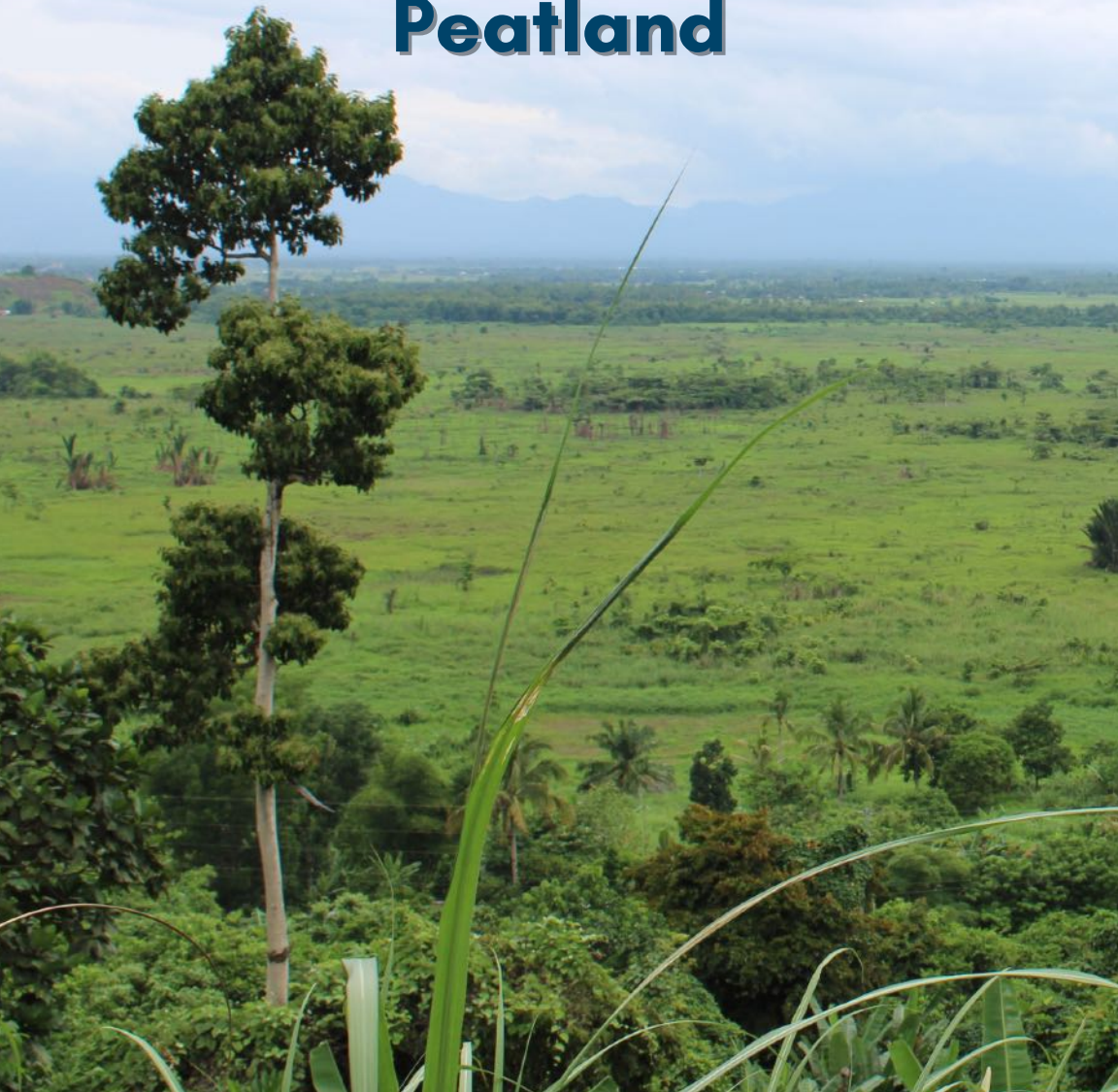


Biodiversity Resources of the Leyte Sab-a Basin Peatland



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Citation: Matutes, H.E., Densing, L.A. 2022. *Biodiversity Resources in the Leyte Sab-a Basin Peatland*. International Institute of Rural Reconstruction, Y.C James Yen Center, Silang, Cavite, Philippines.

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Philippine Plant Specie Organization (Plant Species: Dao,)

ISBN: 1-930261-50-0

Printed and Distributed by

International Institute of Rural Reconstruction

Y.C. James Yen Center

Silang, Cavite, Philippines

Published by

International Institute of Rural Reconstruction



A non-profit organization, IIRR seeks to enable communities and seek their own potential with programs across health, education, environment, and livelihood, its goal is to have rural communities take charge of their own success. Managing the project, IIRR worked with local partners, community, local organizations, and institutions to achieve the project's goal of sustainable management of the Sab-a Peatland.

Visayas State University (VSU)



VSU is a premier university of science and technology and environmental conservation. Research and development are part of the primary mission to generate knowledge. VSU led the technical research in Sab-a Peatland to establish the peatlands' profile.

Women's Enablers Advocate and Volunteers for Empowering and Responsive Solutions (WEAVERS)



A non-government organization led by women, the group led the social preparation and community organizing component of the project. The organization emphasized helping women in the communities.

Environmental Legal Assistance Center, Inc. (ELAC)



ELAC is an environmental non-government organization committed to helping communities uphold their constitutional right to a healthful and balanced ecology. ELAC led the legal research component of the project.

Forest Foundation Philippines



Established in 2002, under a bilateral agreement between the governments of the United States of America and the Philippines, the Forest Foundation Philippines is a nonprofit organization that provides grants to organizations that empower the people to protect and conserve the forests.

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Benigno Resurrecion

(*Dracontomelon dao* (Blanco) Merr. & Rolfe)

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(*Macaranga grandifolia* (Blanco) Merr.)

Preface

Leyte Sab-a Basin Peatland (LSBP) is one of the two major confirmed peatlands in the Philippines, yet its biodiversity is rarely studied. For the first time, this coffee table book attempts to showcase flora and fauna of LSBP derived from the study “Assessment of Biodiversity in Leyte Sab-a Basin Peatland” conducted by the faculty researchers of Visayas State University-Alangalang campus. It is designed to enable the user to identify some of the wildlife species readily and will cover avifauna, herpetofauna, mammals, fish, and flora found in LSBP.

This coffee table book provide information on some of the notable wildlife species with their common name, local name, family name scientific name, conservation status, and other remarkable notes on whether it is endemic, Key Biodiversity Area (KBA) trigger species, and CITES listed species. The information on the species composition of flora and fauna is not as comprehensive since the researchers did their studies in a short period of time. We acknowledged that more species are still found in the peatland which we did not include here.

