021 survey. Recorded during pre-clearance surveys.
Mammals						

⁹ Conservation status is a per IUCN 2022. The IUCN Red List of Threatened Species. Version 2022-1. <<https://www.iucnredlist.org>>

¹⁰ As defined in Section 4.2.1 and based on habitat mapping prepared by Myknee 2020. UF= Undisturbed Primary Forest, DF = Disturbed Secondary Forest, R = Riparian, RF= Remnant Forest, FH = Fallow Habitat, GH = Garden Habitat, C = Cliff Habitat

¹¹ SI = Solomon Islands, G = Guadalcanal

¹² Restricted range definition is equivalent to 'endemicity' for terrestrial vertebrates and plants and is defined as those species having an Extent of Occurrence (EOO) of less than 50,000 km² (IFC 2019). Solomon Islands total area is 28,896 km².

¹³ EOO data from IUCN 2022.

+ Indicates species associated with Solomon Islands Rainforest ecoregion.

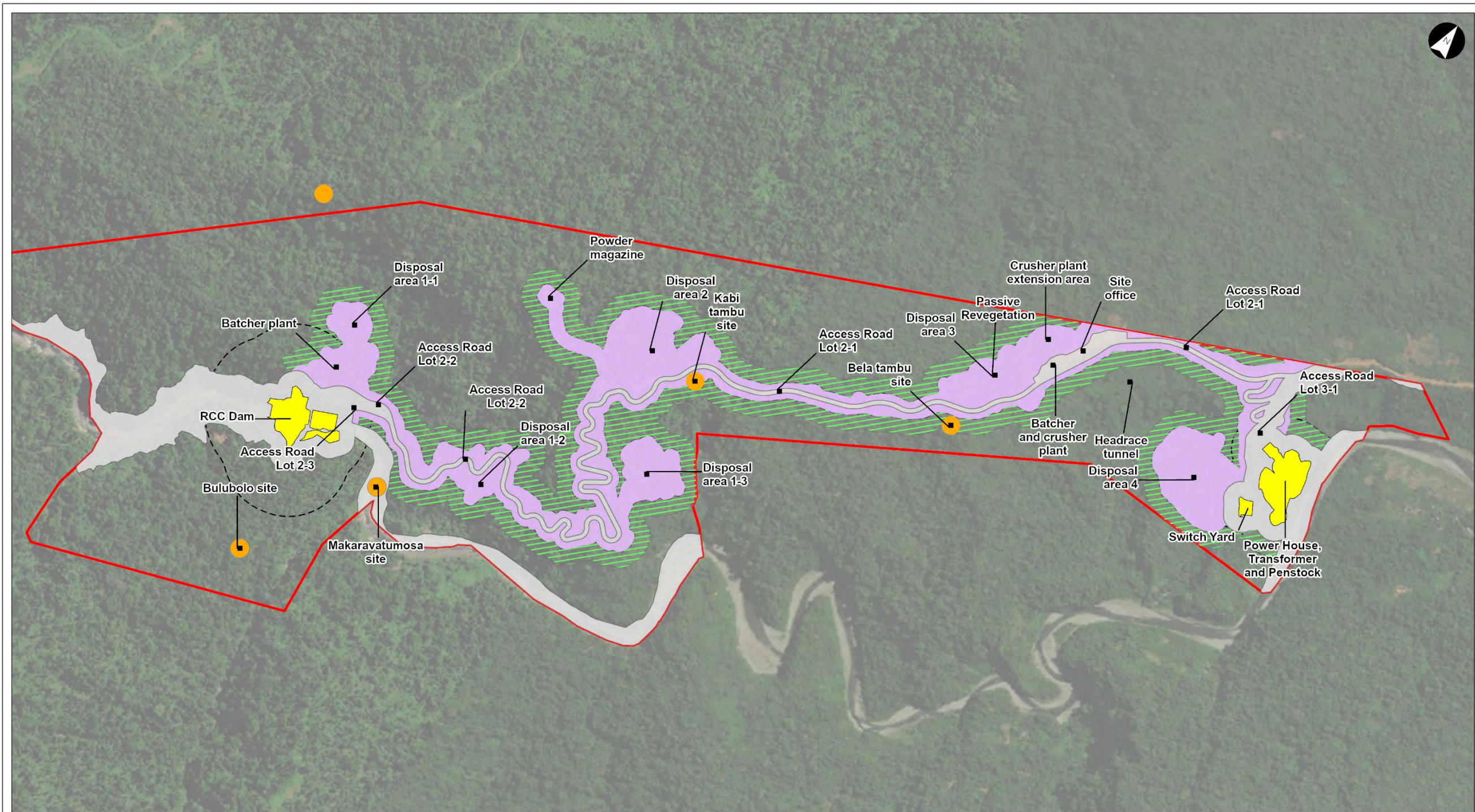
Scientific Name	Common Name	IUCN Status ⁹	Habitat Type ¹⁰	Known Distribution ¹¹	Restricted Range ^{12, 13}	Records from within the Project Area
<i>Uromys porculus</i>	Guadalcanal Rat	CR	UF	G	Endemic to Guadalcanal therefore extent of occurrence is assumed to be 5,302 km ²	No, unlikely to occur. Not recorded since 1888 (Oceania 2019),
<i>Pteralopex atrata</i>	Guadalcanal Monkey-faced Bat	EN	UF, GH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Likely to occur. Elevational limit <400 m and it has been recorded approx. 20 km from site 2016–2019) (Oceania 2019).
<i>Uromys rex</i>	King Rat	EN	UF	G	Yes, EOO is estimated to be ~5000 km ² .	Likely to occur. Signs recorded 6 km from site in 2015 (Oceania 2019).
						C-3 Forest Clearance Plan – Likely.
						Captured in 1987 and 1989 in Poha Valley, Poha River Catchment and Gold Ridge (Matepono River catchment). Matepono River catchment is immediately east of Tina River Catchment.
<i>Dobsonia inermis</i>	Solomons Bare-backed Fruit-bat	LC	UF, DF, GH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Likely to occur. Recorded approx. 20 km from site 2016–2019) (Oceania 2019).
<i>Pteropus woodfordi</i>	Dwarf Flying-fox	LC	UF, DF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Likely to occur. Recorded approx. 20 km from site 2016–2019) (Oceania 2019).
<i>Hipposideros dinops</i>	Fierce Leaf-nosed Bat	VU	UF	Indonesia, Papua New Guinea, Solomon Islands	DD; The Fierce Leaf-nosed Bat is not endemic to Solomon Islands as IUCN (2023) notes that this species is present on the islands of Bougainville (Papua New Guinea), Choiseul, New Georgia, Nggatokae Island, Santa Isabel, San Jorge, and Malaita (all in the Solomon Islands). This species extent of occurrence is unknown.	Likely (recorded approx. 20 km from site 2016–2019).
<i>Melonycteris fardoulisi</i>	Fardoulis' Blossom Bat	NT	UF, DF, GH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Likely to occur. Recorded approx. 20 km from site 2016–2019) (Oceania 2019).
Avifauna						
<i>Ceyx nigromaxilla</i>		LC	UF, DF	G		Recorded during ESIA Scoping Study at Res 3, Dam 4.

