

Multifunctional Conservation Area of Mayong Merapun Forest Triputra Agro Persada



TRIPUTRA AGRO PERSADA



2019



Multifunctional Conservation Area of Mayong Merapun Forest Triputra Agro Persada

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Mayong Merapun Forest



Forewords

Multifuncional Conservation Area(MFCA) of Mayong Merapun Forest is created and designed in order to accommodate many kinds of conservation needs related to the concession of oil palm plantation for Triputa Agro Persada (TAP). This conservation manifests the commitment of our company to the sustainability of flora and fauna's biodiversity because a good habitat is indicated by the composition of its vegetation, the density of the vegetation and the canopy cover which creates a micro climate, resulting in the support and availability of the things needed by the fauna.

It is expected that The Multifunctional Conservation Area of Mayong Merapun Forest, which is divided into 3 zones, can give contribution to the implementation of biodiversity conservation by conserving the flora and fauna, as well as develop the research on the biodiversity, establish a forest which can be utilized for education and the collection of types and enclaves of wildlife. The management of TAP is committed to protecting the biodiversity and important ecosystem living around or in the concession land of TAP.

The entire members of research team of Ecology and Conservation Center for Tropical Studies (ECOSITROP) would like to express their most sincere gratitude to TAP and all of its staffs for the supports and the facilities which eased the monitoring of the biodiversity in Mayong Merapun Forest. We hope that this document will be taken into account as the reference in a long-term and short term management of conservation areas.

Team



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Background

A forest is a natural habitat for many kinds of wildlife in Kalimantan. In the forest, there are so many kinds of plants with their own functions, such as the provider of fruits and foods, nest, protector of water source and any other natural functions and services needed by the wildlife. The whole types of plants, including trees and the understoreys, serve as the food provider for the wildlife. The parts of plants which are usually consumed include the fruits, shoots, flowers, and nectars. The food chain of the ecosystem was considered to be in balance. But today, the forest areas are getting smaller and the regions of this forest are being fragmented.

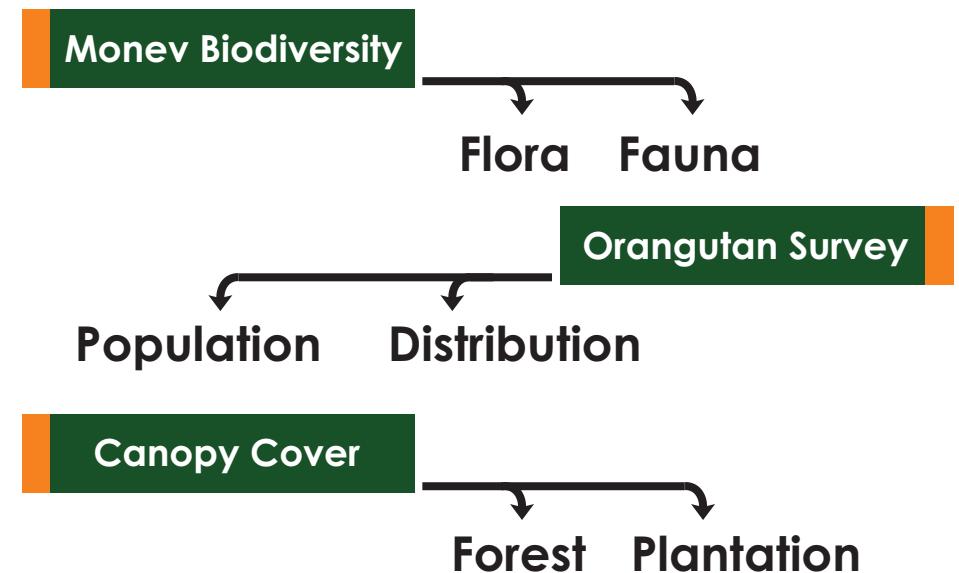
Data compilation, which was performed through identification and inventory, was applied to TAP's oil palm plantation. Generally, this

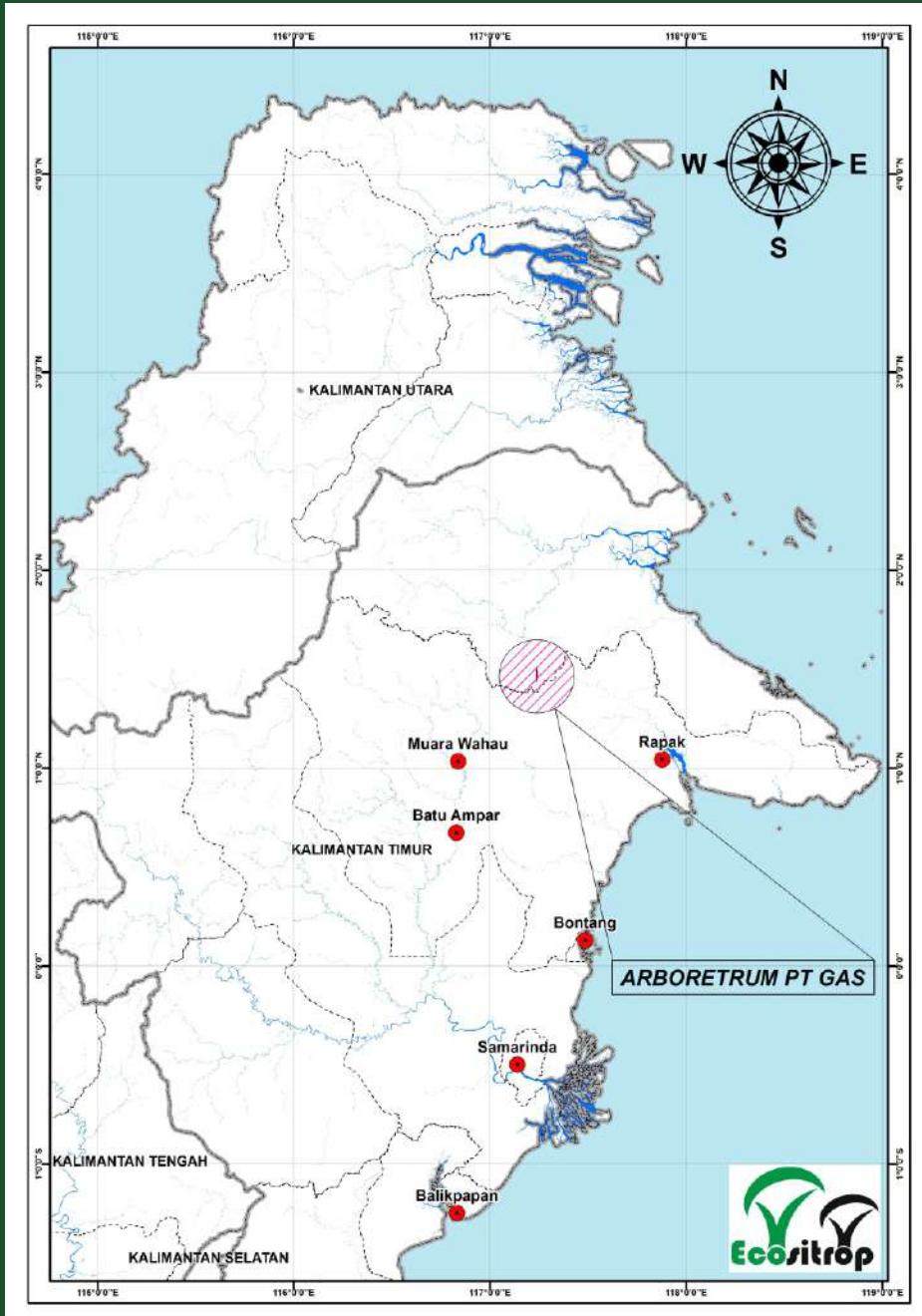
plantation is still dominated by the canopy cover of the surrounding forest. The forest condition of this oil palm plantation did not experience a change. But, this area is just not as the same in the context of positioning and broadness as a natural habitat for wildlife. Nowadays, the forest areas which can be used as the natural habitat for wildlifes are getting tighter due to land clearings. A number of efforts should be implemented in order to maintain the balance and the function of the ecosystem. Every single kind of flora and fauna has its own particular function and their roles in the food chain are crucial.

The identification and inventory were conducted on the flora (trees, herbs, and lianas) and the fauna (mammals, avifauna, herpetofauna, and insects). An intervened forest tends to be habited by only a

particular number of survived species, for instance, a particular species of tree which can survive direct sunlight. Furthermore, several kinds of wildlife will be suppressed by the change of quality that occurs in their habitat, especially herpetofauna and insects. (Lepidoptera and odonatan order). They got a higher sensitivity to the change of land function because their roaming ability is limited.

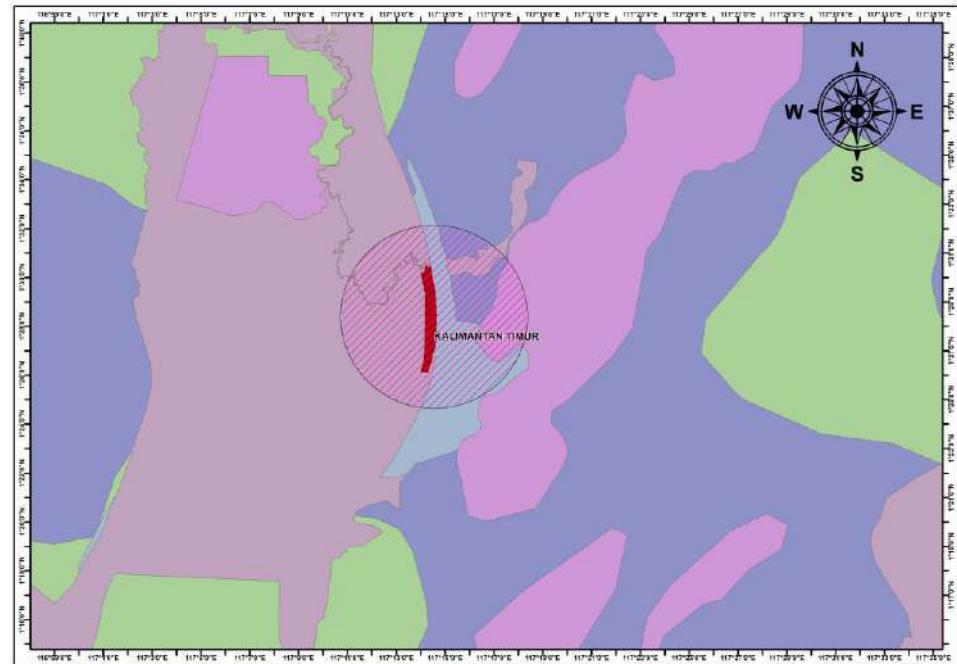
Identification and inventory were performed in order to find the actual condition of the areas and the wildlife living in it because the change of habitat quality (both directly and indirectly) will be an effect on wildlife's existence. Identification and inventory will be the very first steps of the prolonged process of flora and fauna biodiversity management so that our purpose in maintaining the ecosystem function can be implemented as planned.