On the other hand, flipping the pages of this coffee table book will be a journey toward the beautiful creatures that LSBP possesses and that the people are not aware of. People often disregard LSBP as a grassland with no value, but if you are inside it, our very own peatland is surprisingly hosting diverse wildlife species. Their presence enables the peatland to continuously provide various ecosystem services that people benefit from it. It is intended to encourage people to appreciate nature’s beauty and its importance in maintaining a healthy ecological balance, and climate regulation and contribute towards a responsible citizen that complements its value and does not endanger the environment.

May this resource book be a humble contribution to our dedicated effort to educate the public and serve as an inspiration to appreciate, adore, love, and be a steward in the protection, conservation, and management of LSBP resources.

Heremerose E. Matutes
Project Leader, Biodiversity Study

ACKNOWLEDGEMENTS

This resource book Biodiversity Resources of the Leyte Sab-a Basin Peatland, would not have been possible without the support of the Forest Foundation Philippines through the International Institute of Rural Reconstruction (IIRR), our collaborating partners Environmental Legal Assistance Center, Inc. (ELAC), Women Enablers, Advocates, and Volunteers for Empowering Responsive Solutions (WEAVERS), Local Government Units of Alangalang, Sta Fe, and San Miguel, local communities, Department of Environment and Natural Resources (DENR) and other stakeholders.

We also extend our heartfelt gratitude to Marvin Jay Sarmiento, Angelique Carsola, and Chenalin C. De Los Santos for their technical support during the conduct of the Rapid Biodiversity Assessment. Special thanks to Maggie Rosimo, Juvilyn Salazar and the rest of the IIRR staff for their untiring effort and dedication in realizing this coffee table book. We are also grateful to the following people as our Research Assistants, laborers, and field guides: Donna Mae Salazar, Cristina Jane Leonido, Remark Varona, Miony Gozo, Lemar Mercader, Igmedio Guersola, and Vicente Nobe. We would like to thank the DENR-R8 for granting us the gratuitous permit (GP No. 2021-06) to conduct the biodiversity assessment in LSBP. Thanks are also due to our co-faculty researchers at Visayas State University, both from the Baybay and Alangalang campuses Dr. Pastor Garcia, Dr. Judith Jomadiao, Dr. Lilibeth Miralles, Dr. Marichu Padayao, Prof. Eppie Katangkatang, Michael Arguelles, Rey Peja, Syrus Cesar Decena, Arwin Arribado, Jayson Baldesco, Edwin Relevo, Shella Salamia, Prof. Lydia Robel, Ma. Angeles Ambida and Christine Joy Piangco for their continued enthusiasm for the 4-years Leyte Sab-a Basin Forest Restoration Initiative (LSBFRI) project.

We thank you for supporting the cause of conserving our very own Leyte Sab-a Basin Peatland.

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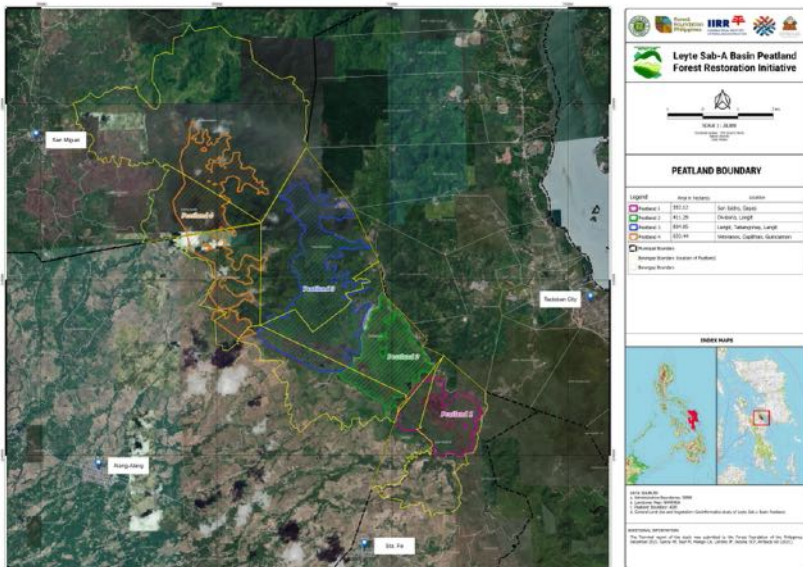
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INTRODUCTION

The Leyte Sab-a Basin Peatland (LSBP) is one of the two confirmed peatlands in the Philippines. The peatland plays a significant role in climate regulation, biodiversity conservation, and ecosystem services for surrounding communities and the entire province yet is threatened by land-use conversion and degradation. Despite the human-induced stressors that affect the ecological functions of LSBP, there is still a significant area of peat swamp forest that needs protection to sustain its ecosystem services. LSBP is the largest water catchment basin in Eastern Visayas which receives water from various sources e.g., springs, rivers, aquifers, and rainfall (ADB, 2000). The current estimates suggest that the peatland has an area of about 2,107.64 hectares (Fig.1; Garcia et al., 2021).

In the 1970's, the government through P.D. No. 625 created the Leyte Sab-a Basin Development Authority (LSBDA) to convert the peatland into a food basket in Leyte. Thereafter, people lack the scientific knowledge on the ecological importance of the peat swamp forest and thought only of the economic gain that this ecosystem will provide. As a result, numerous human interventions were made to fully convert it into agricultural land. The conversion and draining of the peatland may have resulted in its degradation characterized in terms of loss of important species of flora and fauna and other impacts on ecological services (ADB, 2000).



Location map of the Leyte Sab-a Basin Peatland with its current land use and vegetation types (Garcia et al., 2021).

The Biodiversity Assessment was carried out in LSBP to know the impact of these land use changes on the species diversity. The Biodiversity Assessment was conducted at the three municipalities namely Alangalang, Sta. Fe, San Miguel, and portions of Tacloban City, Province of Leyte, the Philippines. This research project was funded by the Forest Foundation Philippines through the International Institute of Rural Reconstruction. The objectives of the Biodiversity Assessment were to provide baseline data of flora and fauna species, assess the presence of significant species of flora and fauna, and document species with high ecological value and conservation interest that may be impacted due to the emerging environmental threats within the peatland.

LSBP is home to several unique and endemic wild flora and fauna. The researchers were able to document 17 reptiles (nine threatened species), seven amphibians, eight mammals (four threatened species), 67 birds (18 Philippine endemic species, five threatened species, and 13 migratory birds), and 175 plant species (16 threatened species). Among the municipalities within the LSBP, Alangalang particularly Brgy. Tabangohay contains a substantial area of peat swamp forest. It was also the thriving hub and nesting site of some threatened forest-dependent bird species like the Rufous Hornbill (*Buceros hydrocorax*) and the rare and critically endangered Blue-Naped Parrot (*Tanygnathus lucionensis*).