Scientific Name	Common Name	IUCN Status ⁹	Habitat Type ¹⁰	Known Distribution ¹¹	Restricted Range ^{12, 13}	Records from within the Project Area
	Guadalcanal Dwarf Kingfisher				Yes. Endemic to Guadalcanal therefore extent of occurrence is assumed to be 5,302 km ² .	Observed during C-3 Forest Clearance Plan.
<i>Coracina papuensis elegans</i>	White-bellied Cuckooshrike	LC	UF, DF, R, GH, FH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Recorded at TL4 and Kambi Tabu site during biodiversity survey. Call and flyover in vicinity of Lot 1 area during and recorded in Lot 2-2 and Lot 2-3 during pre-clearance surveys.
<i>Eurystomus orientalis solomonensis</i>	Oriental Dollarbird	LC	DD	SI	Sub-species is endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Cacomantis variolosus addendus</i>	Brush Cuckoo	LC	DD	SI	Sub-species is endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Centropus milo</i>	Buff-headed Coucal	LC	UF, DF, R, GH	SI	Yes, EOO is estimated to be 46,900 km ² .	Recorded during ESIA Scoping Study at TL3, TL4, TL5, Acc.1, PP1, Dam2 and at the power house site during Myknee Ecological Consulting's survey and recorded during pre-clearance surveys at the Magazine area, disposal area 2 and 3, Lot 2-2, Lot 2-3.
<i>Guadalcanaria inexpectata</i>	Guadalcanal Honeyeater	LC	UF (montane)	G	Yes, EOO is estimated to be 1,400 km ²	Recorded during pre-clearance surveys at Powder Magazine Area, DA-2 and 3, Lot 2-1 and Lot 2-3. Biodiversity element triggering KBA criteria.
<i>Myzomela melanocephala</i>	Black-headed Myzomela	LC	UF, GH	SI	Yes, EOO is estimated to be 10,200 km ² .	Recorded during ESIA scoping study at Dam2, Dam4, Upp.2. Observed during C-3 Forest Clearance Plan.
<i>Pachycephala implicata</i>	Guadalcanal Hooded-Whistler	LC	UF	G	Yes, EOO is estimated to be 930 km ²	Recorded during Myknee Ecological Consulting's survey at Reference Site. Observed during pre-clearance survey carried out by Hyundai in 2021.
<i>Pachycephala pectoralis cinnamomea</i>	Golden Whistler	LC		SI	Sub-species is endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Recorded during ESIA scoping study at PP2, Res.2, Res.4, Dam2.
<i>Hypotaenidia philippensis christophori</i>	Buff-banded Rail	LC	DD, FH, GH	SI	Sub-species is endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Recorded during the scoping survey at TL3. Observed by George Ledec downstream of Core Land September 2022 (World Bank email 2024).
<i>Hypotaenidia woodfordi</i>	Guadalcanal Rail	LC	UF, FH, GH	G	Yes, EOO is estimated to be 6500 km ² .	Observed during Entura 2011 biodiversity survey (TL1 and TL3) and ESIA scoping study (TL1 and TL3). Observed during preclearance surveys in Lot 2-1 and Lot 2-2.

Scientific Name	Common Name	IUCN Status ⁹	Habitat Type ¹⁰	Known Distribution ¹¹	Restricted Range ^{12, 13}	Records from within the Project Area
						Observed by George Ledec downstream of Core Land September 2022 (World Bank email 2024).
<i>Ninox jacquinoti granti</i>	Guadalcanal Boobook	NT	UF, DF	PNG (Bougainville), SI	Yes, EOO is estimated to be 6600 km ² .	Recorded during Myknee Ecological Consulting's survey at the Reference Site. Presence recorded during preclearance surveys at Powder Magazine Area , DA-2, DA-3, Lot 2-1 and Lot 2-3.
<i>Ducula brenchleyi</i>	Chestnut-bellied Imperial Pigeon	NT	UF, DF, R	SI	Yes, EOO is estimated to be 38,500 km ² .	No recorded occurrences within Project Area but is considered 'likely' to occur.
<i>Zosterops rendovae</i>	Grey-throated White-eye	LC	UF	PNG (Bougainville), SI	Yes, EOO is estimated to be 11,300 km ² .	No recorded occurrences in the Project Area but considered likely to occur.
Reptiles and Amphibians						
<i>Acutotyphlops infralabialis</i>	Red Blind Snake	DD	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Ramphotyphlops becki</i>	Beck's Blind Snake	DD	UF	G	Endemic to Guadalcanal therefore extent of occurrence is assumed to be 5,302 km ²	Not recorded during surveys.
<i>Cornufer bufoniformis</i>	Warty Webbed Frog	LC	UF, DF, R, W, GH	PNG (Bougainville), SI	Yes, EOO is estimated to be 28,226 km ² .	Recorded during Myknee's survey at Vurapokilo Stream. Call heard during pre-clearance surveys.
<i>Cornufer malukuna</i>	Malukuna Webbed Frog	LC	UF, DF, R, W	G	Yes, EOO is estimated to be 27,175 km ² .	Recorded during biodiversity surveys at Upp.2, Camp #1, Vurapokilo Stream.
<i>Cyrtodactylus biordinis</i>	Guadalcanal Bow-fingered Gecko	LC	UF	G	Yes, EOO is estimated to be 5,336 km ² .	Not recorded during surveys.
<i>Emoia flavigularis</i>	Yellow-throated Skink	LC	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Observed during pre-clearance surveys at Lot 2-2, Lot 2-3.
<i>Sphenomorphus bignelli</i>	-	LC	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Sphenomorphus concinnatus</i>	Elegant Forest Skink	LC	UF, DF, GH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.

Scientific Name	Common Name	IUCN Status ⁹	Habitat Type ¹⁰	Known Distribution ¹¹	Restricted Range ^{12, 13}	Records from within the Project Area
<i>Sphenomorphus cranei</i>	Crane's Skink	LC	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Tribolonotus schmidtii</i>	Schmidt's Crocodile Skink	LC	UF	G	Endemic to Guadalcanal therefore extent of occurrence is assumed to be 5,302 km ²	Recorded in the Powerhouse and tunnel area during pre-clearance surveys.
<i>Salomonelaps par</i>	Solomons Coral Snake (Solomons Red Krait)	LC	UF, GH	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Recorded in Lot 2-2, and Lot 2-3 during pre-clearance surveys.
<i>Hypsilurus macrolepis</i>	Solomons Tree Dragon	NT	UF, GH	SI	Species only known from Makira and associated islands and is likely a misidentification.	Recorded at Vurapokilo Stream during biodiversity surveys, however this is likely a misidentification, with reptile distribution in the Solomon Islands relatively well known.
<i>Cyrtodactylus salomonensis</i>	Solomons Bent-toed Gecko	NT	UF	SI	Yes, EOO is estimated to be 9,999 km ² .	Recorded at Vurapokilo Stream (upper area) during biodiversity surveys and recorded in Lot 2-2 and Lot 2-3 during pre-clearance surveys.
<i>Corucia zebrata</i>	Prehensile-tailed Skink (Solomon Island Prehensile-tailed Skink)	NT	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys.
<i>Loveridgelaps elapoides</i>	Solomon's Small-eyed Snake	VU	UF	SI	Endemic to Solomon Islands therefore the extent of occurrence assumed to be 28,400 km ² .	Not recorded during surveys but considered likely as per the C-3 Forest Clearance Plan.
<i>Cornufer myersi</i>	Myers Wrinkled Ground Frog	LC	UF	SI	Yes, EOO is estimated to be 4,300 km ² .	Not recorded during surveys.

ANNEX C: REVEGETATION PLANS



Revegetation - Planting Schedule Overview

Page 1 of 5

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_001m
Drawn By: VCS, Checked By: KH
Review By: KH
Rev: 3
Date: 2024-10-17



Legend

- Temporary Disturbance (Max. Clearance Area)
- Core Land
- Permanent Infrastructure Buffer (Operation Zone)
- Permanent Infrastructure
- Tambu Sites

Planting Zones

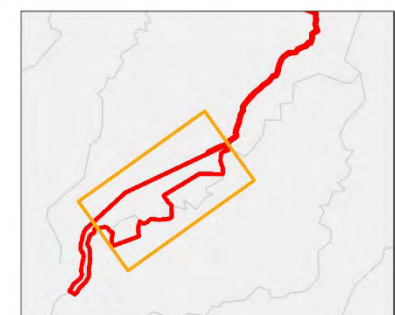
- Pioneer Planting
- Diversity Planting

Notes:

