FINAL REPORT OF FAUNA

BIRD SPECIES IDENTIFICATION ALONG EDUCATIONAL TRAIL IN CONSERVATION AREA ADJACENT TO JELALONG 5 ESTATE, GLENEALY PLANTATIONS SDN BHD

For

GLENEALY PLANTATIONS SDN BHD

(Sustainability Division)

Prepared by

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EXECUTIVE SUMMARY

Objective

The primary goal of this initial biodiversity assessment is to evaluate the existing fauna particularly birds at conservation area adjacent to Jelalong Estate.

This survey seeks to recognize potential influences on fauna specially birds and propose pertinent compensatory and mitigative actions to safeguard and preserve biodiversity in the potentially affected area. To accomplish this, we conducted a thorough preliminary fauna assessment focusing on the birds within the conservation area. This assessment is confined to the impacted biodiversity area and also examines potential direct as well as indirect/induced impacts and risks resulting from ongoing activities.

Date

This study was conducted from 16 to 19 July 2024.

Result Summary

Altogether, there 23 species of birds were observed in this area. Eleven species recorded by using mist netting method while 12 species recoded by using audio or visual by binocular. Three species fall under Neatly Threatened (NT) and three species fall under Vulnerable (VL). Four species listed in Appendix II under CITEC list, while the rest of species list as Least Concern (LC).

Recommendations

We know very little about most of the species inhabiting the site, beyond their mere existence. To effectively conserve this unique ecosystem, it is crucial to implement several strategies. These include:

i. monitoring existing species within conservation area.

ii. initiating tree planting programs particularly with local communities to share awareness on the area.

iii. and legally protecting important areas from disturbance.

Consequently, it is essential to monitor the biodiversity in the region, particularly by inventorying rare, threatened, endangered, and near-extinct species.

1.0 INTRODUCTION AND BACKGROUND

Birds are recognized as vital indicators of environmental health and ecosystem integrity. Their presence, abundance, and behaviour provide valuable insights into the state of various habitats and the impacts of environmental changes. This introductory overview highlights why birds are effective indicators and how they are used in ecological monitoring and conservation efforts. Birds inhabit diverse ecosystems, from forests and grasslands to wetlands and urban areas. This widespread presence makes them suitable for monitoring a variety of habitats. Birds respond quickly to changes in their environment, such as habitat degradation, pollution, and climate change. These responses can be observed and measured, providing early warnings of ecological disturbances. Birds occupy multiple trophic levels and ecological niches, including predators, herbivores, and scavengers. This diversity allows them to reflect the health of different components of the ecosystem.

Birds are generally conspicuous and easier to observe and identify compared to many other wildlife species. This accessibility facilitates regular monitoring and data collection. Extensive historical data and ongoing research on bird populations provide a robust foundation for assessing trends and making comparisons over time. Bird species composition and abundance can indicate the quality and health of specific habitats. For example, the presence of certain forest-dwelling bird species can signify a well-preserved woodland. Birds, especially those at higher trophic levels, can accumulate contaminants such as pesticides and heavy metals. Monitoring these birds helps assess the levels of pollution in the environment. Changes in bird migration patterns, breeding times, and distribution are valuable indicators of climate change impacts. Shifts in these patterns can provide insights into broader ecological responses to changing temperatures and weather conditions. Bird diversity and abundance serve as proxies for overall biodiversity and ecosystem health. Rich bird communities often correlate with high biodiversity and robust ecosystem functioning. Birds can reflect the impacts of human activities such as urbanization, deforestation, and agriculture. Declines or increases in specific bird populations can indicate the effects of these activities on the environment.

Birds, as sensitive and easily monitored components of ecosystems, play a crucial role in indicating the health and integrity of the environment. Their responses to various environmental factors provide valuable data for conservationists, researchers, and policymakers. By monitoring bird populations, we gain essential insights into the state of our natural world and can take informed actions to protect and preserve biodiversity and ecosystem services.

