

DELAYING EXTINCTION

ADVANCING THE PROTECTION OF *GONYSTYLUS BANCANUS* AS A PROTECTED SPECIES IN INDONESIA



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Background

Indonesia's remaining natural forests face a real and pressing threat from the commercial timber trade, both legal and illegal. Despite numerous regulations prohibiting timber extraction from natural forests, such practices continue across the supply chain, from source to market, even after decades of state-sanctioned forest degradation. For actors involved in this trade, demand for natural timber persists, driven in part by the affluent consumer preferences and lifestyles. Among wealthier consumers, consumption is often expressed through the acquisition and display of material goods, where ownership functions as a visible symbol of status. At the same time, for communities with limited economic opportunities, participation in supplying this market may remain difficult to refuse. Economic incentives become the dominant driver. Within the timber trade, this dynamic is especially pronounced: high-value timber extracted from natural habitats ultimately serves consumer demand, while communities at the lower end of the supply chain may continue harvesting timber with limited consideration of long-term environmental consequences. There is no environmental perspective here, the rarer the timber, the more valuable it becomes. The greater challenges and risks involved in extraction, the higher the resulting price.

This same dynamic affects one of the endemic tree species found in Kalimantan and Sumatra: *ramin*, known by its scientific name *Gonystylus bancanus*. On the one hand, this species is highly valued in global markets due to its smooth texture and pale colour, making it a sought-after material for furniture, handicrafts, and other premium products¹. On the other hand, *ramin* plays an essential ecological role when left standing in its natural habitat. Its above-ground root system, characterised by specialised breathing roots, helps retain water and reduces fire risk in peatland areas. In the contest between ecological value and economic interest in the global marketplace, market demand has largely dominated. Economic consideration continues to shape the narrative, often quietly, through both legal or illegal trade channels.

An assessment conducted by IFM Fund in 2025 (internal report, unpublished) revealed the prevalence of *ramin* logging in the natural habitats. Field findings identified several *modus operandi*, including the masking or misidentification of timber species to evade monitoring. This practice illustrates the complexity of timber supply chains and poses a significant challenge to traceability and market oversight. *Ramin*, which has been classified as Critically Endangered by the International Union for Conservation of Nature (IUCN) and listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) requiring strict trade controls, is facing increasingly weakened regulatory oversight and enforcement effectiveness.

The exploitation of this species has not been accompanied by sufficient cultivation or restoration efforts (Bob and Parno, 2003), placing increasing pressure on the long-term sustainability of *ramin* populations. This situation is further compounded by the species' biological characteristics, as *ramin* demonstrates slow and limited natural regeneration (Mansur et al., 2024; Wardani et al., 2010). At the same time, shifting perspectives on land use and commodity value continue to drive large-scale land clearing in Central Kalimantan. As a result, *ramin*'s natural habitat is being progressively degraded, placing the species at increasing risk of extinction.

On the subject of extinction, Elizabeth Kolbert (2014), in her book *The Sixth Extinction: An Unnatural History*, describes extinction as one of the most profound environmental challenges of our time. The decline and disappearance of flora and fauna in the current era are not, at their core, spontaneous phenomena; rather, they are closely linked to human activities that exploit natural resources beyond their capacity for regeneration. Such overexploitation ultimately undermines nature's ability to recover and sustain ecological balance. Historically, this pattern can also be observed in the extinction of numerous species, including woolly mammoths, sabre-toothed cats, and other prehistoric megafauna such as giant ground sloths and glyptodonts, many of whose extinctions have been associated with human activity (Dawson, 2016).

Scientifically, species extinction has been extensively documented through a growing body of evidence showing that human activity is a primary driver. This phenomenon continues to the present day, with the risk of species extinction increasingly associated with rising demand for high-value flora and fauna as symbols of excessive consumption and lifestyle patterns. At the same time, the expansion of economically driven commodities such as oil palm plantations, gold and coal mining, and rubber cultivation, continues to accelerate the clearance of remaining natural forests. Beyond large-scale land conversion and mechanical clearing, forest and peatland fires also represent a major factor limiting the natural regeneration of *ramin*. Against this backdrop of mounting pressures, the verification team undertook field documentation to assess the presence of *ramin* and identify the dominant threats contributing to the species' endangerment.