Profile

Mayong Merapun Forest is located inside the oil palm plantation concession area and it is recognized as a Highly Valued Conservation Area (HVCA) of PT General Aura Semari, Triputra Agro Persada. The administrational areas of this concession include Merapun Village, Kelay, Berau, East Kalimantan. The broadness of the Multifunctional Conservation Area in Mayong Merapun Forest is approximately 600 ha. In order to arrive in the forest, it takes 12 hours of a road trip from the capital of East Kalimantan (Samarinda) or 4 hours from the Capital of the Region (Berau).



Zoning

Education and Tour Zone (99,53 Ha)

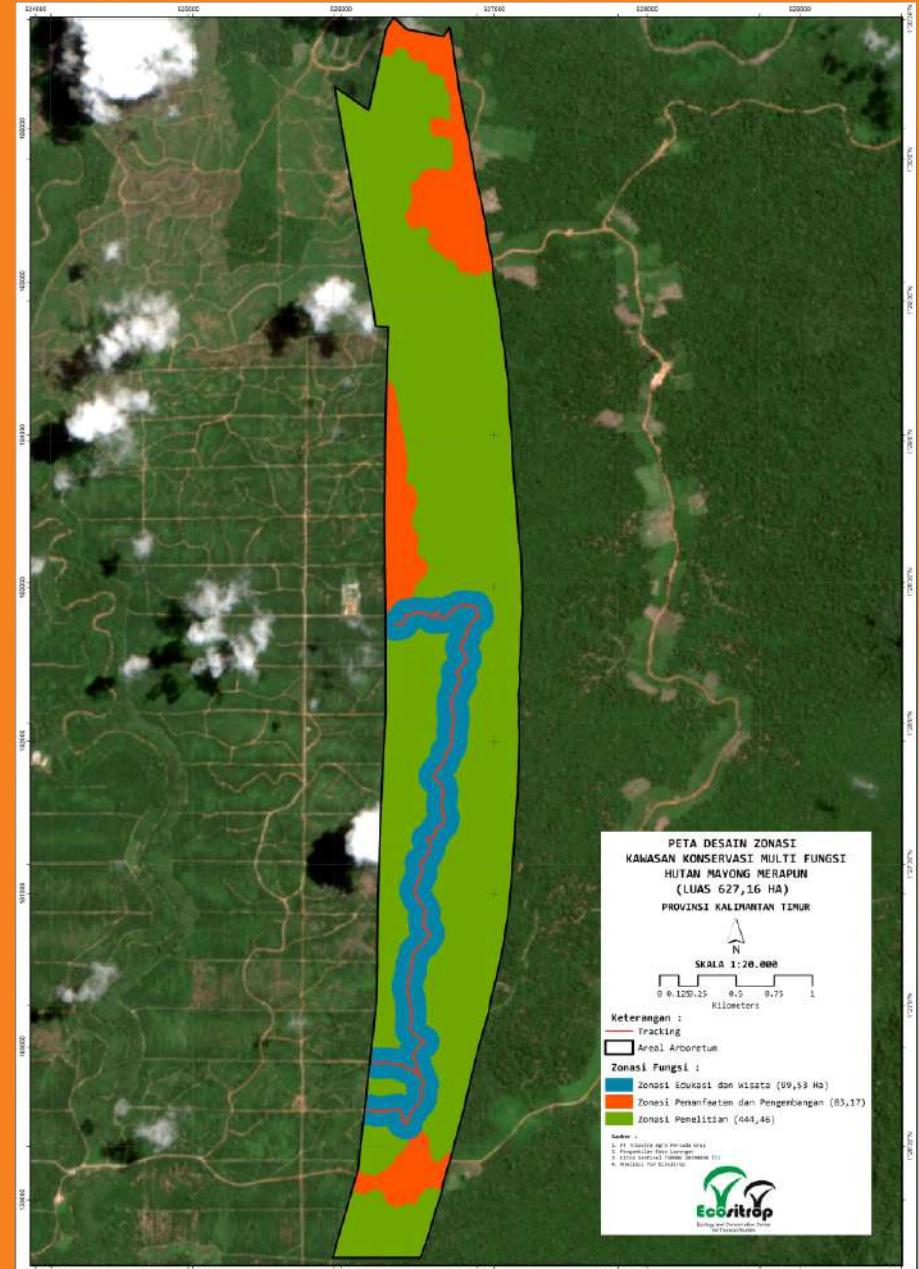
- Travelling
- Natural Traffic Education
- Monitoring Track

Exploration and Development Zone (83,17 Ha)

- Species Enrichment
- Natural Seed Evacuation
- Natural Species Development

Research Zone (444,46 Ha)

- Orangutan Monitoring
- Monitoring of Flora and Fauna Biodiversity



Management of the Area

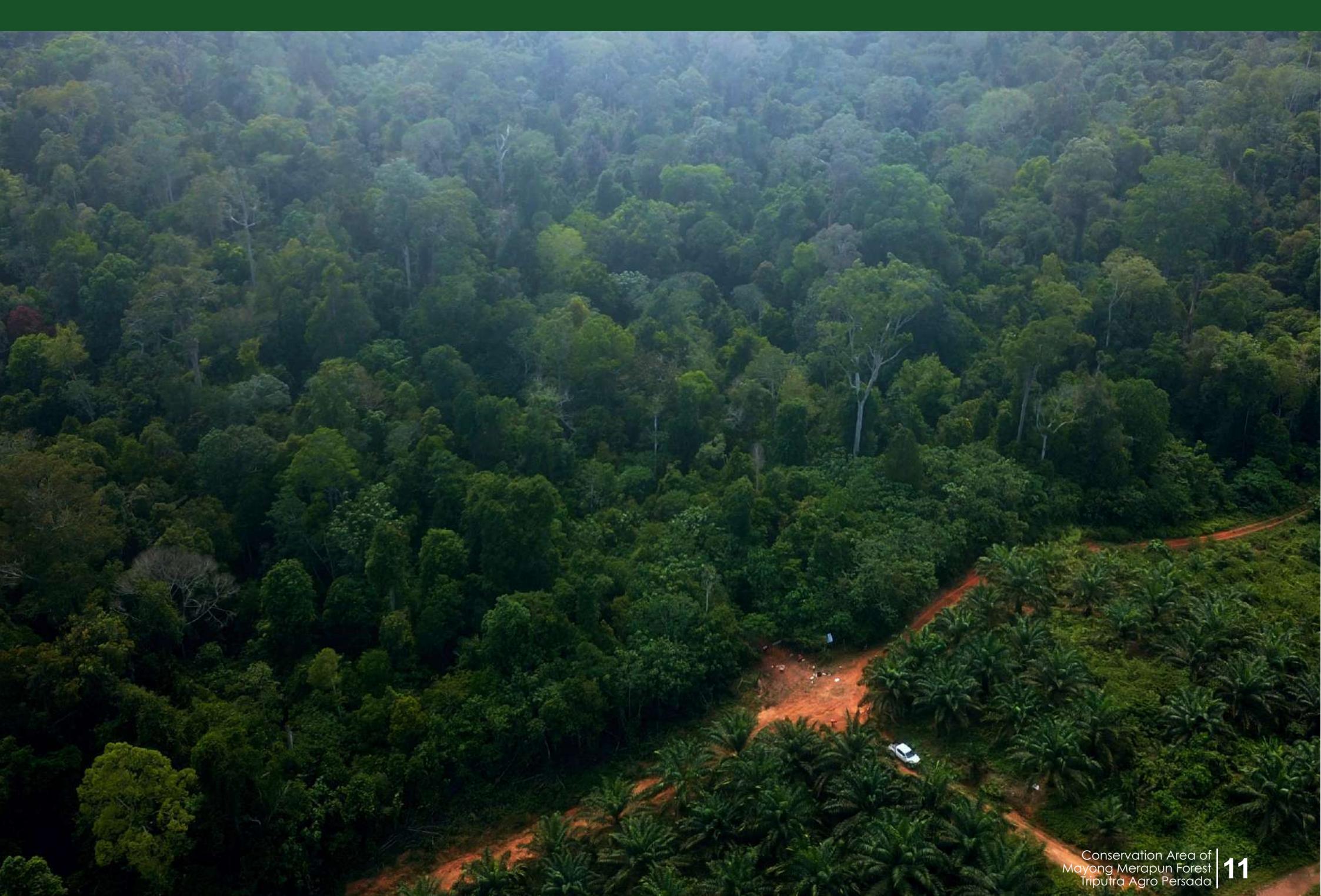
Legal Basis

UU 5, 1999	Conservation for the Biological Natural Resources and Its Ecosystem
UU 41, 1999	On the Forestry
UU 32, 2009	Protection and Management for the Living Environment
PP 7, 1999	Plants and Wildlife Preservation
PP 8, 1999	Plants and Wildlife Utilization
Kepmenhut 355, 2003	Procurement of Plants and Wildlife Specimens

Area Function

Conservation for the Biological Natural Resources and Its Ecosystem
On the Forestry
Protection and Management for the Living Environment
Plants and Wildlife Preservation
Plants and Wildlife Utilization
Procurement of Plants and Wildlife Specimens

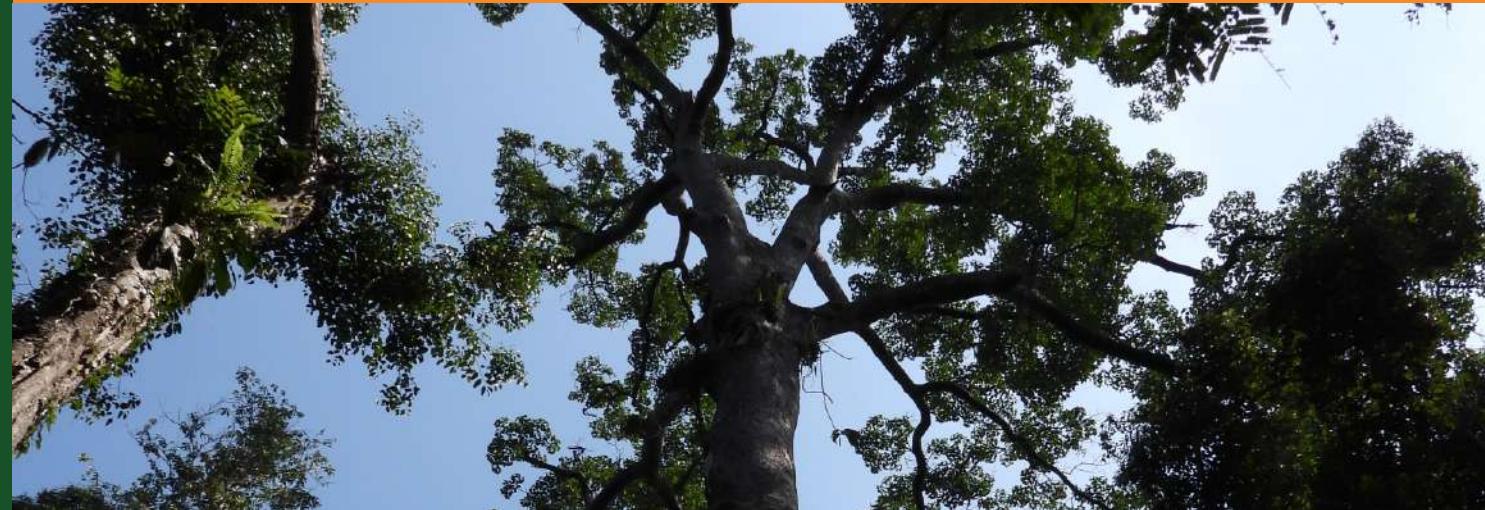




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Steps

The stipulation of the Multifunctional Conservation Area in Mayong Forest was performed in several steps. It was because we need to consider some particular things in determining the most suitable location to be used as the Multifunctional Conservation Area. The safety aspect and any other aspects should be counted on while determining the location. The determined location should conduct an analysis of its vegetation cover. The limit of the conservation area and transect lines will be determined based on the latest map. A number of aspects such as topography, accessibility to the transect lines, vegetation potencies (trees, herbs, lianas), and the aesthetic aspect (or the scenery) should be counted while determining the transect lines. The other aspects that should also be considered included the result of monitoring and evaluation process on the actual biodiversity of the location



1.