Meanwhile, Brgy. Magsaysay and Brgy. Langit are habitats of the Philippine Warty Pig (*Sus philippinensis cf. mindanensis*) a Critically Endangered (CR) species categorized by the IUCN Red List of Threatened Species and DAO 2019-09. Moreover, Brgy. Langit is one of the nesting sites of the Vulnerable species of Philippine Duck (*Anas luzonica*) while Brgy. Magsaysay is an abode to some of the notable species such as the Philippine Frogmouth (*Batrachostomus septimus*) and the Philippine Nightjar (*Caprimulgus manillensis*). Despite having a disturbed ecosystem, migratory birds were seen in almost all of the habitats in LSBP. The inclusion of LSBP in the proposed local conservation area and other legal frameworks may greatly help the survival of the threatened species and migratory bird species that are more dependent on the peatland as their habitat.

APPROACHES AND METHODS

FLORA

Assessment of its floristic composition was carried out using transect line and quadrat methods. Trees and other vegetation from the peatland ecotone were rapidly assessed using strip sampling method. The following publications were used in the identification of flora: a) the Inventory and Assessment of Mother Trees of Indigenous Timber Species on Leyte Island and Southern Mindanao by Gregorio et al. (2010) in classifying native trees in the peatland forest; b) the Co's Digital Flora of the Philippines by Pelsner et al. (2011) and the Philippine Native Trees of Lantican (2015), as reference for endemism and species distribution list. For the conservation status of flora assemblage, the researchers used the DENR DAO 2017-11 List of Threatened Plants to determine the category of flora species documented. The IUCN Red list of Threatened Species was referred to as an international counterpart for the conservation status.



Direct Encounters

Nocturnal and diurnal visual encounter surveys (VES) were employed in all sampling sites (Fig. 1). Audio/Bioacoustics was also used to detect the presence of species on the selected sites. Voucher specimens were collected and housed in VSU Alangalang laboratory for future molecular and phylogenetic study.



Figure 1. (A) Nocturnal survey and (B) Diurnal survey in one of the study sites. Photograph copyright Chenalin Delos Santos (A) and IRRI (B)

Indirect Encounters

Indices of presence are one of the non-invasive methods to list down species present in the peatland forest and in the surrounding communities. This includes trail marks, animal tracks, animal poops, feathers, skulls and other wildlife derivatives were recorded to suffice the data needed for establishing biodiversity results (Fig. 2). Ethnobiological interviews were also conducted immediately prior to the field survey. Using maps and the images of threatened wildlife species we obtained in the literature, we interviewed the locals about any additional known locations or potential sightings of our target species. Furthermore, we also hired the local guides who knew the peatland well enough and where to find the ideal sites.



Figure 2. (A) Several mandibles of *Sus philippinensis* cf. *mindanensis* hunted by a single local hunter in the peatland forest. (B) Ethnobiological interview. Photograph copyright Marvin Jay R. Sarmiento (A) & Chenalin Delos Santos (B).

SECONDARY DATA

Secondary data from different literatures, websites and available publications related to the fauna assemblage were collated to form a unified field checklist of fauna. Compilation of qualitative and quantitative data and cultural narratives has been used as basis for identifying knowledge gaps and designing data collection strategies according to the needs of the assessment, and avoiding the duplication of efforts.

The following websites were used in forming the field checklists of fauna.

The checklists were narrowed down by selecting only the locality of Leyte and applied it to the rest of the checklists.

Some of the websites we conferred with were the reptile database (<https://reptile-database.reptarium.cz>) for reptiles of Leyte, Amphibia database (<https://amphibiaweb.org>), ASM Mammal Diversity Database (<https://www.mammaldiversity.org>) for mammals, and e-bird life (<https://ebird.org>) for the avifauna of Leyte. For the wildlife conservation status, IUCN Red List of Threatened Species (<https://www.iucnredlist.org>), and the Philippine Red list of the Department of Environment and Natural Resources (DAO 2019-09) as local equivalent were referred to.



The Guide to the Philippine Birds by Robert S. Kennedy (2000), and Photographic Guide to the Birds of Negros, Panay & Cebu by Jakosalem et al. (2019) on endemism and species distribution of avifauna assemblage, e-bird (<https://ebird.org/about>) for avifauna checklist of Leyte Island while Synopsis of the Philippine Snakes (Leviton et.al. 2018) was used for Ophidia assemblage and Amphibians of the Philippines, Part I: Checklist of the Species (Diesmos et.al. 2015) for amphibians. The publication of Mallari et.al (2013) on the biodiversity baseline assessment in Southern Leyte was used as secondary data for birds, reptiles and amphibians while the publication of Rickart et.al (1993) was used for mammal diversity.

HOW TO USE THIS BOOK

This book covers flora and fauna encountered during the Biodiversity Assessment in LSBP. The authors recognized that taxonomy and systematics are very dynamic disciplines of science that will change the lists and classification of species once this book is produced and disseminated to a broader audience. We also acknowledged that others might disagree with our classification system. Therefore, we inform the user of this book to be aware of these differences and the possible changes it will have soon.

Species Accounts

The Species Accounts include the common name, scientific name, family name, the local name of the species in the area or locality, conservation status, and other significant remarks. For birds, if there are no local names of the species, we based the local names on the Photographic Guide to the Birds of Negros, Panay & Cebu (Jakosalem et al., 2019). For fauna with significant conservation value, we put other remarks as a Key Biodiversity Area (KBA) trigger species, CITES-listed species, and distribution status based on IUCN (Endemic, Resident, Migrant). The order of information we used for flora and fauna is shown below. Other remarks for flora include the habitat type where it was observed and the growth habit. For IUCN threat assessment, species with no assessment is categorized as Not Evaluated (NE). For DAO 2019-09 and 2017-11, native species not included in the list are categorized as Other Wildlife Species (OWS).

Fauna

Common Name: Blue-naped Parrot

Scientific Name: *Tanygnathus lucionensis* (Linnaeus, 1766)

Family Name: Psittacidae

Local Name: Pikoy

Conservation Status: IUCN (Near Threatened); DAO 2019-09 (Critically Endangered) Remarks: Near Endemic, KBA trigger species, CITES-listed species

Flora

Scientific Name: *Nauclea orientalis* (L.) L.

Family Name: Rubiaceae

Local Name: Kabak, Bangkal

Conservation Status: IUCN (Least Concern), DAO 2017-11 (Other Wildlife Species)

Other Remarks: Peat Swamp Forest, Tree

Guide to Conservation Status

The conservation status of the species followed the latest International Union for Conservation of Nature (IUCN) Red List of Threatened Species, the DENR Administrative Order (DAO) 2019 - 09 for fauna and the DAO 2017 - 11 for flora as the local equivalent.