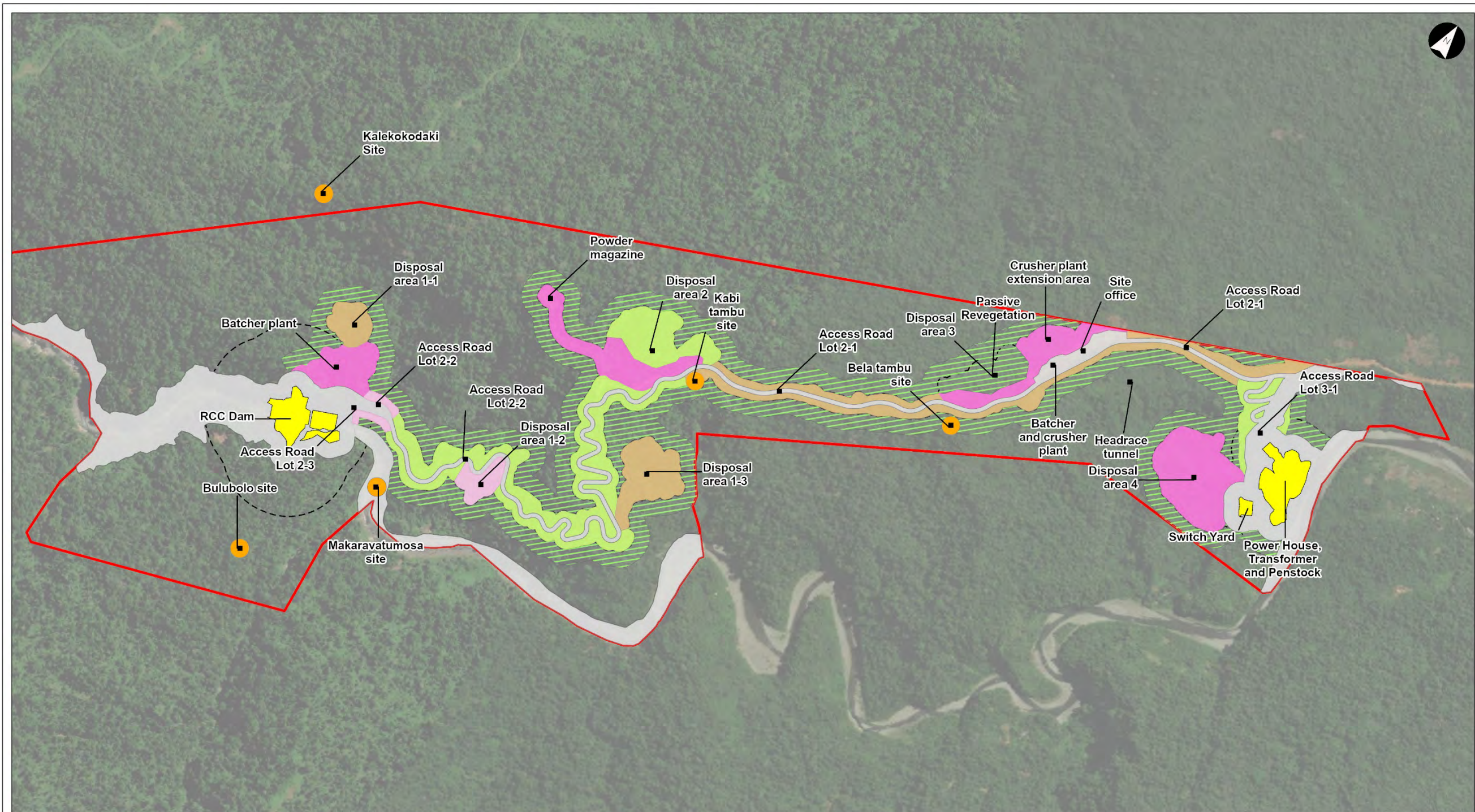
1. Map displayed in WGS 1984 UTM Zone 57S | Satellite imagery supplied by Esri World Imagery (February 2022)
2. The 'dry season' in the Solomon Islands is typically May to October, however is subject to climatic conditions.
3. The 'wet season' in the Solomon Islands is typically November to April, however is subject to climatic conditions.
4. The annual rainfall for the Solomon Islands is approximately 3000-5000mm.
5. Extension of planting/seeding may be applicable in the first few months of the wet season if rainfall conditions and predictions are tolerable.
6. It is recommended no planting/seeding to be installed after December to allow plants to establish and minimise plant/seed loss from anticipated rainfall events - subject to variance, contractor onsite to determine suitability.
7. Diversity planting may continue to be installed post 2028 by the community.
8. Refer to CAMP Report for planting techniques, cultivation and densities.
9. Refer to Revegetation Planting Maps for treatment identification.
10. This schedule is subject to earthwork completion. Do not plant/seed if areas are not finalised and are subject to disturbance from future works.

Scale at A3: 1:12,000

0 50 100 150 200
metres



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Revegetation - Planting Schedule Overview

Page 2 of 5

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_001m
Drawn By: VCS, Checked By: KH
Review By: KH
Rev: 3
Date: 2024-10-17



Legend

- Temporary Disturbance (Max. Clearance Area)
- Core Land
- Permanent Infrastructure Buffer (Operation Zone)
- Permanent Infrastructure
- Tambu Sites

Planting Schedule

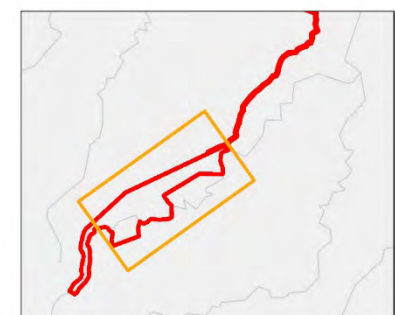
- 2025
- 2026
- 2027
- 2028
- Throughout (Construction/Operation)

Notes:

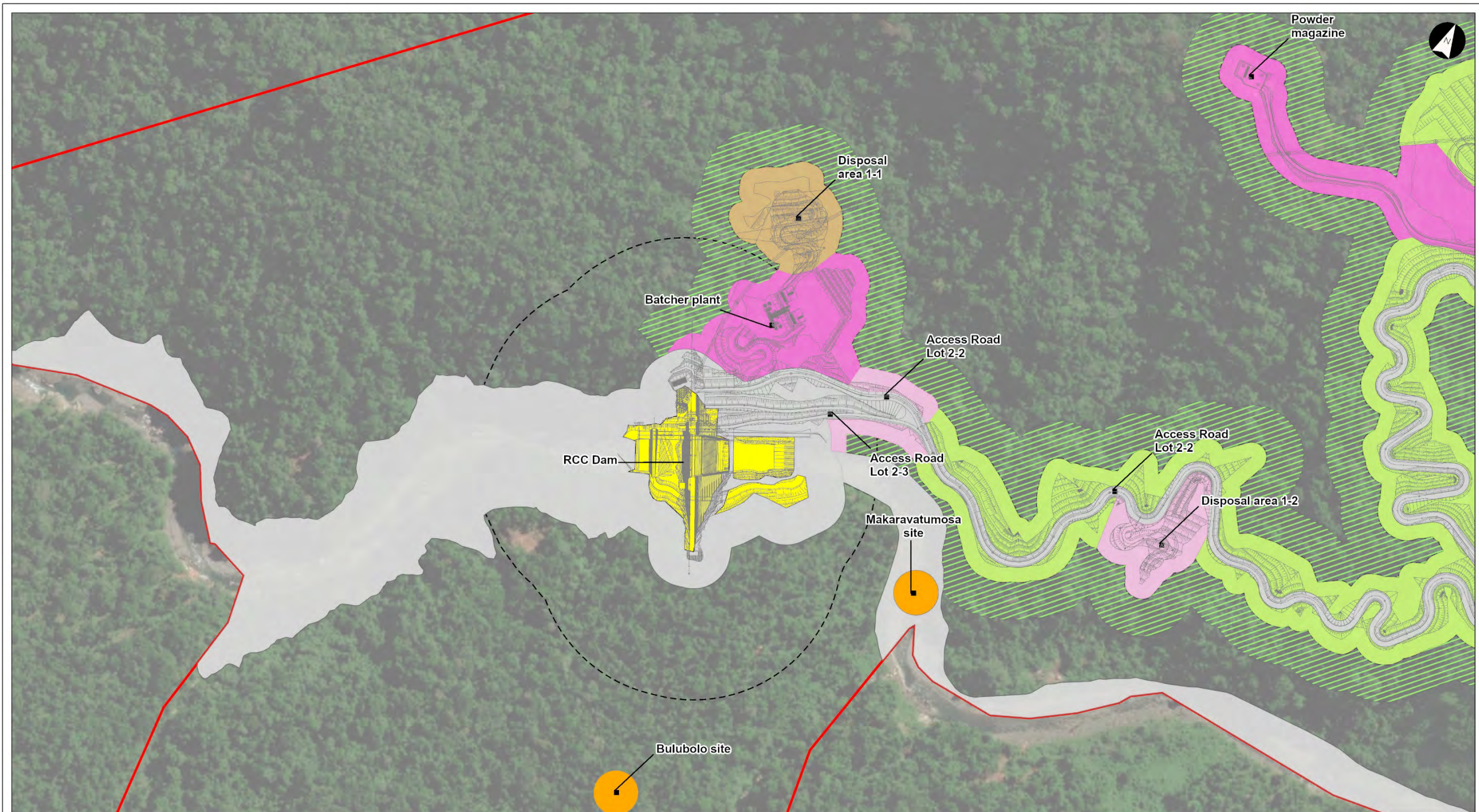
1. Map displayed in WGS 1984 UTM Zone 57S | Satellite imagery supplied by Esri World Imagery (February 2022)
2. The 'dry season' in the Solomon Islands is typically May to October, however is subject to climatic conditions.
3. The 'wet season' in the Solomon Islands is typically November to April, however is subject to climatic conditions.
4. The annual rainfall for the Solomon Islands is approximately 3000-5000mm.
5. Extension of planting/seeding may be applicable in the first few months of the wet season if rainfall conditions and predictions are tolerable.
6. It is recommended no planting/seeding to be installed after December to allow plants to establish and minimise plant/seed loss from anticipated rainfall events - subject to variance, contractor onsite to determine suitability.
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8. Refer to CAMP Report for planting techniques, cultivation and densities.
9. Refer to Revegetation Planting Maps for treatment identification.
10. This schedule is subject to earthwork completion. Do not plant/seed if areas are not finalised and are subject to disturbance from future works.

