greencorp

25
12

CRITICAL HABITAT ASSESSMENT AND HABITAT MAPPING REPORT

Laleia Solar Independent Power Producer Project

Document Information

Document title	Critical Habitat Assessment and Habitat Mapping Report
Client organization	EDF/ITOCHU
Client contacts	Nao Kajiyama kajiyama-n@itochu.co.jp; Christophe RICHOU <christophe.richou@edf-re.fr>
Project manager	Dr Karlheinz Spitz
Project number	2025-TL-03

Revision History

*Revision **02** submitted 12/122025*

*Revision **01** submitted 22/09/2025*

Revision description	Incorporating comments received by IFC		
Prepared by	Bakhtiar Aji, Bagus Chandra, Indy Maqdisa		*11/12/2025*
Approved by	Dr Karlheinz Spitz	This is a digitally scanned signature. The author has given its use for this particular document. The original document is held on file.	*11/12/2025*
Distributed to	EDF/ITOCHU		*12/12/2025*

Notification of Confidentiality

This document and the information in it are provided in confidence for the sole purpose of the Critical Habitat Assessment and Habitat Mapping Report and may not be disclosed to any third party or used for any other purpose without the express written permission of EDF Renewables & Itochu Corporation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 Background

The Government of Timor-Leste, through EDTL-EP, is advancing the development of the Laleia Solar Independent Power Producer (IPP) Project. In line with IFC Performance Standard 6 (PS6) and ADB Safeguard Policy Statement (SPS), a Critical Habitat Assessment (CHA) was prepared to evaluate the biodiversity values of the project area and its surroundings. The assessment establishes a baseline of habitats and species, determines whether Critical Habitat thresholds are triggered, and proposes measures to avoid, minimize, or mitigate biodiversity impacts.

2 Methodology

The CHA applied a multi-step methodology consistent with good international practice.

Habitat Mapping

Habitat mapping was carried out using Sentinel-2 satellite imagery (January–August 2025), Google Earh imageries, and interpretation verified through field surveys. Manual digitization was selected to reduce classification errors, particularly between visually similar habitats such as savanna and rangeland. Coral reef and seagrass habitats were obtained from the geomorphic zonation and benthic habitat data of the Allen Coral Atlas (ACA) with a 5-meter resolution (satellite imagery January 2018 - January 2021). Habitat classification (Table 2.1, Appendix 1) followed Trainor et al. (2007) classification scheme, with adjustments to local ecological conditions.

Table 2-1 Habitat Classification

No.	Habitat Class	Ecosystem	Habitat Type
1	Tropical Forest	**Terrestrial**	**Natural** Areas dominated by native species where ecological functions and species composition remain largely intact.
2	Woodland		
3	Mangrove		
4	Savanna		
5	Inland Waterbody		
5	Coastal Area (beach)		
6	Marine Waters	**Marine**	
7	Coral Reef		
8	Seagrass Beds		
9	Rangeland	**Terrestrial**	**Modified** Areas substantially altered by human activity, typically dominated by non-native plants or domestic animals.
10	Agricultural Land		
11	Plantation		
12	Urban Area		
13	Pond		

Ecologically Appropriate Area of Analysis

The Ecologically Appropriate Area of Analysis (EAAA) was delineated to capture both direct and indirect project effects. This included the project footprint, adjacent coastal areas, nearshore marine ecosystems, and surrounding uplands. Secondary data sources included IBAT, IUCN Red List, BirdLife International, GBIF, and national legislation (Table 2-2; Appendix 2).

Table 2-2 Datasets Used in Biodiversity Desk Assessment

Dataset	Primary Source(s)
Species proximity (globally threatened and range-restricted species)	IBAT
Global Biodiversity Hotspots	Conservation International; IBAT
Terrestrial Ecoregions	WWF
World Heritage Sites (natural values)	UNESCO World Heritage Centre
Key Biodiversity Areas (KBAs)	IBAT; KBA Partnership
Endemic Bird Areas	BirdLife International; IBAT
World Database on Protected Areas (WDPA)	UNEP-WCMC; IBAT
Threatened Species Status	IUCN Red List
Species occurrence records	GBIF (Global Biodiversity Information Facility)
Important Bird Areas (IBAs)	BirdLife International; IBAT
Distribution of marine ecosystems (turtles, coral reefs, seagrass, mangroves)	UNEP; Allen Coral Atlas

The EAAA boundaries were defined based on the project's Area of Influence and by considering the ecological functions of habitats relevant to potential trigger species, such as roosting sites, feeding grounds, and other key habitat features. The delineation approach follows the High Conservation Value Resource Network (HCVRN) guidance, applying a buffer of approximately 5 km around the project area to represent the potential zone of indirect project impacts. (Figure 2-1).

Targeted Field Verification

Targeted field surveys focused on avifauna, reptiles, small mammals, and vegetation (Appendix 3).

Stakeholder Engagement

Consultations with government agencies (Ministry of Agriculture and Fisheries, Department of Biodiversity, Department of Forest Conservation) and NGOs (Conservation International, Blue Ventures, Haburas) informed the assessment and validated findings (Section 4).

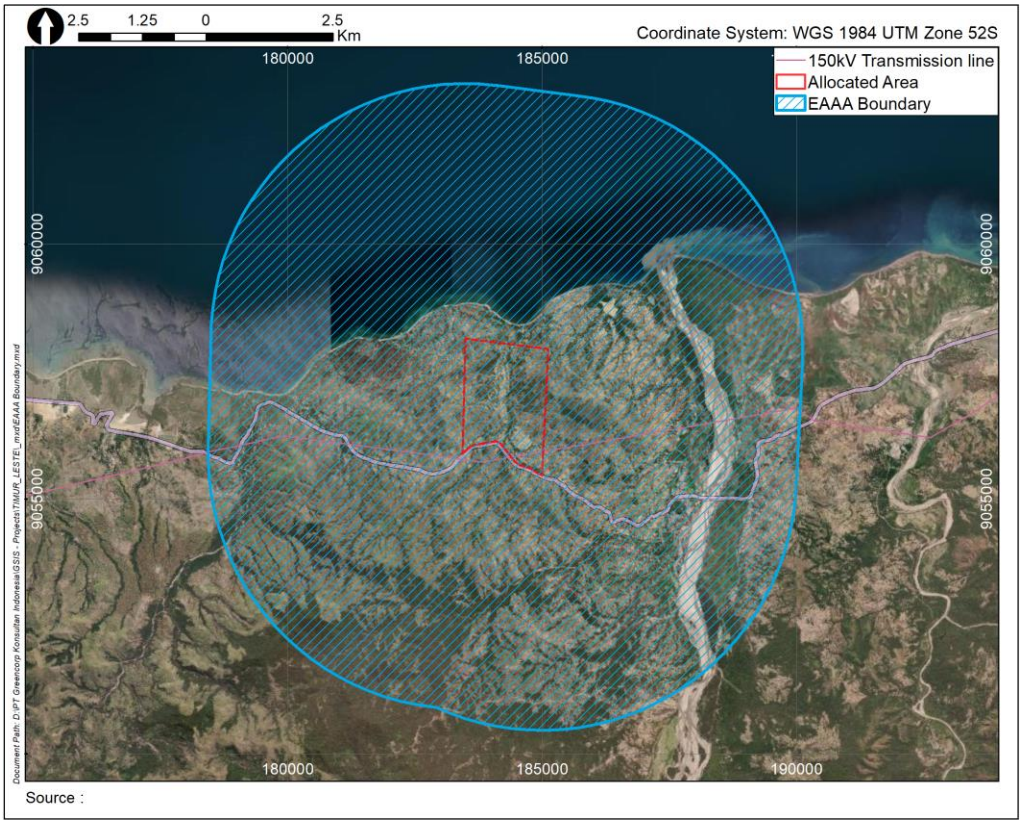


Figure 2.1 Delineation of Ecological Appropriate Area of Analysis

3 Habitat Mapping Analysis

The allocated project area of 350 ha comprises about 242 ha of Natural Habitat and about 108 ha of Modified Habitat. Within the wider EAAA (12,231 ha), Natural Habitat dominates with an area of 10,378 ha, rather than Modified Habitat which only covers 1,853 ha. Natural habitats identified include tropical forest, woodland, savanna, mangroves, water body, coastal area, seagrass beds, and coral reef. Meanwhile Modified habitats include rangelands, agricultural land, and urban area (エラー! 参照元が見つかりません。). Generally, Modified Habitat refers to areas that have been substantially altered by human activities and are now predominantly characterized by non-native species or intensive land uses. In contrast, Natural Habitat is defined as areas composed of viable assemblages of plant and/or animal species of largely native origin, where ecological functions and species composition remain primarily intact and have not been significantly modified by human intervention.

Field verification confirmed that the actual project site within the allocated area (flood plain) is predominantly rangeland used for communal grazing (**Figure 3.2**). Tamarind trees (*Tamarindus indica*), while not native, are common and locally valued for fruit and shade. Despite the dry conditions, several water bodies remain inundated, particularly within the mangroves located north to the project site, which serves as a potential habitat for waterbirds. The coastal zone

located north of the project site also contains fringing reef, seagrass beds, and is occasionally used for fishing, driftwood collection, and seaweed harvesting. Meanwhile, south of the project site consists of savanna-covered hills, transitioning into tropical forest further to the south.

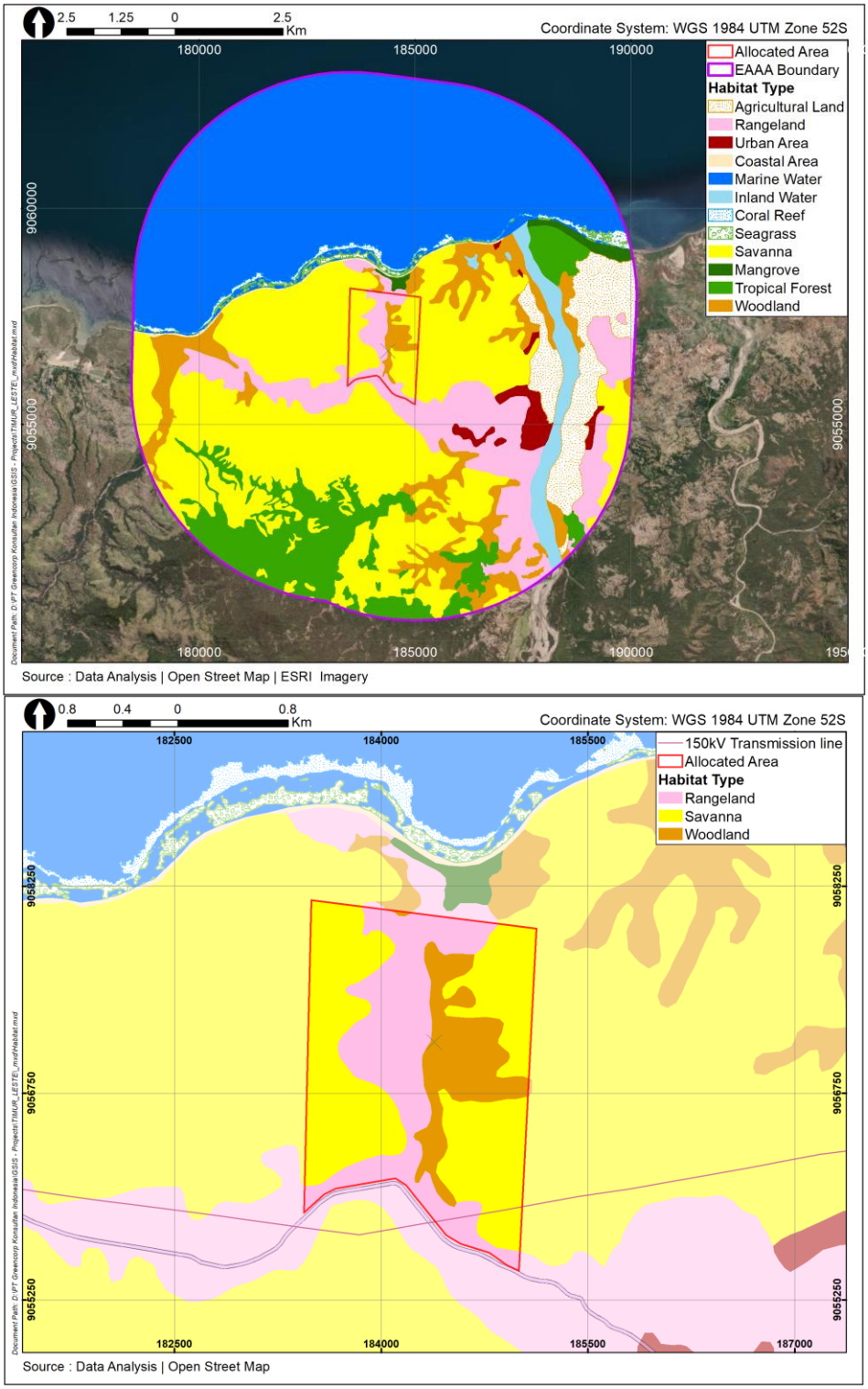


Figure 3.1 Habitat Mapping of The EAAA (above) and Allocated Project Area (below)

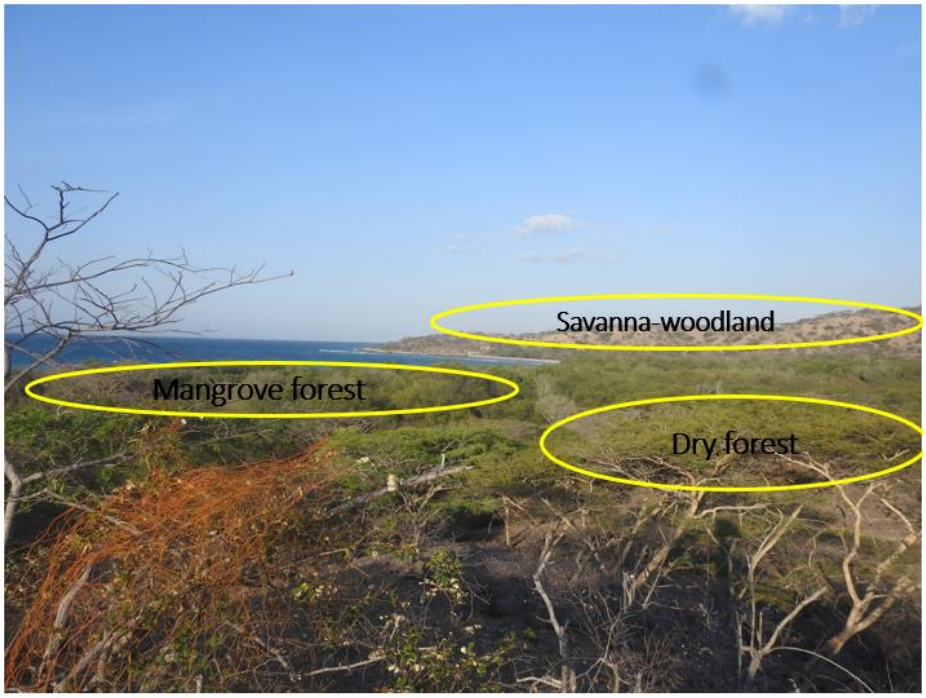


Figure 3.2 Natural Habitat Illustration on the Surrounding Project Landscape

4 Stakeholder Consultation

Consultations with government agencies emphasized uncertainties around protected area boundaries and the need for clear demarcation in the Lamsanak region. Authorities highlighted ongoing pressures from hunting parrots and deer, and exploitation of turtles and crocodiles. NGOs confirmed active efforts to establish Marine Protected Areas (MPAs) in Manatuto and stressed the importance of community involvement in coastal management. Residents expressed concern over restricted access to grazing land, firewood, and tamarind trees, and requested continued access to the beach. For Minutes of Meetings see Table 4-1.

Table 4-1 Minutes of Meetings

Participant (Name & Institution)	Minutes of Meeting (MoM)
Rui dos Reis Pires Department of Biodiversity, Ministry of Tourism	Clarified that the Lamsanak Protected Area has not yet been officially designated; boundary demarcation is needed (authority for this process rests with the Department of Forest Conservation under the Ministry of Agriculture and Fisheries). Species-level protection is under Decree No. 6/2020, with the Department responsible for preservation, sustainable use, and research. NGOs (CI, Blue Ventures, Haburas) support biodiversity programs, but illegal hunting of parrots, deer, and turtle exploitation remains common.

Participant (Name & Institution)	Minutes of Meeting (MoM)
Pedro Pinto Department of Forest Conservation, Ministry of Agriculture and Fisheries	The Lamsanak Protected Area primarily focuses on aquatic conservation, with its management under the Department of Fisheries, including boundary determination. While its main emphasis is on marine ecosystems, aquatic protected areas may also include buffer zones that extend into terrestrial areas, particularly where wetlands are present. Confirmed Lamsanak Protected Area is managed primarily by the Department of Fisheries, though species protection falls under Forest Conservation. Emphasized legal frameworks: Decree No. 5/2016 (Protected Area System), Decree No. 6/2020 (Biodiversity Protection), Law No. 14/2017 (Forestry Regime). Noted that ~80 bird species are legally protected, including 35 endemics. Highlighted need for formal boundary demarcation and compensation if overlaps occur. Legal mechanism for temporary forest land use remains in draft form, with current regulations governed by Law No. 14 of 2017.
Anselmo Amaral Conservation International	Explained Conservation International (CI)'s focus on community-based coastal and marine resource management. In Manatuto, CI is working on Marine Protected Area (MPA) development, including zoning for protection and sustainable use. Activities emphasize coral reefs, seagrass, and mangroves. Terrestrial activities remain limited. CI works with communities on awareness, management, and participatory planning. Conservation is implemented through community-based stewardship, alongside active participation in consultations and village-level facilitation related to Tara Bandhu, a customary regulation governing the conservation of flora, fauna, and the environment. In Manatuto, Tara Bandhu is still at the consultation stage with village leaders. One of the key species targeted for protection within the MPA is the sea turtle. Although turtle hunting for consumption still occurs, its intensity is lower than in the past. CI has not yet released data on sea turtle landings along the Manatuto coastline, as the monitoring program is still in its early stages and reporting has not begun. Community members have also reported sightings of dugongs around Manatuto, though not in numbers large enough to form groups. CI has also established Community Conservation Groups (CCGs) as the frontline implementers of its programs at the local level. In Manatuto, the CCG consists of community members from various villages, ethnic groups,

Participant (Name & Institution)	Minutes of Meeting (MoM)
	and livelihoods. CI's focus on the CCGs is to expand program implementation and community capacity building. Nearly 90% of CI's programs are extensions of government initiatives.

5 Critical Habitat Assessment

The CHA applied PS6 criteria systematically (Table 5.1). Candidate species were first identified through the Integrated Biodiversity Assessment Tool (IBAT) and cross-referenced with previous biodiversity studies and IUCN Red List assessments. Species considered included those classified as Critically Endangered (CR) or Endangered (EN), as well as restricted-range, endemic, and migratory or congregatory species. in detailed, assessment of critical habitat species candidate is presented on Appendix 4.

Under **Criterion 1** (CR/EN species), a total of 42 species were assessed, and none were found to qualify or meet the thresholds to trigger Critical Habitat within the EAAA.

For **Criterion 2** (Endemic/Restricted-range species), total of 15 candidate species were identified through screening and literature review. None of these species meet the thresholds to qualify as Critical Habitat trigger species. Field observations and available data indicate that local population levels for all assessed species fall below the IFC PS6 thresholds, and the project area does not support globally significant concentrations.

Criterion 3 (Migratory/Congregatory species), there is evidence that the coastal area may serve as potential nesting habitat for marine turtles, including the Green Turtle and the Hawksbill Turtle. Although the EAAA does not meet the thresholds for Critical Habitat for these species, continued monitoring is recommended given their conservation importance and the low number of records to date.

Criterion 4 (Unique ecosystems) - Fringing coral reefs and seagrass beds occur offshore of the project site and are recognized as sensitive ecosystems. However, they are limited in extent and do not represent ≥5% of the global extent of any ecosystem type that would qualify as Critically Endangered (CR) or Endangered (EN) under the IUCN Red List of Ecosystems. The Ecologically Appropriate Area of Analysis (EAAA) has not been assessed as a highly threatened ecosystem, and the project footprint itself lies predominantly within modified habitats.

Criterion 5 (Evolutionary processes) - Although no specific physical features within the project footprint were identified as directly associated with evolutionary processes, the broader EAAA lies within the Wallacea biogeographic zone, a globally recognized center of endemism shaped by complex geological history. Several endemic species recorded in the area illustrate this evolutionary significance. On this basis, Criterion 5 is considered to be triggered at the regional scale. However, within the project footprint itself, habitats are largely modified and the contribution to maintaining these processes is limited. Careful management of endemic species

is therefore recommended, but the project is not expected to result in significant adverse impacts on evolutionary processes at the regional level.