**Stipulation of MFCA Location in
the Oil Palm Plantation of TAP**



2.

**Drone Mapping and matching
of Data and Information**



3.

**Survey of Area Potency and
Transect Establishing**



4.

**Zoning Process (Z): Z.of Species Collection,
Z. of Education &Tour, Z. of Conservation**



Design of Transect Lines Education and Tour Zone



Tracking lines were marked based on the canopy cover, the topography, the optional accesses and the potency within the MFCA of Mayong Forest.



Ladders were set on the way down and climbs in order to ease visitor's movement.



One of the ladders made in order to ease the visitors when they intend to pass and enter the Mayong Forest.

Transects

Transect lines can be used as the monitoring lines, security lines, and the lines for the means of education, research and tour. The length of lines established in the multifunctional conservation area was approximately 1,2 km and the width were 2 m. The potency of biodiversity, such as the flora, fauna and many kinds of trees can be identified along the transect lines.



BIODIVERSITY OF FLORA





SUNSET IN THE MAYONG MERAPUN FOREST

Identification of The Potency of Flora Biodiversity

Identification and inventory on the flora biodiversity were performed in the Multifunctional Conservation Area of Moyong Forest, particularly in the oil palm plantation possessed by TAP. The identified flora included trees, herbs, and lianas. The obtaining of vegetation information related to the stand composition in the area will provide the comprehension about quality of land cover and the habitat.





The team identified flora species by attaching label to the tree. All of the trees located along transect line, had been labelled with the species name identified by the team. The purpose of this labelling is to help the visitors in recognizing tree species in Mayong Merapun Forest.



The plus tree founded in the Multifunctional Conservation Area of Mayong Forest, TAP.

Potency of Trees



Ulin
Eusideroxylon zwageri



Meranti merah
Shorea pauciflora



Pasang
Quercus gaharuensis



Buni
Antidesma sp.



Mahang
Macaranga triloba

We have been identifying as many as 149 species of trees that live at the right and the left side of the transect lines. The identified trees were then labelled so that the visitors could recognize tree species of the tropical forest in Kalimantan.

Local Name	: Ulin
Latin Name	: <i>Eusideroxylon zwageri</i>
Family	: Lauraceae
Appearance	: The stem of ulin tree is generally straight and the diameter is 150 cm. The height of this tree is 30 to 50 meters. The color of patio wood inside the ulin tree is blackish brown, while the color of its gulbal wood is yellowish brown. When being soaked in water for a long time, the color of the cut ulin stem will turn black.
Leaf Shape	: Ulin leaves are arranged in a spiral. They are single and the edges are flat. The shape is oval or rounded with pointed ends. The length of ulin leaves is 14-18 cm, and the width is 5-11 cm. The surface of ulin leaves is rough and hairless. The bottom of the leaf is lightly haired in its mother leaf bone.
Flower	: Ulin flowers drop easily and the color will be green, yellow or violet. The position of ulin flower is symmetrical in every direction, and the length is 3-3 mm.
Fruit	: The fruit of ulin tree falls in the stone fruit category and the shape is an ellipse or rounded. This fruit has one core. The length of ulin fruit is 7-16 cm. The flesh of ulin fruit is sticky, slippery and transparent. Within a single ulin fruit, there is one seed with a length of 5-15 cm and a diameter of 3-6 cm.
Distribution	: Kalimantan, South Sumatra, Eastern Sumatra, the Philippines, Brunei Darussalam, Sabah, and Sarawak.



Local Name	: Kayu arang
Latin Name	: <i>Diospyros foxworthyi</i>
Family	: Ebenaceae
Appearance	: The height of this tree is 24 m to 30 m. The branches are solid with reddish color or blackish brown when young. This tree is somewhat dry.
Leaf Shape	: Being similar to the skin, the color of the leafs, in both of the sides, is black and dry. The shape is oval, elips, or ovate. 11-30 x 4-12,5 cm.
Flower	: The diameter of the flower is 3 mm. the color is yellowish white with a narrow crown leaf.
Fruit	: The length of the fruit is 33 mm, and the color is purple-blackish brown. The seed is elongated in shape.
Distribution	: Malaysia, Sumatera, Kalimantan, Philippines.



Diversity of Understorey Species

Identification and inventory processes were also performed on the groups of understoreys, including herbs, lianas, and palms. These vegetations are considered as food resources. The flower will be of nectar for butterflies and any other kind of insects



Hareneus
(*Rubus molucanus*)



Pacing tawar
(*Costus speciosus*)



Rambusa
(*Passiflora foetida*)



Keladi hutan
(*Alocasia longiloba*)



Glepangan
(*Eupatorium odoratum*)



Daun Kupu-kupu
(*Bauhinia longiloba*)



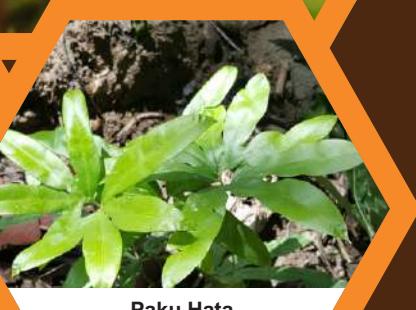
Mali-mali
(*Leea indica*)



Paku
(*Lygodium microphyllum*)



Karamunting
(*Melastoma malabathricum*)



Paku Hata
(*Lygodium circinatum*)

Potency of Medicinal Herbs



Karamunting
(Melastoma malabathricum)

Root extracts can be used to increase platelets, improve fibrinogen level, and the muscle contraction of capillary blood vessels. In other words, root extracts could inhibit *Staphylococcus aureus*, the culprit of pus formation. The tannin or the pigment of the roots can be used as a natural black coloring. Many people use this pigment to color their teeth and eyebrows black



Rambusa
(Passiflora foetida)

Calcium will maintain your bone density, so you can be prevented from the risk of osteoporosis. Furthermore, the antioxidant contents of fruits, which include vitamin C, flavonoid and potassium will prevent free radicals, resulting in the inhibition of cancer cell development and the damage of skin tissue.



Pacing tawar
(Costus speciosus)

Pacing Tawar can be processed as a medicine for healing kidney illness (Nephritic edema), convex stomach, urinal tract infection (tractus urinarius) and heart contraction (chirosis). You could produce diosgenin from the seeds of 'pacing tawar' through immobilize system, promoting quality improvement for the pharmaceutical industry.

Bajakah



Bajakah (*Uncaria cordata*)

The water produced by bajakah tastes like regular water but cooler. This plant grows only in a dense forest with a few amounts of sunlight (because of the density). According to scientific researches, the root of "Bajakah" wood can heal cancer and tumor.



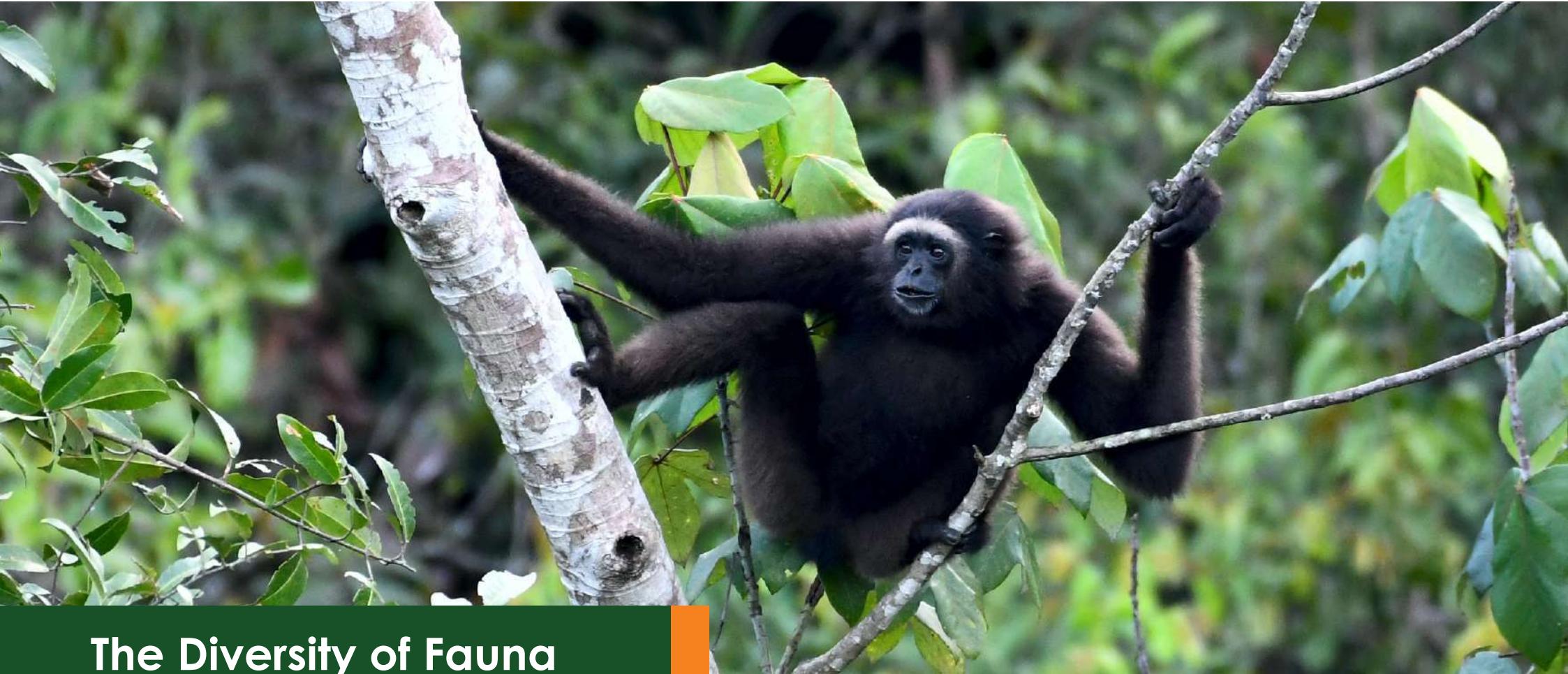
Pasak Bumi (*Eurycoma longifolia*)

Basically, Pasak Bumi contains efficacy in each of its parts. The young leaf of 'pasak bumi' can be used to heal stomach ache. The roots and the skin of 'pasak bumi' is highly effective in healing fever, wounds in the gum and worm disorder. It can be used as a tonik for mothers during the postpartum. The skin of 'pasak bumi' stem is widely used as the coagulant for the postpartum event. Furthermore, 'pasak bumi' can be used to heal bone pain.