Scale at A3: 1:12,000

0 50 100 150 200
Metres



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Revegetation - Planting Schedule Page 3 of 5

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_001m
Drawn By: VCS Checked By: KT
Review By: KH
Rev: 2
Date: 2024-10-17



Legend

- Temporary Disturbance (Max. Clearance Area)
- Design Layout
- Core Land
- Permanent Infrastructure
- Permanent Infrastructure Buffer (Operation Zone)
- Tambu Sites

Planting Schedule

- 2025
- 2026
- 2027
- 2028
- Throughout (Construction/Operation)

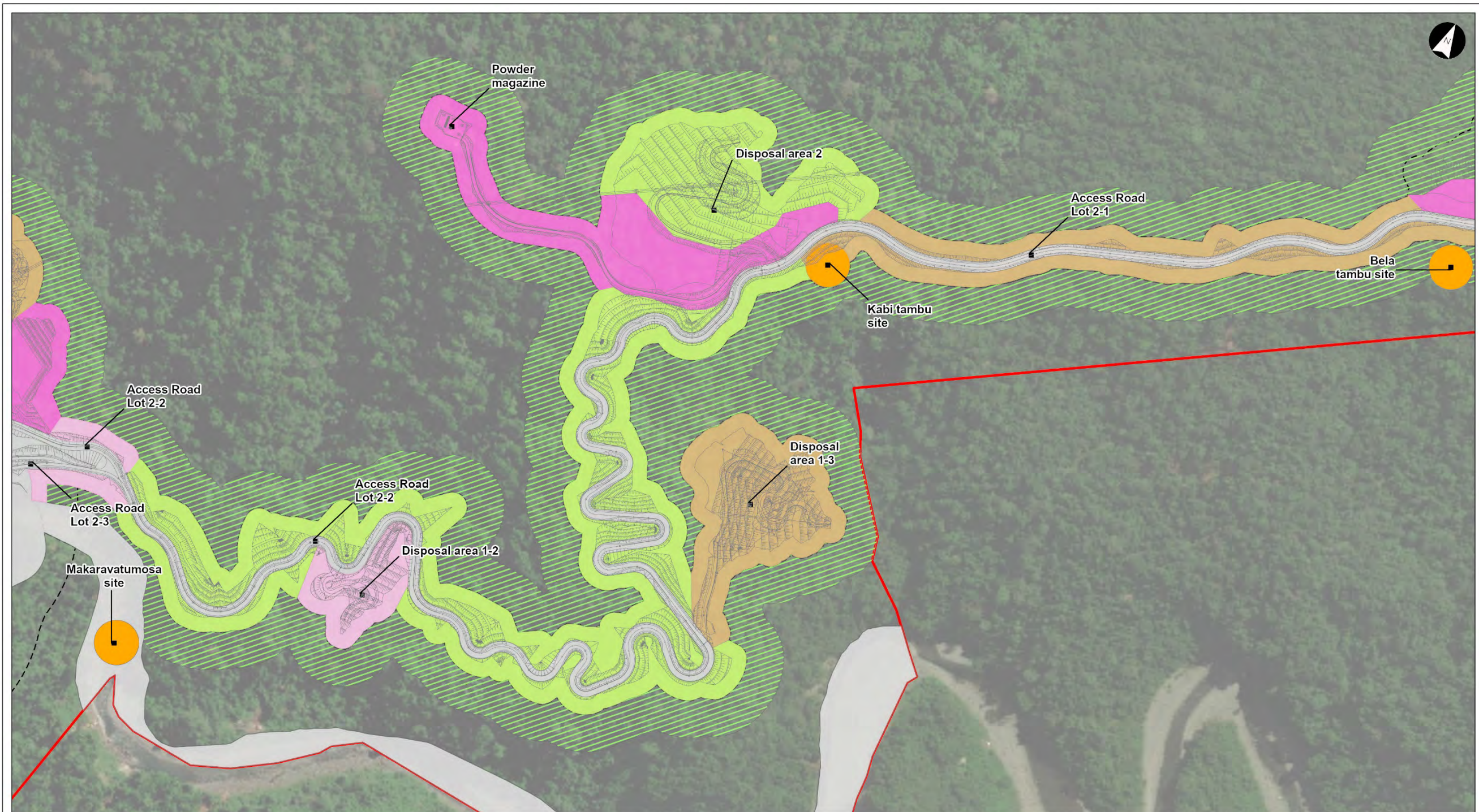
Notes:

- Map displayed in WGS 1984 UTM Zone 57S | Satellite imagery supplied by Esri World Imagery (February 2022)
- The 'dry season' in the Solomon Islands is typically May to October, however is subject to climatic conditions.
- The 'wet season' in the Solomon Islands is typically November to April, however is subject to climatic conditions.
- The annual rainfall for the Solomon Islands is approximately 3000-5000mm.
- Extension of planting/seeding may be applicable in the first few months of the wet season if rainfall conditions and predictions are tolerable.
- It is recommended no planting/seeding to be installed after December to allow plants to establish and minimise plant/seed loss from anticipated rainfall events - subject to variance, contractor onsite to determine suitability.
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Scale at A3: 1:5,000



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Revegetation - Planting Schedule

Page 4 of 5

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_001m
Drawn By: VCS Checked By: KT
Review By: KH
Rev: 2
Date: 2024-10-17



Legend

- Temporary Disturbance (Max. Clearance Area)
- Design Layout
- Core Land
- Permanent Infrastructure
- Permanent Infrastructure Buffer (Operation Zone)
- Tambu Sites

Planting Schedule

- 2025
- 2026
- 2027
- 2028
- Throughout (Construction/Operation)

Notes:

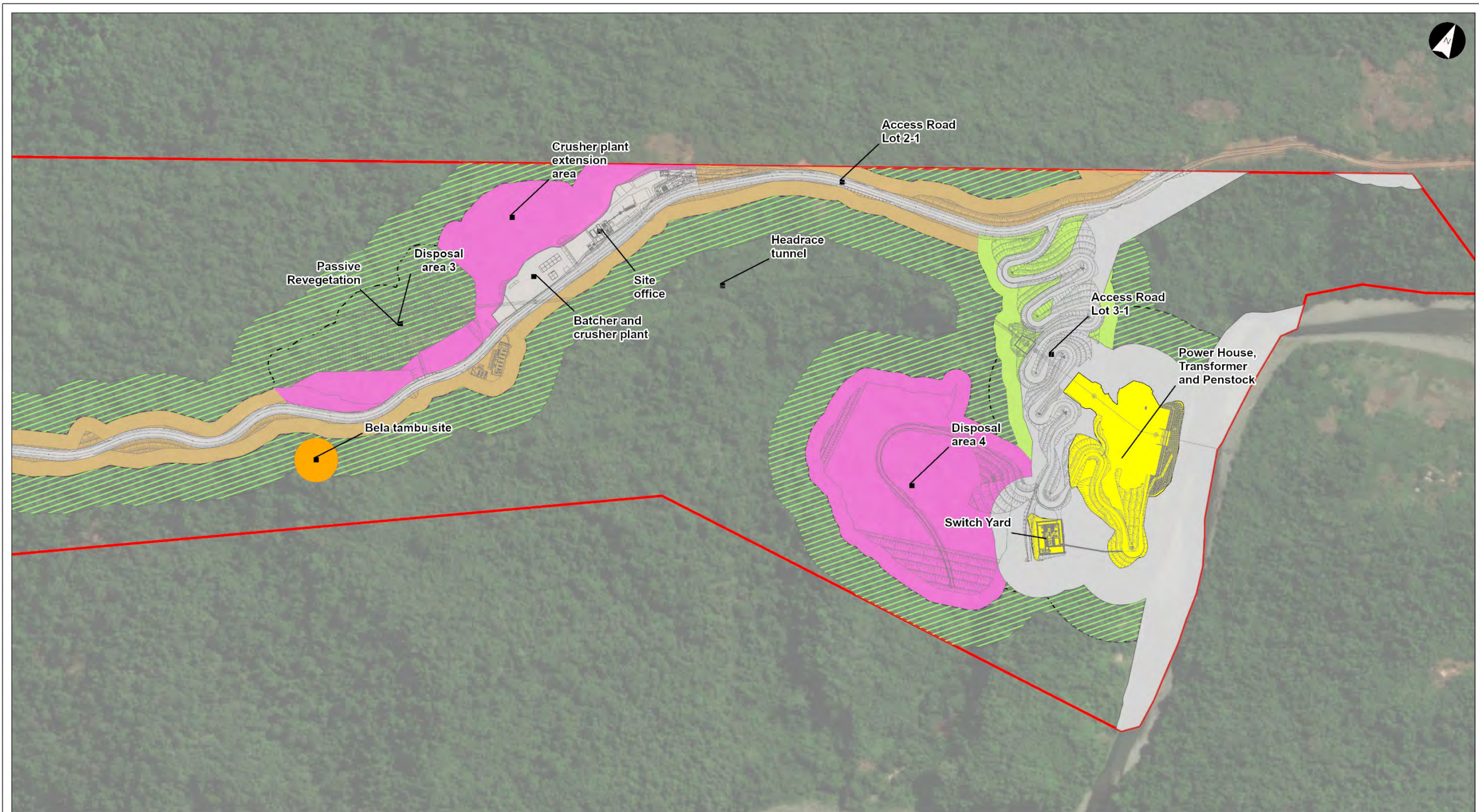
1. Map displayed in WGS 1984 UTM Zone 57S | Satellite imagery supplied by Esri World Imagery (February 2022)
2. The 'dry season' in the Solomon Islands is typically May to October, however is subject to climatic conditions.
3. The 'wet season' in the Solomon Islands is typically November to April, however is subject to climatic conditions.
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Scale at A3: 1:5,000

0 50 100 150 200 Metres



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Revegetation - Planting Schedule Page 5 of 5

Tina River Hydropower Project
Solomon Islands

Project Code: 310103253_001m
 Drawn By: VCS Checked By: KT
 Review By: KH
 Rev: 2
 Date: 2024-10-17



Legend

- Temporary Disturbance (Max. Clearance Area)
- Design Layout
- Core Land
- Permanent Infrastructure
- Permanent Infrastructure Buffer (Operation Zone)
- Tambu Sites

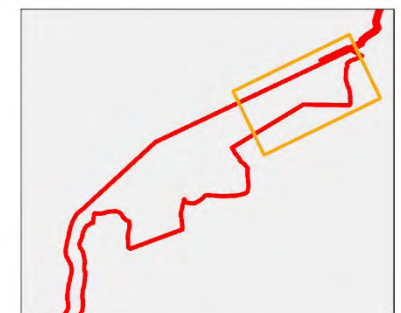
Planting Schedule

- 2025
- 2026
- 2027
- 2028
- Throughout (Construction/Operation)

Notes:

- Map displayed in WGS 1984 UTM Zone 57S | Satellite imagery supplied by Esri World Imagery (February 2022)
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- Diversity planting may continue to be installed post 2028 by the community.
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Scale at A3: 1:5,000



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ANNEX D: PLANT SPECIES LIST

Native and exotic flora recorded from the Project area and immediate surrounds 2017-2021
(Source: Modified from Stantec, 2023)

IUCN Status: VU – Vulnerable, NT – Near Threatened, LC – Least Concern, NE – Not Evaluated (IUCN 2024).

NATIVE SPECIES SUITABLE FOR USE IN REVEGETATION

Scientific Name	Common Name	IUCN Status
<i>Acacia auriculiformis</i>	Ear-leaf Acacia	LC
<i>Acalypha grandis</i>	Acalypha	LC
<i>Actinodaphne solomonensis</i>	Actinodaphne	CR
<i>Actinodaphne</i> sp.	-	NE
<i>Aglaia cucullata</i>	Amoora	NE
<i>Aglaia silvestris</i>	Aglaia	NT
<i>Albizia procera</i>	White sirs	LC
<i>Albizia</i> sp.	Albizzia, Paraserianthes	NE
<i>Alocasia macrorrhiza</i>	Wild Giant Taro	NE
<i>Alpinia novae-pommeraniae</i>	Wild Ginger	NE
<i>Alpinia oceanica</i>	Alpinia	NE
<i>Alpinia purpurata</i>	Red Ginger	NE
<i>Alpinia purpurata</i>	Ginger	NE
<i>Alpinia</i> spp.	Ginger Plant	NE
<i>Alpinia stapfiana</i>	Ginger	NE
<i>Alstonia scholaris</i>	Alstonia, Milky Pine	LC
<i>Alstonia spectabilis</i>	Alstonia	LC
<i>Areca macrocalyx</i>	Wild Betel Nut	LC
<i>Areca catechu</i>	Betle nut	NE
<i>Artocarpus altilis</i>	Bread Fruit	NE
<i>Artocarpus vrieseanus</i>	Wild Bread Fruit	NE
<i>Astronidium novae-georgiae</i>	Astronidium	NE
<i>Astronidium solomonensis</i>	Astronidium	NE
<i>Bambusa balcooa</i>	Yellow Bamboo	NE
<i>Bambusa blumeana</i>	Spiny Bamboo	NE
<i>Bambusa</i> sp.	Fi'l Kao	NE
<i>Barringtonia edulis</i>	Cut nut	NE
<i>Barringtonia procera</i>	Cut nut	NE
<i>Barringtonia</i> sp.	Wild Cut nut	NE
<i>Begonia solomonensis</i>	Begonia	NE
<i>Bombax ceiba</i>	Cotton Tree	LC
<i>Brachiaria mutica</i>	Para Grass	LC