2.0 Significant Studies of Fauna in Plantation Areas

Research on fauna in plantation areas has provided insights into biodiversity, ecosystem services, and the impacts of land use changes. Here are some notable studies and their contributions to our understanding of fauna in plantation environments. This research focused on the biodiversity in oil palm plantations compared to natural forests in Southeast Asia. Findings showed significant reductions in species richness and diversity in oil palm plantations. The study highlighted the need for biodiversity-friendly management practices and the conservation of natural forest fragments within plantation landscapes.

Bird surveys in oil palm plantations are critical for understanding and mitigating the ecological impacts of these agricultural landscapes. Here are several reasons why these surveys are important. Surveys provide data on the variety of bird species present in oil palm plantations. This helps in assessing the overall biodiversity of the area. Birds often serve as indicators of ecosystem health. Changes in bird populations can signal changes in the environment, such as habitat degradation or pollution. Surveys help in evaluating the quality of habitats within and surrounding the plantations. This information is crucial for developing management strategies to improve or maintain habitat quality. Identifying key bird species and their habitat requirements assists in creating conservation plans and measures to protect vulnerable species and enhance biodiversity.

Bird surveys can reveal the effects of different plantation management practices on wildlife. This includes the impacts of monoculture practices, pesticide use, and deforestation. Data from bird surveys can guide the adoption of more sustainable agricultural practices that support biodiversity, such as agroforestry, organic farming, and the preservation of natural habitats within plantation areas. Birds are sensitive to changes in their environment, making them useful indicators of climate change. Surveys can track changes in migration patterns, breeding times, and distribution, providing valuable data on the impacts of climate change. Regular bird surveys establish baseline data and facilitate long-term monitoring of ecological changes, helping to detect trends and inform timely conservation actions.

Surveys contribute to scientific research on bird ecology, behaviour, and conservation. This knowledge is essential for developing effective conservation strategies and understanding the broader ecological impacts of plantations. Data from bird surveys can inform policy and decision-making at local, national, and international levels, promoting sustainable agricultural practices and biodiversity conservation. Bird surveys in oil palm plantations are essential for understanding and mitigating the ecological impacts of these agricultural systems. They provide valuable data for biodiversity assessment, conservation planning, and sustainable management practices. By monitoring bird populations, we can gain insights into ecosystem

health, inform policy decisions, and engage communities in conservation efforts, ultimately contributing to the preservation of biodiversity and the promotion of sustainable agriculture.

3.0 Objectives

The main objective of assessment is to assess baseline data on fauna particularly bird species within the conservation area adjacent to Jelalong Estate.

4.0 DESCRIPTION OF ASSESSMENT AREA

This study was conducted at conservation area adjacent to Jelalong estate.