BIODIVERSITY OF FAUNA





The Diversity of Fauna

The Palm Oil Plantation of Triputra Agro Persada has some remaining forested area which can be considered as High Conservation Value Area (HCVA). Identification and inventory on the wildlife species has been continuously performed in Mayong Merapun Forest, which now becomes a Multifunctional Conservation Area under Triputra Agro Persada Management. Regardless of the fact that oil palm is a homogeneous plant, this plant is a welcoming one to the wildlife. Besides, the area that will be explored as the oil palm plantation is relatively narrow.

The identified and inventoried wildlifes include :

- a. Mammals
- b. Avifauna (birds)
- c. Herpetofauna (reptile and amphibian)
- d. Insects (Lepidopteran and Odonatan Order)



Orangutan
(*Pongo pygmaeus*)

Diversity of Mammals



Pig-Tailed Macaque
(*Macaca nemestrina*)



Bearded Pig
(*Sus barbatus*)



Red Muntjac
(*Muntiacus muntjak*)

According to the result of identification and inventory process, the number of mammals who live in the oil palm plantation of TAP is 14 species. The mammals are distributed in the entire monitoring areas. A number of kinds of mammals were successfully identified by the footsteps and scratch, including the bearded pigs (*Sus barbatus*), Red Muntjac (*Muntiacus muntjak*), Greater Mousedeer (*Tragulus napu*) and Sun bear (*Helarctos malayanus*). Those species can also be identified through camera trap. The species that were identified by the sound was Bornean Gibbon (*Hylobates muelleri*). The sound of this species is highly recognizable and heard in a distance.





Red Langur
(*Presbytis rubicunda*)



Plantain Squirrel
(*Callosciurus notatus*)



Painted Treeshrew
(*Tupaia picta*)

The existence of mammals in the oil palm plantation area

NO	Nama Jenis		Famili	Metode Pengamatan
	Nama Lokal	Nama Ilmiah		
1	Bornean Gibbon	<i>Hylobates muelleri</i>	Hylobatidae	S
2	Orangutan	<i>Pongo pygmaeus</i>	Pongidae	Sr, CT
3	Pig-Tailed Macaque	<i>Macaca nemestrina</i>	Cercopithecidae	CT
4	Red Langur	<i>Presbytis rubicunda</i>	Cercopithecidae	L
5	Red Muntjac	<i>Muntiacus muntjak</i>	Cervidae	CT, J
6	Greater Mousedeer	<i>Tragulus napu</i>	Tragulidae	CT, J
7	Bearded Pig	<i>Sus barbatus</i>	Suidae	CT, J
8	Sun Bear	<i>Helarctos malayanus</i>	Ursidae	Ck
9	Malay Civet	<i>Viverra tangalunga</i>	Viverridae	CT
10	Masked Palm Civet	<i>Paguma larvata</i>	Viverridae	CT
11	Malayan Porcupine	<i>Hystrix brachyura</i>	Hystricidae	CT
12	Painted Treeshrew	<i>Tupaia picta</i>	Tupaiidae	CT, L
13	Plantain Squirrel	<i>Callosciurus notatus</i>	Sciuridae	L
14	Rat	<i>Rattus sp</i>	Muridae	CT

S : Sound

Sr : Nest

J : Footsteps

Ck : Scratch on the tree stems

CT : Camera trap

L : Direct Monitoring

The mammals found in our location included Malayan Porcupine (*Hystrix brachyura*), Sun bear (*Helarctos malayanus*), Bearded pig (*Sus barbatus*), Greater Mousedeer (*Tragulus napu*), Red Muntjac (*Muntiacus muntjak*) and orangutan (*Pongo pygmaeus*).



Orangutan

Pongo pygmaeus morio

Orangutan is wildlife that requires to be protected. One of the habitats of orangutan in Kalimantan is located the oil palm plantation possessed by the Triputra Agro Persada. The result of identification on the population and distribution of orangutan indicated the fact that the species is relatively residing in the Multifunctional Conservation Area of Mayong Merapun Forest. It was estimated that there will be more than 5 individuals of orangutan. The number of food sources for orangutan in Mayong Merapun forest is relatively abundance, ranging from fruits, shoots and cambium. Furthermore, Mayong forest is also providing the trees that can be used as a nest, considering that orangutan is regularly building nests to rest in.

Bornean Gibbon

Hylobates muelleri

In Mayong Merapun forest, we identified a species of primate called Bornean Gibbon. Bornean Gibbon is an endemic of Kalimantan. The habitat of Bornean Gibbon is up on a bunch of high trees, in which the number of trees is considerably plentiful to help the species moves and hangs from one canopy to another. It is because Bornean Gibbon is considered an arboreal primate. It consumes fruits, flowers, young leaves and little insects. Bornean Gibbon likes sweet fruits, especially fig. Bornean Gibbon is usually seen in a little group consisting of one adult male, one adult female and one up to three cubs.



Sun Bear (*Helarctos malayanus*)

Sun bears were identified in our Multifunctional Conservation Area of Mayong Merapun Forest. This mammal, which has the Latin name of *Helarctos malayanus*, is a kind of protected species and it is granted the category of a vulnerable mammal according to conservation status of IUCN. Meanwhile, according to the data issued by CITES, honey bear is listed in the 'Appendix I'. Honey bear can be identified by the scratches or though the camera traps.



The scratches of honey bears on the stems located in Multifunctional Conservation Area of Mayong Forest



Crested Fireback

Identification and inventory on mammals can be implemented through many ways such as direct monitoring, identifying footsteps, identifying nests, identifying scratches on tree stems, as well as identifying sounds and hairs by operating drones. But, those methods are not effective because they cannot be implemented in 24 hours. Nowadays, identification and inventory can be performed

Red Muntjac

by using the 'camera trap' method. The cameras can be operated for several months depending on the power of their batteries, resulting in a more effective identification and inventory process. The mammals that were identified in our locations were Malayan Porcupine (*Hystrix brachyura*), Sun bear (*Helarctos malayanus*), Bearded pig (*Sus barbatus*), Greater Mousedeer (*Tragulus*

Malay Civet

napu), Red Muntjac (*Muntiacus muntjak*) and Orangutan (*Pongo pygmaeus*). Those mammals were successfully founded in the monitoring location.

Diversity of Avifauna



Oriental Pied Hornbill
(Anthracoceros albirostris)



Wreathed Hornbill
(Rhyticeros undulatus)



Rhinoceros Hornbill
(Buceros rhinoceros)

The monitoring of avifauna (birds) was also conducted in the oil palm plantation of TAP. The condition of the usability of the avifauna monitoring location was that it is a kind of forest located next to the oil palm plantation. The bird survey activities included the recording of the directly identified bird types, as well as the birds documented through fog mesh and camera. Direct identification was performed through binoculars or by eyes. Identification and inventory of birds were also conducted indirectly through their recognizable sounds. Identification and inventory processes began in the morning from 6 am until 6 pm in the afternoon. Furthermore, the inventory was also

performed on the number of every bird species.





Savana Nightjar
(*Caprimulgus affinis*)



Scaly-Breasted Bulbul
(*Pycnonotus squamatus*)



Thick-Billed Spiderhunter
(*Arachnothera crassirostris*)



Olive-Winged Bulbul
(*Pycnonotus plumosus*)



Spectacled Bulbul
(*Pycnonotus erythrophthalmos*)



Cream-Vented Bulbul
(*Pycnonotus simplex*)



Crimson-Breasted Flowerpecker
(*Prionochilus percussus*)



Yellow-Breasted Flowerpecker
(*Prionochilus maculatus*)



Black-and-Yellow Broadbill
(*Eurylaimus ochromalus*)

Diversity of Herpetofauna

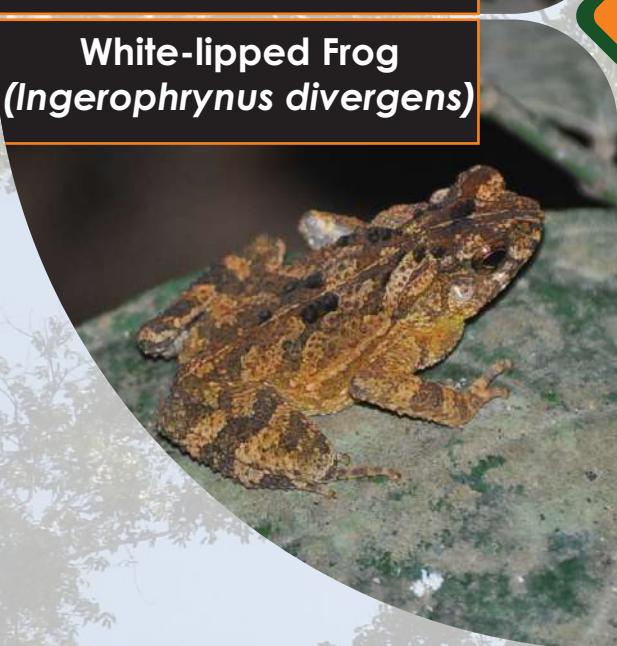


The monitoring of herpetofauna focused on the herpetofauna diurnal, especially the amphibian. The survey was conducted in the evening from 7 pm until 10 pm. Here are the pictures of the herpetofauna survey conducted in the evening.





Brown Marsh Frog
(Chalcorana raniceps)



White-lipped Frog
(Ingerophrynus divergens)



Forest Toad
(Fejervarya cancrivora)



Crab-eating Frog
(Kurixalus chaseni)

According to the result of the herpetofauna monitoring, the amount of successfully observed herpetofauna species was 20. The amount of herpetofauna observed in the multifunctional area of Mayong Merapun forest was 29. Meanwhile, the composition of herpetofauna species according to the families was composed of 14 species of toads and frogs, 4 species of lizards (reptile) and 2 species of snakes (reptile).



Dendrelaphis pictus

Duttaphrynus melanostictus

Diversities of Dragonflies (Odonata)



Straight-edged red-parasol
(Neurothemis terminata)



Yellow-striped Flutterer
(Rythothemis phylis)



Slender Skimmer
(Orthetrum sabina)



Treehugger
(Tyriobapta torrida)

The order of Odonata (dragonflies) is generally divided into two sub-order which are Anisoptera (dragonfly) and Zygoptera (needle dragonfly). The existence of dragonflies is highly related to the watery place. It is so because the entire life stages of dragonfly are depending on watery places. Their life stages of being an egg and larvae are considered aquatic (depend on water), while the camouflage into an adult form occurs around watery places (Gillot, 2005).