IUCN Red List of Threatened Species Categories

EXTINCT (EX) – a taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame right to the taxon’s life cycle and life form.

EXTINCT IN THE WILD (EW) – a taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity, or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame right to the taxon’s life cycle and life form.

CRITICALLY ENDANGERED (CR) – a taxon is Critically Endangered when the best evidence indicates that it meets any criteria A to E for Critically Endangered (see Section V). It is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN) – a taxon is Endangered when the best available evidence indicates that it meets any criteria A to E for Endangered (see Section V). It is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU) – a taxon is Vulnerable when the best available evidence indicates that it meets any criteria A to E for Vulnerable (see Section V). It is therefore considered to be facing a high risk of extinction in the wild.

NEAR THREATENED (NT) – a taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC) – a taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable, or Near Threatened. Widespread and abundant taxa are included in this category.

¹IUCN. (2012). IUCN Red List Categories and Criteria: Version 3.1. Second edition. Gland, Switzerland and Cambridge, UK: IUCN. Iv +

DATA DEFICIENT (DD) - a taxon is Data Deficient when there is inadequate information to make a direct or indirect assessment of its risk of extinction based on its distribution and population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and distribution are lacking. Data Deficient is, therefore, not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is essential to make positive use of whatever data are available. In many cases, great care should be exercised in choosing between DD and a threatened status. Suppose the range of a taxon is suspected to be relatively circumscribed, and a considerable period has elapsed since the last record of the taxon. In that case, threatened status may well be justified.

NOT EVALUATED (NE) - a taxon is Not Evaluated when it has not yet been evaluated against the criteria.

DAO 2019 - 09 Updated National List of Threatened Philippine Fauna and their Categories

CITES - refers to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, a treaty regulating the international trade of fauna and flora listed in its Appendices.

CITES Appendix I - species threatened with extinction or may be affected by trade. International (commercial) trade in wild-taken specimens is prohibited.

CITES Appendix II - species not necessarily threatened with extinction, but for which trade must be controlled to avoid their becoming so, and species that resemble species already included in Appendix II. International trade is permitted but regulated through appropriate permits/certificates.

CITES Appendix III - species included at the request of a Party that already regulates trade in the species and needs other countries' cooperation to prevent unsustainable or illegal exploitation. International trade in specimens of species listed in this Appendix is allowed only upon presentation of the appropriate permits or certificates.

Threatened Species - a general term used to denote species considered critically endangered, endangered, vulnerable, or other accepted categories of wildlife whose populations are at risk of extinction.

Critically Endangered Species - refers to a species facing an extremely high risk of extinction in the wild in the immediate future; presumed extinct species upon the rediscovery of a population of such a group shall be automatically categorized as critically endangered.

Endangered Species - refers to a species that is not critically endangered and whose survival in the wild is unlikely if the causal factors continue operating.

Vulnerable Species - refers to a species that is neither critically endangered nor endangered but is threatened by adverse factors throughout its range and is likely to be moved to the endangered category in the future.

Other Threatened Species - refers to a species that is not critically endangered, endangered, nor vulnerable but is under threat from adverse factors, such as over-collection throughout its range, and is likely to be moved to the vulnerable category in the near future. It also includes species that tend to become threatened due to predation, destruction of habitats, or other similar causes, new species, and species with insufficient scientific information. Such species may be included in the threatened species list by the Secretary upon the recommendation of the Philippine Red List Committee (PRLC) for Wild Fauna and endorsement of the National Wildlife Management Committee (NWMC).

DAO 2017 - 11 Updated National List of Threatened Philippine Plants and their Categories

Critically Endangered Species - refers to a species, subspecies, varieties, or other infraspecific categories facing an extremely high risk of extinction in the wild in the immediate future.

Endangered Species - refers to species, subspecies, varieties, or forma that is not critically endangered but whose survival in the wild is unlikely if the causal factors continue operating.

Other Threatened Species - refers to a species, subspecies, varieties, or other infraspecific categories that are not critically endangered, endangered, or vulnerable but are under threat from adverse factors, such as over-collection throughout its range and are likely to move to the vulnerable category in the near future.

Other Wildlife Species - refers to non-threatened species, subspecies, varieties, or other infraspecific categories that tend to become threatened due to habitat destruction or other similar causes as may be listed by the Secretary upon the recommendation of the National Wildlife Management Committee.

Threatened Species - a general term used to denote species or subspecies considered critically endangered, endangered, vulnerable, or other accepted categories of wildlife whose populations are at risk of extinction. This shall include varieties, formae, or different infraspecific categories.

Vulnerable Species - refers to a species or subspecies, varieties, formae, or other infraspecific categories of plants that are not critically endangered nor endangered but are under threat from adverse factors throughout their range and are likely to move to the endangered category in the future. This shall include varieties, formae, or other infraspecific categories.



White-breasted Woodswallow
Artamus leucorhynchus
(Linnaeus, 1771)

AVIFAUNA SPECIES

01

A total of 67 avifauna species belonging to 37 families were documented in Leyte Sab-a Basin Peatland and its vicinity during the Rapid Biodiversity Assessment (RBA) conducted from March 31 to April 9, 2021. Alangalang and Sta Fe comprised the highest number of species with 41 and 40 respectively, while San Miguel and Tacloban recorded 33 and 26 avian species respectively. Ardeidae (bitterns, egrets, and herons) had the most significant number of species (10), followed by Rallidae (crakes and rails) and Columbidae (pigeons and doves) with five species. The rest of the families had fewer species. There were 18 Philippine endemic species, five threatened species, and 13 migratory birds. Avian species that are under a threatened category and are Key Biodiversity Area trigger species: Blue-naped Parrot (*Tanygnathus lucionensis*), Rufous Hornbill (*Buceros hydrocorax*), Philippine Duck (*Anas luzonica*), Philippine Hanging-parrot (*Loriculus philippensis*), and Azure-breasted Pitta (*Pitta steerii*). In the succeeding sections of this coffee table book, we present some of the notable species encountered during the RBA.