Table 5-1 IFC PS6 Criteria and Thresholds for Determining Critical Habitat

Criterion	Thresholds
Criterion 1 Critically Endangered (CR) and Endangered (EN) Species	Areas supporting ≥0.5% of the global population and ≥5 reproductive units of a CR or EN species. Areas supporting globally important concentrations of a Vulnerable (VU) species, where loss would lead to uplisting to EN or CR. Areas with important concentrations of nationally or regionally listed EN/CR species.
Criterion 2 Endemic and Restricted-Range Species	Areas supporting ≥10% of the global population of a species with a restricted range (<50,000 km²).
Criterion 3 Migratory and Congregatory Species	Areas supporting ≥1% of the global population of a migratory or congregatory species. Sites sustaining species concentrations that meet Ramsar or BirdLife thresholds (e.g., >20,000 waterbirds or >10,000 pairs of seabirds).
Criterion 4 Highly Threatened or Unique Ecosystems	Areas representing ≥5% of the global extent of an ecosystem type classified as Critically Endangered (CR) or Endangered (EN) by IUCN. Other ecosystems of high priority for conservation, even if not yet formally assessed.
Criterion 5 Key Evolutionary Processes	Areas maintaining processes essential for speciation, genetic exchange, population viability, or climate refugia. Determination is based on expert judgment, scientific literature, or ecological modelling.

6 Impact Assessment

The Critical Habitat Assessment evaluated the potential impacts of the project on biodiversity within the project footprint and the wider Ecologically Appropriate Area of Analysis (EAAA). Impacts were assessed against receptor sensitivity and the magnitude of predicted change, following IFC PS6 guidance. Four primary impact pathways were considered: habitat loss, habitat fragmentation, bird mortality, and habitat degradation.

Habitat Loss

The project will result in the permanent conversion of approximately 100 ha of Modified Habitat, consisting primarily of communal rangeland and scrubland interspersed with tamarind trees. These habitats are already subject to long-term grazing and fuelwood collection and are of reduced ecological integrity compared to natural systems. **No intact Natural Habitat types of conservation significance will be directly lost within the project footprint**. However, ecological features of local value—particularly tamarind trees, seasonal ponds, and grazing resources—require management attention to address community and ecological linkages.

Habitat Fragmentation

Perimeter fencing around the solar arrays has the potential to restrict terrestrial fauna movement, particularly for small mammals and reptiles, and to alter traditional patterns of livestock grazing. While the project area itself supports a relatively depauperate fauna assemblage, fragmentation effects could be felt at the local level if not mitigated. Wildlife-friendly fencing and the establishment of designated access routes for community livestock movements will be necessary to minimize these effects.

Bird Mortality

The risk of bird collisions with solar infrastructure is generally low due to the low height of panels. However, seasonal ponds at the northern and southern ends of the site may attract waterbirds, including migratory species. While surveys to date recorded only low numbers, monitoring is recommended during both wet and dry seasons to determine whether collision risk or displacement effects could become significant. The design should integrate pond retention and management measures to support waterbird use while minimizing risks.

Habitat Degradation

Potential degradation pathways include increased erosion and dust, altered surface drainage, and sediment delivery to the downstream coastal zone. These processes could affect adjacent sensitive ecosystems, particularly seagrass beds and fringing coral reefs located approximately 200 m from the project footprint. Construction-phase activities (land clearing, road works, drainage channel excavation) are the most likely sources of such impacts. The project's drainage system should also be designed to avoid terminating a hard-lined concrete channel directly on an unconsolidated beach.

Artificial Lighting - A key degradation pathway associated with the project is artificial night lighting from security infrastructure and operations. The project footprint lies close to the coastal zone, where Green and Hawksbill Turtles are known to occur and may nest. Both species are highly sensitive to light disturbance during nocturnal activities, particularly nesting and hatchling orientation. Artificial lighting can disorient adults, deter nesting, and significantly increase hatchling mortality by drawing them inland instead of toward the sea.

Comparative evidence from other solar projects highlights the scale of this risk. At the Likupang Solar Power Plant (North Sulawesi), baseline radiance of 2.15 nW/cm²·sr increased to 8.85 nW/cm²·sr between 2019 and 2024, representing a fourfold increase in night-sky brightness. Although the impact area was localized, exposure was continuous and long-term, leading to a medium magnitude of predicted impact.

For the Laleia Solar IPP, the coastal setting means that artificial light emissions could directly affect turtle nesting beaches and associated marine habitats within a few hundred meters of the project

boundary. The sensitivity of these receptors is considered high, and even modest increases in radiance may degrade habitat quality.

Mitigation Measures

Mitigation measures include maintaining wildlife-friendly fencing, preserving and integrating ponds into drainage design, implementing erosion and sediment control at the outfall, and monitoring seasonal bird use. As for lightening, mitigation will require strict lighting controls, including: (1) use of downward-facing, shielded luminaires to reduce light spill. (2) minimization of perimeter and security lighting to essential safety requirements; (3) adoption of low-wavelength (amber or red spectrum) lighting where feasible, which is less disruptive to turtles; and (4) regular monitoring of radiance levels at the site boundary and adjacent beach areas to confirm effectiveness.

7 Conclusion

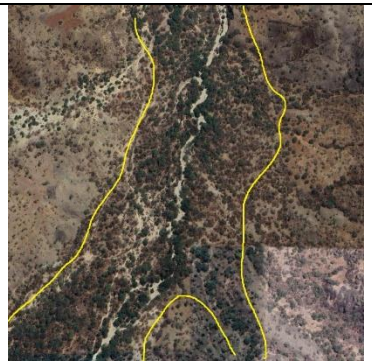
The Critical Habitat Assessment confirms that the EAAA does not meet any of the Critical Habitat thresholds under IFC PS6. The project footprint is situated within Modified Habitat, with only small patches of Natural Habitat present. Species of global conservation significance have a low likelihood of occurring within the site, and no populations meeting IFC PS6 thresholds were identified.

Accordingly, while the project itself does not overlap with Critical Habitat, it is situated near biodiversity values of high conservation importance. Indirect and cumulative impacts — including artificial lighting, erosion and sedimentation, drainage outfall design, and disturbance to turtle nesting beaches — must therefore be carefully managed. With adequate mitigation, monitoring, and adaptive management, residual impacts are expected to remain localized and consistent with IFC PS6 requirements.

Approximately 40 ha of the allocated project area (terrestrial portion) overlaps with the proposed Lamsanak Protected Area (as per World Database on Protected Areas or WDPA). However, the actual project footprint does not overlap, and this Protected Area has not yet been formally designated, and its boundaries remain under discussion. The authority for boundary demarcation lies with the Department of Forest Conservation under the Ministry of Agriculture and Fisheries. Because Lamsanak is primarily designated as a marine protected area, with terrestrial lands acting largely as buffer zones, the overlap in land is unlikely to pose significant ecological conflict — i.e., the terrestrial overlap does not incorporate intact critical habitat, and ecological values are low. Nevertheless, the overlap of the allocated project area is a regulatory and administrative issue that requires resolution. Practically, the government may need to adjust or rezone the terrestrial buffer zone boundaries to exclude the development footprint or formalize the Protected Area boundary so that no conflict remains. Alternatively, the government may wish to reduce the allocated project area by 40 ha to avoid overlap.

APPENDIX 1 IDENTIFICATION OF HABITAT TYPE (Trainor et al. 2007)

Habitat Type	Habitat Class	Definition	Visual Representation by GE Imagery	Field verification	Key Parameter Identification
1. Woodland	Natural	Woodland is categorized as monsoonal dry forest, which is typical of the Timor Island landscape. In the EAAA, it is found along the coastline up to hilly montane areas. What distinguishes this habitat from savanna is that woodland has more tree vegetation, therefore higher canopy density. It sometimes has no clear boundary with the savanna to the north. There are several patches where woodland is concentrated along riverbanks, forming riparian habitats. Riparian habitats are characterized by a	 *Southern part*  *Northern part*	 	According to Trainor et al. (2007), this type of habitat are quite extensive along the northern coast, including stands of *Eucalyptus alba*, palms, acacias, and open forest of *Eucalyptus urophylla* in the hills. Much of this vegetation is likely formed by the conversion of tropical forest into agricultural land, but in some areas it occurs naturally in regions with lower rainfall and different soils. Trees such as *Tamarindus indica*, *Schleichera oleosa*, and *Dillenia pentagyna* may be common in some zones. Several key identifications of this habitat are: 1. Sparse canopy density 2. Smoother texture 3. Light green color 4. Smaller canopy diameter 5. Some canopies have brown color due to leave-shedding in dry season

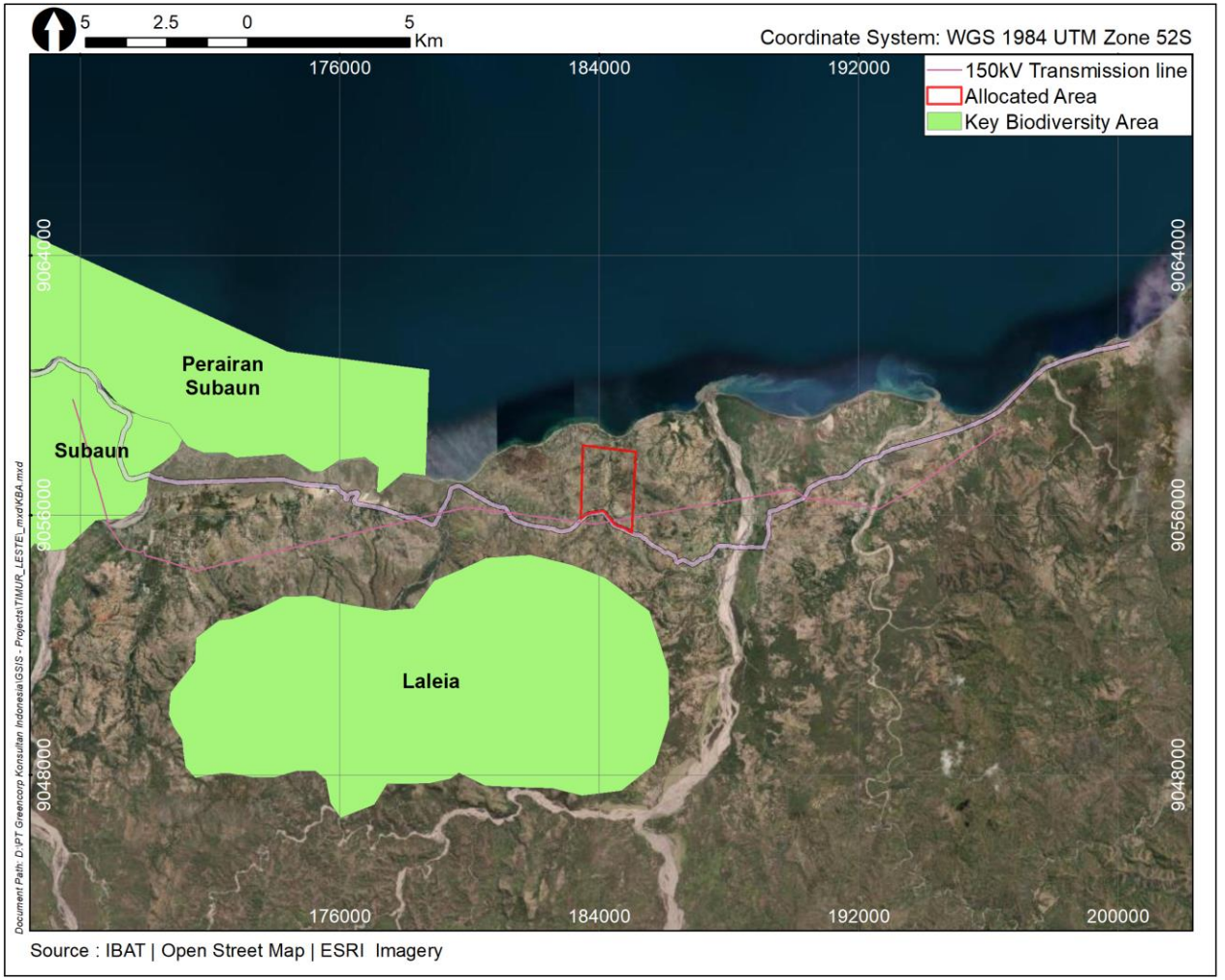
Habitat Type	Habitat Class	Definition	Visual Representation by GE Imagery	Field verification	Key Parameter Identification
		darker tone with open canopy structure and relatively homogeneous vegetation.	 *Riparian woodland (within the yellow line)*		
2. Mangrove	Natural	This habitat is categorized as forests that grow in low-elevation coastal areas and are influenced by tidal fluctuations. In the EAAA, it is located in the western-most part, particularly in the Hera area. Mangrove vegetation is also present within the project area; however, its characteristics differ from typical mangrove forests. Based on field surveys, the		 	Trainor et al. (2007), defines mangroves as part of wetland habitat. Wetland areas are extremely limited in Timor-Leste, but a good variety of types still exist, including freshwater lagoons, saltwater lagoons, rivers and streams, marshes and ponds, estuaries, sandbanks and mudflats in tidal zones, beaches, mangroves, and coral reefs. Mangroves are extensive in the Hera–Metinaro area, 12–35 km east of Dili. Several key identifications of this habitat are: 1. Close canopy density 2. Grainier texture compared to woodland, but smoother compared to tropical forest

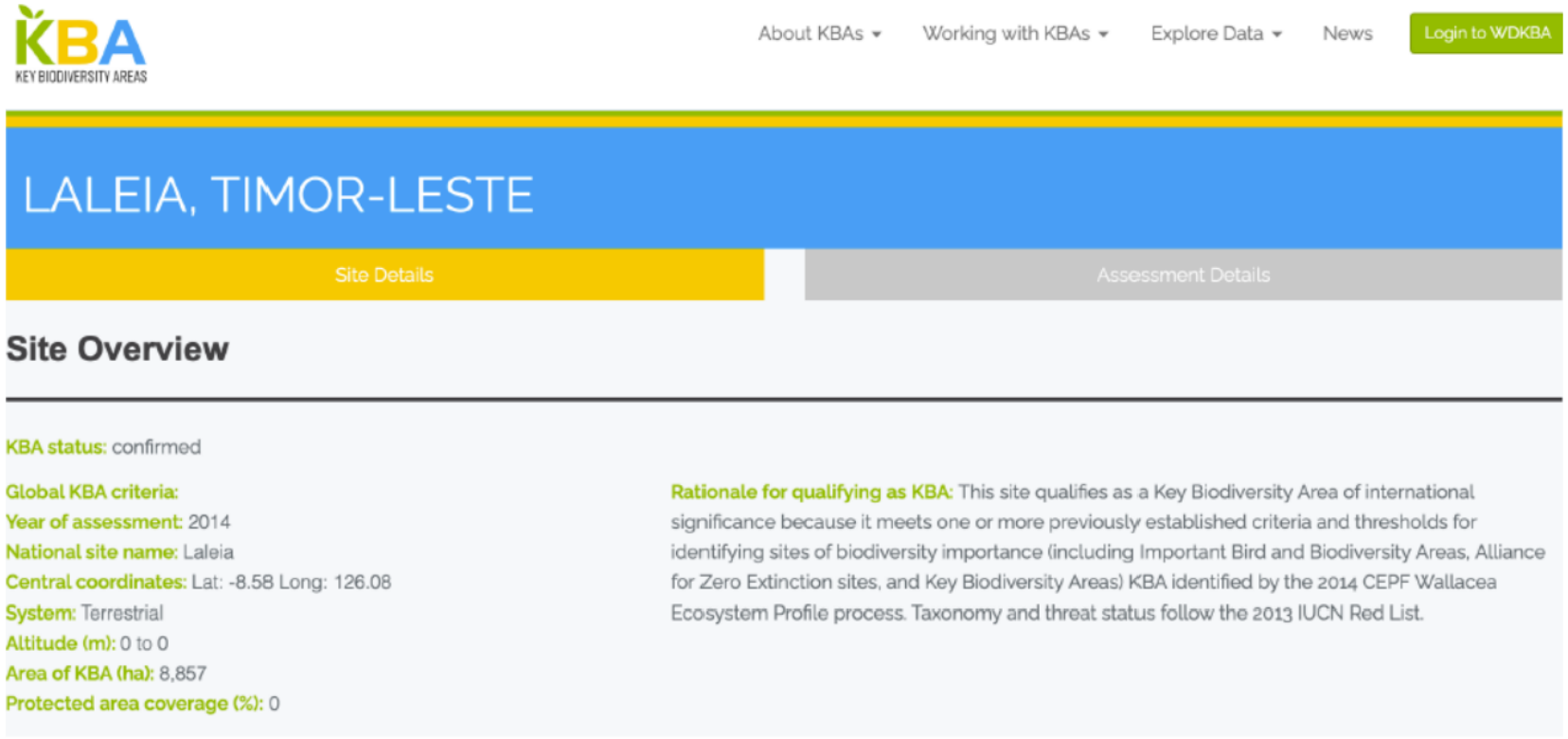
Habitat Type	Habitat Class	Definition	Visual Representation by GE Imagery	Field verification	Key Parameter Identification
		mangroves in the project area are drier and have a more open, sparse canopy.			3. Dark green color 4. Smaller canopy diameter 5. Highly associated with coastline
3. Savanna	Natural	Open areas dominated by shrubs and sparse stands of trees. They are commonly found in the northern part of the EAAA, which consists of flat to hilly terrain. What distinguishes this habitat from rangeland is that it is not intensively modified by human activities. During field surveys, savannas were found to have very low to almost no presence of invasive plant species.		 	Trainor et al. (2007) placed this habitat as equals to woodland which are quite extensive along the northern coast. Several key identifications of this habitat are: 1. Relative open area (low canopy detection) 2. Smooth texture 3. Light color with bright tone 4. Largely found in the northern part along the coastline
4. Water Body	Natural	Includes rivers, streams, and seasonal ponds. Many channels are ephemeral, with flow restricted to the wet season, while ponds and springs			Several key identifications of this habitat are: 1. Open area 2. Smooth texture 3. Light color with bright tone 4. Shows dendritic pattern (for river)

Habitat Type	Habitat Class	Definition	Visual Representation by GE Imagery	Field verification	Key Parameter Identification
		retain water longer and provide dry-season refuges for livestock and wildlife. The rivers in the EAAA are characterized by wide upstream sections (up to 700 m) and are mostly in a dry state.			
5. Rangeland	Modified	This type of habitat is categorized as grassland and scrub which altered by long-term grazing. Rangelands in the EAAA are mainly identified through associative aspects, as these habitats are strongly associated with settlements, small roads, and former cultivation or cleared lands. Based on field survey, this type of habitat has more invasive species concentration with vast distribution.		  *Red circle: presence of alien species (*Jatropha gossypifolia*)	This habitat type corresponds to what Trainor et al. (2007) described as "grassland," which is degraded land dominated by grasses (mostly non-native). The primary use of this habitat type is for livestock grazing and the cultivation of food crops. Several key identifications of this habitat are: 1. Relative open area (low canopy detection) 2. Smooth texture 3. Light color with bright tone 4. Largely found in the northern part along the coastline 5. Often show human modifications such as grazing area, small trails, and non-permanent structures.

Habitat Type	Habitat Class	Definition	Visual Representation by GE Imagery	Field verification	Key Parameter Identification
6. Agricultural Land	Modified	Cultivated fields and shifting gardens, primarily maize, cassava, and small rice plots. Agricultural mosaics include fallow land and regenerating scrub.			This type of habitat as small cultivated fields and gardens established in slash-and-burn areas. Several key identifications of this habitat are: 1. Has a regular man-made pattern and shows stratified rectangular shape 2. Smoother texture than savanna 3. Light color, often shows green 4. Highly associated with river
7. Urban Area	Modified	Residential areas and supporting facilities, indicated by well-maintained access roads.			Clusters of houses, roads, and small-scale infrastructure in villages and hamlets. Concentrated along the northern coastline. Several key identifications of this habitat are: 1. Has a regular man-made pattern (housing complex) 2. Have a complex road structure 3. Shows variation of color with bright tone 4. Highly associated with coastline

APPENDIX 2 SPECIES IBAT SCREENING RESULTS





KBA
KEY BIODIVERSITY AREAS

About KBAs ▾ Working with KBAs ▾ Explore Data ▾ News Login to WDKBA

LALEIA, TIMOR-LESTE

Site Details | Assessment Details

Site Overview

KBA status: confirmed

Global KBA criteria:
Year of assessment: 2014
National site name: Laleia
Central coordinates: Lat: -8.58 Long: 126.08
System: Terrestrial
Altitude (m): 0 to 0
Area of KBA (ha): 8,857
Protected area coverage (%): 0

Rationale for qualifying as KBA: This site qualifies as a Key Biodiversity Area of international significance because it meets one or more previously established criteria and thresholds for identifying sites of biodiversity importance (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and Key Biodiversity Areas) KBA identified by the 2014 CEPF Wallacea Ecosystem Profile process. Taxonomy and threat status follow the 2013 IUCN Red List.