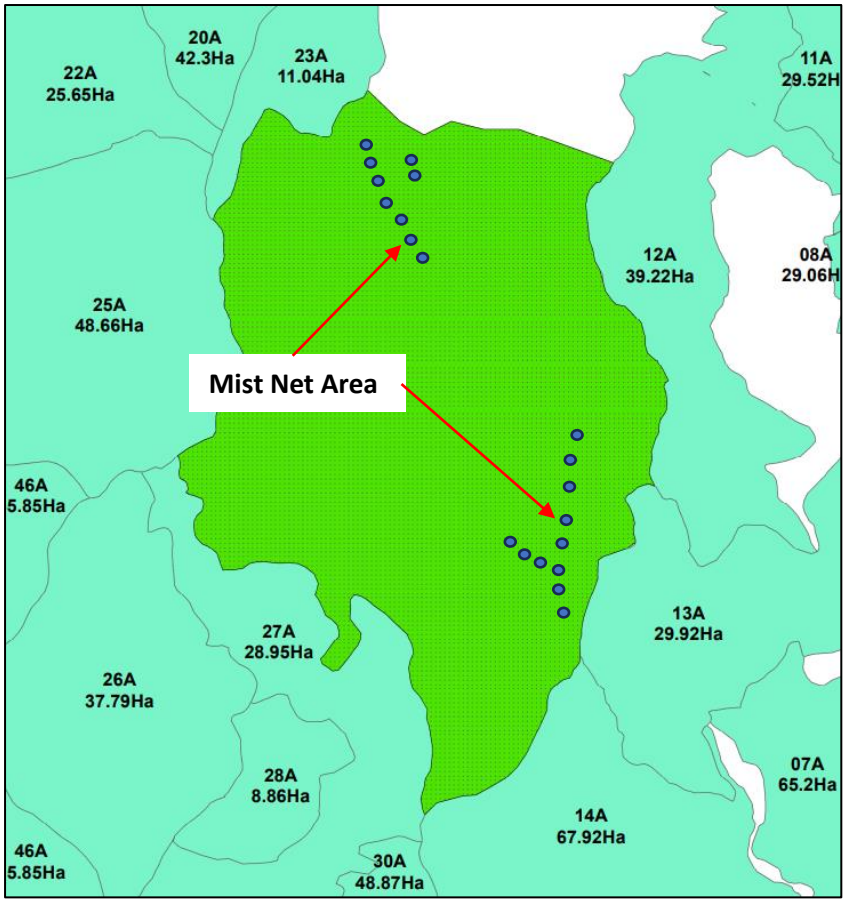

Figure 1: Location of study area

5.0 BIODIVERSITY ASSESSMENT TEAM

There are dedicated personnel from UPMKBs (Table 4) comprises of researchers and students who work tirelessly to advance our understanding of complex scientific concepts and push the boundaries of innovation. Their collaborative efforts are driven by a shared passion for discovery and a commitment to excellence. By integrating diverse expertise and fresh perspectives, they tackle challenging problems, develop cutting-edge technologies, and contribute to significant breakthroughs in their respective fields. Their work not only enhances academic knowledge but also paves the way for practical applications that can benefit society at large. Together, they embody the spirit of curiosity, creativity, and relentless pursuit of knowledge.

Table 1: Fauna Assessment Team

No.	Name & Responsibility	Expertise & Experience
1	Dr. Zamri Bin Rosli (Project Leader)	Wildlife management and ecology - Has 22 years services with UPM as a researcher and lecturer -Published more than 30 papers in JCR, WOS and indexed journal. -Presented more than 20 papers at national and international levels -Receive more than 1 million research grants from university, ministry, agency and government sectors. -Published 5 books related to wildlife -Actively involved in community engagement project such as in tree planting programme and education training.
2	Mr, George Bala Empin	- Has over 20 years services with UPM as assistant science officer - Actively involve in research particularly to fauna survey Actively involved

6.0 APPROACH AND METHODOLOGY OF THE ASSESSMENT

Birds – Two methods were used to obtain data on birds. The mist netting method was used to capture cryptic bird species which cannot be detected using binoculars such as those species that belong to the understorey. All birds captured were identified by using 'Field Guide to the Birds of Borneo' by Phillipps. Birds were then released immediately after identification. Observations by using binoculars were carried out along the border line of the assessment area as well as the buffer zone.

Figure 2: Setting up mist-net

7.0 ASSESSMENT AND FINDINGS

Assessment of birds was conducted from 16th to 19th July 2024. Data collection was done from 8:30am in the morning up to 3.30pm. The results of the fauna assessment are as follows:

7.1 Birds Survey

A total of 23 species of birds were spotted at Jelalong conservation area as shown in Table 1 and 2. Out of these 23 species, 11 species or 48% were recorded by using the mist-netting method (Table 1) while 52% or 12 species (Table 2) were recorded by using audio or visual observation. The netted birds were represented mainly by the group of bulbuls from the family

of Pycnonotidae with 4 species, followed by the group of Picidae with two species. Three bird species are identified as Nearly Threatened (NT) under IUCN list which represented by buff-necked woodpecker, black-backed Kingfisher and Banded Broadbill. Three species that fall under Vulnerable represented by Great Argus, Rhinoceros Hornbills and Black Hornbills.

Figure 3: Net checking

These three species were also listed under Appendix 11 based on the conservation and protection status under IUCN Red List.

Tabe 2: Bird captured by using mist netting method.