NOTABLE SPECIES



Common Name: Blue-Naped Parrot

Scientific Name: *Tanygnathus lucionensis* (Linnaeus, 1766)

Family Name: Psittacidae

Local Name: Pikoy

Conservation Status: (IUCN) Near Threatened, (DAO 2019-09)

Critically Endangered

Remarks: Near Endemic, KBA trigger species, CITES listed species



Common Name: Philippine Duck

Scientific Name: *Anas luzonica* Fraser, 1839

Family Name: Anatidae

Local Name: Gamaw, Kolimaw

Conservation Status: (IUCN and DAO 2-19-09) Vulnerable

Remarks: Endemic, KBA trigger species,



Common Name: Philippine Frogmouth

Scientific Name: *Batrachostomus septimus*

Tweeddale, 1877

Family Name: Podargidae

Local Name: Tagkaro

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: Endemic



Common Name: Philippine Nightjar

Scientific Name: *Caprimulgus manillensis* Walden, 1875

Family Name: Caprimulgidae

Local Name: Pitkahaw

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: Endemic



Common Name: Clamorous Reed Warbler

Scientific Name: *Acrocephalus stentoreus* (Hemprich & Ehrenberg, 1833)

Family Name: Acrocephalidae

Local Name: Tambabaras

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other Wildlife Species



Common Name: Oriental Dollarbird

Scientific Name: *Eurystomus orientalis* (Linnaeus, 1766)

Family Name: Coraciidae

Local Name: Kusi

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other Wildlife Species



Common Name: Tawny Grassbird

Scientific Name: *Cincloramphus timoriensis* (Wallace, 1864)

Family Name: Locustellidae

Local Name: Langgaas

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: Purple Heron
Scientific Name: *Ardea purpurea*
Linnaeus, 1766
Family Name: Ardeidae
Local Name: Doong
Conservation Status: (IUCN) Least
Concern, (DAO 2019-09) Other
Wildlife Species
Remarks: (IUCN) Resident





Common Name: Orange-bellied
Flowerpecker
Scientific Name: *Dicaeum
trigonostigma* (Scopoli, 1786)
Family Name: Dicaeidae
Local Name: Tikboy
Conservation Status: (IUCN) Least
Concern, (DAO 2019-09) Other Wildlife
Species
Remarks: (IUCN) Resident



Common Name: Brahminy Kite
Scientific Name: *Haliastur indus*
(Boddaert, 1783)
Family Name: Accipitridae
Local Name: Sikop
Conservation Status: (IUCN and DAO
2019-09) Least Concern



Common Name: Javan Pond Heron

Scientific Name: *Ardeola speciosa*
(Horsfield, 1821)

Family Name: Ardeidae

Local Name: Dugwak, Tanga (Negros,
Panay, Cebu)

Conservation Status: (IUCN) Least Concern,
(DAO 2019-09) Other Wildlife Species

Remarks: Migrant



Common Name: Little Egret
Scientific Name: *Egretta garzetta*
(Linnaeus, 1766)
Family Name: Ardeidae
Local Name: Talabong
Conservation Status: (IUCN) Least
Concern, (DAO 2019-09) Other Wildlife
Species
Remarks: (IUCN) Resident/ Migrant



Common Name: Grey Heron

Scientific Name: *Ardea cinerea* Linnaeus, 1758

Family Name: Ardeidae

Local Name: Lapay, Dapay, Dugwak
(Negros, Panay, Cebu)

Conservation Status: (IUCN) Least Concern, (DAO
2019-09) Other Wildlife Species

Remarks: (IUCN) Migrant



Common Name: Marsh Sandpiper

Scientific Name: *Tringa stagnatilis* (Bechstein, 1803)

Family Name: Scolopacidae

Local Name: Manorok

Conservation Status: (IUCN) Least Concern, (DAO 2019-09)

Other Wildlife Species

Remarks: Migrant



Common Name: Golden-headed Cisticola

Scientific Name: *Cisticola exilis* (Vigors & Horsfield, 1827)

Family Name: Cisticolidae

Local Name: Pitpitaw

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: Purple-throated Sunbird

Scientific Name: *Leptocoma sperata* (Linnaeus, 1766)

Family Name: Nectariniidae

Local Name: Tikboy lalaki

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: Grey Wagtail

Scientific Name: *Motacilla cinerea* Tunstall, 1771

Family Name: Motacillidae

Local Name: Bangkiyod, Bankiyod, Ananakyod, Ayud-ayud
(Negros, Panay, Cebu)

Conservation Status: (IUCN) Least Concern, (DAO 2019-
09) Other Wildlife Species

Remarks: (IUCN) Migrant

OTHER NOTABLE AVIFAUNA SPECIES

Family Name	Common Name	Local Name	Scientific Name	Conservation Status – IUCN & DAO 2019-09	Other Remarks
Bucerotidae	Rufous Hornbill	Kalaw (Negros, Panay, Cebu)	<i>Buceros hydrocorax</i> Linnaeus, 1766	(IUCN) Vulnerable (DAO 2019-09) Endangered	Endemic, CITES listed species; no photo
Psittaculidae	Philippine Hanging-Parrot	Colasisi, Kosi (Negros, Panay, Cebu)	<i>Loriculus philippensis</i> (Statius Muller, 1776)	(IUCN) Least Concern (DAO 2019-09) Critically Endangered	Endemic, CITES listed species, (IUCN) Least Concern, (DAO) Critically Endangered
Pittidae	Azure-breasted Pitta	Wowha, Bakwa (Negros, Panay, Cebu)	<i>Pitta steerii</i> (Sharpe, 1876)	(IUCN and DAO 2019-09) Vulnerable	Endemic, KBA trigger species, (DAO) Endemic, Vulnerable

OTHER AVIFAUNA SPECIES



Common Name: Chestnut Munia

Scientific Name: *Lonchura atricapilla* (Vieillot, 1807)

Family Name: Estrildidae

Local Name: Maya

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: Cinnamon Bittern

Scientific Name: *Ixobrychus cinnamomeus* (Gmelin, JF, 1789)

Family Name: Ardeidae

Local Name: Lapay

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other Wildlife Species

Remarks: (IUCN) Resident



Common Name: Collared Kingfisher

Scientific Name: *Todiramphus chloris* (Boddaert, 1783)

Family Name: Alcedinidae

Local Name: Tikarol

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: (IUCN) Resident



Common Name: Coppersmith Barbet

Scientific Name: *Psilopogon haemacephalus* (Statius Muller, 1776)

Family Name: Megalaimidae

Local Name: Pokpok

Conservation Status: (IUCN) Least Concern, (DAO 2019-09)

Other Wildlife Species

Remarks: Resident



Common Name: Eurasian Moorhen

Scientific Name: *Gallinula chloropus* (Linnaeus, 1758)

Family Name: Rallidae

Local Name: Kiri

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: Resident, Migrant



Common Name: Asian Glossy Starling

Scientific Name: *Aplonis panayensis* (Scopoli, 1786)

Family Name: Sturnidae

Local Name: Daragsiyang

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other
Wildlife Species

Remarks: Resident



Common Name: Olive-backed Sunbird

Scientific Name: *Cinnyris jugularis* (Linnaeus, 1766)