LALEIA, TIMOR-LESTE

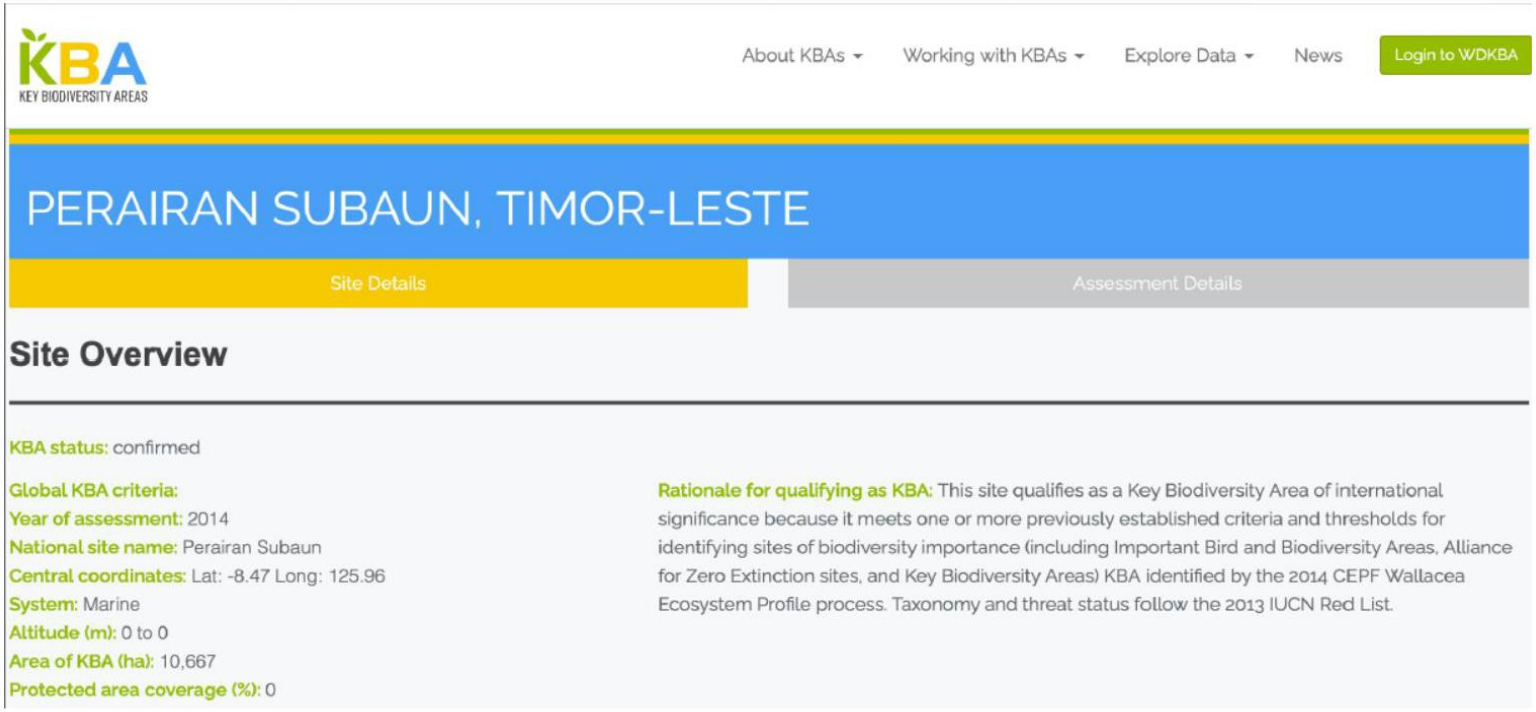
Site Details | Assessment Details

Biodiversity elements triggering KBA criteria

Taxonomic Group	Scientific name	Common name	IUCN Red List Category	KBA Criteria	Legacy Criteria
Mammals	*Rusa timorensis*	Javan Rusa	VU		Y
Plants	*Santalum album*	Sandalwood	VU		Y

Recommended citation

Key Biodiversity Areas Partnership (2022) *Key Biodiversity Areas factsheet: Laleia*. Extracted from the World Database of Key Biodiversity Areas. Developed by the Key Biodiversity Areas Partnership: BirdLife International, IUCN, American Bird Conservancy, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society for the Protection of Birds, World Wildlife Fund and Wildlife Conservation Society. Downloaded from http://www.keybiodiversityareas.org/ on 26/08/2022.


KBA
KEY BIODIVERSITY AREAS
About KBAs
Working with KBAs
Explore Data
News
Login to WDKBA
PERAIRAN SUBAUN, TIMOR-LESTE
Site Details
Assessment Details
Site Overview
KBA status: confirmed
Global KBA criteria:
Year of assessment: 2014
National site name: Perairan Subaun
Central coordinates: Lat: -8.47 Long: 125.96
System: Marine
Altitude (m): 0 to 0
Area of KBA (ha): 10,667
Protected area coverage (%): 0
Rationale for qualifying as KBA: This site qualifies as a Key Biodiversity Area of international significance because it meets one or more previously established criteria and thresholds for identifying sites of biodiversity importance (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and Key Biodiversity Areas) KBA identified by the 2014 CEPF Wallacea Ecosystem Profile process. Taxonomy and threat status follow the 2013 IUCN Red List.

PERAIRAN SUBAUN, TIMOR-LESTE

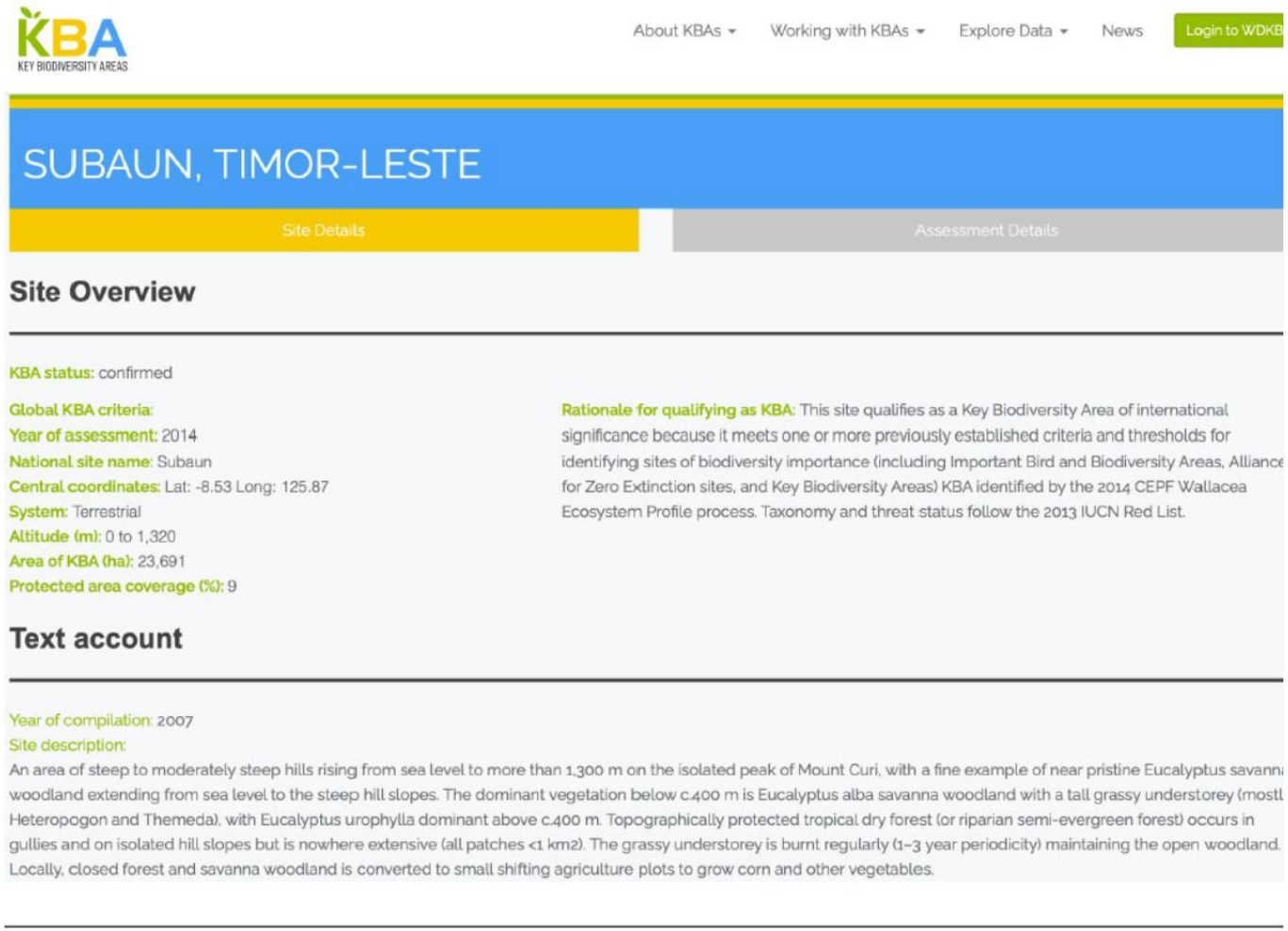
Site Details | Assessment Details

Biodiversity elements triggering KBA criteria

Taxonomic Group	Scientific name	Common name	IUCN Red List Category	KBA Criteria	Legacy Criteria
Invertebrates	*Euphyllia cristata*		VU		Y
Invertebrates	*Heliofungia actiniformis*		VU		Y
Invertebrates	*Heliopora coerulea*	Blue Coral	VU		Y
Invertebrates	*Pectinia lactuca*	Lettuce Coral	VU		Y
Invertebrates	*Porites nigrescens*		VU		Y
Invertebrates	*Turbinaria mesenterina*		VU		Y
Reptiles	*Chelonia mydas*	Green Turtle	EN		Y

Recommended citation

Key Biodiversity Areas Partnership (2022) *Key Biodiversity Areas factsheet: Perairan Subaun*. Extracted from the World Database of Key Biodiversity Areas. Developed by the Key Biodiversity Areas Partnership: BirdLife International, IUCN, American Bird Conservancy, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society for the Protection of Birds, World Wildlife Fund and Wildlife Conservation Society. Downloaded from http://www.keybiodiversityareas.org/ on 26/08/2022.



KBA
KEY BIODIVERSITY AREAS

About KBAs ▾ Working with KBAs ▾ Explore Data ▾ News Login to WDKB

SUBAUN, TIMOR-LESTE

Site Details | Assessment Details

Site Overview

KBA status: confirmed

Global KBA criteria:
Year of assessment: 2014
National site name: Subaun
Central coordinates: Lat: -8.53 Long: 125.87
System: Terrestrial
Altitude (m): 0 to 1,320
Area of KBA (ha): 23,691
Protected area coverage (%): 9

Rationale for qualifying as KBA: This site qualifies as a Key Biodiversity Area of international significance because it meets one or more previously established criteria and thresholds for identifying sites of biodiversity importance (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and Key Biodiversity Areas) KBA identified by the 2014 CEPF Wallacea Ecosystem Profile process. Taxonomy and threat status follow the 2013 IUCN Red List.

Text account

Year of compilation: 2007
Site description:
An area of steep to moderately steep hills rising from sea level to more than 1,300 m on the isolated peak of Mount Curi, with a fine example of near pristine Eucalyptus savanna woodland extending from sea level to the steep hill slopes. The dominant vegetation below c.400 m is Eucalyptus alba savanna woodland with a tall grassy understorey (mostly Heteropogon and Themeda), with Eucalyptus urophylla dominant above c.400 m. Topographically protected tropical dry forest (or riparian semi-evergreen forest) occurs in gullies and on isolated hill slopes but is nowhere extensive (all patches <1 km2). The grassy understorey is burnt regularly (1–3 year periodicity) maintaining the open woodland. Locally, closed forest and savanna woodland is converted to small shifting agriculture plots to grow corn and other vegetables.

SUBAUN, TIMOR-LESTE

Site Details | Assessment Details

Biodiversity elements triggering KBA criteria

Taxonomic Group	Scientific name	Common name	IUCN Red List Category	KBA Criteria	Legacy Criteria
Birds	*Dicaeum maugei*	Red-chested Flowerpecker	LC		Y
Birds	*Ducula rosacea*	Pink-headed Imperial-pigeon	NT		Y
Birds	*Gerygone inornata*	Plain Gerygone	LC		Y
Birds	*Lichmera flavicans*	Yellow-eared Honeyeater	LC		Y
Birds	*Meliphaga reticulata*	Streaky-breasted Honeyeater	LC		Y
Birds	*Myzomela vulnerata*	Red-rumped Myzomela	LC		Y
Birds	*Nectarinia solaris*	Flame-breasted Sunbird	LC		Y
Birds	*Oriolus melanotis*	Olive-brown Oriole	LC		Y
Birds	*Pachycephala orpheus*	Fawn-breasted Whistler	LC		Y
Birds	*Padda fuscata*	Timor Sparrow	NT		Y
Birds	*Philemon inornatus*	Plain Friarbird	LC		Y
Birds	*Sphecotheres viridis*	Timor Figbird	LC		Y

Birds	*Padda fuscata*	Timor Sparrow	NT	Y
Birds	*Philemon inornatus*	Plain Friarbird	LC	Y
Birds	*Sphecotheres viridis*	Timor Figbird	LC	Y
Birds	*Trichoglossus euteles*	Olive-headed Lorikeet	LC	Y
Birds	*Turacoena modesta*	Black Cuckoo-dove	NT	Y
Plants	*Santalum album*	Sandalwood	VU	Y

Recommended citation

Key Biodiversity Areas Partnership (2022) *Key Biodiversity Areas factsheet: Subaun*. Extracted from the World Database of Key Biodiversity Areas. Developed by the Key Biodiversity Areas Partnership: BirdLife International, IUCN, American Bird Conservancy, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society for the Protection of Birds, World Wildlife Fund and Wildlife Conservation Society. Downloaded from http://www.keybiodiversityareas.org/ on 25/08/2022.

IBAT

Integrated Biodiversity Assessment Tool

PROXIMITY REPORT
MANATUTO MODIFIED SITE

Country: Timor-Leste

Location: [-8.5, 126.1]

Date of analysis: 24 December 2022 (GMT)

Size of site: 2 km^2

Buffers applied: 1 km | 3 km | 5 km

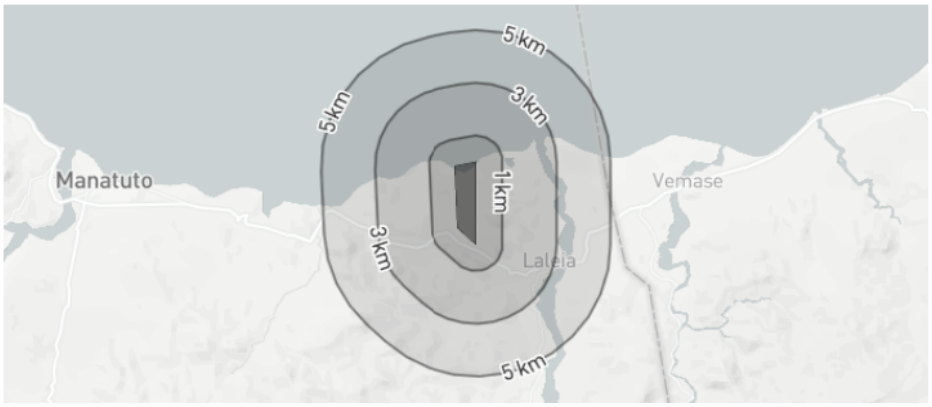
IUCN Red List Biomes: Marine, Terrestrial

Generated by: Cherry Rivera

Organisation: ADB

Overlaps with:

Protected Areas	1
Key Biodiversity Areas	1
IUCN Red List	259



Displaying project location and buffers: 1 km, 3 km, 5 km

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN environment programme WCMC

IBAT

About this report

This report presents the results of [1284-38105] proximity analysis to identify the biodiversity features and species which are located within the following buffers: 1 km, 3 km, 5 km.

This report is one part of a package generated by IBAT on 24 December 2022 (GMT) that includes full list of all species, protected areas, Key Biodiversity Areas in CSV format, maps showing the area of interest in relation to these features, and a 'How to read IBAT reports' document.

WARNING: IBAT aims to provide the most up-to-date and accurate information available at the time of analysis. There is however a possibility of incomplete, incorrect or out-of-date information. All findings in this report must be supported by further desktop review, consultation with experts and/or on-the-ground field assessment. Please consult IBAT for any additional disclaimers or recommendations applicable to the information used to generate this report.

Please note, sensitive species data are currently not included in IBAT reports in line with the Sensitive Data Access Restrictions Policy for the IUCN Red List. This relates to sensitive Threatened species and KBAs triggered by sensitive species.

Data used to generate this report

- UNEP-WCMC and IUCN, 2022. Protected Planet: The World Database on Protected Areas (WDPA)[On-line], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net - December 2022.
- BirdLife International (on behalf of the KBA Partnership), 2022. Key Biodiversity Areas - November 2022.
- IUCN, 2022. IUCN Red List of Threatened Species - August 2022.
- IUCN. The IUCN Red List of Threatened Species. Version 2019-3. (2019). https://www.iucnredlist.org
- IUCN. Threats Classification Scheme (Version 3.2). (2019)
- Strassburg, B.B.N., Iribarrem, A., Beyer, H.L. et al. Global priority areas for ecosystem restoration. Nature 586, 724–729 (2020). https://doi.org/10.1038/s41586-020-2784-9

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN environment programme WCMC

IBAT

Protected Areas

The following protected areas are found within 1 km, 3 km, 5 km of the area of interest.
For further details please refer to the associated csv file in the report folder.

Area name	Within buffer of
Lamsanak	1 km

Key Biodiversity Areas

The following key biodiversity areas are found within 1 km, 3 km, 5 km of the area of interest.
For further details please refer to the associated csv file in the report folder.

Area name	Distance
Laleia	3 km

IUCN Red List of Threatened Species

The following threatened species are potentially found within 50km of the area of interest.

For the full IUCN Red List please refer to the associated csv in the report folder.