Scientific Name	Common Name	IUCN Status
<i>Broussonetia papyrifera</i>	Paper Mulberry	LC
<i>Brownlowia argentata</i>	Brownlowia	NE
<i>Burckella obovata</i>	Burckella	LC
<i>Burckella</i> sp.	Burckella	NE
<i>Calamus aruensis</i>	Lawyer Cane, Rattan	NE
<i>Calamus vestitus</i>	Lawyer Cane, Rattan	NE
<i>Calamus vitiensis</i>	Lawyer Cane, Rattan	NE
<i>Calanthe longifolia</i>	Terrestrial orchid	NE
<i>Calophyllum neobudicum</i>	Calophyllum	LC
<i>Calophyllum peekelli</i>	Calophyllum	LC
<i>Calophyllum soulattri</i>	Calophyllum	LC
<i>Calophyllum vitiense</i> *	Damanu	LC
<i>Cananga odorata</i>	Ylang, Cananga	LC
<i>Canarium asperum</i>	Wild Ngali nut, Canarium	LC
<i>Canarium indicum</i>	Ngali Nut	LC
<i>Canarium salomonense</i>	Small Ngali nut, Canarium	NE
<i>Carica papaya</i>	Pawpaw, Papaya	NE
<i>Caryota rumphiana</i>	Caryota Palm	LC
<i>Causonis trifolia</i>	Cayratia	NE
<i>Cedrela odorata</i>	Spanish Cedar	VU
<i>Celtis latifolia</i>	Celtis	NE
<i>Celtis philippensis</i>	Celtis	LC
<i>Cerbera manghas</i>	Cerbera	LC
<i>Cheilocostus speciosus</i>	Crepe Ginger	LC
<i>Cinnamomum solomonense</i>	Cinammon	LC
<i>Citrus limon</i>	Bush lime	NE
<i>Clerodendrum buchananii</i>	Clerodendrum	NE
<i>Cocos nucifera</i>	Coconut	NE
<i>Colocasia esculenta</i>	Taro	LC
<i>Cominsia gigantea</i>	Cominsia	NE
<i>Commelina diffusa</i>	Climbing Dayflower	LC
<i>Commersonia bartramia</i>	Commersonia	LC
<i>Cordyline fruticosa</i>	Cordyline, Ti	LC
<i>Crinum asiaticum</i>	Crinum, lily	NE
<i>Cryptocarya medicinalis</i>	Cryptocarya	CR
<i>Cryptocarya</i> sp.	Cryptocarya	NE
<i>Cucurbita</i> sp.	Curcubita	NE
<i>Cyathocalyx petiolaris</i>	Cyathocalyx	NE
<i>Cycas revoluta</i>	Sago palm tree, ban shou	LC

Scientific Name	Common Name	IUCN Status
<i>Cycas seemannii</i>	Cycad, logologo	VU
<i>Cyrtosperma chamissonis</i>	Swamp Taro	NE
<i>Cyrtosperma johnstonii</i>	Wild Taro	NE
<i>Cyrtosperma johnstonii</i>	Wild Taro	NE
<i>Dendrocide inerme</i>	Poison or Stinging Tree	NE
<i>Dennstaedtia erecta</i>	Fern	NE
<i>Dennstaedtia sp.</i>	Dennstaedtia Fern	NE
<i>Dicranopteris linearis</i>	Gleichenia linearis fern	LC
<i>Dillenia ingens</i>	Giant-leaved Dillenia	NE
<i>Dioscorea alata</i>	Purple Yam	NE
<i>Dioscorea sp.</i>	Yam	NE
<i>Diplazium esculentum</i>	Edible fern	LC
<i>Donax canniformis</i>	Donax	NE
<i>Dracontomelon sp.</i>		NE
<i>Dysoxylum excelsum</i>	Dysox, Dysoxylum	NE
<i>Dysoxylum parasiticum</i>	Dysoxylum	NE
<i>Dysoxylum sp.</i>	Dysoxylum	NE
<i>Elaeis guineensis</i>	Oil Palm	LC
<i>Elaeocarpus angustifolius</i>	Elaeocarpus	LC
<i>Elaeocarpus sp.</i>	Elaeocarpus	NE
<i>Elatostema salomonense</i>	Elatostemon	NE
<i>Endospermum formicarum</i>	Bass Wood	NE
<i>Endospermum medullosum</i>	Whitewood	VU
<i>Erythrina sp.</i>	Erythrina	DD
<i>Euphorbia hirta</i>	Milky Weed, Asthma-plant	NE
<i>Euphorbia sp.</i>	-	NE
<i>Falcataria falcata</i>	Moluccan albizia	LC
<i>Ficus benjamina</i>	Ficus, Strangler Fig	LC
<i>Ficus bracteata</i>	Ficus, Fig tree	NE
<i>Ficus chrysochaete</i>	Ficus	NE
<i>Ficus copiosa</i>	Ficus	LC
<i>Ficus longibracteata</i>	Ficus, Fig	NE
<i>Ficus longifolia</i>	Ficus	NE
<i>Ficus septica</i>	Ficus	LC
<i>Ficus sp.</i>	Ficus	NE
<i>Ficus variegata</i>	Ficus	LC
<i>Ficus virgata</i>	Ficus, Fig	DD
<i>Ficus wassa</i>	Ficus	NE
<i>Finschia chloroxantha</i>	Finschia	LC

Scientific Name	Common Name	IUCN Status
<i>Flagellaria gigantea</i>	Flagellaria	NE
<i>Flueggea flexuosa</i>	Poumuli	LC
<i>Freycinetia solomonensis</i>	Climbing pandanus	NE
<i>Garcinia sessilis</i>	Heilala	LC
<i>Garcinia solomonensis</i>	Garcinia	NE
<i>Gironniera</i> sp.	Gironniera	NE
<i>Glochidion zeylanicum</i>	Glochidion	LC
<i>Gmelina moluccana</i>	Canoe wood, Gmelina	LC
<i>Grammatophyllum speciosum</i>	Giant Orchid	NE
<i>Gymnostoma papuana</i>	Casuarina	NE
<i>Haplolobus floribundus</i>	Haplolobus	LC
<i>Haplolobus</i> sp.	Haplolobus	NE
<i>Heliconia lanata</i>	Heliconia	NE
<i>Heliconia salomonensis</i>	Heliconia	NE
<i>Heritiera solomonensis</i>	Bush Heritiera	NE
<i>Hernandia nymphaeifolia</i>	Hernandia	LC
<i>Heterospathe minor</i>	Heterospathe palm	NE
<i>Heterospathe salomonense</i>	Heterospathe	NE
<i>Heterospathe salomonensis</i>	Heterospathe palm	NE
<i>Hibiscus tiliaceus</i>	Yellow Hibiscus	LC
<i>Homalanthus</i> sp.	Homalanthus	NE
<i>Homalanthus tatambense</i>	Homalanthus	NE
<i>Homalomena pendula</i>	Homalomena	NE
<i>Hornstedtia lycostoma</i>	Hornstedtia, Sweet Ginger	NE
<i>Hornstedtia scottiana</i>	Sweet Ginger	NE
<i>Hoya guppyi</i>	Hoya	NE
<i>Hydriastele macrospadix</i>	Tall Palm	NE
<i>Intsia bijuga</i>	Kwila, Iron Wood, Merbau	NT
<i>Ipomoea batatas</i>	Sweet Potato	NE
<i>Ipomoea illustris</i>	Ipomoea	NE
<i>Kleinhovia hospita</i>	Kleinhovia	LC
<i>Leea indica</i>	Leea	LC
<i>Leucosyke salomonensis</i>	Leucosyke	LC
<i>Licuala lauterbachii</i>	Licuala palm	NE
<i>Litsea purglabra</i>	Litsea	NE
<i>Ludwigia octovalvis</i>	Primrose Willow	LC
<i>Lygodium palmatum</i>	Lygodium Fern	NE
<i>Macaranga dioica</i>	Macaranga	LC
<i>Macaranga polyadenia</i>	Macaranga	LC