**Blue-gossamerwing damselfly
(*Euphaea impar*)**



**Jewel damselfly
(*Heliocypa fenestrata*)**



**Bornean damselfly
(*Rhinagrion borneense*)**

The amount of successfully identified dragonfly species was 16, and they are distributed all over the Mayong forest. 5 out of the 16 identified types were classified into needle dragonfly (Zygoptera). The identified needle dragonfly included *Rhinagrion borneense*, *Vestalis amoena*, *Heliocypha biforata*, *Heliocypha fenestrata*, and *Euphaea impar*.

The most common dragonfly which can be identified will be the family of Libellulidae. The lengths of dragonfly were varied, ranging from 25-75 mm. The dragonfly which came from Libellulidae family were commonly founded around pools or puddles located at the edges of the forest, and they can adapt themselves to the dirty and turbid water. Meanwhile, there were the other dragonflies that came from other families, and their existence was in absolute dependence on clear and clear water. Dragonflies are consuming insects and other vertebrates in order to fulfill their needs for food. In the food chain, dragonfly is playing the roles as consumers, as well as the prey to the higher consumers such as insect predators or birds (Gillot, 2005).

Diversity of Butterflies (Lepidoptera)



Ciliate blue
(Anthene emolus)

Common Archduke
(Lexias pardalis)

Malayan Red Harlequin
(Paralaxita damajanti)

Identification and inventory of the Lepidopteran order (butterfly) were conducted at the MFCA of Mayong Merapun Forest. Generally, the conditions of their habitat in every location were somewhat varied. The vegetation compositions were also varied. Identification and inventory of butterfly families were conducted in the morning until the afternoon. But, butterflies tend to be more active in daylight or in sunny weather.





Dark Grass Brown
(Orsotriaenia medus)



Lesser Dart
(Pontathus omaha)

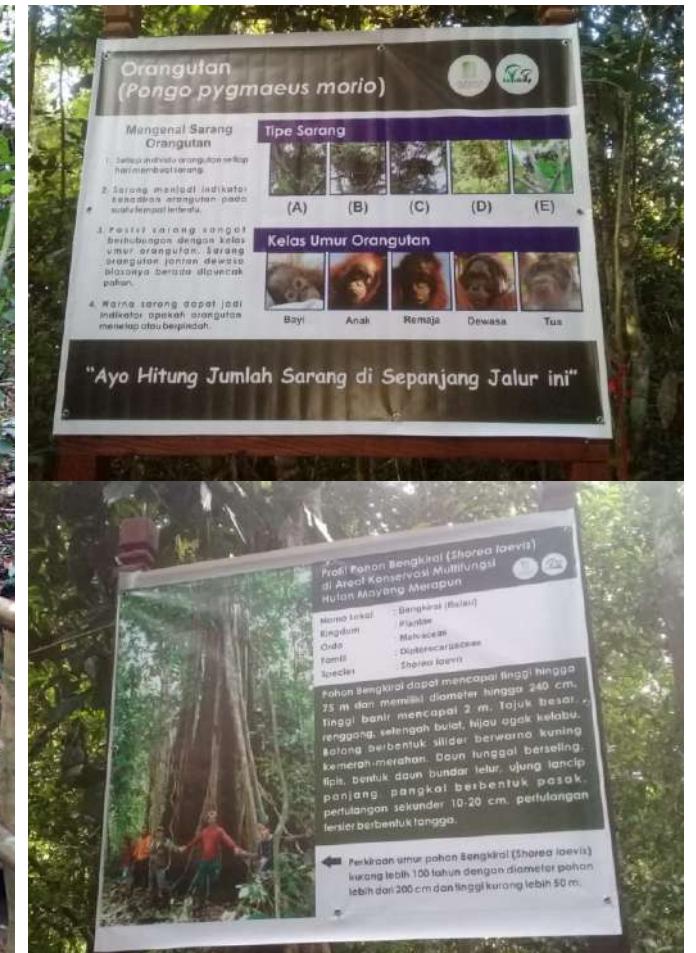


Burmese Acasia Blue
(Surendra vivarna)

The amount of successfully identified butterfly species was 29. The Nymphalidae family was frequently seen. Nymphalidae was commonly founded in places with dense canopy cover and even the opened ones (Smart, 1975). The collection of data regarding the diversity of butterfly species was performed in order to see the existence of this supporting fauna which has an important role in the ecosystem. Butterflies are considered to be one of the pollinators and the predator of the other species (Hammond and Miller, 1998).

Objects and Facilities

In the multifunctional conservation area of Mayong Merapun forest, we provide a number of facilities which will help the visitors to pass the transect lines, such as chairs, bridges and information boards.





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Areal Konservasi Multifungsi Hutan Mayong Merapun Triputra Agro Persada



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2019



Areal Konservasi Multifungsi Hutan Mayong Merapun Triputra Agro Persada

Penyusun

Yaya Rayadin

Slamet Rochmadi

Nur Qomari

Miftah Ayatussurur

Herlan Pradesta

Cecep Lukmanul Hakim



Hutan Mayong Merapun



Kata Pengantar

Areal Konservasi Multi Fungsi (AKMF) "Hutan Mayong" dibuat dan didesain dalam rangka mengakomodasikan berbagai kebutuhan konservasi di dalam konsesi perkebunan kelapa sawit Triputra Agro Persada (TAP). Hal ini dilakukan sebagai salah salah satu komitmen perusahaan terhadap kelestarian keanekaragaman hayati flora maupun fauna, karena habitat yang baik dapat dilihat dari komposisi vegetasi yang beragam dan kerapatan vegetasi serta tutupan tajuk yang dapat menciptakan iklim mikro di dalamnya sehingga dapat mendukung dan menyediakan kebutuhan bagi berbagai jenis fauna.

Areal Konservasi Multi Fungsi Hutan Mayong yang terbagi dalam 3 zonasi ini diharapkan mampu berkontribusi dalam implementasi konservasi keragaman hayati melalui kegiatan konservasi flora dan fauna, pengembangan penelitian biodiversitas, pengembangan hutan pendidikan maupun berfungsi sebagai koleksi jenis dan kantong satwa. Manajemen TAP berkomitmen dalam perlindungan biodiversitas dan juga ekosistem penting yang berada disekitar maupun di dalam konsesi TAP.

Seluruh tim peneliti Ecology and Conservation Center for Tropical Studies (ECOSITROP) mengucapkan terima kasih yang sebesar-besarnya kepada pihak TAP dan seluruh staf karyawan yang terlibat dalam mendukung, penyediaan sarana dan prasarana untuk kelancaran kegiatan monitoring kenakeragaman hayati. Dokumen ini diharapkan menjadi salah satu pertimbangan dalam mengelola areal konservasi baik jangka panjang maupun jangka pendek.

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Latar Belakang

Hutan merupakan habitat alami bagi berbagai jenis satwa liar di Kalimantan. Berbagai jenis tumbuhan relatif beragam dan memiliki banyak fungsi seperti, sumber buah atau makanan bagi satwa liar, tempat bersarang, melindungi sumber air dan fungsi-fungsi jasa lingkungan lainnya. Jenis-jenis tumbuhan baik pohon maupun tumbuhan bawah, semuanya memiliki fungsi sebagai penyedia makanan bagi satwa liar. Bagian-bagian tumbuhan yang paling sering diambil adalah buah, pucuk daun, bunga dan nektar. Rantai makanan dalam ekosistem berjalan dengan seimbang. Namun, saat ini luas hutan semakin berkurang dan wilayah-wilayah hutan menjadi terfragmentasi.

Pengumpulan data melalui identifikasi dan inventarisasi dilakukan

pada wilayah perkebunan kelapa sawit TAP yang pada umumnya masih didominasi oleh tutupan hutan. Secara umum kondisi hutan di dalam wilayah perkebunan kelapa sawit TAP cenderung sama, yang membedakannya adalah letak dan luas wilayah hutan sebagai habitat alami satwa liar. Saat ini luas wilayah hutan sebagai habitat alami satwa liar semakin menyempit akibat pembukaan lahan. Upaya-upaya konservasi perlu dilakukan untuk menjaga keseimbangan dan fungsi ekosistem. Setiap jenis flora dan fauna memiliki fungsi yang berbeda dan perannya dalam rantai makanan sangat penting.

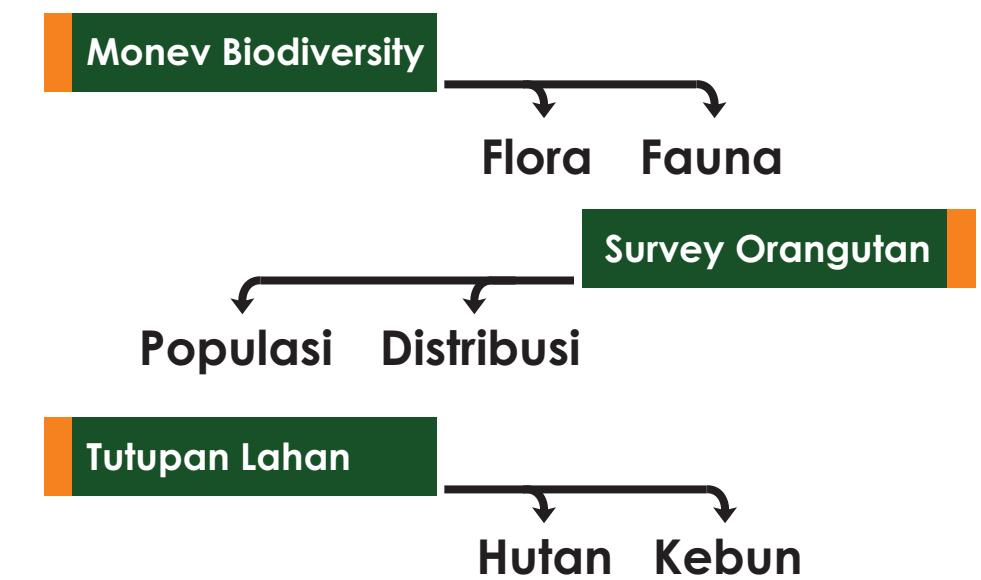
Identifikasi dan inventarisasi meliputi flora (pohon, herba dan liana) dan fauna (mamalia, avifauna, herpetofauna dan serangga).

Wilayah hutan yang terganggu memiliki kecenderungan hanya jenis-jenis tertentu saja yang dapat bertahan, misalnya jenis-jenis pohon pionir atau pohon-pohon yang tahan terhadap sinar matahari langsung. Selain itu, beberapa jenis satwa liar juga akan mengalami tekanan terhadap perubahan kualitas habitat terutama kelompok herpetofauna dan serangga (ordo Lepidoptera dan ordo Odonata) memiliki tekanan yang lebih tinggi terhadap perubahan fungsi lahan kerana kemampuan jelajah jenis-jenis tersebut sempit.

Identifikasi dan inventarisasi dilakukan untuk mengetahui kondisi aktual wilayah hutan dan satwa liar di dalamnya karena perubahan kualitas habitat dan penyempitan wilayah hutan baik secara langsung maupun tidak langsung akan berpengaruh terhadap keberadaan satwa liar. Identifikasi dan inventarisasi merupakan tahap awal dalam proses panjang pengelolaan keanekaragaman hayati flora dan fauna sehingga tujuan mempertahankan fungsi ekosistem dapat berjalan sesuai rencana.