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Eretmochelys imbricata	Hawksbill Turtle	REPTILIA	CR	Decreasing	Terrestrial, Marine
Carcharhinus longimanus	Oceanic Whitetip Shark	CHONDRICHTHYES	CR	Decreasing	Marine
Sphyrna lewini	Scalloped Hammerhead	CHONDRICHTHYES	CR	Decreasing	Marine
Pristis zijsron	Green Sawfish	CHONDRICHTHYES	CR	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Rhina ancylostoma	Bowmouth Guitarfish	CHONDRICHTHYES	CR	Decreasing	Marine
Rhynchobatus australiae	Bottlenose Wedgefish	CHONDRICHTHYES	CR	Decreasing	Marine
Millepora boschmai		HYDROZOA	CR	Unknown	Marine
Pristis pristis	Largetooth Sawfish	CHONDRICHTHYES	CR	Decreasing	Marine, Freshwater
Glaucostegus typus	Giant Guitarfish	CHONDRICHTHYES	CR	Decreasing	Marine
Balaenoptera borealis	Sei Whale	MAMMALIA	EN	Increasing	Marine
Balaenoptera musculus	Blue Whale	MAMMALIA	EN	Increasing	Marine
Chelonia mydas	Green Turtle	REPTILIA	EN	Decreasing	Terrestrial, Marine
Rhincodon typus	Whale Shark	CHONDRICHTHYES	EN	Decreasing	Marine
Isurus oxyrinchus	Shortfin Mako	CHONDRICHTHYES	EN	Decreasing	Marine
Carcharhinus amblyrhynchos	Grey Reef Shark	CHONDRICHTHYES	EN	Decreasing	Marine
Anoxypristis cuspidata	Narrow Sawfish	CHONDRICHTHYES	EN	Decreasing	Marine
Eusphyra blochii	Winghead Shark	CHONDRICHTHYES	EN	Decreasing	Marine
Negaprion acutidens	Sharptooth Lemon Shark	CHONDRICHTHYES	EN	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Stegostoma tigrinum	Zebra Shark	CHONDRICHTHYES	EN	Decreasing	Marine
Rhinoptera javanica	Javanese Cownose Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Mobula tarapacana	Sicklefin Devil Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Mobula thurstoni	Bentfin Devil Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Isurus paucus	Longfin Mako	CHONDRICHTHYES	EN	Decreasing	Marine
Porites eridani		ANTHOZOA	EN	Unknown	Marine
Anacropora spinosa		ANTHOZOA	EN	Decreasing	Marine
Lobophyllia serratus	Lobed Cactus Coral	ANTHOZOA	EN	Unknown	Marine
Porites ornata		ANTHOZOA	EN	Unknown	Marine
Montipora setosa		ANTHOZOA	EN	Decreasing	Marine
Alveopora excelsa		ANTHOZOA	EN	Unknown	Marine
Alveopora minuta		ANTHOZOA	EN	Unknown	Marine
Pectinia maxima		ANTHOZOA	EN	Unknown	Marine
Mobula kuhlii	Shorthorned Pygmy Devil Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Alopias pelagicus	Pelagic Thresher	CHONDRICHTHYES	EN	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Holothuria scabra	Golden Sandfish	HOLOTHUROIDEA	EN	Decreasing	Marine
Holothuria lessoni	Golden Sandfish	HOLOTHUROIDEA	EN	Decreasing	Marine
Thelenota ananas	Prickly Redfish	HOLOTHUROIDEA	EN	Decreasing	Marine
Mobula birostris	Oceanic Manta Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Numenius madagascariensis	Far Eastern Curlew	AVES	EN	Decreasing	Terrestrial, Marine, Freshwater
Calidris tenuirostris	Great Knot	AVES	EN	Decreasing	Terrestrial, Marine
Mobula mobular	Spinetail Devil Ray	CHONDRICHTHYES	EN	Decreasing	Marine
Centrophorus granulosus	Gulper Shark	CHONDRICHTHYES	EN	Decreasing	Marine
Cuora amboinensis	Southeast Asian Box Turtle	REPTILIA	EN	Decreasing	Terrestrial, Freshwater
Macaca fascicularis	Long-tailed Macaque	MAMMALIA	EN	Decreasing	Terrestrial
Pteropus vampyrus	Large Flying-fox	MAMMALIA	EN	Decreasing	Terrestrial
Pterocarpus indicus	Burmese Rosewood	MAGNOLIOPSIDA	EN	Decreasing	Terrestrial

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Rhinolophus montanus	Timorese Horseshoe Bat	MAMMALIA	EN	Unknown	Terrestrial
Alopecoenas hoedtii	Wetar Ground-dove	AVES	EN	Decreasing	Terrestrial
Treron psittaceus	Timor Green-pigeon	AVES	EN	Decreasing	Terrestrial
Calostoma insigne		AGARICOMYCETES	EN	Decreasing	Terrestrial
Eucalyptus urophylla	Timor White Gum	MAGNOLIOPSIDA	EN	Decreasing	Terrestrial
Macaca fascicularis ssp. fascicularis	Common Long-tailed Macaque	MAMMALIA	EN	Decreasing	Terrestrial
Carcharodon carcharias	White Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Caretta caretta	Loggerhead Turtle	REPTILIA	VU	Decreasing	Terrestrial, Marine
Dermochelys coriacea	Leatherback	REPTILIA	VU	Decreasing	Terrestrial, Marine
Dugong dugon	Dugong	MAMMALIA	VU	Decreasing	Marine
Hippocampus histrix	Thorny Seahorse	ACTINOPTERYGII	VU	Decreasing	Marine
Hippocampus trimaculatus	Three-spot Seahorse	ACTINOPTERYGII	VU	Decreasing	Marine
Lepidochelys olivacea	Olive Ridley	REPTILIA	VU	Decreasing	Terrestrial, Marine

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN WCMC

Manatuto modified site | Page 7 of 22

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Carcharhinus amboinensis	Pigeye Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Carcharhinus brevipinna	Spinner Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Carcharhinus falciformis	Silky Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Carcharhinus melanopterus	Blacktip Reef Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Triaenodon obesus	Whitetip Reef Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Urogymnus asperrimus	Porcupine Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Carcharhinus amblyrhynchoides	Graceful Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Hippocampus kelloggi	Great Seahorse	ACTINOPTERYGII	VU	Decreasing	Marine
Physeter macrocephalus	Sperm Whale	MAMMALIA	VU	Unkncwn	Marine
Nebrius ferrugineus	Tawny Nurse Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Rhizoprionodon acutus	Milk Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Odontaspis ferox	Smalltooth Sand Tiger	CHONDRICHTHYES	VU	Decreasing	Marine
Epinephelus fuscoguttatus	Brown-marbled Grouper	ACTINOPTERYGII	VU	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Taeniurops meyeni	Blotched Fantail Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Epinephelus polyphekadion	Camouflage Grouper	ACTINOPTERYGII	VU	Decreasing	Marine
Bolbometopon muricatum	Green Humphead Parrotfish	ACTINOPTERYGII	VU	Decreasing	Marine
Plectropomus areolatus	Squaretail Coralgrouper	ACTINOPTERYGII	VU	Decreasing	Marine
Montipora angulata		ANTHOZOA	VU	Decreasing	Marine
Moseleya latistellata		ANTHOZOA	VU	Decreasing	Marine
Pavona venosa		ANTHOZOA	VU	Unknown	Marine
Catalaphyllia jardinei		ANTHOZOA	VU	Unknown	Marine
Montipora hodgsoni		ANTHOZOA	VU	Decreasing	Marine
Alveopora marionensis		ANTHOZOA	VU	Unknown	Marine
Acropora turaki		ANTHOZOA	VU	Decreasing	Marine
Echinopora ashmorensis	Hedgehog Coral	ANTHOZOA	VU	Decreasing	Marine
Pectinia lactuca	Lettuce Coral	ANTHOZOA	VU	Unknown	Marine
Montipora gaimardi		ANTHOZOA	VU	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Acropora willisae		ANTHOZOA	VU	Decreasing	Marine
Montipora orientalis		ANTHOZOA	VU	Decreasing	Marine
Acropora plumosa		ANTHOZOA	VU	Decreasing	Marine
Acropora acuminata		ANTHOZOA	VU	Decreasing	Marine
Pectinia alcicornis		ANTHOZOA	VU	Unknown	Marine
Turbinaria bifrons		ANTHOZOA	VU	Unknown	Marine
Acropora listeri		ANTHOZOA	VU	Decreasing	Marine
Acropora paniculata		ANTHOZOA	VU	Decreasing	Marine
Anacropora matthaii		ANTHOZOA	VU	Decreasing	Marine
Plerogyra discus		ANTHOZOA	VU	Unknown	Marine
Acropora derawanensis		ANTHOZOA	VU	Decreasing	Marine
Acropora multiacuta		ANTHOZOA	VU	Decreasing	Marine
Goniopora planulata		ANTHOZOA	VU	Unknown	Marine
Montipora malampaya		ANTHOZOA	VU	Decreasing	Marine
Pocillopora ankeli		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Goniopora polyformis		ANTHOZOA	VU	Unknown	Marine
Galaxea cryptoramosa		ANTHOZOA	VU	Unknown	Marine
Acropora vaughani		ANTHOZOA	VU	Decreasing	Marine
Lobophyllia flabelliformis		ANTHOZOA	VU	Unknown	Marine
Fungia curvata		ANTHOZOA	VU	Unknown	Marine
Porites nigrescens		ANTHOZOA	VU	Unknown	Marine
Pavona decussata	Cactus Coral	ANTHOZOA	VU	Unknown	Marine
Fimbriaphyllia paradivisa		ANTHOZOA	VU	Unknown	Marine
Montipora florida		ANTHOZOA	VU	Decreasing	Marine
Platygyra yaeyamaensis		ANTHOZOA	VU	Decreasing	Marine
Astreopora cucullata		ANTHOZOA	VU	Decreasing	Marine
Acropora kirstyae		ANTHOZOA	VU	Decreasing	Marine
Astreopora incrustans		ANTHOZOA	VU	Decreasing	Marine
Alveopora daedalea		ANTHOZOA	VU	Unknown	Marine
Pocillopora danae		ANTHOZOA	VU	Unknown	Marine

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN WCMC

Manatuto modified site | Page 11 of 22

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Pocillopora elegans		ANTHOZOA	VU	Unknown	Marine
Porites attenuata	Hump Coral	ANTHOZOA	VU	Unknown	Marine
Galaxea acrhelia		ANTHOZOA	VU	Unknown	Marine
Acropora caroliniana		ANTHOZOA	VU	Decreasing	Marine
Montipora cactus		ANTHOZOA	VU	Decreasing	Marine
Acropora retusa		ANTHOZOA	VU	Decreasing	Marine
Porites sillimaniana		ANTHOZOA	VU	Unknown	Marine
Porites cumulatus		ANTHOZOA	VU	Unknown	Marine
Symphyllia hassi		ANTHOZOA	VU	Unknown	Marine
Montipora friabilis		ANTHOZOA	VU	Decreasing	Marine
Acropora aspera		ANTHOZOA	VU	Decreasing	Marine
Acropora abrolhosensis		ANTHOZOA	VU	Decreasing	Marine
Stylocoeniella cocosensis		ANTHOZOA	VU	Unknown	Marine
Leptoseris yabei		ANTHOZOA	VU	Unknown	Marine
Porites aranetai		ANTHOZOA	VU	Unknown	Marine
Alveopora verrilliana		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Paramontastraea salebrosa		ANTHOZOA	VU	Decreasing	Marine
Acropora russelli		ANTHOZOA	VU	Decreasing	Marine
Fimbriaphyllia ancora		ANTHOZOA	VU	Unknown	Marine
Turbinaria patula		ANTHOZOA	VU	Unknown	Marine
Isopora brueggemanni		ANTHOZOA	VU	Decreasing	Marine
Montipora vietnamensis		ANTHOZOA	VU	Decreasing	Marine
Heliopora coerulea	Blue Coral	ANTHOZOA	VU	Decreasing	Marine
Acropora tenella		ANTHOZOA	VU	Decreasing	Marine
Nemenzophyllia turbida		ANTHOZOA	VU	Unknown	Marine
Montipora caliculata		ANTHOZOA	VU	Decreasing	Marine
Acropora donei		ANTHOZOA	VU	Decreasing	Marine
Acropora kimbeensis		ANTHOZOA	VU	Decreasing	Marine
Turbinaria heronensis		ANTHOZOA	VU	Unknown	Marine
Pavona danai		ANTHOZOA	VU	Unknown	Marine
Heliofungia actiniformis		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Acropora batunai		ANTHOZOA	VU	Decreasing	Marine
Fimbriaphyllia paraancora		ANTHOZOA	VU	Unknown	Marine
Acropora striata		ANTHOZOA	VU	Decreasing	Marine
Acropora lokani		ANTHOZOA	VU	Decreasing	Marine
Porites tuberculosa		ANTHOZOA	VU	Unknown	Marine
Leptoria irregularis		ANTHOZOA	VU	Decreasing	Marine
Acropora horrida		ANTHOZOA	VU	Decreasing	Marine
Acropora solitaryensis		ANTHOZOA	VU	Decreasing	Marine
Cyphastrea ocellina	Ocellated Brain Coral	ANTHOZOA	VU	Decreasing	Marine
Acropora dendrum		ANTHOZOA	VU	Decreasing	Marine
Acanthastrea regularis		ANTHOZOA	VU	Unknown	Marine
Alveopora allingi		ANTHOZOA	VU	Unknown	Marine
Mycedium steeni		ANTHOZOA	VU	Unknown	Marine
Acropora speciosa		ANTHOZOA	VU	Decreasing	Marine
Galaxea astreata		ANTHOZOA	VU	Unknown	Marine
Porites napopora		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Acropora microclados		ANTHOZOA	VU	Decreasing	Marine
Pavona bipartita		ANTHOZOA	VU	Unknown	Marine
Goniopora albiconus		ANTHOZOA	VU	Unknown	Marine
Micromussa multipunctata		ANTHOZOA	VU	Decreasing	Marine
Montipora corbettensis		ANTHOZOA	VU	Decreasing	Marine
Acanthastrea ishigakiensis		ANTHOZOA	VU	Unknown	Marine
Dipsastraea laddi		ANTHOZOA	VU	Decreasing	Marine
Acropora globiceps		ANTHOZOA	VU	Decreasing	Marine
Goniopora burgosi		ANTHOZOA	VU	Unknown	Marine
Acropora loisetteae		ANTHOZOA	VU	Decreasing	Marine
Acropora desalwii		ANTHOZOA	VU	Decreasing	Marine
Acropora hoeksemai		ANTHOZOA	VU	Decreasing	Marine
Turbinaria stellulata		ANTHOZOA	VU	Unknown	Marine
Montipora samarensis		ANTHOZOA	VU	Decreasing	Marine

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN WCMC

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Montipora verruculosa		ANTHOZOA	VU	Decreasing	Marine
Acanthastrea bowerbanki		ANTHOZOA	VU	Unknown	Marine
Anacropora puertogalerae		ANTHOZOA	VU	Decreasing	Marine
Montipora capricornis		ANTHOZOA	VU	Decreasing	Marine
Acropora simplex		ANTHOZOA	VU	Decreasing	Marine
Acropora spicifera		ANTHOZOA	VU	Decreasing	Marine
Montipora crassituberculata		ANTHOZOA	VU	Decreasing	Marine
Montipora mactanensis		ANTHOZOA	VU	Decreasing	Marine
Seriatopora dendritica		ANTHOZOA	VU	Unknown	Marine
Acropora walindii		ANTHOZOA	VU	Decreasing	Marine
Montipora australiensis		ANTHOZOA	VU	Decreasing	Marine
Montipora turtlensis		ANTHOZOA	VU	Decreasing	Marine
Pachyseris rugosa		ANTHOZOA	VU	Unknown	Marine
Physogyra lichtensteini		ANTHOZOA	VU	Unknown	Marine

KNOW YOUR ENVIRONMENT | BirdLife | IUCN | CONSERVATION INTERNATIONAL | UN WCMC

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Montipora cocosensis		ANTHOZOA	VU	Decreasing	Marine
Acropora aculeus		ANTHOZOA	VU	Decreasing	Marine
Isopora crateriformis		ANTHOZOA	VU	Decreasing	Marine
Porites horizontalata		ANTHOZOA	VU	Unknown	Marine
Montipora delicatula		ANTHOZOA	VU	Decreasing	Marine
Acropora papillare		ANTHOZOA	VU	Decreasing	Marine
Caulastraea echinulata		ANTHOZOA	VU	Decreasing	Marine
Duncanopsammia peltata		ANTHOZOA	VU	Unknown	Marine
Porites cocosensis		ANTHOZOA	VU	Unknown	Marine
Acropora kosurini		ANTHOZOA	VU	Decreasing	Marine
Alveopora gigas		ANTHOZOA	VU	Unknown	Marine
Acropora anthocercis		ANTHOZOA	VU	Decreasing	Marine
Goniastrea ramosa		ANTHOZOA	VU	Decreasing	Marine
Alveopora fenestrata		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Seriatopora aculeata		ANTHOZOA	VU	Unknown	Marine
Acropora palmerae		ANTHOZOA	VU	Decreasing	Marine
Acropora verweyi		ANTHOZOA	VU	Decreasing	Marine
Leptoseris incrustans		ANTHOZOA	VU	Unknown	Marine
Leptastrea aequalis		ANTHOZOA	VU	Decreasing	Marine
Acanthastrea brevis		ANTHOZOA	VU	Unknown	Marine
Pavona cactus		ANTHOZOA	VU	Unknown	Marine
Lobophyllia dentatus		ANTHOZOA	VU	Unknown	Marine
Porites rugosa		ANTHOZOA	VU	Unknown	Marine
Acropora awi		ANTHOZOA	VU	Decreasing	Marine
Euphyllia cristata		ANTHOZOA	VU	Stable	Marine
Acropora indonesia		ANTHOZOA	VU	Decreasing	Marine
Acropora jacquelineae		ANTHOZOA	VU	Decreasing	Marine
Lobophyllia diminuta	Lobed Cactus Coral	ANTHOZOA	VU	Unknown	Marine
Australogyra zelli		ANTHOZOA	VU	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Montipora cebuensis		ANTHOZOA	VU	Decreasing	Marine
Acanthastrea faviaformis		ANTHOZOA	VU	Unknown	Marine
Cyphastrea agassizi		ANTHOZOA	VU	Decreasing	Marine
Turbinaria mesenterina		ANTHOZOA	VU	Unknown	Marine
Acanthastrea hemprichii		ANTHOZOA	VU	Unknown	Marine
Acropora polystoma		ANTHOZOA	VU	Decreasing	Marine
Echinophyllia costata		ANTHOZOA	VU	Unknown	Marine
Isopora cuneata		ANTHOZOA	VU	Decreasing	Marine
Acropora echinata		ANTHOZOA	VU	Decreasing	Marine
Acropora elegans		ANTHOZOA	VU	Decreasing	Marine
Anacropora reticulata		ANTHOZOA	VU	Decreasing	Marine
Astraeosmilia curvata		ANTHOZOA	VU	Decreasing	Marine
Montipora altasepta		ANTHOZOA	VU	Decreasing	Marine
Turbinaria reniformis		ANTHOZOA	VU	Unknown	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Urogymnus granulatus	Mangrove Whipray	CHONDRICHTHYES	VU	Decreasing	Marine
Pateobatis fai	Pink Whipray	CHONDRICHTHYES	VU	Decreasing	Marine
Alopias superciliosus	Bigeye Thresher	CHONDRICHTHYES	VU	Decreasing	Marine
Pateobatis jenkinsii	Jenkins' Whipray	CHONDRICHTHYES	VU	Decreasing	Marine
Istiophorus platypterus	Sailfish	ACTINOPTERYGII	VU	Decreasing	Marine
Stichopus herrmanni	Curryfish	HOLOTHUROIDEA	VU	Decreasing	Marine
Actinopyga miliaris	Harry Blackfish	HOLOTHUROIDEA	VU	Decreasing	Marine
Actinopyga mauritiana	Surf Redfish	HOLOTHUROIDEA	VU	Decreasing	Marine
Actinopyga echinites	Deep Water Redfish	HOLOTHUROIDEA	VU	Decreasing	Marine
Amblyglyphidodon batunai	Green Sergeant	ACTINOPTERYGII	VU	Decreasing	Marine
Amblyglyphidodon ternatensis	Ternate Damsel	ACTINOPTERYGII	VU	Decreasing	Marine
Mola mola	Ocean Sunfish	ACTINOPTERYGII	VU	Decreasing	Marine
Albula glossodonta	Shortjaw Bonefish	ACTINOPTERYGII	VU	Decreasing	Marine

IBAT

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Himantura leoparda	Leopard Whipray	CHONDRICHTHYES	VU	Decreasing	Marine
Mobula alfredi	Reef Manta Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Holothuria fuscogilva		HOLOTHUROIDEA	VU	Decreasing	Marine
Hydrobates matsudairae	Matsudaira's Storm-petrel	AVES	VU	Unknown	Terrestrial, Marine
Aetobatus ocellatus	Spotted Eagle Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Gobiodon erythrospilus	Red-spotted Coralgoby	ACTINOPTERYGII	VU	Unknown	Marine
Oxymonacanthus longirostris	Harlequin Filefish	ACTINOPTERYGII	VU	Decreasing	Marine
Carcharhinus tjutjot	Indonesian Whaler Shark	CHONDRICHTHYES	VU	Decreasing	Marine
Pastinachus ater	Broad Cowtail Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Aetomylaeus nichofii	Banded Eagle Ray	CHONDRICHTHYES	VU	Decreasing	Marine
Hippocampus spinosissimus	Hedgehog Seahorse	ACTINOPTERYGII	VU	Decreasing	Marine
Acerodon mackloti	Sunda Fruit Bat	MAMMALIA	VU	Decreasing	Terrestrial
Pteropus griseus	Gray Flying Fox	MAMMALIA	VU	Decreasing	Terrestrial

IBAT

Recommended citation

IBAT Proximity Report. Generated under licence 1284-38105 from the Integrated Biodiversity Assessment Tool on 24 December 2022 (GMT). www.ibat-alliance.org

How to use this report

This report provides an indication of the potential biodiversity-related features - protected areas, key biodiversity areas and species - close to the specified location. It provides an early indication of potential biodiversity concerns, and can provide valuable guidance in making decisions. For example, this information can be helpful when assessing the potential environmental risk and impact of a site, categorising investments/projects, preparing the terms of reference for an impact assessment, focusing attention on key species of conservation concern and sites of known conservation value, and reviewing the results of an impact assessment.