Scientific Name	Common Name	IUCN Status
<i>Macaranga similis</i>	Macaranga	LC
<i>Macaranga tanarius</i>	Macaranga	LC
<i>Mangifera indica</i>	Planchonella, Wild Mango	NE
<i>Manihot esculenta</i>	Cassava, Tapioka	NE
<i>Medinilla cauliflora</i>	Medinilla	NE
<i>Melastoma affine</i>	Melastoma (Blue Tongue)	NE
<i>Melicope elleryana</i>	Euodia	LC
<i>Melicope solomonensis</i>	Euodia	NT
<i>Melicope sp.</i>	Melicope	NE
<i>Merremia pacifica</i>	Merremia	NE
<i>Merremia peltata</i>	Merremia	NE
<i>Metroxylon salomonense</i>	Sago palm, Sagu	NE
<i>Mikania micrantha</i>	Mile-a-minute	NE
<i>Mimosa invisa</i>	Sensitive Grass	NE
<i>Mimosa pudica</i>	Sensitive Grass	LC
<i>Morinda citrifolia</i>	Wild Noni tree	NE
<i>Mucuna bennettii</i>	Mucuna (New Guinea Creeper)	LC
<i>Mucana sp.</i>	Legume	NE
<i>Musa acuminata</i>	Red Dacca (Wild Banana)	LC
<i>Musa sapientum</i>	Banana	NE
<i>Musa spp.</i>	Banana tree	NE
<i>Mussaenda cylindrocarpa</i>	Mussaenda	NE
<i>Myristica fatua</i>	Myristica	LC
<i>Myrmecodia tuberoa</i>	Ant Plant	NE
<i>Nastus obtusus</i>	Bamboo, Green Bamboo	NE
<i>Nastus racembambose</i>	Climbing Bamboo	NE
<i>Neonauclea orientalis</i>	Nauclea	NE
<i>Nephrolepis sp.</i>	Nephrolepis	LC
<i>Nephrolepis biserrata</i>	Fish tail Fern	NE
<i>Nephrolepis hirsutula</i>	Fish tail Fern	NE
<i>Nothofagus sp.</i>		LC
<i>Osmoxylon novoguineense</i>	Boerlagiodendron	LC
<i>Osmoxylon sp.</i>		NE
<i>Palaquium firmum</i>	Pometia, Taun, Pencil Cedar	LC
<i>Pandanus compressus</i>	Pandanus	NE
<i>Pandanus sp.</i>	Pandanus	NE
<i>Paraserianthis falcata</i>	Albizia	NE
<i>Parinari glaberrima</i>	Tita Tree	NE
<i>Parinari noda</i>	Parinari	NE

Scientific Name	Common Name	IUCN Status
<i>Paspalum conjugatum</i>	T-grass	LC
<i>Pennisetum polystachyon</i>	Mission Grass	NE
<i>Pennisetum purpureus</i>	Napier Grass	LC
<i>Pennisetum sp.</i>	Pennisetum	NE
<i>Pholidota sp.</i>	Orchid	NE
<i>Phragmites karka</i>	Fi'I Rade	LC
<i>Phreatia sp.</i>	Orchid	NE
<i>Phyllanthus reticulatus</i>	Phyllanthus	LC
<i>Physokentia insolita</i>	Physokentia	NE
<i>Pimeleodendron amboinicum</i>	Pimeleodendron	NE
<i>Piper betle</i>	Piper	NE
<i>Piper wichmanii</i>	Piper	NE
<i>Pipturus argenteus</i>	Pipturus	LC
<i>Planchonella firma</i>	Planchonella	LC
<i>Planchonella thyrsoides</i>	Planchonella	NT
<i>Pleomele angustifolia</i>	Pleomele	NE
<i>Plerandra solomonensis</i>	Plerandra	NE
<i>Polyscias guilfoylei</i>	Polyscias	NE
<i>Polyscias sp.</i>	Polyscias	NE
<i>Pometia pinnata</i>	Pometia, Taun (Dawan)	LC
<i>Premna corymbosa</i>	Premna	NE
<i>Psidium guajava</i>	Guava Tree	LC
<i>Pterocarpus indicus</i>	Rose wood	EN
<i>Ptychosperma salomonense</i>	Ptychosperma palm	NE
<i>Pueraria lobata</i>	Legume Cover crop	NE
<i>Pueraria sp.</i>	Pueraria	NE
<i>Pullea sp.</i>	Pullea	NE
<i>Rhopaloblaste elegans</i>	Rhopaloblaste palm	NE
<i>Rhus taitensis</i>	Rhus	NE
<i>Rubus moluccanus</i>	Wild Raspberry	NE
<i>Samanea saman</i>	Rain Tree	LC
<i>Saurauia purgans</i>	Saurauia	NE
<i>Schizaea sp.</i>	-	NE
<i>Schizomeria serrata</i>	Schizomeria	LC
<i>Schizostachyum serrata</i>	Schizomeria	NE
<i>Schizostachyum tessellatum</i>	Bamboo	NE
<i>Schleinitzia novo-guineensis</i>	Schleinitzia	LC
<i>Schleinitzia sp.</i>	Schleinitzia	NE
<i>Scindapsus salomoneinsis</i>	Scindapsus	NE

Scientific Name	Common Name	IUCN Status
<i>Selaginella rechingeri</i>	Selaginella	NE
<i>Semecarpus forsterii</i>	Semecarpus	LC
<i>Senna alata</i>	Cassia	LC
<i>Sida rhombifolia</i>	Sida	NE
<i>Sloanea insularis</i>	Sloanea	NT
<i>Solanum</i> sp.	Potatoe, Kumara	NE
<i>Solanum torvum</i>	Egg Plant, Devil's Fig	NE
<i>Spathodea campanulata</i>	African Tulip (African Tulip Tree)	LC
<i>Spathoglottis plicata</i>	Ground Orchid	NE
<i>Spathoglottis</i> sp.	Ground Orchid	NE
<i>Sphaeropteris brackenridgei</i>	Cyathea, Tree Fern	LC
<i>Sphaeropteris</i> spp.	Cyathea	NE
<i>Sphaeropteris vittata</i>	Tree Fern	LC
<i>Starchytapheta jamaicensis</i>	Blue Rat's tail	NE
<i>Starchytapheta</i> spp.	Blue Rat's tail	NE
<i>Stenochlaena palustris</i>	Climbing Fern	NE
<i>Sterculia conwentzii</i>	Sterculia	LC
<i>Sterculia parkinsonii</i>	Sterculia	LC
<i>Sterculia</i> sp.	Sterculia	NE
<i>Strobilanthes reptans</i>	Hemigraphis	NE
<i>Syzygium nemorale</i>	Syzygium	NE
<i>Syzygium buettneriana</i>	Syzygium	NE
<i>Syzygium myriadena</i>	Syzygium	NE
<i>Syzygium onesima</i>	Syzygium, Wild Local Apple	NE
<i>Syzygium onesimum</i>	Syzygium	LC
<i>Syzygium</i> sp.	Syzygium	NE
<i>Syzygium tierneyana</i>	Syzygium	NE
<i>Tapeinochilus solomonense</i> <i>Tapeinochilus</i>	Ginger	NE
<i>Terminalia brassii</i>	Brown Terminalia, Swamp Oak	NT
<i>Terminalia calamansanai</i>	Yellow Terminalia	LC
<i>Terminalia complanata</i>	Terminalia	LC
<i>Terminalia sepicana</i>	Terminalia	LC
<i>Terminalia</i> sp.	Terminalia	NE
<i>Themeda triandra</i>	Kangaroo Grass	NE
<i>Theobroma cacao</i>	Cocoa	NE
<i>Timonius timon</i>	Timonius	LC
<i>Trema orientale</i>	Trema (Andraregina)	LC
<i>Trichospermum psilocladum</i>	Trichospermum	LC
<i>Uncaria appendiculata</i>	Water Rope	NE

Scientific Name	Common Name	IUCN Status
<i>Utania racemosa</i>	Fagraea	NE
<i>Trema orientalis</i>	Ear-leaf Acacia	LC
<i>Trichospermum psilocladum</i>	Acalypha	LC
<i>Uncaria lanosa appendiculata</i>	Actinodaphne	CR
<i>Utania racemosa</i>		NE
<i>Viola odorata</i>	Amoora	NE
<i>Vitex cofassus</i>	Aglaia	LC
<i>Vitex negundo</i>	White siris	LC
<i>Wollastonia biflora</i>	Albizzia, Paraserianthes	NE
<i>Zygogynum haplopus</i>	Wild Giant Taro	NE

*May be an incorrect species identification. *Calophyllum vitiense* is endemic to Fiji.