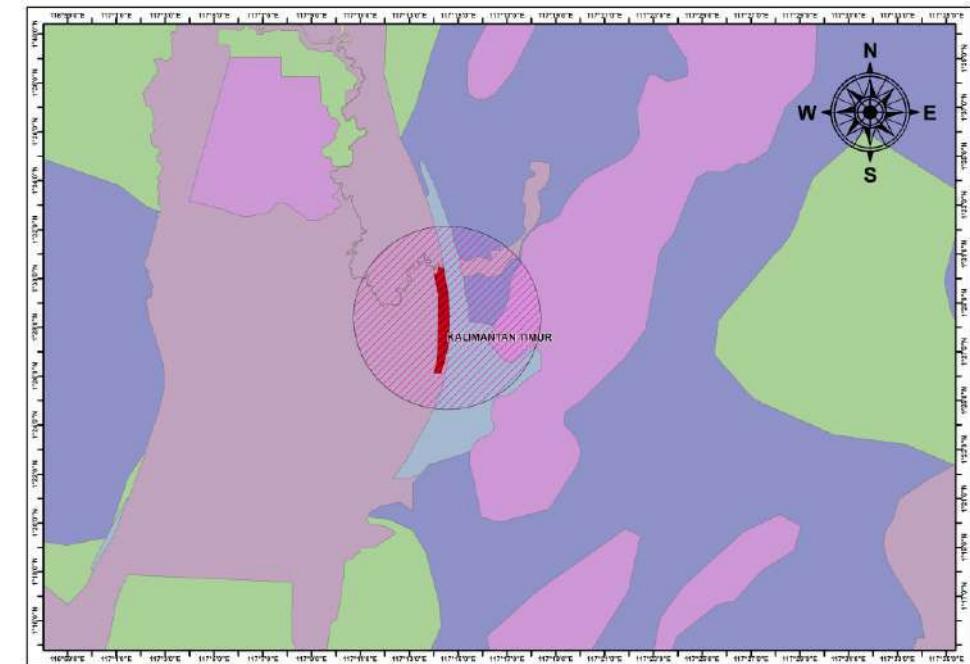


Tujuan



Profil Umum

Hutang Mayong Merapun berada didalam konsesi perkebunan kelapa sawit dan merupakan Areal Bernilai Konservasi Tinggi (ABKT) PT General Aura Semari, Triputra Agro Persada. Letak administrasi areal tersebut termasuk Desa Merapun, Kecamatan Kelay, Kabupaten Berau Propinsi Klimantan Timur. Luas Areal Kawasan Konservasi Multi Fungsi Hutan Mayong Merapun kurang lebih 600 Ha. Untuk menuju hutan tersebut jika ditempuh dari ibu kota propinsi (samarinda) kurang lebih 12 jam dan dari ibu kota Kabupaten (Berau) kurang lebih 4 jam dengan melalui jalur darat.



Zonasi

Zona Koleksi Jenis

Koleksi buah lokal
Lokasi penghijauan

Zona Konservasi

Konservasi satwa
Lokasi arboretum
Hutan penelitian
Konservasi jenis

Zona Edukasi dan Wisata

Fungsi wisata
Fungsi penelitian
Fungsi pendidikan
Lintas alam
Jalur monitoring

Pengelolaan Kawasan

Dasar Hukum

UU 5, 1999	Konservasi Sumberdaya Alam Hayati dan Ekosistemnya
UU 41, 1999	Tentang Kehutanan
UU 32, 2009	Perlindungan dan Pengelolaan Lingkungan Hidup
PP 7, 1999	Pengawetan Tumbuhan dan Satwa Liar
PP 8, 1999	Pemanfaatan Jenis Tumbuhan dan Satwa Liar
Kepmenhut 355, 2003	Penandaan Spesimen Tumbuhan dan Satwa Liar

Fungsi Kawasan

Konservasi Sumberdaya Alam Hayati dan Ekosistemnya

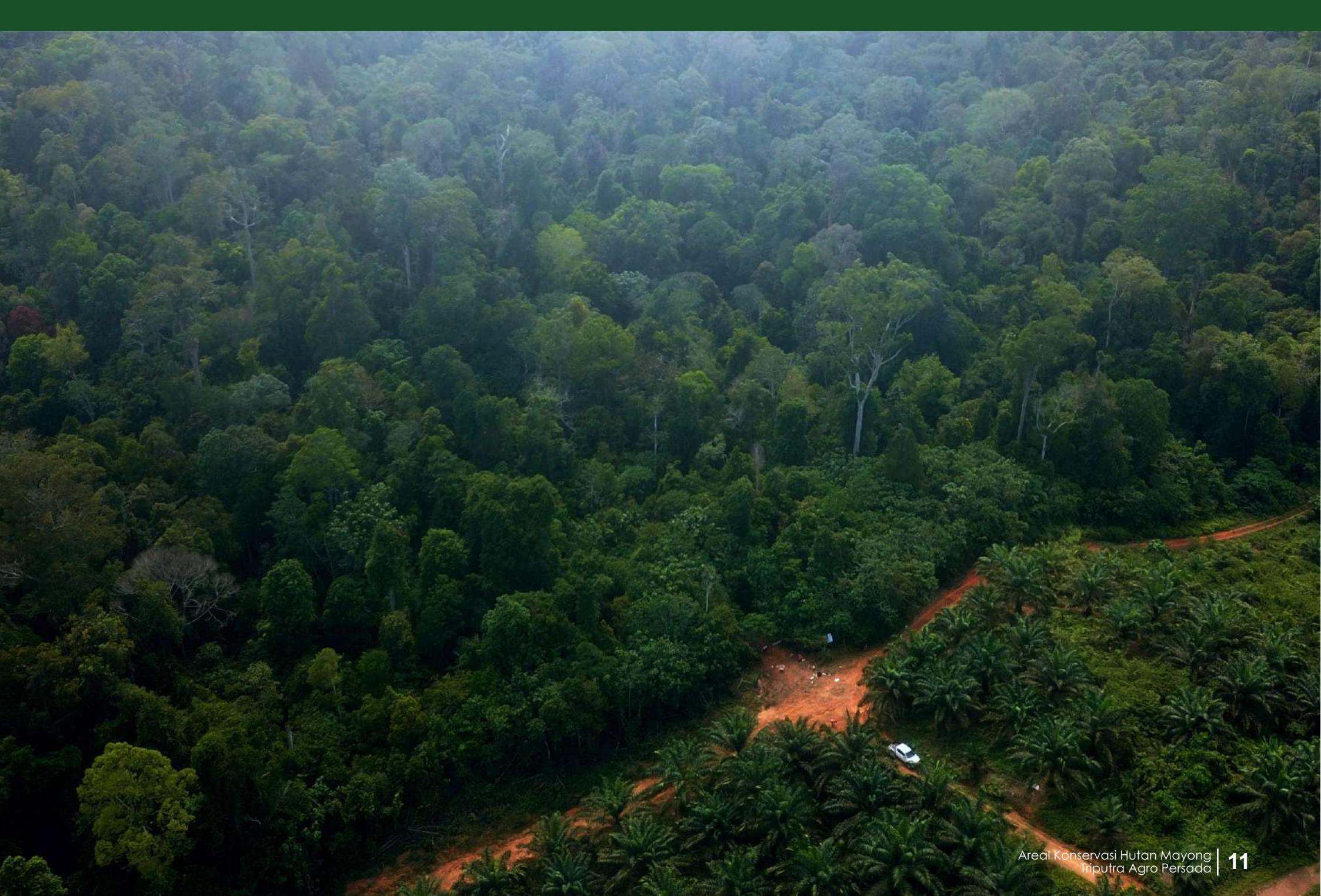
Tentang Kehutanan

Perlindungan dan Pengelolaan Lingkungan Hidup

Pengawetan Tumbuhan dan Satwa Liar

Pemanfaatan Jenis Tumbuhan dan Satwa Liar

Penandaan Spesimen Tumbuhan dan Satwa Liar



Areal Konservasi Hutan Mayong | 11
Triputra Agro Persada

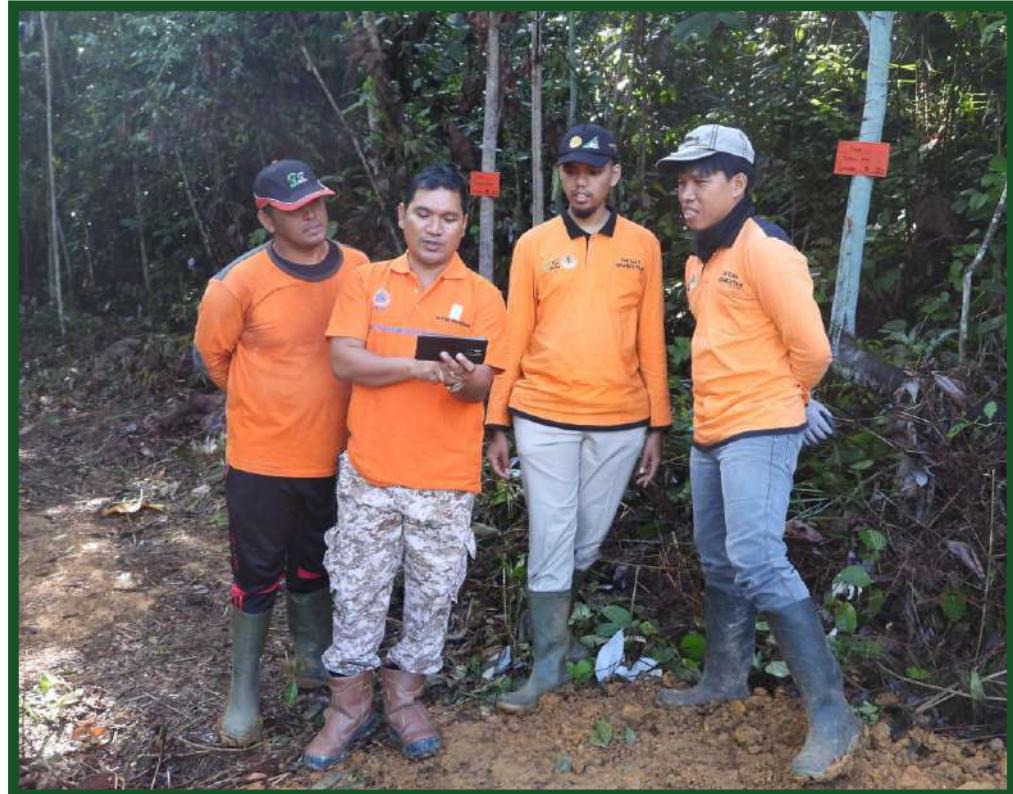


TRIPUTRA AGRO PERSADA



Tahapan Kegiatan

Penentuan lokasi Areal Konservasi Multi Fungsi Hutan Mayong dilakukan dalam beberapa tahap. Hal ini dikarenakan perlu pertimbangan beberapa hal dalam mempertimbangkan lokasi yang cocok untuk ditetapkan sebagai Areal Konservasi Multi Fungsi. Penentuan lokasi harus mempertimbangkan aspek keamanan dan aspek lainnya. Lokasi Hutan Mayong yang telah ditetapkan kemudian dianalisis tutupan vegetasinya, batas areal konservasi dan penentuan jalur transek yang didasarkan pada peta terbaru. Penentuan jalur transek juga mempertimbangkan beberapa hal yaitu topografi, aksesibilitas ke jalur transek, potensi vegetasi baik pohon maupun herba dan liana serta aspek estetika atau pemandangan alam. Aspek lainnya yang menjadi pertimbangan adalah hasil-hasil kegiatan monitoring dan evaluasi keanekaragaman hayati yang aktual pada lokasi tersebut.