The report does not provide details of potential indirect, downstream or cumulative impacts. Furthermore, the report should be regarded as a "first-step", providing a set of conservation values sourced from global data sets, and is not a substitute for further investigation and due diligence, especially concerning national and/or local conservation priorities.

IBAT

Recommended citation

IBAT Proximity Report. Generated under licence 1284-35341 from the Integrated Biodiversity Assessment Tool on 19 October 2022 (GMT). www.ibat-alliance.org

How to use this report

This report provides an indication of the potential biodiversity-related features - protected areas, key biodiversity areas and species - close to the specified location. It provides an early indication of potential biodiversity concerns, and can provide valuable guidance in making decisions. For example, this information can be helpful when assessing the potential environmental risk and impact of a site, categorising investments/projects, preparing the terms of reference for an impact assessment, focusing attention on key species of conservation concern and sites of known conservation value, and reviewing the results of an impact assessment.

The report does not provide details of potential indirect, downstream or cumulative impacts. Furthermore, the report should be regarded as a "first-step", providing a set of conservation values sourced from global data sets, and is not a substitute for further investigation and due diligence, especially concerning national and/or local conservation priorities.

APPENDIX 3 VERIFICATION FIELD SURVEY

1. METHODOLOGY

The field survey aimed to collect data on candidate species with the potential to trigger Critical Habitat under IFC PS6 within areas potentially affected by the Solar Project. Data collection protocols were tailored to focal taxa, including vegetation, birds, bats, and sea turtles.

1.1 Vegetation

Vegetation surveys followed an exploratory purposive approach to capture representative plant communities. For each plot, species were recorded by scientific and local names where possible, and abundance was noted. Specimens of unidentified plants were coded, photographed, and collected for subsequent herbarium identification. All observations were systematically logged in field notebooks.

1.2 Terrestrial Fauna

Recce Walks - Reconnaissance walks were conducted along existing trails, ridgelines, riverbanks, and other accessible habitats (Ancrenaz 2013). Both direct sightings and indirect evidence of fauna (tracks, scats, feeding signs, diggings, wallows, vocalizations) were recorded. Surveys were carried out during peak activity periods, 07:00–09:00 and 19:00–21:00, to capture both diurnal and nocturnal species. Observations were documented on tally sheets, including species identity, number of individuals, time of encounter, and supporting notes, with photographs taken using telephoto lenses.

Mist Nets (Bats) - Mist nets were installed along bat flight paths, including forest clearings, riverbanks, and near fruiting/flowering trees (Suyanto 2021). Nets were erected prior to sunset (16:00–17:00) and checked at 19:00, 21:00, and the following morning at 07:00. Captured bats were handled carefully, separated by species in cloth bags, and identified using external morphology and morphometrics (e.g., body, head, ear, forearm, wing, calf, and leg length). Each individual was photographed for reference. Figure 1.1 shows an example of mist net installation.

1.3 Birds

Vantage Point (VP) Surveys - Bird surveys used the vantage point (VP) method to quantify flight activity and assess potential collision or disturbance risk (SNH 2017). Observers recorded species identity, number of individuals, flight direction, behavior (flapping, gliding, soaring, maneuvering), and flight height categories (0–10 m; 10–20 m; >20 m). Supporting weather data (wind using Beaufort scale, rainfall, cloud cover, visibility) were also logged.

VPs were located to maximize visibility of airspace while minimizing disturbance, typically on hilltops, savanna edges, or coastal margins. Each VP survey lasted six hours per day over three days, divided into morning (07:00–10:00) and afternoon (14:00–17:00) sessions. Detection distances beyond 1 km were excluded due to declining accuracy (Gittings 2024).

Maps at 1:25,000 scale were produced for each VP, showing location, flight lines of target species, and a legend cross-referenced to field records. Figure 1.2 shows the vantage point used in the study area.

1.4 Sea Turtles and Other Herpetofauna

A Visual Encounter Survey (VES) was applied to assess turtle nesting activity and other herpetofauna. Teams walked pre-defined transects along the beach during evening peak activity, recording species encountered, behavior, and microhabitat use. Individuals were identified to the lowest possible taxonomic level using field guides, and photographic records were taken for verification. Figure 1.3 illustrates a typical VES transect.

1.5 Species of High Conservation Value

Species were assessed against international and national conservation criteria, including:

- Threatened status: IUCN Red List (Version 3.1, 2021)
- Trade regulation: CITES Appendices
- Legal protection: Timor-Leste and regional legislation
- Endemism: restricted-range and island-specific taxa

1.6 Limitations and Bias

Survey reliability was constrained by limited local reference literature and seasonal variability. Some individuals, particularly juveniles or cryptic species, could not be identified to species level in the field. In such cases, identification was supported by photographs, vocalizations, and cross-checks with global databases such as Xeno-Canto and Merlin Bird ID. Species lists should therefore be regarded as preliminary, pending additional verification.

Figure 1.1 The mist net installation at study area

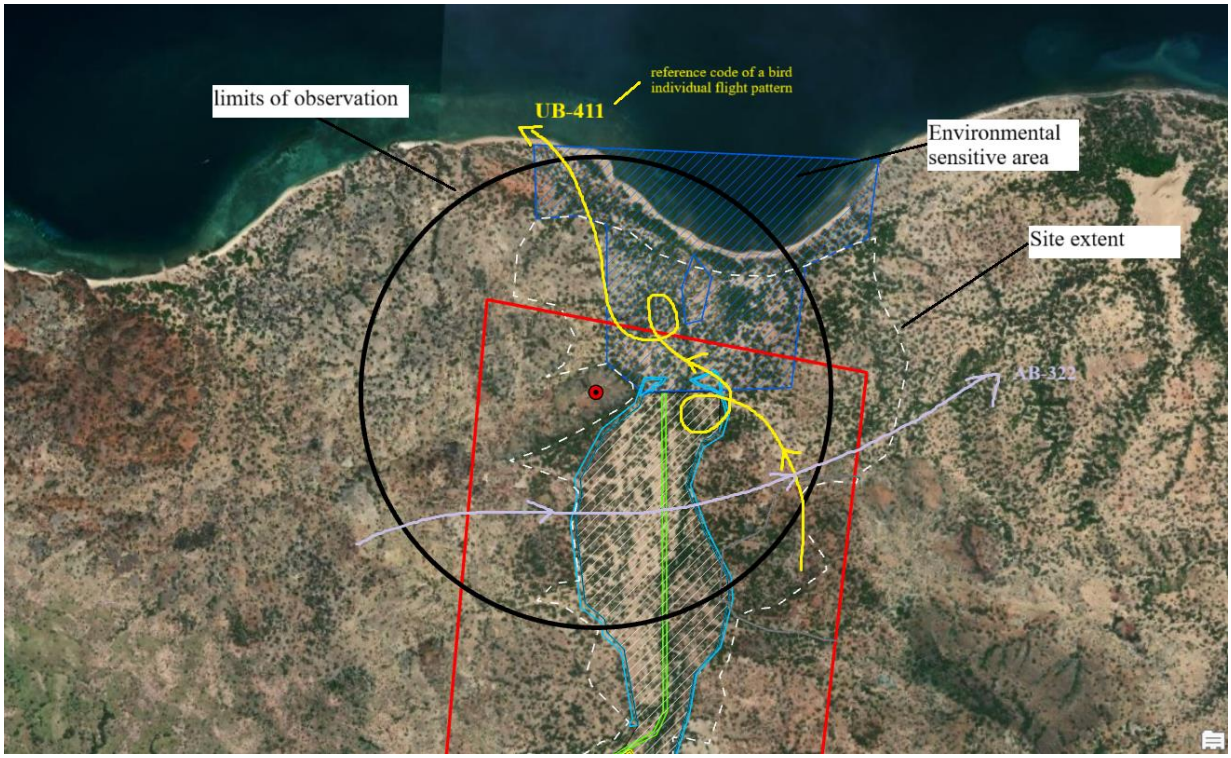


Figure 1.2. Vantage point at study area

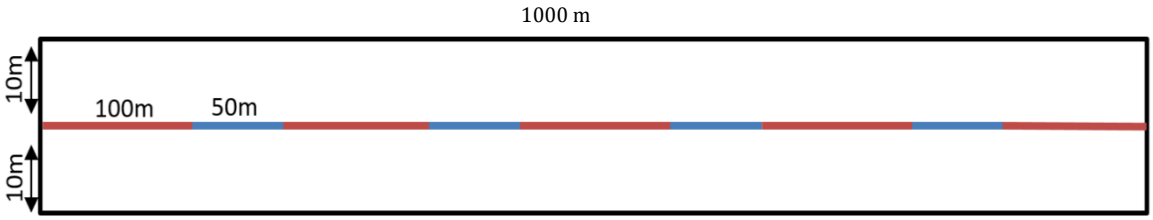


Figure 1.3. Illustration of a data collection line during a Visual Encounter Survey

2. SURVEY RESULT

2.1 Vegetation and Habitat Characteristics

Habitat Characteristics and Ecosystem Type - This site is at an altitude of 0–23 meters above sea level, with terrain ranging from flat to hilly. The ecosystem is characterized by a mosaic of savanna, woodland, and rangeland, fragmented by shrubs and open land (Figure 2.1). Modifying factors in this area include fires, livestock grazing, and the spread of invasive species. Botanical data were collected across each habitat type. Vegetation cover is sparse under dry conditions, and the forest floor is predominantly dry, covered by bare soil and debris.

Composition of Vegetation - The species of plants found in the five data collection sites were generally dominated by plants from the families Fabaceae based on the number of species found and their distribution. The composition of vegetation species reflects the dominant habitat type in the project area, mainly the mosaic of savanna-woodland (Table 2.1).

Figure 2.1 Vegetation community across habitat types (clockwise): coastal vegetation along sandy beach, savanna-woodland, rangeland, and mangrove.

Table 2.1. List of Flora of Project Plan Area

Status	Habit	Species	Abundance
Native	Tree	*Acacia oraria*	Uncommon
	Tree	*Acacia sp.*	Common
	Tree	*Tamarindus indicus*	Common
	Tree	*Pterocarpus indicus*	Uncommon
	Tree	*Avicennia marina*	Locally common in estuary
	Tree	*Vachellia leucophloea*	Common
	Undergrowth	*Spinifex littoreus*	Locally common in coastal zone
	Undergrowth	*Calotropis gigantea*	Uncommon
	Undergrowth	*Ziziphus mauritiana*	Uncommon
Introduced	Undergrowth	*Jatropha gossypifolia*	Abundant
		Aloe vera	Locally common in coastal zone
		Opuntia sp.	Uncommon
Unknown	Undergrowth	Grass (Poaceae)	Abundant

2.2 Mammals

The field survey and local interviews recorded three mammal species in the project area (Table 2.2). Direct encounters were limited, and no bats were captured in mist nets during the survey. The restricted observations are likely related to seasonal conditions: the survey was conducted in the dry season, when fruiting and flowering resources are scarce and surface water is minimal. These factors reduce mammal activity and detectability.

Of the three species documented, two are considered of conservation importance. The Javan rusa (*Rusa timorensis*), listed as **Vulnerable** on the IUCN Red List and protected under Indonesian Ministry of Environment and Forestry Regulation P.106/2018, remains an important game and cultural species in Timor-Leste. It shows some resilience in human-modified landscapes, with studies indicating that up to 11% of its suitable habitat occurs in production and secondary forests (Rahman et al., 2020). The Long-tailed macaque (*Macaca fascicularis*), although widespread, is of conservation concern due to habitat loss and hunting pressures. The third species, the wild pig (*Sus scrofa*), is common and adaptable, with a global status of Least Concern.

Table 2.2. Mammal Species Recorded in the Project Area

Family	Scientific Name	IUCN Status	CITES	P.106/2018	Endemism
Cervidae	*Rusa timorensis*	**VU**	–	✓	–
Cercopithecidae	*Macaca fascicularis*	**VU**	**II**	–	–
Suidae	*Sus scrofa*	**LC**	–	–	–

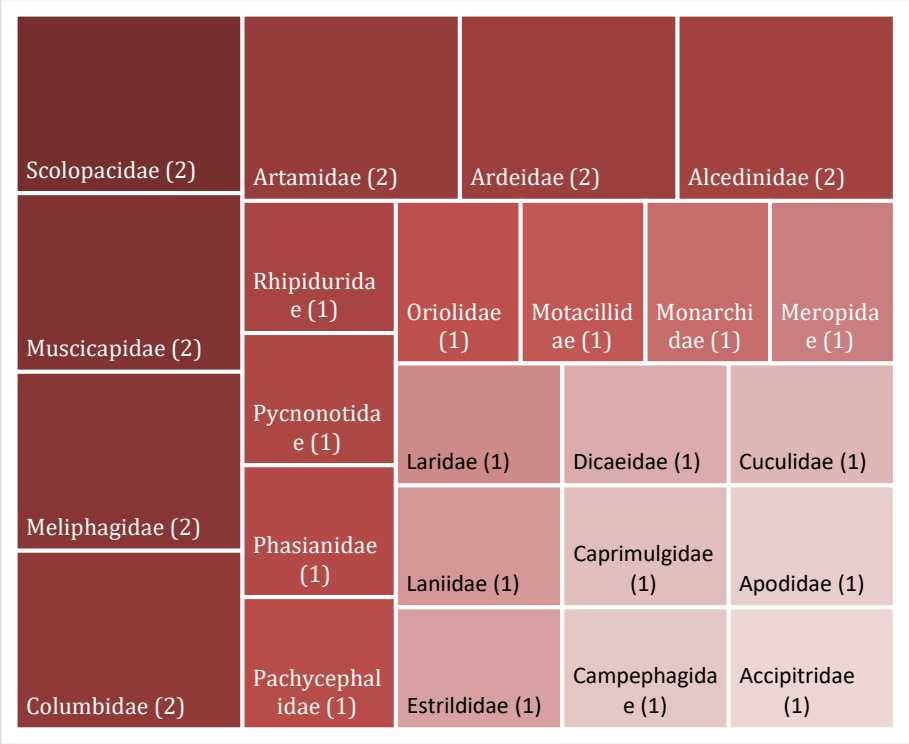
2.3 Birds

Richness and Composition

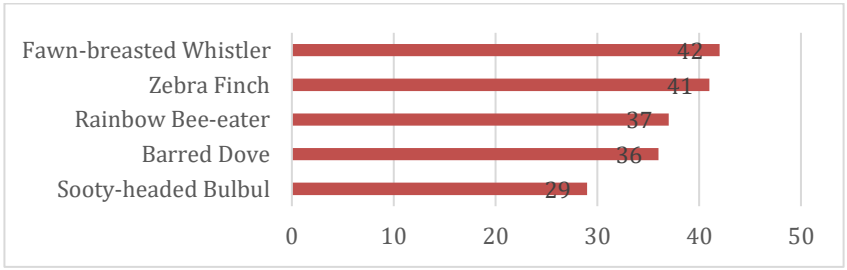
The survey recorded 31 bird species from 24 families within the project area (Figure 2.2a). Species richness was relatively even across families, with no single family showing dominance in terms of species count. A total of 390 individual birds were observed, with the Fawn-breasted Whistler (*Pachycephala orpheus*) recorded as the most abundant species. Other common species included the Timor Zebra Finch (*Taeniopygia guttata),* Rainbow Bee-eater (*Merops ornatus*), Barred Dove (*Geopelia maugeus)*, and Sooty-headed Bulbul (*Pycnonotus aurigaster*) (Figure 2.3).

Feeding Guilds and Abundance

The dry-season conditions during the survey limited the availability of fruiting trees, reducing the detectability of frugivorous birds. In contrast, insectivores were well represented: more than half of the 31 species recorded were insectivorous, including the Fawn-breasted Whistler, which was the most abundant species encountered. This observation is consistent with Trainor et al. (2008), who classified the species as a “common resident” in Timor-Leste, reflecting its widespread occurrence and ecological importance in the island’s habitats.



(a)



(b)

Figure 2.2 Species Composition per Family (a) and 5 Most Abundant Species in Project Area (b)

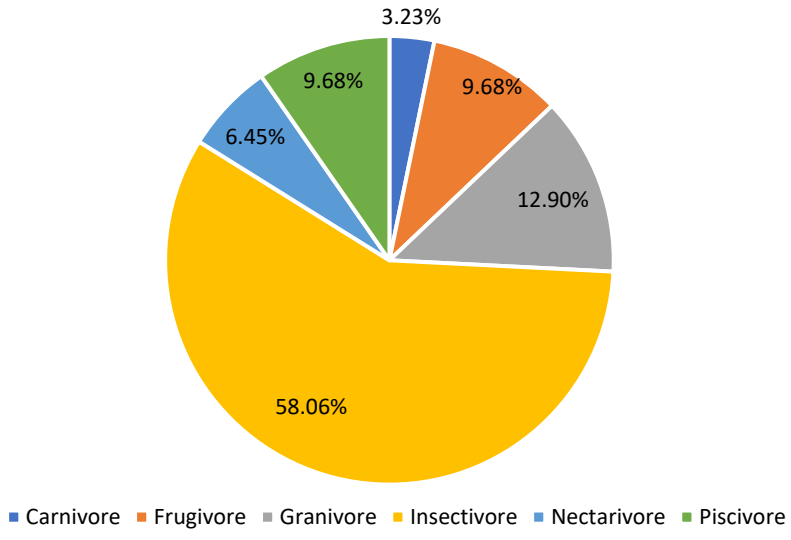


Figure 2.3 Feeding Guild Percentage of Birds Found in Project Area

Conservation and Locality Status

According to the IUCN Red List, all bird species recorded during the survey are currently assessed as Least Concern (LC). Under the CITES Appendices, only the Brahminy Kite (*Haliastur indus*) is listed, classified under Appendix II.

Nationally, however, several species are afforded legal protection. Under Decree-Law No. 6/2020 on the Legal Framework for the Protection and Conservation of Biodiversity, eight of the species recorded are designated as protected, most of which are endemics restricted to Timor and Wetar. Among the species observed, the Brahminy Kite stands out as the most conservation-relevant: it is both included in CITES Appendix II and protected under Timor-Leste's national legislation (Table 2.3).

Table 2.3. List of Threatened and Protected Bird Species Found in Project Area

No.	Scientific Name	English Name	Conservation Status		
			IUCN Status	CITES	No.6/2020
1	*Haliastur indus*	Brahminy Kite	LC	App II	p
2	*Aerodramus fuciphagus*	Edible-nest Swiftlet	LC		p
3	*Meliphaga reticulata*	Timor Meliphaga	LC		p
4	*Pilemon inortatus*	Timor Friarbird	LC		p
5	*Saxicola guttularis*	White-bellied Bushchat	LC		p
6	*Sphecotheres viridis*	Timor Figbird	LC		p
7	*Pachycephala orpheus*	Fawn-breasted Whistler	LC		p
8	*Gallus gallus*	Red Jungle-fowl	LC		p

Note: LC = least concern; App II = Appendix II; p = protected

Locality and Biogeographic Status

The survey identified five migratory species, seven endemic species, and one introduced species within the project area (Table 2.4).

Among the migratory species, the Sacred Kingfisher (*Todiramphus sanctus*), Rainbow Bee-eater (*Merops ornatus*), and Lesser Crested Tern (*Thalasseus bengalensis*) breed in Australia and migrate northward to the Indonesian Archipelago, including Timor Island, during the austral winter. The Whimbrel (*Numenius phaeopus*) and Common Sandpiper (*Actitis hypoleucos*) are long-distance migrants that breed in the northern hemisphere and overwinter in Southeast Asia.

Most of the endemic species recorded are also classified as restricted-range birds, with distributions of less than 50,000 km². The only exception is the Timor Fantail (Rhipidura rufiventris), which, although endemic, is not considered restricted-range.

One alien species was also documented: the Sooty-headed Bulbul (*Pycnonotus aurigaster*). The subspecies present in Timor, including in the project area, originates from Java and Bali and was likely introduced through anthropogenic activities, most probably the bird trade.