Family Name: Nectariniidae

Local Name: Tikboy babae

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: Resident



Common Name: Pied Triller

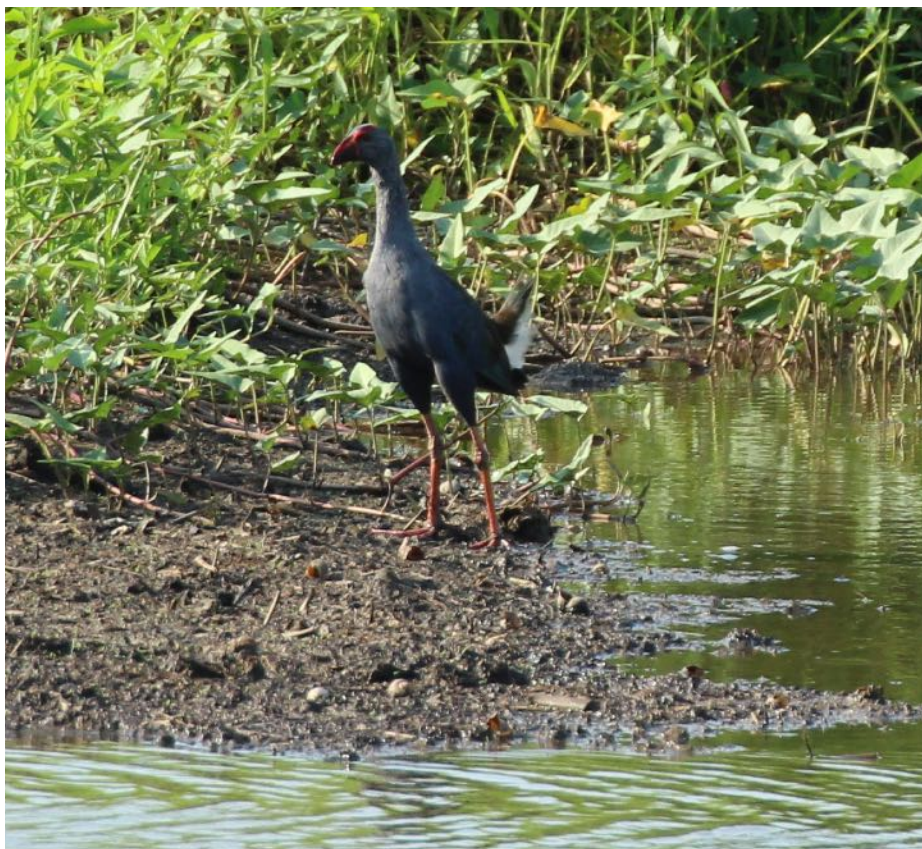
Scientific Name: *Lalage nigra* (Forster, JR, 1781)

Family Name: Campephagidae

Local Name: Buga-ongon, Salaksak
(Negros, Panay, Cebu)

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other
Wildlife Species

Remarks: Resident



Common Name: Purple Swamphen

Scientific Name: *Porphyrio porphyrio* (Linnaeus, 1758)

Family Name: Rallidae

Local Name: Kiyaw

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other
Wildlife Species



Common Name: Red Turtle Dove

Scientific Name: *Streptopelia tranquebarica* (Hermann, 1804)

Family Name: Columbidae

Local Name: Tokmo, Tukmo

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: Resident, Endemic



Common Name: Yellow Vented Bulbul

Scientific Name: *Pycnonotus goiavier* (Scopoli, 1786)

Family Name: Pycnonotidae

Local Name: Tuktokriyo

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: White-breasted Woodswallow

Scientific Name: *Artamus leucorhynchus* (Linnaeus, 1771)

Family Name: Artamidae

Local Name: Getget, Git-git

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Common Name: White-breasted Waterhen

Scientific Name: *Amaurornis phoenicurus* (Pennant, 1769)

Family Name: Rallidae

Local Name: Ababakuwa, Korowakwak

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

Remarks: (IUCN) Resident



Southeast Asian Box Turtle
Cuora amboinensis Riche in Daudin, 1801

HERPETOFAUNA AND MAMMALS

02

Twenty-four herpetofauna (17 reptiles and 7 amphibians) and 8 mammal species were recorded in the Leyte Sab-a Basin peatland (LSBP) during the Rapid Biodiversity Assessment (RBA) that was carried out from March 31 to April 09, 2021 covering 29 sampling sites from the municipalities of Alangalang, Sta. Fe, and San Miguel. The reptiles recorded belong to eight families of venomous and non-venomous snakes (7), lizards (1), skinks (2), geckos (2) and iguanas (3), and turtle (1), while the amphibians belong to five families of narrow-mouthed frogs (2), forked-tongued or cricket frogs (2), toad (1), true frog (1), and shrub frog (1). The mammals belong to eight families of tarsier (1), monkey (1), wild pig (1), deer (1), palm civet (1), rodent (1), and bats (2). Unfortunately, four of these reptiles of tagged as Vulnerable and Near Threatened by the IUCN (2021) and Other Threatened Species by DAO (2019-09). These are the Water monitor lizard (*Varanus samarensis*), the gecko (*Gekko gekko*), the skinks (*Hydrosaurus pustulatus* and *Bronchocela cristatella*), the turtle (*Cuora amboinensis*) and the snakes (*Naja samarensis*, *Ophiophagus hannah*, *Stegonotus muelleri*, and *Coelognathus erythrurus*). Also, four mammalian species are under the Vulnerable or Endangered and Near Threatened category by the IUCN (2021) and DAO (2019-09), and these are the Philippine tarsier (*Tarsius syrichta*), the Philippine macaque monkey (*Macaca fascicularis philippinensis*), the Philippine warty pig (*Sus philippensis mindanensis*), and the Philippine deer (*Rusa marianna*). All these species should not be disregarded as they have a role to play in the overall health and in maintaining the ecological balance of the peatland.