ANNEX E: BIODIVERSITY ADVISORY GROUP TERMS OF REFERENCE

Tina River Hydropower Development Project

Biodiversity Action Group

Terms of Reference

February 2024

Introduction

The Tina River Hydro Development Project (TRHDP or "Project") is a national project of Solomon Islands, managed by a dedicated Project Office (PO) under the Ministry of Mines, Energy and Rural Electrification (MMERE). The TRHDP is part of a broader initiative called the Solomon Islands Sustainable Energy Project and has as its objective the provision of more affordable and reliable renewable electricity to the capital. The project is expected to be the first major hydroelectric project in Solomon Islands.

As part of the TRHPDP's commitments to responsible development, to minimize and mitigate impacts as well as offset residual impacts, the project has developed a Biodiversity Management Plan (BMP), associated offset strategies¹⁴, and a Core Land Conservation Area Management Plan (CAMP). These documents present a series of action plans and strategies to achieve the project's biodiversity objectives.

One of the items identified as an action is the establishment of a Biodiversity Action Group (BAG). The BAG key function is an advisory role to provide unbiased views and advice to the project in relation to biodiversity mitigation, management, restoration and conservation.

This TOR outlines the framework of the BAG as well as its expected functions, roles and responsibilities.

Purpose

The BAG is a technical expert group providing oversight of biodiversity mitigation, management, restoration and conservation activities of the TRHDP. The purpose of the BAG is to review and provide advice to the Project company and SIG to improve the success of biodiversity management, and to assess progress towards biodiversity aims and objectives.

Specifically, the BAG provides oversight of the implementation of the following documents:

- Biodiversity Management Plan (BMP) and related plans for construction and operation.
- Core Land Conservation Area Management Plan (CAMP).
- Terrestrial Offset Management Strategy (TOMS), with actions reflected in the CAMP.
- Aquatic Offset Management Strategy and related plans and/or biodiversity management activities to be developed by SIG for the upper Tina River catchment.

¹⁴ Terrestrial Offset Management Strategy and Aquatic Offset Management Strategy.
Tina River Hydropower Development Project: Core Land Conservation Area Management Plan

Responsibilities

The BAG shall provide expert advice on biodiversity management and monitoring activities relevant to the Project, including assessing progress towards net gain in biodiversity. This includes:

- Convening at least six-monthly to review biodiversity management and monitoring activities and associated data. More frequent, quarterly, meetings shall be held at times of peak activity related to biodiversity planning and management.
- Reviewing methodologies, data, and reports regarding biodiversity management and monitoring activities completed and proposed.
- Reviewing annual budgets, personnel, and resources to ensure that the Project provides adequate resourcing for biodiversity management activities.
- Assessing progress towards agreed biodiversity aims, objectives and KPIs.
- Promoting local livelihoods, traditional and scientific knowledge.
- Facilitating information sharing and coordination of conservation efforts locally and internationally.

The BAG will act as a Management Committee for the Core Land Conservation Area, providing technical review and oversight. Outside of Core Land the BAG will provide advice to SIG on biodiversity activities of relevance to the project, such as in the Tina River upper catchment.

Membership

Members of the BAG include (but are not limited to) the key stakeholders in Figure 1 below and Attachment 1.

The BAG shall be chaired by THL as Project owner. The BAG members shall comprise representatives from SIG, landowners, local and international biodiversity experts. Participation by SIG and landowners is optional, while all other members are required to attend.

The membership of the BAG can be expanded if additional technical capability is needed, subject to prior approval of other BAG members. Nominated personnel from each organisation may change through the course of the Project but should be kept as consistent as possible.

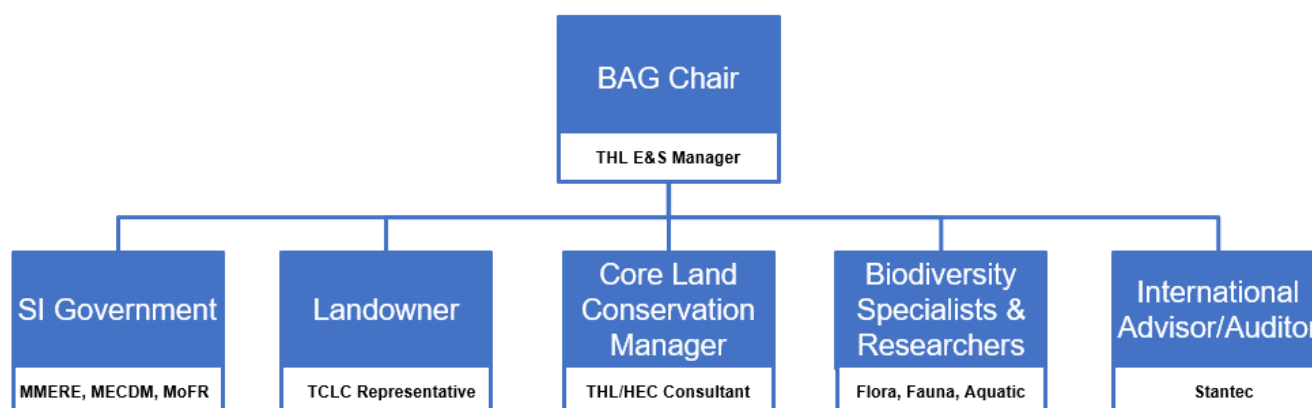


Figure 1: BAG structure and attendees

BAG Meetings

The THL E&S Manager (or other THL nominee) is the BAG Chair, responsible for convening meetings, collating any reports, organising speakers and presentations prior to the meeting, taking and distributing minutes. Alternatively, some tasks can be delegated to other BAG member(s), with prior agreement. It is anticipated that BAG meetings shall be no longer than 2 hours duration.

- 1) BAG meetings shall be held in-person and virtually (if required) every 6 months, or more frequently (every 3 months) if required at times of peak activity of relevance to biodiversity.
- 2) The Chair shall schedule meetings well in advance, ideally at the meeting prior, with reminders sent out one month in advance. Dates and times of meetings shall be scheduled to enable maximum attendance, with awareness of different time zones if applicable.
- 3) The Chair shall preside over the meeting, and communicate meeting details, venue, agenda, and other relevant information, and take minutes.
- 4) The date, time and agenda for the next meeting shall be discussed and agreed at the end of the previous meeting.

Funding

Independent experts involved in BAG meetings shall be funded by THL via a pre-agreed allowance. Independent experts shall have a written contract with THL to ensure that expectations and remuneration are mutually agreed.

Attachment 1: Members of BAG Committee (current as of March 2025)

Personnel are subject to change.

Organisation		Position	Name	Notes
SIG	MMERE	Project Office E&S Safeguards Manager	Mr. Sahibzada Tanzeel Ahmed	
	MECDM	Chief Conservation Officer	Ms. Agnetha Vave-Karamui	Invitation also extended to MoFR as optional attendee
Owner	THL	E&S Manager	Dr. Amal Krishna Saha	BAG Chair
Contractor	HEC ¹	Conservation Manager	TBC (vacant)	HEC E&S Assistant Manager while vacant
Landowner	TCLC	Secretary to TCLC	Mr. Richard Bapo	-
Biodiversity Specialists / Researchers	Consultant	Botanist	Mr. Myknee Sirikolo	Myknee Ecological Consulting
	TBC	Fauna (bird/mammal) expert	TBC	-
	Consultant	Aquatic ecologist	Mr. David Boseto	Ecological Solutions
International Advisor	Stantec	E&S Safeguards Lead	Ms. Kristy Harrison	Auditor

1. Conservation Manager role to be transferred to THL at COD.