Table 2.4. Locality Status of Birds Found in Project Area

No	Scientific Name	English Name	Locality Status
1	*Actitis hypoleucos*	Common Sandpiper	Migrant
2	*Aerodramus fuciphagus*	Edible-nest Swiftlet	Native
3	*Anthus rufulus*	Paddy field Pipit	Native
4	*Ardea alba*	Great Egret	Native

No	Scientific Name	English Name	Locality Status
5	*Artamus cinereus*	Black-faced Woodswallow	Native
6	Artamus leucorynchus	White-breasted Woodswallow	Native
7	*Butorides striata*	Striated Heron	Native
8	*Cacomantis variolosus*	Brush Cuckoo	Native
9	*Caprimulgus affinis*	Savanna Nightjar	Native
10	*Dicaeum hanieli*	Timor Flowerpecker	Endemic
11	*Gallus gallus*	Red Jungle-fowl	Native
12	*Geopelia maugeus*	Barred Dove	Native
13	*Haliastur indus*	Brahminy Kite	Native
14	Lalage sueurii	White-shouldered Triller	Native
15	*Lanius schach*	Long-tailed Shrike	Native
16	*Meliphaga reticulata*	Timor Meliphaga	Endemic
17	*Merops ornatus*	Rainbow Bee-eater	Migrant
18	*Myiagra ruficolis*	Broad-billed Flycatcher	Native
19	*Numenius phaeopus*	Whimbrel	Migrant
20	*Pachycephala orpheus*	Fawn-breasted Whistler	Endemic
21	*Pilemon inortatus*	Timor Friarbird	Endemic
22	*Pycnonotus aurigaster*	Sooty-headed Bulbul	Introducted
23	*Rhipidura ruvifentris*	Timor Fantail	Endemic
24	Saxicola caprata	Pied Bushchat	Native
25	*Saxicola guttularis*	White-bellied Bushchat	Endemic
26	Sphecotheres viridis	Timor Figbird	Endemic
27	*Spilopelia chinensis*	Spotted Dove	Native
28	*Taeniopygia guttata*	Zebra Finch	Native
29	*Thalasseus bengalensis*	Lesser Crested Tern	Migrant
30	*Todiramphus chloris*	Collared Kingfisher	Native
31	*Todiramphus sanctus*	Sacred Kingfisher	Migrant

Bird Community Structure

Bird community structure was assessed using four ecological indices, each reflecting a different aspect of diversity. The Shannon-Wiener Index (H') measured overall species diversity, while the Evenness Index (E) assessed how uniformly individuals were distributed among species. Margalef's Richness Index (Dmg) provided an estimate of species richness, and the Dominance Index (C) indicated whether the community was dominated by a few species.

Results for the project area are presented in Table 2.5. The values show high species richness (Dmg = 5.20) and evenness (E = 0.85), suggesting a well-balanced bird community. Species diversity was moderate (H' = 2.92), consistent with expectations for semi-natural habitats, while dominance was low (C = 0.07), indicating no single species disproportionately structured the community.

Taken together, these indices suggest that the project area provides a suitable habitat mosaic for birds, offering sufficient resources such as food, space, and cover to support a relatively diverse and evenly distributed avifauna.

Table 2.5 Bird Community Indices in the Project Area

Index	Value	Interpretation
Shannon-Wiener Diversity (H')	2.92	Moderate diversity
Pielou's Evenness (E)	0.85	High evenness
Margalef's Richness (Dmg)	5.20	High richness

2.4 Sea turtle and Other Herpetofauna

A total of six hours of active sampling was conducted along the sandy beach adjacent to the project area. No sea turtles were directly observed during this effort, and data on turtle presence were supplemented by opportunistic observations and community interviews.

Local knowledge indicates the historical occurrence of at least four sea turtle species along this coastline. Among these, the Green Turtle (Chelonia mydas) was confirmed with high confidence, while records of three additional species remain to be verified. Residents reported that turtle nesting was frequent from the 1970s through the late 2000s but has markedly declined over the past two decades. This trend is consistent with broader regional declines, likely driven by population reductions and degradation of suitable nesting habitat.

Other herpetofauna recorded during the survey were limited to two species: the Tokay Gecko (*Gekko gecko*) and a Bronzeback Snake (*Dendrelaphis sp.).* Dendrelaphis is a colubrid snake that functions as an important mid-level predator, regulating populations of small vertebrates such as amphibians and invertebrates. Its presence suggests that the site continues to provide adequate trophic and structural resources to sustain ecological interactions. The Tokay Gecko, a large, nocturnal, semi-arboreal lizard, was frequently encountered in the woodland–rangeland ecotone and in relatively high numbers. Highly adaptable, *G. gecko* occupies both natural habitats and human settlements across Southeast Asia (Brown et al., 2012). Its distinctive calls and size make it a conspicuous element of the local fauna. Phylogenetic studies (Gamble et al., 2015) highlight the evolutionary success of the genus Gekko, underscoring the broad ecological tolerance of the Tokay Gecko.

Species of High Conservation Value

Most herpetofauna recorded fall within low conservation concern categories. The Green Turtle (*Chelonia mydas*) is the only species of high conservation value, listed as Endangered (EN) by the IUCN, included in CITES Appendix I (prohibiting international trade), and protected nationally under Government Regulation P.106/2018. These overlapping protections emphasize the importance of safeguarding remaining populations through strict mitigation of threats such as light pollution, habitat loss, and human disturbance.

Table 2.6. Herpetofauna Species Recorded in the Project Area and Their Conservation Status

Family	Scientific Name	IUCN Status	CITES	Endemism
Geckonidae	*Gecko gecko*	LC		-
Colubridae	*Dendrelaphis inornatus*	LC		-
Chelodinidae	*Chelonia mydas*	EN	App I	-

REFERENCES

Ancrenaz M. 2013. *Field Manual: monitoring large terrestrial mammals in Sabah*. Sabah (MY): Sabah Forestry Departement.

Rahman DA, Condro AA, Rianti P, Masy'ud B, Aulagnier, Semiadi G. 2020. Geographical analysis of the Javan deer distribution in Indonesia and priorities for landscape conservation. *J. for Nature Conservation* 54 (125795): 1-9.

Suyanto A. 2021. *Kelelawar di Indonesia*. Bogor (ID): Pusat Litbang Biologi LIPI

Scottish Natural Heritage. 2017. *Recommended bird survey methods to inform impact assessment of onshore wind farms*. Available at: https://www.gov.wales/sites/default/files/publications/2022-01/rhoscrowther-wind-farm-rep035-sarah-bond-appendix-c.pdf

Gittings T. 2024. Distance effects on detection rates in wind farm vantage point surveys: implications for avian collision risk modelling. *Inpractice* 126: 40 – 44.

Brown, R. M., Siler, C. D., Oliveros, C. H., Esselstyn, J. A., Rafe, R. W., Diesmos, A. C., & Diesmos, M. L. (2012). Evolutionary relationships of the gekkonid lizard genus *Gekko* Laurenti 1768 and the biogeographic implications of sympatry with related *Ptychozoon* Kuhl 1824 (Squamata: Gekkonidae). *Zoological Journal of the Linnean Society*, *163*(4), 1195-1218.

Gamble, T., Bauer, A. M., Greenbaum, E., & Jackman, T. R. (2015). Out of the dark: Phylogeography and systematics reveal radiation, cryptic diversity, and unexpected patterns of colonisation in the Asian gecko genus *Gekko*. *Zoological Journal of the Linnean Society*, *173*(3), 797-823.

IUCN. (2025). *The IUCN Red List of Threatened Species. Version 2025-1*. Retrieved April 26, 2025, from https://www.iucnredlist.org

APPENDIX 4 CRITICAL HABITAT ASSESSMENT CRITERION 1, 2 AND 3

Range= Restricted Range; MT= Movement Patterns

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
1	Hawksbill Turtle	*Eretmochelys imbricata*	CR	No	Full Migrant	The Hawksbill turtle (Eretmochelys imbricata) is a highly migratory species of subtropical and tropical areas with an important role in the ecosystem. The hawksbill turtle is a species that lives in both marine and land environments. Its primary marine habitats are tropical coral reefs, coastal lagoons, mangroves, and rocky areas. On land, these turtles create their nests on sandy beaches of islands and mainlands throughout tropical and subtropical regions. Hawksbill turtles are also highly migratory, traveling long distances to use a wide variety of locations and habitats during their lives. Female Hawksbill Turtles (Eretmochelys imbricata) display a behavior known as 'natal homing,' in which they return to the same beach where they hatched to lay their own eggs. During a nesting season, a female may nest several times, with each clutch containing an average of around 130 eggs. Nesting generally takes place at night and involves the female excavating a body pit, digging a deeper egg chamber, depositing the eggs, and then covering the nest before returning to the sea. There are no publications or recorded evidence of nesting activity within the EAAA. However, in Timor-Leste, Jaco Island and Tutuala Beach have been documented as nesting sites for Hawksbill Turtles. hawksbills nesting in the Nino Konis Santana National Park has been tracked with satellite transmitters moving through the Timor Sea and south to Western Australia (Pilcher 2021). Hawksbills	Although global spatial data confirm important nesting and feeding grounds for sea turtles (UNEP, 1999), there is no recorded occurrence of Hawksbill Turtle within the EAAA. However, the species may be present at nearby landing sites outside the EAAA but within the same seascape context, such as Jaco Island and Tutuala Beach (Pilcher 2021). Considering sea turtles as nationally significant species based on stakeholder consultations, a precautionary approach suggests that the EAAA is unlikely to meet the threshold as habitat supporting ≥5% of the global population (Criterion 1a) or supporting ≥10% of the global population during migration season (Criterion 3a).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						nest on multiple islands scattered across the ATS region, but few estimates of abundance are available. While the exact total population of hawksbill turtles is unknown, scientific data indicates a massive decline of over 80% within the last three generations.	
2	Green Turtle	*Chelonia mydas*	LC	No	Full Migrant	Green turtles are distributed throughout the Arafura and Timor Seas, typically remaining in coastal waters where they utilize shallow habitats for development and foraging (Pilcher, 2021). In Timor-Leste, Jaco Island and Tutuala Beach have been identified as nesting sites (Nunes, 2001), and other potential breeding areas may exist along the south coast. Nesting has also been reported in low numbers at Tibar Bay, west of Dili, and Ulmera (Eisemberg et al., 2014). It is understood that Conservation International may hold additional data on turtle nesting sites in Timor-Leste; however, this information has not yet been made available According to NOAA Fisheries and the U.S. Fish and Wildlife Service, 11 distinct population segments (DPS) of Green turtles have been recognized globally. Within the East Indian–West Pacific DPS, the largest nesting site occurs in Northern Australia, supporting approximately 25,000 nesting females, estimated from an order of magnitude of 5,000 nesting females per season (Limpus, 2009). Currently, this DPS hosts 58 reported nesting sites (in some cases comprising multiple beaches based on survey data), with six sites each supporting	Published records confirm the presence of Green Turtles at Jaco Island, Tutuala Beach, and along the southern coastline of Timor-Leste, although occurrences are in low numbers. To date, there are no published reports indicating nesting activity along the northern coastline of Timor-Leste. Ecologically, the EAAA contains habitat characteristics suitable for Green Turtles, including potential nesting areas. However, based on the available information, the EAAA is unlikely to meet the threshold to supporting ≥10% of the global population during migration season (Criterion 3a).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						more than 5,000 nesting females, including the large Northern Australian population. Despite these significant sites, populations remain substantially depleted compared to historical levels. The trend-based reference point for evaluating population forecasts is set at a 50% decline from the last observed abundance, while the abundance-based reference point is defined as a total adult female population of 300 individuals (Seminoff et al., 2015).	
3	Oceanic Whitetip Shark	*Carcharhinus longimanus*	CR	No	No	The Oceanic Whitetip Shark (Carcharhinus longimanus) is a highly pelagic species inhabiting the open ocean. It is among the most widespread shark species, occurring across tropical and subtropical waters worldwide. Typically, individuals occupy depths averaging around 60 meters but may occasionally be observed in shallower waters down to 35 meters. This species does not generally approach coastal shorelines. This is a globally widespread shark, they can be found in the Indian Ocean, the Atlantic Ocean, and the Pacific Ocean. There are currently no reliable data available on the global population size of the Oceanic Whitetip Shark. Genetic studies indicate potential population structuring between the Western Atlantic and the Indo-Pacific, suggesting some degree of regional differentiation.	Specifically, there are no records from literature or interviews of this species occurring within the EAAA or in the waters of Timor-Leste. However, if the species were to be found, it is unlikely that it would meet Criterion 1 thresholds for triggering critical habitat.
4	Scalloped Hammerhead	*Sphyrna lewini*	CR	No	No	Scalloped hammerhead sharks inhabit tropical and warm temperate coastal waters, utilizing both shallow nurseries for juveniles and deeper offshore waters for adults and mating, with a global distribution across continental and insular shelves. Key habitat characteristics include large aggregations at specific sites such as the Flower Garden Banks, estuarine areas, and mangrove ecosystems for reproduction and	The Timor Sea is recognized as habitat for the scalloped hammerhead based on local fisher catch records, with occurrences predominantly in the southern waters of Timor Island. However, given the distribution range and localized occurrence, it is unlikely that this area

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						pupping, as well as deep waters adjacent to shelves where they hunt. Scalloped hammerheads are pelagic sharks found worldwide in tropical and warm-water regions, including the Atlantic, Indian, and Pacific Oceans. While their main habitat is open marine waters, they are also commonly observed near continental and island shelves and frequently enter bays and estuaries. Although there are no precise global population size estimates, population trend data over three generations from two sampling sites in the Atlantic suggest a potential global decline of more than 80% (Rigby et al., 2025). At the local level, catch data from fishing ports in East Nusa Tenggara recorded scalloped hammerhead sharks as a commonly caught species between 2016 and 2017, accounting for 12.5% of total shark landings, or 518 individuals, with the fishing grounds estimated to be in the southern waters of Timor Island (Dewi et al., 2018).	would meet Criterion 1 thresholds for triggering critical habitat.
5	Green Sawfish	*Pristis zijsron*	CR	No	No	The green sawfish is distributed across the Indian and western Pacific Oceans, as well as along the East African coastline of the Atlantic (Everett et al., 2015). It inhabits marine, estuarine, and freshwater environments, often favoring sandy and muddy substrates located near river mouths (Peverell, 2005). The species typically occurs in waters less than 5 m deep, although adults may be found at depths up to 100 m (Dulvy et al., 2016). Green sawfish are primarily coastal, with juveniles inhabiting shallow nearshore areas, while adults are more commonly found offshore at depths exceeding 70 m (Harrison and Dulvy, 2014). The status of global and local populations of green sawfish remains uncertain. Reproductive biology is poorly understood; however, data from the Gulf of Carpentaria (Northern Australia) suggest that the species has a low intrinsic rate of population increase, making it highly vulnerable to	Available data are very limited; however, assuming the main distribution of this species lies within the Pacific Ocean, it is unlikely that the EAAA marine area would meet the threshold of supporting 5% of the global population (Criterion 1a). Furthermore, within the Arafura and Timor Seas (ATS) region, the EAAA has not been identified as an important habitat for river sharks and other shark species (Hakim et al., 2020). Therefore, it is also unlikely to meet the thresholds for national or regional concentrations (Criterion 1c).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						fishing pressure and slow to recover from population declines (Harrison and Dulvy, 2014).	
6	Bowmouth Guitarfish	*Rhina ancylostoma*	CR	No	No	Bowmouth guitarfishes are recorded at depths of up to 70 m but generally prefer shallow waters close to shore, particularly in or near coral reefs and mangroves, at depths of 3–70 m. They favor sand and mud substrates but may also be found swimming in the water column above the seabed (ICAR-CMFRI, 2022). The species is distributed across the Indo-West Pacific, ranging from the Persian Gulf to Australia and Japan. Population dynamics and stock structure remain poorly understood. However, anecdotal reports and historical catch records across its range indicate localized population depletion. For instance, landings of bowmouth guitarfish in India declined by 86% between 2007 and 2020.	Available data on local and regional contexts, including catch records from the nearest regional ports, are very limited. However, assuming the primary distribution of this species lies within the Indo-West Pacific, it is unlikely that the EAAA marine area would meet the threshold of supporting more than 5% of the global population (Criterion 1a). Furthermore, within the Arafura and Timor Seas (ATS) region, the EAAA has not been identified as an important habitat for river sharks or other shark species (Hakim et al., 2020). Therefore, it is also unlikely to meet the thresholds for national or regional concentrations (Criterion 1c).
7	Bottlenose Wedgefish	*Rhynchobatus australiae*	CR	No	No	The Bottlenose Wedgefish is distributed across subtropical waters of the Indian Ocean and western Pacific, ranging from the eastern coast of Africa and the Red Sea to Taiwan, the Philippines, and Australia. This species prefers habitats close to shore, at depths of up to 60 m on the continental shelf, occurring over soft substrates but also associated with coral reefs. The species is highly vulnerable to fishing pressure. The global and regional (Timor Leste) populations are unknown, but the species is believed to be declining due to susceptibility to capture by fishers. Based on its geographic distribution, the EAAA landscape represents part of the species' extant habitat (Kyne, 2019).	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
8	Largetooth Sawfish	*Pristis pristis*	CR	No	No	The Largetooth Sawfish inhabits tropical and subtropical coastal areas worldwide, including estuaries, mangroves, and freshwater systems. The species is also capable of entering rivers and freshwater habitats, including lakes and billabongs, and is often found in shallow freshwater environments, likely as a strategy to avoid predation. The Largetooth Sawfish consists of four distinct subpopulations: Western Atlantic, Eastern Atlantic, Eastern Pacific, and Indo-West Pacific. While precise population estimates are unavailable, the species is generally declining due to fishing pressure. Based on its range map, the EAAA landscape represents part of the species' extant habitat (Espinoza et al., 2022).	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).
9	Giant Guitarfish	*Glaucostegus typus*	CR	No	No	Juvenile Giant Guitarfish are commonly found in nearshore habitats, such as mangroves and coral reefs, while adults inhabit deeper marine waters, down to at least 100 m on the continental shelf. The species is widely distributed across the Eastern Indian and Western Pacific Oceans, occurring from India to northern Australia, as well as Papua New Guinea, the Solomon Islands, and north to Taiwan (Kyne et al., 2019). There are no precise estimates of the global or regional population in Timor Leste, but the species is experiencing sharp declines, primarily due to overfishing in coastal areas. According to range maps, the EAAA landscape represents part of the species' extant habitat, with a high likelihood of occurrence (Kyne et al., 2019; FishBase, 2025).	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).
10	Sei Whale	*Balaenoptera borealis*	EN	No	No	The Sei Whale typically inhabits deep waters across its range, avoiding polar and tropical regions, and prefers a temperature range of 8–18ºC. It is distributed throughout the world's oceans, including the North Atlantic, Pacific, and Southern Oceans, but there are no records of its presence in the Northern Indian Ocean. The global population of Sei Whales is	Although the species may potentially occur within the EAAA seascape, considering its wide global distribution and population, the likelihood that the EAAA supports a significant portion of the global population is very low. Therefore, the EAAA is unlikely to meet the

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						estimated at approximately 50,000 individuals (Chooke, 2018). However, there are no local or regional records of the species in Timor-Leste, either in the scientific literature or through fisheries data.	threshold for designation as Critical Habitat under Criterion 1 for the Sei Whale.
11	Blue Whale	*Balaenoptera musculus*	EN	No	Full Migrant	The Blue Whale primarily inhabits open ocean waters worldwide, excluding the Arctic Ocean, and undertakes seasonal migrations between cold or temperate feeding areas and warmer tropical breeding grounds. During the austral summer, the species migrates to high-latitude feeding areas, while in winter, it moves to low-latitude tropical regions for breeding. The global population of Blue Whales is estimated at 5,000–15,000 individuals, with a generally increasing trend (Cooke, 2018). The EAAA forms part of the Ombai Strait, which is recognized as a global migration corridor for the species, although the migratory path does not directly intersect the project area (Bluecorridors, 2025). No records exist for the number of individuals passing near the EAAA during migration. Considering the species' broad distribution and migratory behavior, it is unlikely that the EAAA supports ≥5% of the global population. Therefore, the EAAA is unlikely to meet the threshold for Critical Habitat designation under Criterion 1 for the Blue Whale.	While the EAAA is located along a migratory route, the area has limited potential as suitable habitat for the species. Therefore, it is unlikely that the EAAA would meet the thresholds for designation as Critical Habitat under Criterion 1 or Criterion 3.
12	Whale Shark	*Rhincodon typus*	EN	No	Full Migrant	The Whale Shark is generally considered a solitary species, although aggregations have been observed in certain locations. The reasons for these aggregations are not fully understood but are likely related to local food availability. Whale Sharks are distributed across tropical and subtropical waters between approximately 30°N and 35°S, occurring in around 124 countries, with the exception of the Mediterranean Sea (Toha et al., 2019). There are no precise global population estimates; however, based on counts, modeled population estimates, and	Studies using telemetry indicate migratory patterns of Whale Sharks, with the nearest research to the EAAA suggesting the species is present in the Ombai Strait. Observations suggest that their occurrence in this area is at low concentration (Putra et al., 2024). Considering the species' distribution and the low density observed, it is unlikely that the