AMPHIBIANS



Common Name: Philippine Sticky Frog

Scientific Name: *Kalophrynus sinensis* Peters, 1867

Family Name: Microhylidae

Local Name: Pakla

Conservation Status: (IUCN) Not Evaluated, (DAO 2019-09)

Other Wildlife Species

Remarks: Endemic



Common Name: Painted Narrow-mouth Toad

Scientific Name: *Kaloula picta* Duméril and Bibron, 1841

Family name: Microhylidae

Local Name: Pakla

Conservation Status: (IUCN) Least Concern

Remarks: Endemic



Common Name: Common Tree Frog

Scientific Name: *Polypedates leucomystax* Gravenhorst, 1829

Family Name: Rhacophoridae

Local Name: Pakla

Conservation Status: (IUCN) Least Concern



Common Name: Cane Toad

Scientific Name: *Rhinella marina* Linnaeus, 1758

Family Name: Bufonidae

Local Name: Pakla

Conservation Status: (IUCN) Least Concern



Common Name: Luzon Wart Frog

Scientific Name: *Fejervarya vittigera* Wiegmann, 1834

Family Name: Dicroglossidae

Local Name: Pakla

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other
Wildlife Species

SNAKES



Common Name: Philippine Shrub Snake

Scientific Name: *Oxyrhabdium modestum* Duméril, 1853

Family Name: Lamprophiidae

Local Name: Halas

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: Endemic



Common Name: Philippine Ground Snake

Scientific Name: *Stegonotus muelleri* Duméril, Bibron and Duméril, 1854

Family Name: Colubridae

Local Name: Halas

Conservation Status: (IUCN) Least Concern, (DAO 2019-09)

Other Wildlife Species

Remarks: Endemic, KBA trigger species

LIZARDS



Common Name: Tokay Gecko

Scientific Name: *Gekko gecko* Linnaeus, 1758

Family Name: Gekkonidae

Local Name: Tiki/Tuko

Conservation Status: (IUCN) Least Concern, (DAO 2019-09) Other Threatened Species

Remarks: CITES-listed (A-II), Resident



Common Name: Indo-Pacific Slender Gecko

Scientific Name: *Hemiphyllodactylus typus* Bleeker, 1860

Family Name: Gekkonidae

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other Wildlife Species

Remarks: Possible (new record for Leyte), Resident



Common Name: Common Mabuya

Scientific Name: *Eutropis multifasciata* Kuhl, 1820

Family Name: Scincidae

Local Name: Tabili

Conservation Status: (IUCN) Least Concern (DAO 2019-09)

Other Wildlife Species

Remarks: Endemic



Common Name: Samar Water Monitor

Scientific Name: *Varanus samarensis* Koch, Gaulke & Böhme, 2010

Family Name: Varanidae

Local Name: Halo

Conservation Status: (IUCN) Least Concern (DAO 2019-09) Other Threatened Species

Remarks: Endemic and CITES-listed (A-II)

TURTLE



Common Name: Southeast Asian Box Turtle

Scientific Name: *Cuora amboinensis* Riche in Daudin, 1801

Family Name: Geoemydidae

Local Name: Bao

Conservation Status: (IUCN) Vulnerable, (DAO 2019-09) Other threatened species

Remarks: CITES-listed (A-II)

MAMMALS



Common Name: Philippine Warty Pig

Scientific Name: *Sus philippensis mindanensis* Forsyth Major
1897

Family Name: Suidae

Local Name: Baboy lhalas

Conservation Status: (IUCN and DAO 2019-09) Vulnerable

Remarks: Endemic, KBA Trigger species



Common Name: Philippine Tarsier

Scientific Name: *Tarsius syrichta* Linnaeus, 1758

Family Name: Tarsiidae

Local Name: Mago

Conservation Status: (IUCN) Near Threatened (DAO 2019-09)

Other Threatened Species

Remarks: Endemic, CITES-listed species



Common Name: Lesser Dog-faced Fruit Bat

Scientific Name: *Cynopterus luzoniensis* Peters, 1861

Family Name: Pteropodidae

Local Name: Kabog

Conservation Status: (IUCN) Least concern (DAO 2019-09)

Other Wildlife Species



Common Name: Lesser Musky Fruit Bat

Scientific Name: *Ptenochirus minor* Yoshiyuki, 1979

Family Name: Pteropodidae

Local Name: Kabog

Conservation Status: (IUCN) Least concern (DAO 2019-09)

Other Wildlife Species



Common Name: Oriental House Rat

Scientific Name: *Rattus tanezumi* Temminck, 1845

Family Name: Muridae

Local Name: Yatot

Conservation Status: (IUCN) Least concern (DAO 2019-09)

Other Wildlife Species




Common Name: Common Palm Civet

Scientific Name: *Paradoxurus hermaphroditus philippinensis*
Jourdan, 1837

Family Name: Viverridae

Local Name: Miro

Conservation Status: (IUCN) Least concern (DAO 2019-09) Other
Wildlife Species

A photograph of two catfish (Clarias sp.) lying on a light-colored, textured surface. The fish are positioned diagonally, with the larger one in the upper right and the smaller one in the lower left. Both fish have a dark, mottled pattern on their bodies and prominent barbels near their heads. The background is a light, speckled surface.

Catfish
Clarias sp.

FISH SPECIES

03

A total of five species belonging to five families were recorded from the pool and stream channel habitats in LSBP. There were 214 individual fish species accounted for. The five fish species were catfish (*Clarias* sp.), striped snakehead (*Channa striata*), climbing perch (*Anabas testudineus*), snakeskin gourami (*Trichopodus pectoralis*) and tilapia (*Oreochromis* sp.).

FISH SPECIES



Common Name: Catfish

Scientific Name: *Clarias* sp.

Family Name: Clariidae

Local Name: Pantak



Common Name: Snakeskin Gourami

Scientific Name: *Trichopodus pectoralis* Regan, 1910

Family Name: Osphronemidae

Local Name: Gourami

Conservation Status: (IUCN) Least Concern



Common Name: Catfish

Scientific Name: *Clarias* sp.

Family Name: Clariidae

Local Name: Imelda fish

Conservation Status: (IUCN) Least Concern



Common Name: Tilapia

Scientific Name: *Oreochromis niloticus*

Family Name: Cichlidae

Local Name: Tilapia

Conservation Status: (IUCN) Least Concern



Common Name: Climbing perch

Scientific Name: *Anabas testudineus* (Bloch, 1792)

Family Name: Anabantidae

Local Name: Gutan

Conservation Status: (IUCN) Least Concern



Common Name: Striped snakehead
Scientific Name: *Channa striata* (Bloch, 1793)
Family Name: Channidae
Local Name: Turobay
Conservation Status: (IUCN) Least Concern



FLORA SPECIES

04

Plant species were sampled from various vegetation types (peat swamp forest, grasses and sedges, grasses and sedges with cultivation, and ecotone) in LSBP and its vicinity consisting of municipalities of Alangalang, Sta Fe, and San Miguel. In the peat swamp forest, a total of 40 trees species belonging to 25 families were recorded. The most represented families were Rubiaceae and Myrtaceae with five species. In addition, 24 species were recorded in the understory mostly represented by Cyperaceae, Dryopteridaceae, and Urticaceae. There were nine species with high conservation value. On the other hand, both grasses and sedges with cultivation have 24 recorded species majorly characterized by members of the Poaceae.