1.

Penentuan Lokasi AKMF di Kawasan Perkebunan Kelapa Sawit TAP



2.

Pemetaan Drone dan Paduserasi Data dan Informasi



3.

Survey Potensi Kawasan serta pembangunan transek

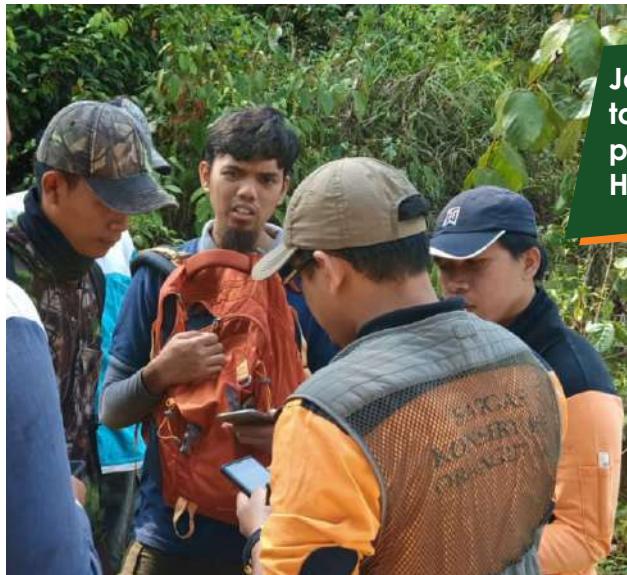


4.

Pembangunan Zonasi (Z) : Z. Koleksi Jenis, Z. Edukasi & Wisata, Z.Konservasi,



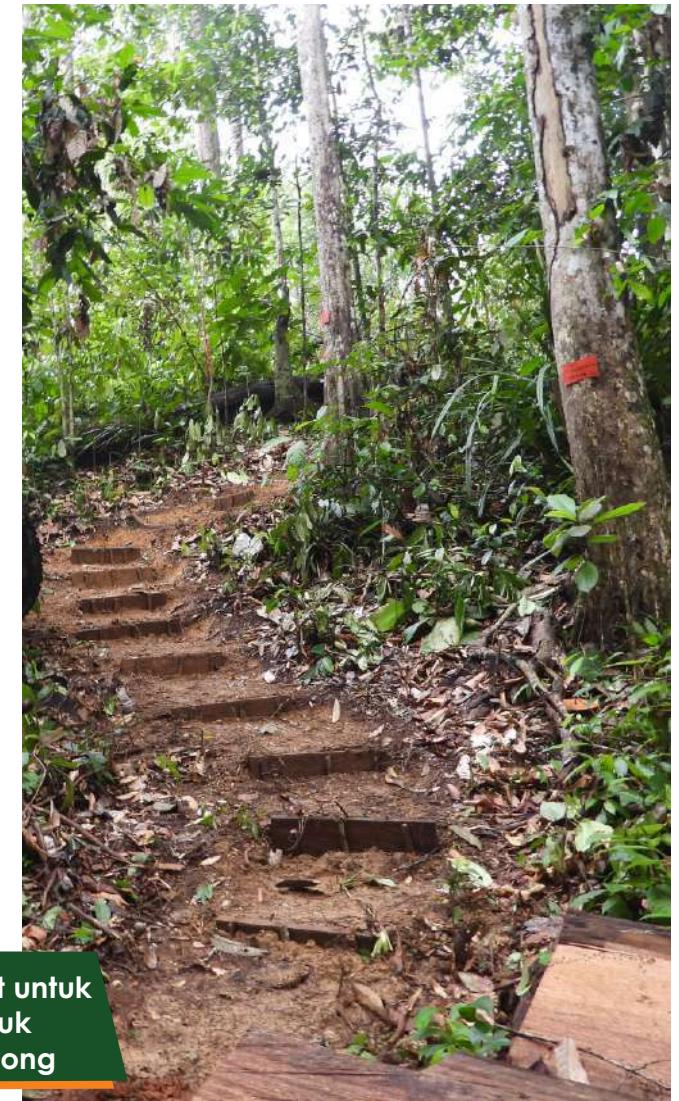
Desain Jalur Transek



Jalur tracking dibuat bedasarkan tutuhan tajuk pohon, topografi, akses pilihan dan potensi yang berada di dalam AKMF Hutan Mayong.



Pada kondisi jalur yang melewati turunan dan tanjakan telah dibangun tangga untuk memudahkan pengunjung.



Salah satu tangga yang telah dibuat untuk memudahkan para pengunjung untuk melewati dan memasuki Hutan Mayong

Transek

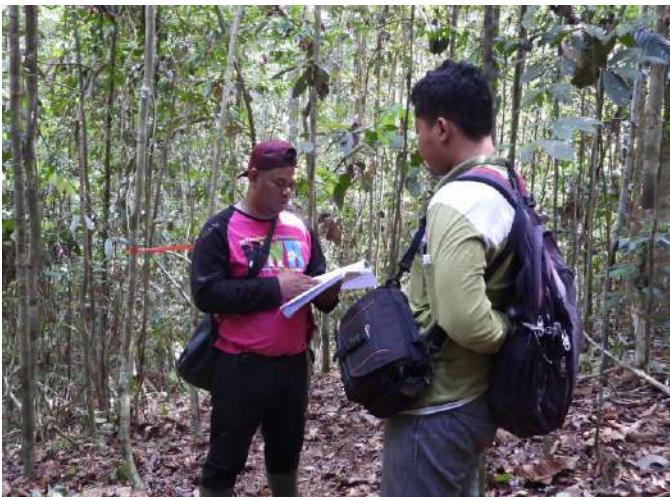
Jalur transek dapat berfungsi sebagai jalur monitoring, jalur pengamanan, jalur untuk tujuan pendidikan, penelitian dan wisata. Jalur yang terbangun di Areal Konservasi Multi Fungsi sepanjang kurang lebih 1,2 Km dengan lebar 2 m. Di sepanjang jalur dapat dilihat berbagai potensi biodiversitas baik flora maupun fauna serta berbagai jenis pohon yang sudah teridentifikasi.



Identifikasi Potensi Keanekaragaman Hayati Flora

Identifikasi dan inventarisasi keanekaragaman hayati flora dilakukan pada Areal Konservasi Multi Fungsi Hutan Mayong di wilayah perkebunan kelapa sawit TAP. Kelompok flora yang diidentifikasi adalah pohon, herba dan liana. Dengan diperolehnya informasi vegetasi mengenai komposisi tegakan pada areal tersebut maka akan diketahui pula kondisi tutupan lahan maupun kualitas habitatnya.





Tim melakukan identifikasi flora dan pemasangan label pada pohon. Disepanjang jalur transek Areal Konservasi Multi Fungsi Hutan Mayong telah terpasang label nama pohon yang telah diidentifikasi oleh tim. Tujuan pemasangan label pohon untuk memudahkan pengunjung mengenal jenis-jenis pohon yang ada di hutan alam.



Beberapa foto pohon besar yang terdapat di Areal Konservasi Multi Fungsi Hutan Mayong TAP.



Pohon Alami



Ulin
Eusideroxylon zwageri



Meranti merah
Shorea pauciflora



Pasang
Quercus gaharuensis



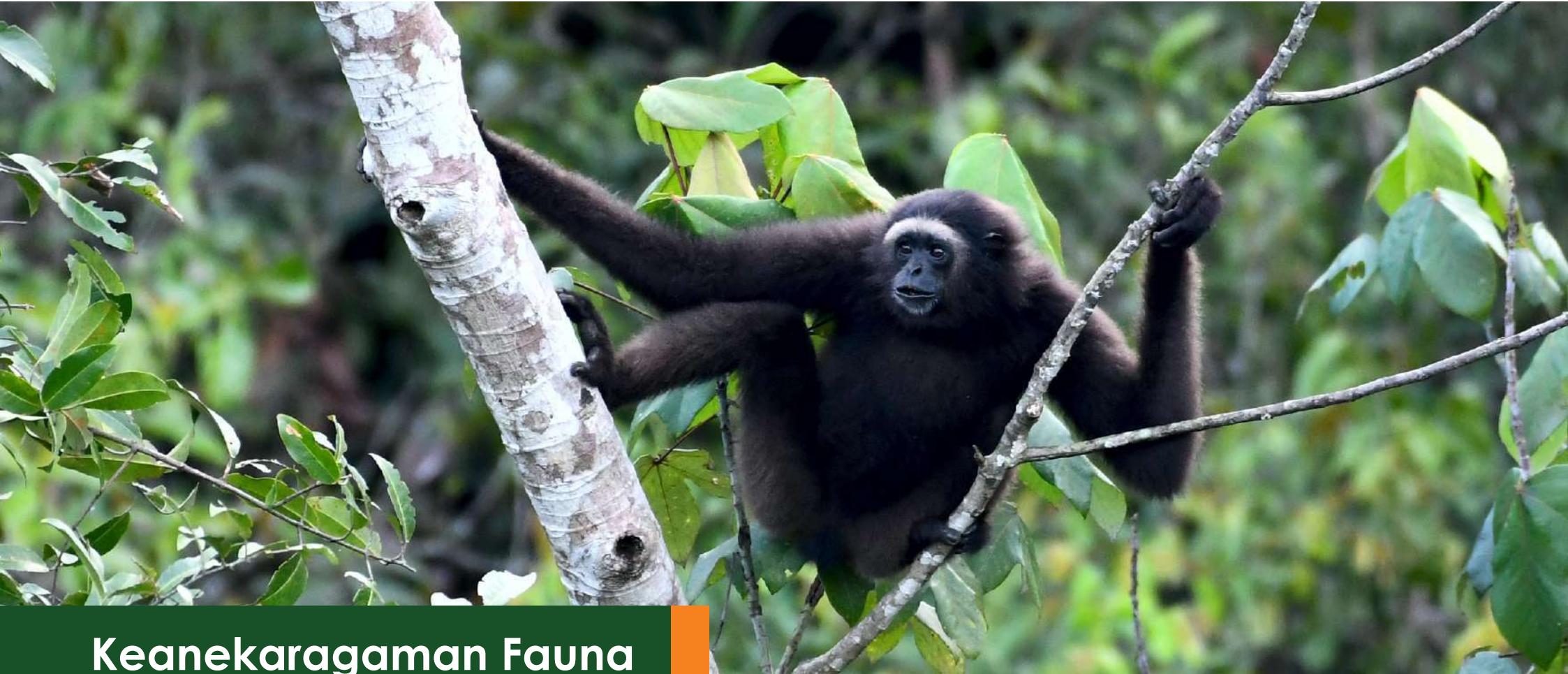
Buni
Antidesma sp.