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						habitat availability, it is inferred that roughly 75% of the global population occurs in the Indo-Pacific, with the remaining 25% in the Atlantic.	EAAA meets the threshold to qualify as Critical Habitat under Criterion 1 or 3.
13	Shortfin Mako	*Isurus oxyrinchus*	EN	No	No	The Shortfin Mako (Isurus oxyrinchus) primarily inhabits pelagic waters in tropical and temperate oceans worldwide, occurring from the surface to depths of 150–888 meters, though it is often found far offshore. Juveniles are more commonly observed in coastal waters, whereas adults predominantly occupy offshore habitats. This species is highly migratory and capable of traversing entire ocean basins (Rigby et al. 2019). Globally, the Shortfin Mako is widespread across temperate and tropical waters of all oceans. No reliable data exist on absolute global population size, but the species shows a strong declining trend due to overfishing and targeted harvesting. Local and regional population records for Timor-Leste are not available, either from literature or fisheries catch reports.	Considering its global distribution and assuming that the Shortfin Mako may occur within the EAAA based on suitable habitat, it is unlikely that the EAAA meets the threshold to qualify as Critical Habitat under Criterion 1a (habitat of ≥5% global population) or Criterion 1c (nationally important concentration).
14	Grey reef shark	*Carcharhinus amblyrhynchos*	EN	No	No	The Grey Reef Shark (*Carcharhinus amblyrhynchos*) primarily inhabits tropical coral reef ecosystems and shallow coastal waters, particularly near reef drop-offs and fringing reefs. It is found on continental shelf waters to depths of approximately 280 m (Simpfendorfer et al. 2020). This species has a patchy but widespread distribution across the tropical Indo-West and Central Pacific Oceans, and it is also reported in parts of the Eastern Tropical Pacific. The global population of Grey Reef Shark is unknown, but a declining trend has been observed due to fishing pressure and overharvesting. In Indonesia, Grey Reef Sharks are commonly recorded in several landing sites. For instance, they constitute 18.5% of shark landings in Kupang (Nurcahyo et al., 2015). Other confirmed occurrences include northern Java (Parluhutan & Irnawati, 2015), Banggai Islands	No population data are available at the local level in Timor-Leste. Assuming the species occurs in the EAAA based on suitable habitat, it is unlikely that the EAAA meets the threshold to qualify as Critical Habitat under Criterion 1.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						(Zamrud et al., 2015), and Morotai, North Maluku (Ichsan et al., 2015).	
15	Narrow sawfish	*Anoxypristis cuspidata*	CR	No	No	The Narrow Sawfish (*Anoxypristis cuspidata*) is a benthopelagic species found in estuarine, inshore, and offshore waters, occurring at depths of 0–128 m, though it is most commonly observed in shallow waters from the surface to 40 m. Historically, the species had a wide distribution across the tropical Indo-West Pacific, including the Arabian Sea and adjacent waters, Southeast Asia, Papua New Guinea, and northern Australia. Populations in parts of their former range are now considered extirpated or extremely rare. No quantitative data are available on the global population of Narrow Sawfish, but trends indicate a decline. Based on its IUCN distribution map (Haque 2023), the presence of this species in the EAAA is uncertain.	Considering the potential presence in the EAAA and its global distribution, the likelihood of the EAAA meeting the threshold as critical habitat under Criterion 1 is considered very low.
16	Winghead shark	*Eusphyra blochii*	EN	No	No	The Winghead Shark (*Eusphyra blochii*) primarily inhabits continental shelves and coastal nearshore waters, including estuaries and inshore seas, at depths of up to approximately 80 meters. In eastern Australia, this species has been observed in highly localized concentrations, often within areas of less than 50 km². No species-specific population data are available, and trends over time are unknown. The species is distributed broadly across the Indo-Pacific region, ranging from the Persian Gulf in the west to the Philippines, north to China and Taiwan, and south to Queensland and the Northern Territory in Australia. Local population data for Timor-Leste are also unavailable.	Considering the global distribution and the potential for suitable habitat within the EAAA, it is unlikely that this area meets the threshold for designation as critical habitat under Criterion 1.
17	Sharptooth lemon shark	*Negaprion acutidens*	EN	No	No	The Sharptooth Lemon Shark (*Negaprion acutidens*) is a demersal species inhabiting shallow inshore and offshore waters to depths of at least 90 meters. It is commonly associated with coral reefs and sandy plateaus near coral	Based on its distribution and potential suitable habitat, it is unlikely that the EAAA meets the threshold for designation as critical habitat under Criterion 1.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						structures (Simpfendorfer 2021). This species has a wide Indo-Pacific distribution, including the Red Sea, coastal waters of South Africa, northern Australia, and other Pacific countries. Global population numbers are unknown, although the species is suspected to be in decline. Similarly, local population data are lacking. Regional records are sparse, with the species documented in southern waters of Central Java, Indonesia, where it is caught only in low numbers (Setiawan and Nugroho, 2015).	
18	Zebra Shark	*Stegostoma tigrinum*	EN	No	No	The Zebra Shark (*Stegostoma fasciatum*) inhabits tropical and subtropical shallow inshore and offshore waters, frequently occurring on and around coral and rocky reefs, as well as on sandy plateaus near coral, at depths down to at least 62 meters (Dudgeon et al., 2019). Its range includes inshore waters along the continental and insular shelves of the Western Pacific and Indian Oceans. The global population of Zebra Shark is not precisely known; however, it is estimated to have declined by approximately 50% over the past 51 years. Observations indicate that sightings are becoming increasingly rare. For example, in Indonesia, fewer than ten encounters were recorded in Raja Ampat over a six-year period, and the species has become increasingly difficult to detect in Berau, East Kalimantan, over the past 15 years. The species is considered threatened in Southeast Asian waters, although populations in Australian waters remain relatively stable (Fahmi, 2021).	Considering its distribution and potential occurrence, while the species may be present within the EAAA seascape, the area is unlikely to meet the threshold as a critical habitat under Criterion 1, given the absence of data indicating that it supports ≥5% of the global population or nationally significant concentrations.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
19	Javanese Cownose Ray	*Rhinoptera javanica*	EN	No	No	The Javanese Cownose Ray inhabits tropical Indo-Pacific waters, including offshore and shallow coastal areas, from the surface down to 50 m, coral reefs, estuarine waters, and coastal lagoons, typically over sandy and muddy substrates. The species occurs near the coasts of China, India, Indonesia, and other Indo-Pacific countries. The global population is unknown, but it is believed to be declining. Range maps indicate that the EAAA landscape forms part of the species' habitat (Sherman et al., 2021).	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).
20	Sicklefin Devil Ray	*Mobula tarapacana*	EN	No	No	The Sicklefin Devil Ray occupies pelagic habitats in offshore waters, from the surface down to 1,896 m, and has a circumtropical distribution across the Atlantic, Pacific, and Indian Oceans. There are no historical baseline population data, and the global population of devil ray species remains unknown. The species' regional occurrence is unconfirmed, but considering the suitable habitat present, it is potentially present within the EAAA landscape.	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).
21	Bentfin Devil Ray	*Mobula thurstoni*	EN	No	No	The Bentfin Devil Ray inhabits tropical, subtropical, and warm temperate waters worldwide, occurring in pelagic environments from the surface to 100 m, both nearshore and in open ocean waters. The species has a circumglobal distribution across the Pacific, Atlantic, and Indian Oceans. Global and regional population data, including for the EAAA, are unknown, but the species shows a strong declining trend. Locally, there are no records or literature reporting its presence within the EAAA landscape.	Considering the suitable habitat present in the EAAA, it is potentially available for the species. However, given its broad global distribution, it is unlikely that the EAAA would meet the threshold to support ≥5% of the global population (Criterion 1a) or represent a national/regional concentration (Criterion 1c).
22	Longfin Mako	*Isurus paucus*	EN	No	No	The Longfin Mako Shark (Isurus paucus) is a pelagic species found in tropical and temperate waters worldwide, including the Atlantic, Pacific, and Indian Oceans. It inhabits deep waters, ranging from the surface to approximately 220 m, often residing in the upper mesopelagic zone during the day	While the EAAA landscape may potentially provide habitat for this species, considering its wide global distribution, it is unlikely that EAAA meets the threshold to support ≥5% of the

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						and ascending to the epipelagic zone at night. Its distribution includes the Western Atlantic (e.g., Gulf Stream and Florida, USA; Cuba; southern Brazil), the Eastern Atlantic (e.g., Guinea, Ghana), the Western Indian Ocean (e.g., Madagascar), and the Pacific Ocean (e.g., Taiwan, near Phoenix Island, and north of Hawaii). There are no available data on the global population size or structure of the Longfin Mako, and its regional population status is also unknown.	global population (Criterion 1a) or represents a national/regional concentration (Criterion 1c).
23	-	*Anacropora spinosa*	EN	No	No	The species is distributed throughout the Coral Triangle (Indonesia, Malaysia, the Philippines, Papua New Guinea, Solomon Islands), as well as in adjacent areas such as Taiwan, Japan, and New Caledonia. According to Turak and DeVantier (2012), it has not been confirmed at any of the 22 monitoring stations in the Timor-Leste region. The species is rare and experiencing a steep decline due to vulnerability to coral bleaching, disease, and habitat loss.	Based on its regional absence (Turak and DeVantier 2012) and global distribution, it is unlikely that the EAAA meets the threshold to support ≥5% of the global population (Criterion 1a) or represents a national/regional concentration (Criterion 1c).
24	Lobed Cactus Coral	*Lobophyllia serratus*	EN	No	No	Lobed Cactus Coral occurs on lagoons and reef slopes, thriving in calm reef flats and upper reef areas in the western Indo-Pacific, including Indonesia and the Philippines, where it is present but generally not abundant. Its depth range is 4–30 m, with a preference for 4–15 m (Bayley et al. 2024). Global and local population data are unknown; however, the species has been confirmed in Timor-Leste based on 22 monitoring stations (Turak and DeVantier 2012).	Considering its presence in the EAAA and its range global distribution, it is unlikely that the EAAA meets the threshold to support ≥5% of the global population (Criterion 1a) or represents a national or regional concentration (Criterion 1c).
25		*Montipora setosa*	EN	No	No	The natural habitat of Montipora setosa is shallow coral reefs in the tropical Indo-Pacific, including parts of Southeast Asia and the western Pacific Ocean. This coral thrives in clear, warm waters with strong sunlight, typically at depths of 2–20 m, and is exposed to moderate to strong water flow. This species is found in the central Indo-Pacific, including the Philippines, Malaysia, and Indonesia. It is very poorly known and may have	Considering its distribution and monitoring results, it is unlikely that the EAAA meets the threshold to qualify as critical habitat under Criteria 1a or 1c.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						a wider distribution. Global population data for this species are limited, and coral reefs are experiencing severe declines worldwide due to rising water temperatures. According to Turak and DeVantier (2012), its presence has not been confirmed in Timor-Leste based on 22 monitoring stations.	
26		*Alveopora minuta*	EN	No	No	Alveopora minuta prefers areas with moderate to strong water flow and high light intensity, commonly occurring on sandy or gravel substrates at depths of 1–20 m. It is frequently found in groups, forming colonies of various sizes. No reproductive studies are available for this species. This species is distributed across the central Indo-Pacific, including the Solomon Islands, and has also been confirmed in West Malaysia and southern Vietnam. It is considered rare, with limited global population data, and coral reefs are undergoing severe declines worldwide due to increasing water temperatures. In Timor-Leste, it has been recorded at several locations, including Atauro Island, Nino Konis Santana National Marine Park, and the EAAA landscape area, with 2 out of 22 monitoring stations located within the EAAA (Turak and DeVantier 2012).	Considering its habitat distribution, it is unlikely that the EAAA meets the threshold to support ≥5% of the global population or qualifies as critical habitat under Criteria 1a or 1c.
27	Shorthorned Pygmy Devil Ray	*Mobula kuhlii*	EN	No	No	The primary habitat of Mobula kuhlii (Shorthorned Pygmy Devil Ray) includes coastal and oceanic waters, ranging from South Africa to Indonesia and northern Australia, across the Indian Ocean and western-central Pacific Ocean. This species is inshore and mainly occurs over continental shelves, generally at depths up to 50 m, and its distribution does not extend into the open epipelagic zone. In Indonesian waters, the species is reported to have high habitat density (FishBase, 2025). Globally, Mobula kuhlii occurs throughout the Indo-West Pacific, from South Africa to the Solomon Islands. The global population size of this species is unknown.	Based on its habitat characteristics, the EAAA may serve as suitable habitat for this species. However, considering its global distribution and available habitat, it is unlikely that the EAAA meets the threshold to support ≥5% of the global population or to represent a national concentration (Criteria 1a and 1c).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
28	Pelagic Thresher	*Alopias pelagicus*	EN	No	No	The primary habitat of Alopias pelagicus is open ocean waters in tropical and subtropical regions of the Pacific and Indian Oceans, ranging from the surface down to approximately 300 meters, although it is occasionally found in nearshore areas, such as offshore coral reefs and submerged shoals in regions with narrow continental shelves, including the Red Sea and Micronesia. There are no available data on the global population size of the Pelagic Thresher. However, the species is estimated to be declining across both the Pacific and Indian Oceans.	Considering its distribution and habitat characteristics, the species may occur within the EAAA landscape, but it is unlikely to meet the threshold as critical habitat under Criterion 1.
29	Golden Sandfish	*Holothuria scabra*	EN	No	No	The primary habitat of Holothuria scabra is shallow tropical waters in the intertidal zone, particularly in seagrass beds and muddy-sand substrates near mangroves and coral reefs. This species burrows into the seabed and plays an important role in sediment processing. It is widespread throughout the Indo-Pacific, from South Africa to the Red Sea, India, China, and Japan, to Australia, and extends northeast to Micronesia and southeast to Tonga. In Madagascar, it occurs along the west coast from south of Toliara to Nosy Be (Hamel et al., 2013). The global population size is unknown, but it is believed to be declining significantly.	No records or literature indicate the presence of H. scabra within the EAAA landscape; however, the area likely provides suitable habitat for this species. Considering its global distribution and potential habitat suitability, it is unlikely that EAAA qualifies as critical habitat under Criterion 1.
30	Golden Sandfish	*Holothuria lessoni*	EN	No	No	The primary habitat of Holothuria lessoni is shallow waters of the Indo-Pacific Ocean, with a distribution ranging from eastern Africa through Papua New Guinea to Australia. This sea cucumber is typically found near islands and reef flats. In the Western Central Pacific, it occurs in lagoons over sandy bottoms at depths of 0–25 m (Conand et al., 2013). Globally, the population of this species is in sharp decline, although total population estimates are not available.	No records or reports indicate the presence of H. lessoni within the EAAA landscape; however, the area is likely suitable habitat for the species. Considering its global distribution and preferred habitats, it is unlikely that EAAA qualifies as critical habitat under Criterion 1.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
31	Pineapple Sea Cucumber	*Thelenota ananas*	EN	No	No	The primary habitat of Thelenota ananas (prickly sea cucumber) consists of clean sandy lagoon bottoms up to 30 m depth, as well as areas around coral reefs and coral rubble. The species is also commonly found along slopes and passes within reef zones and along outer reef flats down to 35 m, with a preference for waters 10–20 m deep (Conand et al., 2013). This species occurs throughout tropical waters of the Pacific and Indian Oceans, including areas around Australia (e.g., the Great Barrier Reef) and the Red Sea, with a wide distribution across the Indo-Pacific region. The global population is unknown, but it is declining, with populations considered depleted in at least 50% of its range (e.g., Philippines, PNG, India, Indonesia, Madagascar) and overexploited in the South Pacific (Conand et al., 2013).	The EAAA marine landscape provides suitable habitat for this species. However, considering the extent of potential habitat and likely population densities, it is unlikely that the EAAA supports ≥5% of the global population. Therefore, the EAAA does not meet the threshold as critical habitat under Criterion 1.
32	Oceanic Manta Ray	*Mobula birostris*	EN	No	No	The giant manta ray (Mobula birostris) primarily inhabits tropical, subtropical, and temperate waters worldwide. It is predominantly pelagic, often found offshore in nutrient-rich oceanic waters, though it can also occur in coastal areas, bays, estuaries, and shallow waters. Observations indicate that the species may enter inlets and intercoastal waterways. The global population size is unknown, but it is declining, with a suspected reduction of 50–79% over three generation lengths. There are no records of the species within the EAAA landscape, nor is it recognized as a key species for protected areas or marine KBAs in the region.	While the species could potentially occur in the EAAA, considering its broad global distribution and population trends, it is unlikely that the EAAA meets the thresholds for critical habitat under Criterion 1.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
33	Far Eastern Curlew	*Numenius madagascariensis*	EN	No	Full Migrant	Far Eastern Curlew (Numenius madagascariensis) breeds in eastern Russia, from the upper reaches of the Nizhnyaya Tunguska River east through the Verkhoyarsk Mountains to Kamchatka, and south to Primorye, with most birds apparently breeding in the far southeast of the range. The Yellow Sea region of the Democratic People's Republic of Korea, Republic of Korea, and China is a particularly important stopover site during both northward and southward migration. It has also been recorded as a passage migrant in Japan, Brunei, Bangladesh, Thailand, Viet Nam, Philippines, Malaysia, and Singapore, with up to 75% of the global population wintering in Australia. The remaining birds winter in China, Indonesia, Papua New Guinea, and New Zealand. The species breeds in open mossy or transitional bogs, moss-lichen bogs, wet meadows, and swampy lake shores, while in the non-breeding season it is essentially coastal, occupying estuaries, mangrove swamps, saltmarshes, and intertidal flats, especially those with extensive seagrass (Zosteraceae) meadows. Roosting sites include saltmarshes, mangrove edges, and sandy beaches. Based on field observations, suitable habitats for this species are present within the EAAA landscape. Knowledge on the species' local stopover and wintering use within EAAA remains limited. While EAAA is indicated as part of the species' distribution (eBird 2025), it is not recognized as a globally important stopover site for migratory birds within the East Asian–Australasian Flyway Site Network (EAAFP 2025) (https://eaaflyway.net/the-flyway/flyway-site-network/).	Considering the species' migration ecology and distribution, it is unlikely that the EAAA supports ≥5% of the global population or a significant national concentration (Criteria 1a and 1c). Furthermore, the EAAA is also unlikely to sustain migratory processes on a cyclical or regular basis (Criteria 3a and 3c).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
34	Great Knot	*Calidris tenuirostris*	EN	No	Full Migrant	Great Knot (Calidris tenuirostris) is a medium-sized, robust shorebird, almost exclusively found on intertidal mudflats during migration, and only rarely inland. It breeds in northeast Siberia, Russia, on gravelly tundra areas covered with lichen and patches of herbs. In its wintering range, the species occurs in sheltered coastal habitats such as inlets, bays, harbours, estuaries, and lagoons with extensive intertidal mud and sandflats, as well as oceanic sandy beaches near mudflats. The species winters mainly in Australia, but also along the coastlines of Southeast Asia, India, Bangladesh, Pakistan, and the eastern Arabian Peninsula. Globally, the species is strongly associated with the East Asian–Australasian Flyway (EAAF). Although the EAAA landscape is potentially as density concentration of this species (eBird 2025) (https://ebird.org/species/grekno), it is not identified as a key migratory stopover site within the EAAF Site Network (https://eaaflyway.net/the-flyway/flyway-site-network/).	While the EAAA provides potential habitat for this species, it is unlikely to support ≥5% of the global population or significant national concentrations (Criteria 1a and 1c). Furthermore, the EAAA is unlikely to function as a site sustaining migratory processes on a cyclical or regular basis (Criteria 2a and 2b).
35	Spinetail Devil Ray	*Mobula mobular*	EN	No	No	Mobula mobular (Spinetail Devil Ray) inhabits offshore waters of tropical and temperate oceans, as well as some warm temperate latitudes. This fully marine species is distributed worldwide, occurring in the Atlantic, Pacific, and Indian Oceans, and also in the Mediterranean and Black Seas. It spends much of its time in waters shallower than 50 m but is capable of diving to depths of over 1,100 m. Information on the occurrence of this species within the EAAA is very limited, with no confirmed records available in the literature. The global population size is unknown, but the species shows a declining trend due to targeted fishing and incidental bycatch, with reductions estimated at 50–79% over the past three generation lengths.	Considering the species' wide global distribution and the availability of suitable habitats both within the EAAA and elsewhere, it is unlikely that the EAAA supports ≥5% of the global population or functions as a site of significant national or regional concentration. Therefore, the EAAA is unlikely to meet the thresholds for critical habitat under Criteria 1a and 1c.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
36	Gulper Shark	*Centrophorus granulosus*	EN	No	No	The Gulper Shark is a demersal and benthopelagic species that inhabits continental and insular shelves and slopes at depths ranging from 50–1,500 m (possibly down to 2,307 m), but is most commonly found between 300–1,100 m. This species has a widespread but patchy global distribution in the Atlantic and Indo-Pacific Oceans. However, based on current distribution maps (Finucci et al. 2024), its occurrence within the EAAA is considered unlikely.	Given the species' global distribution pattern and the low likelihood of occurrence in the EAAA, it is unlikely that the EAAA meets the thresholds for critical habitat under Criteria 1a and 1c.
37	Southeast Asian Box Turtle	*Cuora amboinensis*	EN	No	No	Southeast Asian Box Turtle (Cuora amboinensis) is a reptile species dependent on aquatic habitats but is opportunistic, inhabiting most types of water bodies except large rivers and reservoirs. It is highly aquatic and prefers warm, wet environments, particularly in tropical rainforest areas with stable temperatures. The species is frequently found in rice paddies, marshes, and shallow ponds. This turtle has a very wide distribution, occurring throughout Southeast Asia, from northeastern India and the hills of eastern Bangladesh across mainland Southeast Asia.	Given its broad range and generalist habitat preferences, it is unlikely that the EAAA meets the thresholds for critical habitat under Criterion 1a (≥5% of the global population) or Criterion 1c (national concentration).
38	Common Long-tailed Macaque	*Macaca fascicularis ssp. fascicularis*	EN	No	No	Common Long-tailed Macaque (Macaca fascicularis fascicularis) is a primate species highly tolerant of habitat disturbance. In some regions, it is even considered a pest. The subspecies is extremely adaptable, occupying a wide range of habitats including primary and secondary forests, mangroves, swamp forests, agricultural landscapes, and areas adjacent to human settlements. Geographically, this subspecies has the widest distribution of all Macaca fascicularis subspecies. It occurs in Brunei, Cambodia, Indonesia (Kalimantan, Sumatra, Java, Bali, and most but not all offshore islands), southern Lao PDR, Malaysia (Peninsular Malaysia, Sabah, and Sarawak), the Philippines, Singapore, eastern and southern Thailand (and	Given its extensive range and adaptability, it is unlikely that the EAAA meets the thresholds for critical habitat under Criterion 1a (≥5% of the global population) or Criterion 1c (national concentration).