Moreover, a total of 105 species of trees and other vegetation belonging to 49 families were recorded in the ecotone of the peatland along Brgy. San Isidro, Sta Fe to Sitio Banawag of Brgy. Langit, and along Brgy. Paglaum, Tacloban City to Brgy. Tabangohay, Alangalang Leyte. The majority of these were trees species (77) that are well-represented by small trees (38) from the Euphorbiaceae (10) and Moraceae (6) families. While most of these trees are not assessed for conservation per the IUCN Red List of Threatened Species, some species are highlighted for their status. One Critically Endangered species, *Aquilaria malaccensis* Lam., known as agarwood, was documented in the ecotone. This species is known for its economic importance in the fragrance industry and for traditional and religious practices and is subject to illegal trading due to the expensive value of its heartwood (Naziz et al., 2019). These trees will remarkably enhance the restoration and conservation value of the peatland and its ecotone.

TREES SPECIES



Scientific Name: *Terminalia copelandii* Elmer

Family Name: Combretaceae

Local Name: Lanipau

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species

Other Remarks: Peat Swamp Forest, Tree



Scientific Name: *Nauclea orientalis* (L.) L.

Family Name: Rubiaceae

Local Name: Kabak/ Bangkal

Conservation Status: (IUCN) Least Concern, (DAO 2017-11)

Other Wildlife Species

Other Remarks: Peat Swamp Forest, Tree



Scientific Name: *Barringtonia racemosa* (L.) Spreng.

Family Name: Lecythidaceae

Local Name: Putat

Conservation Status: (IUCN) Least Concern (DAO 2017-II)

Other Wildlife Species

Other Remarks: Ecotone, Tree



Scientific Name: *Vitex parviflora* Juss.

Family Name: Lamiaceae

Local Name: Molave

Conservation Status (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species



Scientific Name: *Shorea almon* Foxw.

Family Name: Dipterocarpaceae

Local Name: Almon

Conservation Status (IUCN) Near Threatened (DAO
2017-11) Vulnerable



Scientific Name: *Eucalyptus deglupta* Blume

Family Name: Myrtaceae

Local Name: Bagras

Conservation Status: (IUCN) Vulnerable, (DAO 2017-11) Other Wildlife Species



Scientific Name: *Diospyros discolor* Willd.

Family Name: Ebenaceae

Local Name: Mabolo

Conservation Status: (IUCN) Not Evaluated (DAO 2017-11) Vulnerable



Scientific Name: *Petersianthus quadrialatus* (Merr.) Merr.

Family Name: Lecythidaceae

Local Name: Toog

Conservation Status: (IUCN) Near Threatened (DAO 2017-11)

Other Wildlife Species

Other Remarks: Ecotone, Tree



Scientific Name: *Dipterocarpus grandiflorus* (Blanco) Blanco

Family Name: Dipterocarpaceae

Local Name: Apitong

Conservation Status: (IUCN) Endangered (DAO 2017-11)

Vulnerable



Scientific Name: *Pterocarpus indicus* Willd.

Family Name: Fabaceae

Local Name: Narra

Conservation Status: (IUCN) Endangered (DAO
2017-11) Vulnerable



Scientific Name: *Dracontomelon dao* (Blanco) Merr. & Rolfe

Family Name: Anacardiaceae

Local Name: Dao

Conservation Status (IUCN) Least Concern (DAO 2017-11)

Vulnerable



Scientific Name: *Ficus nota* (Blanco) Merr.

Family Name: Moraceae

Local Name: Urokay

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species

Other Remarks: Peat Swamp Forest, Tree



Scientific Name: *Premna odorata* Blanco

Family Name: Lamiaceae

Local Name: Adgaw

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species

Other Remarks: Peat Swamp Forest, Tree



Scientific Name: *Dillenia philippinensis* Rolfe

Family Name: Dilleniaceae

Local Name: Katmon

Conservation Status: (IUCN) Near Threatened (DAO 2017-11) Other Wildlife Species



Scientific Name: *Metroxylon sagu* Rottb.

Family Name: Arecaceae

Local Name: Lungbya/Lumbia/Sago

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species

Other Remarks: Sedges and Grasses, Tree



Scientific Name: *Cinnamomum mercadoi* S. Vidal

Family Name: Lauraceae

Local Name: Kalingag

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Tree Species

Other Remarks: Ecotone, Tree



Scientific Name: *Psyrax dicoccos* Gaertn.

Family Name: Rubiaceae

Local Name: Bagosalak (Malakape)

Conservation Status: (IUCN) Vulnerable (DAO 2017-11) Other
Wildlife Species

Other Remarks: Ecotone, Tree



Scientific Name: *Alstonia scholaris* (L.) R.Br.

Family Name: Apocynaceae

Local Name: Dita

Conservation Status: (IUCN) Least Concern (DAO 2017-11)

Other Wildlife Species

Other Remarks: Ecotone, Tree



Scientific Name: *Ficus glandulifera* (Wall. ex Miq.) King

Family Name: Moraceae

Local Name: Katol/ Katulan

Conservation Status: (IUCN) Not Evaluated (DAO 2017-11) Other
Wildlife Species

Other Remarks: Ecotone, Tree



Leonardo L. Co, 2011



Leonardo L. Co, 2011

Scientific Name: *Macaranga grandifolia* (Blanco) Merr.
Family Name: Euphorbiaceae
Local Name: Takip asin
Conservation Status: (IUCN) Vulnerable (DAO 2017-11) Other
Wildlife Species

HERBS



Scientific Name: *Colocasia esculenta* (L.) Schott in Schott & Endl.

Family Name: Araceae

Local Name: Gabi

Conservation Status: (IUCN) Least Concern (DAO 2017-11) Other
Wildlife Species

Other Remarks: Sedges and Grasses with cultivation; Ecotone, Herb



Scientific Name: *Cyrtosperma merkusii* (Hassk.) Schott

Family Name: Araceae

Local Name: Palawan

Conservation Status: (IUCN) Near Endangered (DAO 2017-11) Other
Wildlife Species

Other Remarks: Sedges and Grasses with cultivation; Ecotone, Herb

SEDGES/ GRASSLANDS



Scientific Name: *Fimbristylis umbellaris* (Lam.) Vahl

Family Name: Cyperaceae

Local Name: Tikog

Conservation Status: (IUCN) Not Evaluated (DAO 2017-11)

Other Wildlife Species

Other Remarks: Sedges and Grasses, Grass



Scientific Name: *Phragmites vulgaris* (Lam) Trim

Family Name: Poaceae

Local Name: Tangbo

Conservation Status: (IUCN) Not Evaluated (DAO 2017-11)

Other Wildlife Species

Other Remarks: Sedges and Grasses, Grass

A lush green landscape featuring a wide river in the foreground, a dense forest of trees in the middle ground, and rolling hills in the background. The scene is bathed in a soft, green light, suggesting a tropical or subtropical environment. A palm frond is visible in the upper right corner, and some foliage is in the lower right foreground.

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