Mahang
Macaranga triloba

Telah teridentifikasi sebanyak 149 jenis pohon yang berada disekitar kanan-kiri jalur transek, pohon yang sudah teridentifikasi diberi label nama untuk mempermudah pengunjung melakukan pengenalan jenis pohon alami hutan tropis Kalimantan.





Keanekaragaman Fauna

Identifikasi dan inventarisasi mamalia dapat dilakukan melalui berbagai cara seperti pengamatan langsung, mengidentifikasi jejak kaki, sarang, cakaran pada batang pohon, suara, rambut dan dengan mengoperasikan drone. Namun, cara-cara tersebut cenderung tidak efektif karena tidak dapat dilakukan selama 24 jam. Saat ini, identifikasi dan inventarisasi dapat dikombinasikan dengan metode camera trap. Alat tersebut dapat beroperasi selama beberapa bulan tergantung dari kemampuan daya baterainya, sehingga identifikasi dan inventarisasi dapat lebih efektif.

Satwa liar yang diidentifikasi dan diinventarisasi adalah:

- a. Kelompok mamalia
- b. Kelompok avifauna (burung)
- c. Kelompok herpetofauna (reptil dan amfibi)
- d. Kelompok serangga
(ordo Lepidoptera dan ordo Odonata)

Mamalia



Hasil identifikasi dan inventarisasi mamalia di wilayah perkebunan kelapa sawit TAP sebanyak 14 Jenis mamalia. Mamalia di TAP tersebar di seluruh lokasi monitoring. Beberapa jenis mamalia teridentifikasi melalui tanda-tanda jejak kaki dan cakaran seperti Babi berjenggot (*Sus barbatus*), Kijang muncak (*Muntiacus muntjak*), Pelanduk napu (*Tragulus napu*) dan Beruang madu (*Helarctos malayanus*). Jenis-jenis tersebut juga teridentifikasi melalui kamera trap. Jenis yang teridentifikasi melalui suara adalah Owa kalawat (*Hylobates muelleri*). Suara dari jenis tersebut sangat mudah dikenali dan dapat terdengar dari jauhan.



Keanekaragaman Avifauna



Kangkareng perut-putih
Anthracoceros albirostris



Julang emas
Rhyticeros undulatus



Rangkong badak
Buceros rhinoceros

Monitoring keragaman jenis avifauna (burung) pada wilayah perkebunan kelapa sawit TAP. Kondisi tata guna lahan pada lokasi monitoring avifauna ini adalah berupa hutan yang bersebelahan dengan areal perkebunan kelapa sawit. Survei burung yang dilakukan meliputi pencatatan jenis burung yang teramati secara langsung, termasuk juga jenis burung yang diketahui dari jala kabut dan terdokumentasikan melalui kamera. Pengamatan secara langsung dilakukan dengan menggunakan teropong binokuler atau melihat secara langsung. Identifikasi dan inventarisasi jenis burung juga dilakukan secara tidak langsung melalui suaranya yang mudah

dikenali. Identifikasi dan inventarisasi dilakukan mulai dari pagi hari sekitar pukul 06.00 sampai 18.00. selain itu, jumlah individu setiap jenis burung juga dilakukan inventarisasi.





Cabak
Caprimulgus affinis



Cucak bersisik
Pycnonotus squamatus



Pinjantung kampung
Arachnothera crassirostris



Merbah belukar
Pycnonotus plumosus



Merbah kacamata
Pycnonotus erythrophthalmos



Merbah corok-corok
Pycnonotus simplex



Pentis pelangi
Prionochilus percussus



Pentis raja
Prionochilus maculatus



Sempur hujan-darat
Eurylaimus ochromalus

Keanekaragaman Herpetofauna



Pulchrana baramica

Kegiatan monitoring herpetofauna difokuskan pada herpetofauna diurnal, khususnya kelompok amfibi. Kegiatan survei dilakukan pada malam hari berkisar antara pukul 19:00 s/d 22:00 WITA. Berikut ini adalah gambaran kegiatan survei herpetofauna yang dilakukan pada malam hari.





Chalcorana raniceps



Ingerophrynus divergens



Fejervarya cancrivora



Kurixalus chaseni

Berdasarkan hasil monitoring herpetofauna yang telah dilakukan, jumlah jenis herpetofauna yang teramati adalah sebanyak 20 jenis. Jumlah jenis herpetofauna yang teramati pada areal konservasi multi fungsi Hutan Mayong adalah sebanyak 29 jenis. Adapun komposisi herpetofauna berdasarkan kelompoknya terdiri dari 14 jenis kodok dan katak (amfibi), 4 jenis kadal (reptil), dan 2 jenis ular (reptil).



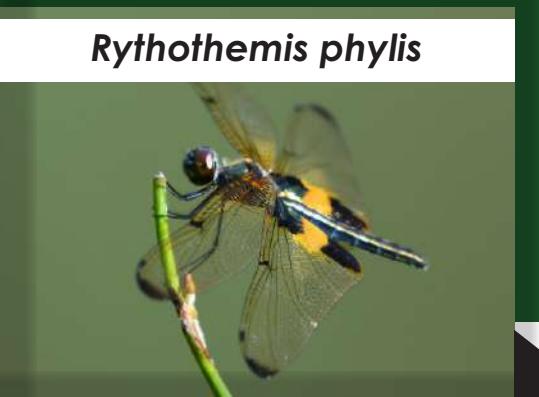
Dendrelaphis pictus

Duttaphrynx melanostictus

Keanekaragaman Capung (Odonata)



Neurothemis terminata



Rythothemis phylis



Orthetrum sabina



Tyriobapta torrida

Secara umum ordo Odonata (capung) dibagi menjadi dua sub-ordo yaitu Anisoptera (capung) dan Zygoptera (capung jarum). Kehadiran Capung erat kaitannya dengan daerah perairan. Hal ini dikarenakan semua fase hidup capung sangat bergantung pada perairan. Fase telur dan larva bersifat aquatic (bergantung pada perairan) sedangkan fase dewasanya umumnya dekat dengan wilayah perairan (Gillot, 2005).



Euphaea impar



heliocypa fenestrata



Rhinagrion borneense

Jumlah jenis Capung yang berhasil teridentifikasi sebanyak 16 jenis Capung yang tersebar di hutan Mayong. Dari 16 jenis yang teridentifikasi 5 jenis diantaranya merupakan Capung jarum (Zygoptera). Jenis Capung jarum yang teridentifikasi adalah *Rhinagrion borneense*, *Vestalis amoena*, *Heliocypha biforata*, *Heliocypha fenestrata* dan *Euphaea impar*.

Jenis-jenis Capung yang umum ditemukan adalah jenis dari famili Libellulidae. Ukuran panjang tubuhnya bervariasi antara 25 – 75 mm ketika dewasa. Capung dari jenis Libellulidae sangat umum ditemukan terutama di sekitar kolam atau genangan air yang berada di tepi hutan dan dapat beradaptasi pada kondisi air yang keruh atau kotor. Sedangkan Capung dari famili lainnya merupakan Capung jarum yang kehadirannya sangat dipengaruhi oleh perairan yang jernih atau bersih. Capung memangsa serangga dan vertebrata lainnya untuk memenuhi kebutuhan makanannya. Dalam rantai makanan, Capung berperan sebagai konsumen dan juga menjadi mangsa bagi predator atau konsumen di atasnya, seperti serangga predator ataupun mangsa bagi burung (Gillot, 2005).

Keanekaragaman Kupu-kupu (Lepidoptera)



Anthene emolus

Lexias pardalis

Paralaxita damajanti

Identifikasi dan inventarisasi ordo Lepidoptera (kupu-kupu) dilakukan di AKMF Hutan Mayong. Secara umum, kondisi habitat setiap lokasi berbeda-beda dan komposisi vegetasinya juga berbeda. Identifikasi dan inventarisasi kelompok kupu-kupu dilakukan pada pagi hari sampai sore hari, namun kupu-kupu cenderung aktif menjelang siang atau pada cuaca yang cerah.

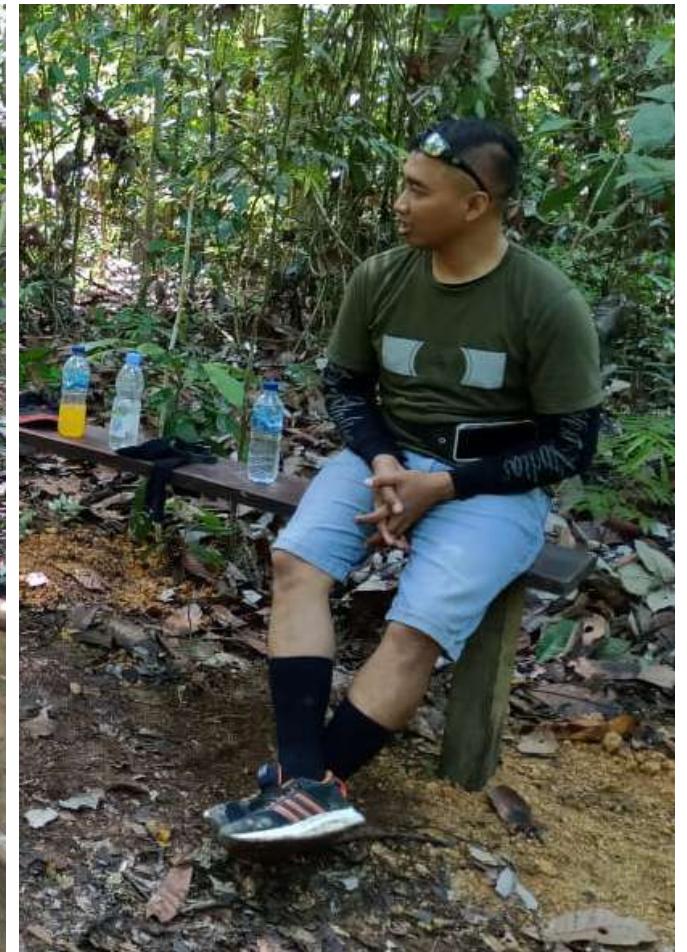




Jumlah jenis kupu-kupu yang berhasil teridentifikasi sebanyak 29 jenis. Jenis yang paling sering ditemukan adalah jenis dari famili Nymphalidae. Jenis-jenis dari famili Nymphalidae sangat umum ditemukan mulai dari tipe tutupan vegetasi yang rapat hingga pada areal yang terbuka (Smart, 1975). Pengumpulan data keanekaragaman jenis kupu-kupu dilakukan untuk mengetahui kehadiran jenis fauna pendukung yang memiliki peranan penting dalam ekosistem. Kupu-Kupu merupakan salah satu serangga penyerbuk dan mangsa bagi jenis satwa lainnya (Hammond dan Miller, 1998).

Objek dan Fasilitas

Didalam Areal Konservasi Multi Fungsi Hutan Mayong Merapun disediakan beberapa fasilitas-fasilitas yang dapat memudahkan pengunjung untuk melewati transek seperti tangga, kursi dan jembatan.





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