No.	Local name	*Scientific name*	Family	Status
1.	Red-eyed Bulbul	*Pycnonotus brunneus*	Pycnonotidea	LC
2.	Finch Bulbul	*Crinigervfinschii*		LC
3.	Hairy-backed Bulbul	*Tricholestes criniger*		LC
4.	Cream-vented Bulbul	*Pycnonotus simplax*		LC
5.	Yellow-bellied Bulbul	*Criniger phaecephalus*		LC
6.	Rufous-chested Flycatcher	*Fecidula dumetoria*	Muscicapidea	LC
7.	Maroon Woodpecker	*Blythipicus rubiginosus*	Picidea	LC
8.	Buff - necked Woodpecker	*Meiglyptes tukki*		NT
9.	Black - backed Kingfisher	*Ceyx rufidorsa*	Alcedinidae	NT
10.	Black - naped Monarch	*Hypothymis azurea*	Monarchidea	LC
11.	Rufous-tailed Tailorbird	*Orthotomus sericeus*	Tailorbirds	LC

IUCN Red List: International Union for Conservation of Nature, Red List

- CR Critically Endangered
- EN Endangered
- VU Vulnerable
- NT Near Threatened
- LC Least Concern
- DD Data Deficient

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora

* Appendix I **Appendix II *** Appendix III

Common Name: Rufous-chested Flycatcher

Scientific name: *Fecidula dumetoria*

Common Name: Hairy-backed Bulbul
Scientific name: *Tricholestes criniger*

Common name: Yellow-bellied Bubul
Scientific name: *Pycnonotus simplax*

Common Name: Black-naped Monarch
Scientific Name: *Hypothymis azurea*

Common name: Rufous-backed Kingfisher
Scientific Name: *Ceyx Rufidorsa*

Common name: Maroon Woodpecked
Scientific name: *Blythipicus rubiginosus*

Common name: Buff-necked Kigfisher
Scientific name: *Meiglyptes tukki*

Table 3: Birds observed by using binocular or audio

No.	Local Name	Scientific Name	Family	Status
1.	Great Argus	*Argusianus argus*	Phasianidae	VU / **
2.	Rhinoceros Hornbill	*Buceros rhinoceros*	Bucerotidae	VU / **
3.	Black Hornbills	*Anthracoceros Malay panus*		VU / **
4.	Banded Broadbills	*Eurylaimus javanicus*	Eurylaimidae	NT
5.	Black and Red Broadbill	*Cymbirthynchus macrorhynchos*		LC
6.	Little Spiderhunter	*Arachnothera longirostra*	Nectarinidea	LC
7.	Hill Myna	*Gracula riligiosa*	Sturnidea	LC
8.	Slander-billed Craw	*Corvus anea*	Corvidea	LC
9.	Blue-winged Pitta	*Pitta moluccencis*	Pittidae	LC
10.	White-rumped Shama	*Copsychus malabaricus*	Turdidea	LC / **
11.	Banded-bay Cuckoo	*Cacomantis sonnetri*	Cuculidea	LC
12.	Fluffy-backed Tit Babbler	*Macronus ptilosus*	Timaliidea	LC

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8.0 RECOMMENDATION

From this study, some recommendations are made as follows:

a. Implement long-term monitoring programs to track changes in bird populations and habitats over time.
b. Identify and protect critical habitats that are essential for the survival of bird species, especially breeding and feeding grounds.
c. Implement habitat restoration projects to enhance degraded areas and improve biodiversity.
d. Identify and mitigate threats to bird populations, such as habitat destruction, pollution, climate change, and invasive species.
e. Implement measures to reduce human-wildlife conflicts and promote sustainable land-use practices.
f. Educate the public about the importance of birds and conservation areas through outreach programs, educational materials, and media campaigns.
g. Promote birdwatching and eco-tourism as ways to raise awareness and generate support for conservation.

9.0 CONCLUSION

Studying birds in these areas is crucial for biodiversity conservation, ecological research, climate monitoring, public engagement, and economic sustainability. Birds are excellent indicators of biodiversity and environmental health. Monitoring bird populations can provide valuable data on the state of ecosystems. Birds play key roles in ecosystems, such as seed dispersal, pest control, and pollination. Studying their interactions within the ecosystem helps in understanding and maintaining ecological balance. This area still contains several important species such as Great Argus, Hornbills and Babbler species which can be used as the indicator of a forest ecosystem.