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						offshore islands), and southern Viet Nam. It has likely been artificially introduced in the Nusa Penida–Timor Island chain.	
39	Large Flying-fox	*Pteropus vampyrus*	EN	No	No	Large Flying-fox occurs from sea level up to around 1,250 m asl, roosting in trees in primary and secondary forests, along beaches, in mangroves, inland, and in hill forests on small uninhabited islands. It is often found near adjacent agricultural areas that it uses for feeding. The species has a very wide distribution throughout much of continental and insular Southeast Asia, although its preferred lowland forest habitats are now fragmented across much of its historical range. On the mainland, it has been reported from southern Viet Nam, Cambodia, Thailand, and much of Peninsular Malaysia. In Timor-Leste, however, its presence has not yet been confirmed.	Given its extensive global distribution, it is unlikely that the EAAA meets the threshold for critical habitat under Criterion 1a (≥5% of the global population) or Criterion 1c (national concentration).
40	Burmese Rosewood	*Pterocarpus indicus*	EN	No	No	Burmese Rosewood is a natural vegetation species typically found in lowland and tropical montane forests, occurring at elevations of 600–1,300 m asl. The species has a very wide distribution, being native to tropical forests of South and Southeast Asia.	Given its broad geographic range and the absence of evidence for concentrated occurrence within the EAAA, it is unlikely that the EAAA meets the threshold for critical habitat under Criterion 1a (≥5% of the global population) or Criterion 1c (national concentration

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
41	Timorese Horseshoe Bat	*Rhinolophus montanus*	EN	Yes (6,593)	No	Timorese Horseshoe Bat is a nocturnal species typically roosting in cave ecosystems, often in rocky outcrops surrounded by degraded hill forests at elevations of around 1,220 m asl. Records suggest the species shows a preference for foraging in dense vegetation, particularly within natural forest and riparian habitats. While no roosts have been directly confirmed with echolocation records, observations indicate that shallow caves near rocky hills are the most likely roosting sites. The species is categorized as a restricted-range species, with an estimated extent of occurrence (EOO) of 6,593 km². To date, all confirmed specimens have been found in Timor-Leste, with a maximum of four known locations (Armstrong & Csorba 2016). The global population size is unknown, but it is presumed to be small and fragmented, dependent on the availability of suitable forest and cave habitats.	One of the known resident locations is believed to occur within or near the EAAA landscape. However, site verification did not record the presence of the species using either camera traps or echolocation survey methods. Geological data indicate that the project area is dominated by the Aileu Complex formation, which consists of metamorphic and meta-sedimentary rocks (Thompson 2011). This formation is unlikely to provide suitable cave habitat for the species. Given the low habitat suitability within the EAAA and the low likelihood that the area supports one of the species' few resident populations, it is unlikely that the EAAA can support ≥10% of the global population or represent a national concentration of the species. Therefore, the EAAA does not qualify as Critical Habitat under Criteria 1a, 1c, or 2a.
42	Wetar Ground Dove	*Pampusana hoedtii*	EN	No	No	Wetar Ground Dove is a lowland forest specialist, inhabiting dry forest and tropical forest up to 250 m asl, and it may also occur in lightly disturbed hill forests. The species is restricted to Timor and Wetar Islands, but it is not classified as a restricted-range species, given its estimated extent of occurrence (EOO) of 55,300 km². The global population is estimated at 1,500–7,000 mature individuals, with an overall declining trend. The population is fragmented into up to 100 subpopulations.	Currently, there is no record of occurrence in the EAAA (eBird 2025). Assuming comparable density with suitable habitats elsewhere, and considering the proportion of potential forest habitat within the EAAA relative to the estimated area of occupancy (AOO), it is unlikely that the EAAA supports ≥5% of the global population. Furthermore, this species is not identified as a trigger species for KBAs or Protected Areas. Therefore, the EAAA is unlikely to qualify as

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
							Critical Habitat under Criterion 1a (≥5% of the global population) or Criterion 1c (national concentration of a species).
43	Timor Green-pigeon	*Treron psittaceus*	EN	Yes (35,100)	No	Timor Green-pigeon is the only green-pigeon species occurring on Timor. It inhabits primary and tall secondary lowland dry forest and monsoon forest, mostly in the extreme lowlands, but occasionally up to 1,000 m asl. The species is restricted to Timor Island, with indications of declining habitat in Indonesia, and remaining suitable habitat likely along the northern coastal areas of Timor-Leste. It is considered a restricted-range species, with an estimated extent of occurrence (EOO) of 35,100 km² (BirdLife 2021). Global population size is estimated between 660–2,000 individuals (BirdLife 2021). Species distribution mapping (eBird 2025) does not confirm occurrence in the EAAA.	Based on the site verification, the survey did not identify any indications of the species' potential presence, particularly when assessed against key habitat parameters such as multi-layered vegetation structure and the availability of food resources for pigeon species. Although the area falls within the broader species range, it is unlikely that the EAAA would support 10% of the global population. Therefore, the EAAA does not meet the thresholds for Critical Habitat under Criterion 1a (habitat supporting ≥10% of the global population) or Criterion 2a (habitat for restricted-range species).
44	Timor Imperial-pigeon	*Ducula cineracea*	NT	Yes (37600)	No	Timor Imperial-pigeon (Ducula cineracea) primarily inhabits forest canopies and large trees in foothill and montane habitats across Timor and Wetar. It is considered resident, though it may undertake local altitudinal movements. On Timor, the species has been recorded from coastal areas up to 2,200 m, while on Wetar it occurs from sea level to 930 m, being more frequent at higher elevations (BirdLife, 2017). This species is a restricted-range species, with an estimated extent of occurrence (EOO) of 37,600 km². The global population is estimated at 6,000–15,000 individuals. According to eBird (2025), the EAAA overlaps with the species' distribution, though likely at relatively low densities.	Considering the species' range map and the availability of suitable habitat within the EAAA, the area is unlikely to support ≥10% of the global population. Therefore, although the species may occur at low densities, the EAAA does not meet the threshold for Critical Habitat designation under Criterion 2.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
45	Streak-breasted Honeyeater	*Meliphaga reticulata*	LC	Yes (38400)	No	Streak-breasted Honeyeater (Territornis reticulata) is generally found from lowlands up to montane habitats at elevations of around 1,200 m. It inhabits natural habitats such as forests, savanna, and shrubland, and is also recorded in modified habitats including arable land. This species is a restricted-range species, occurring only on Timor Island, with an estimated extent of occurrence (EOO) of 38,400 km². The global population size has not been quantified, but it is described as widespread and common across Timor.	While the EAAA overlaps with suitable habitats (eBird 2025) (https://ebird.org/species/stbhon3), no data exist on local or landscape-level populations. Considering its wide distribution and relatively common status across Timor, it is unlikely that the EAAA supports ≥10% of the global population. Therefore, the EAAA is unlikely to trigger critical habitat designation under Criterion 2.
46	Timor Friarbird	*Philemon inornatus*	LC	Yes (38500)	No	Timor Friarbird (*Philemon inornatus*) is commonly found in lowland and foothill habitats up to elevations of around 2,200 m. It inhabits forests and forest edges, as well as more open wooded areas, plantations, and mangroves (BirdLife, 2018). This species is a restricted-range species, with an estimated extent of occurrence (EOO) of 38,500 km², confined to Timor Island. The global population size is not quantified, but the species is reported to be widespread and common across its range. The field observation confirmed the presence of this species within the project area.	Although the EAAA overlaps with suitable habitats (eBird 2025) (https://ebird.org/species/timfri1), no local or landscape-level population estimates are available. Given its broad distribution and abundance across Timor, it is unlikely that the EAAA supports ≥10% of the global population. Therefore, the EAAA is unlikely to trigger critical habitat designation under Criterion 2.
47	Flame-eared Honeyeater	*Lichmera flavicans*	LC	Yes (35000)	No	Flame-eared Honeyeater (*Lichmera flavicans*) inhabits forests and forest edges, particularly in foothill areas, and is less abundant in lowlands but occurs up to montane elevations. It can also be found in savanna, dry forest, and modified habitats such as plantations (BirdLife, 2018). This species is categorized as a restricted-range species, with an estimated extent of occurrence (EOO) of 35,000 km², distributed exclusively on Timor Island. The global population size is not known, but the species is described as locally common, particularly at higher elevations.	While the EAAA overlaps with suitable habitats for this species (eBird 2025) (https://ebird.org/species/yeehon1), no data are available on local or landscape-level populations. Considering its broad distribution across Timor and habitat prefferences, it is unlikely that the EAAA triggers critical habitat under Criterion 2.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
48	Black-breasted Myzomela	*Myzomela vulnerata*	LC	Yes (36500)	No	Black-breasted Myzomela (Myzomela vulnerata) is commonly found in lowland and foothill forests, forest edges, and shrubland. The species is also present in modified habitats such as scrublands and mixed gardens. This species is categorized as a restricted-range species, with an estimated extent of occurrence (EOO) of 36,500 km², occurring only on Timor Island. The global population size is unknown, but it is considered generally stable.	While the EAAA overlaps with suitable habitats of the species (eBird 2025) (https://ebird.org/species/bkbmyz1), there are no available data on local or landscape-level populations. Considering its wide distribution across Timor, it is unlikely that the EAAA supports ≥10% of the global population. Therefore, the EAAA is unlikely to trigger critical habitat designation under Criterion 2.
49	Fawn-breasted Whistler	*Pachycephala orpheus*	LC	Yes (48600)	No	Fawn-breasted Whistler (Pachycephala orpheus) inhabits forests, shrublands, and mangroves across lowland and hill areas, occurring from coastal zones up to 1,200 m asl. The species is categorized as a restricted-range species, with an estimated extent of occurrence (EOO) of 48,600 km², distributed across Timor, Wetar, and Atauro islands (BirdLife, 2024). The global population size remains unknown, and no data are available for local or landscape-level populations.	Based on species distribution maps (eBird, 2025) (https://ebird.org/species/fabwhi1), the Fawn-breasted Whistler is widely distributed across Timor and surrounding islands, including Wetar and Rote. While the EAAA overlaps with its range and contains suitable habitats, the lack of population data and the broad distribution of this species make it unlikely that the EAAA supports ≥10% of the global population. Therefore, the EAAA is unlikely to trigger critical habitat designation under Criterion 2.
50	Timor Figbird	*Sphecotheres viridis*	LC	Yes (43500)	No	Timor Figbird (Sphecotheres viridis flaviventris) is commonly observed in pairs, small groups, or flocks in lowland habitats, including forest, forest edges, wooded areas, and mangroves. The species is also regularly recorded in modified habitats such as arable land and plantations (BirdLife, 2017). It is categorized as a restricted-range species, with an estimated extent of occurrence (EOO) of 43,500 km², distributed across Timor and Rote islands. Based on eBird (2025), the EAAA lies within its distribution range and provides suitable habitat.	The global population size is unknown, although the species is generally described as common across its range. Considering its wide habitat tolerance, occurrence in modified landscapes, and the absence of evidence that EAAA supports ≥10% of globally proportion of the population, it is unlikely that the area meets thresholds for triggering critical habitat under Criterion 2.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
51	Timor Oriole	*Oriolus melanotis*	LC	Yes (43500)	No	Timor Oriole (Oriolus melanotis) occupies a wide range of habitats and elevations. It is commonly observed singly or in pairs in savanna, patches of dry forest, and mangroves, and on Timor it is generally restricted to lowlands. The species also occurs in modified habitats such as arable land and plantations, and can be found from coastal zones up to 2,110 m asl (BirdLife, 2024). Although the global population size has not been quantified, it is suspected to be undergoing a decline estimated at 1–19%. The species is considered a restricted-range species, occurring on Timor and adjacent islands such as Rote, with an estimated extent of occurrence (EOO) of 43,500 km².	Within the EAAA, suitable habitats are present and the area lies within the mapped distribution range of the species (eBird, 2025) (https://ebird.org/species/timori1). However, given its broad ecological tolerance and occurrence in both natural and modified habitats, it is unlikely that the EAAA supports ≥10% of the global population. Therefore, the EAAA is unlikely to trigger critical habitat under Criterion 2.
52	Buff-banded Bushbird	*Cincloramphus bivittatus*	LC	Yes (37700)	No	Buff-banded Bushbird (Crateroscelis hypoxantha) is commonly found in shrubby habitats of lowland and hill forests up to around 1,100 m elevation. It is also frequently recorded in modified habitats such as plantations, arable lands, and heavily degraded former forests. This species is categorized as a restricted-range species, occurring only on Timor Island, with an estimated extent of occurrence (EOO) of 37,700 km². The global l population size is unknown.	No local population estimates are available from the EAAA landscape. However, given its relatively broad habitat tolerance and ability to occupy modified habitats, it is unlikely that the EAAA supports a proportion of the global population sufficient to trigger critical habitat under Criterion 2.
53	Spot-breasted White-eye	*Heleia muelleri*	LC	Yes (38300)	No	White-browed Heleia (Heleia muelleri) is dependent on lowland to montane subtropical or tropical moist forests on Timor Island, occurring up to about 1,300 m asl. The species typically inhabits the canopy and sub-canopy and may be found in pairs or small groups. It is categorized as a restricted-range species, with a global distribution limited to Timor Island and an extent of occurrence (EOO) of 38,300 km². The global population size is unknown, but the species is described as rare and highly localized.	No local population estimates are available from the EAAA landscape, either from literature or field surveys. While suitable habitat occurs within the EAAA, it represents only a small proportion of the total available habitat. Considering the species' habitat requirements and distribution patterns (https://ebird.org/species/timwhe1), it is unlikely that the EAAA supports a concentration sufficient to trigger critical habitat under Criterion 2.

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
54	White-bellied Bushchat	*Saxicola gutturalis*	LC	Yes (45000)	No	White-bellied Bushchat (Saxicola gutturalis) exhibits a broad habitat preference. It is commonly found alone or in pairs, inhabiting forest canopies, scattered trees, and lowland to upland savanna between 0–1,200 m a.s.l. The species is sexually dimorphic, with males recognizable by their whitish underparts and distinctly longer tail. This bird is categorized as a restricted-range species, distributed across Timor, Rote, and Semau Islands, with an extent of occurrence (EOO) of approximately 45,000 km². According to BirdLife (2021), its global population is estimated at 30,000–200,000 individuals.	No population estimates are available for the EAAA. However, considering the wide distribution and generalist habitat preferences of this species, it is unlikely that the EAAA supports at least 10% of the global population. Therefore, the EAAA does not meet the threshold for triggering critical habitat under Criterion 2a.
55	Black-banded Flycatcher	*Ficedula timorensis*	LC	Yes (37500)	No	Ficedula timorensis (Timor Flycatcher) is an insectivorous bird inhabiting lowland and foothill forests of Timor Island. The species is shy, often occurring in dense undergrowth, and is usually observed alone or in pairs. It appears to favor habitats with limestone boulders and rocky scree slopes. This species is categorized as a restricted-range species, occurring only on Timor Island (Indonesia and Timor-Leste), with an estimated extent of occurrence (EOO) of 37,500 km². The global population size has not been quantified, and it is considered uncommon and local, though possibly overlooked due to its cryptic behavior. The global population size of this species has not yet been quantified. It is described as uncommon and local, though potentially under-recorded. At the local scale, no population estimates are available within the EAAA landscape, either from literature sources or from field surveys.	Given that the preferred habitats of the species are not commonly found within the EAAA, which is dominated by rangeland and savanna, it is unlikely that the area would meet the thresholds for Criterion 2.
56	Timor Sparrow	*Padda fuscata*	NT	Yes (43,400)	No	The Timor sparrow is primarily found in lowland areas, occasionally extending to elevations of around 700 m. It typically occurs as individuals or in small groups of three to five birds, sometimes mixing with other granivorous species, and has also been observed forming larger flocks of 30–50 individuals. This species is categorized as a restricted-range	The EAAA is dominated by rangeland, savanna, and upland forest habitats. Based on these habitat characteristics and the known distribution of the Timor Sparrow (*Padda fuscata*), the area is likely to provide suitable habitat for the species. However, given the

No	Common Name	Species Name	IUCN	Range (EOO)	MT	Ecology	Justification
						species, occurring in Timor-Leste, West Timor, and the outlying islands of Semau and Roti, Indonesia, with an estimated extent of occurrence (EOO) of 43,400 km². Although widespread, it is generally sparsely and patchily distributed. Populations have experienced dramatic declines due to habitat conversion for agriculture and hunting. The global population of the Timor sparrow is estimated to be in the range of 6,000–15,000 individuals (BirdLife, 2016).	broad availability of similar habitats across its range, the EAAA is unlikely to support ≥10% of the global population. Consequently, the area does not meet the threshold for **Criterion 2a** as a critical habitat.
57		*Calostoma insigne*	EN	No	No	The species is ectomycorrhizal, generally forming symbiotic associations with Dipterocarpaceae trees. Calostoma from Malaysia has been associated with Castanopsis species.	Given its broad geographic range and general habitat associations, it is highly unlikely that the EAAA meets the thresholds to qualify as critical habitat under either Criterion 1a or Criterion 1c.
58	Timor White Gum	*Eucalyptus urophylla*	EN	No	No	Timor White Gum (Eucalyptus urophylla) grows on a wide variety of soil types, including lithosols, Mediterranean soils, and regosols. It is tolerant of diverse climatic conditions, from wet to dry zones, and is commonly found in hill valleys. Locally known as Ampupu, this species is native to the Lesser Sunda Islands, including Timor, where it occurs from coastal areas up to 3,000 m asl. Beyond its natural range, it has been widely introduced to tropical and subtropical regions of South America, Africa, and Asia, where it is used extensively as a commercial timber plantation species. From its natural distribution, the extent of occurrence (EOO) is estimated at 50,373 km², with an area of occupancy (AOO) of 316 km². Based on known threat localities, the species is estimated to occur in more than 17 locations (Hills, 2019).	The EAAA provides suitable habitat for Timor White Gum, particularly within dryland and tropical forest habitat types. However, field observations indicate that the project area is a modified habitat, and this forest-specialist species was not recorded. The population size is unknown both globally and within the EAAA landscape. Considering its wide distribution and broad habitat preferences, it is unlikely that the EAAA supports ≥5% of the global population; therefore, the area does not meet Criterion 1a. Furthermore, as the species is not a trigger for protected areas or Key Biodiversity Areas (KBAs), it is also unlikely that the EAAA meets the threshold for Criterion 1c as a site of national species concentration.