This report focuses specifically on *ramin* (*Gonystylus bancanus*), although the genus *Gonystylus* comprises several other species. This species was selected because of its particularly close ecological association with peatland ecosystems, which constitute its primary habitat. The presence of *ramin* may be regarded as an indicator of peatland ecosystem health. A decline in its population, or its disappearance from a given peatland area, may signal degradation or disturbance of the peat ecosystem upon which the species depends.

¹ M. H. S. Dewi dkk., "Status of *ramin* (*Gonystylus* spp.) in Eastern Kalimantan, Indonesia," *Scandinavian Journal of Forest Research*, Vol. 39, No. 6, 2024.

Findings and Challenge

Quotas and Trade

Historically, ramin has been subject to intensive exploitation since the mid-1960s, driven by strong demand in export markets, primarily in the form of round logs (Bob and Parno, 2003). This demand contributed to the encroachment of forest areas, including conservation zones, with logging volumes reaching a peak of 1.27 million m³ in 1976. Trade data from the 1970s, 1980s, and early 1990s indicate that Indonesia consistently exported more than 500,000 m³ of ramin annually. According to a report by the Environmental Investigation Agency (1998), more than 7.6 million m³ of ramin timber was harvested from concession forest areas in Indonesia between 1980 and 1987.

In response to the high rate of exploitation and the widespread practice of illegal logging, the Government of Indonesia introduced a temporary suspension (moratorium) on ramin logging and trade in 2001 and listed all ramin species under CITES Appendix III. This measure was further strengthened at the 13th Conference of the Parties (CoP13), held in Bangkok in 2004, when Indonesia successfully proposed the transfer of ramin to CITES Appendix II.

However, regulation through international instruments did not bring ramin utilisation to a complete halt. National quota allocation for ramin utilisation has continued on a limited and government-controlled basis. In 2021 and 2022, quotas for ramin (*Gonystylus bancanus*) utilisation were sourced exclusively from Riau Province, with the majority allocated for export rather than domestic use. From 2023 onwards, changes occurred in both the quota volume and unit of measurement, while harvesting locations shifted to Central Kalimantan Province. In 2024 and 2025, harvesting expanded to include both Central Kalimantan and West Kalimantan provinces.

The shift in the unit of measurement from cubic metres to kilograms suggests a change in the form of the commodity being traded, while exports continued to dominate over domestic utilisation. Furthermore, based on data from the CITES Trade Database (accessed 25 June 2025), ramin exports and imports continued throughout the [2020–2023 period](#) across various timber product categories, including round logs, sawn timber, wood billets, dried plant materials, and wood chips or shavings.²

Table 1. Ramin Trade Quotas in Indonesia

Year	Harvest Quota	Domestic Sales	Exports	Harvest Location	Unit	Regulation
2021	7.203	720	6.483	Riau	m ³	SK.1/KSDAE/KKH/ KSA.2/1/2021
2022	7.203	720	6.483	Riau	m ³	SK.2/KSDAE/KKH/ KSA.2/1/2022
2023	4.000.000	200.000	3.800.000	Central Kalimantan	Kg	SK.83/KSDAE/KKHSG/ KSA.2/4/2023
2024	750.000	75.000	675.000	Central Kalimantan, West Kalimantan	Kg	SK.234/KSDAE/KKHSG/ KSA.2/12/2023
2025	500.000	25.000	475.000	Central Kalimantan, West Kalimantan	Kg	Regulation no. 277 Year 2024

² CITES Trade Database. Trade data for *Gonystylus bancanus*, 2020–2023 period. Accessed 25 June 2025, via <https://trade.cites.org>

Ramin continues to be extracted from its natural habitat to meet market demand for high-quality timber, placing increasing pressure on the species and heightening the risk of extinction. Taxonomically, ramin comprises 33 recorded species. Under CITES, all ramin species are collectively listed in Appendix II, indicating that they are not necessarily currently threatened with extinction but may become so unless trade is subject to strict regulation. By contrast, the IUCN assesses each species individually according to its respective level of threat. Of the 33 recorded species (shown in the table below), 4 are classified as Critically Endangered, 5 as Endangered, 11 as Vulnerable, 6 as Near Threatened, 6 as Least Concern, and 1 as Data Deficient. Population trends reported by the IUCN indicate continued decline across multiple species, driven by factors including fire, logging, trade, and other anthropogenic pressures.

Ramin trade in Indonesia is regulated under Ministry of Trade Regulation No. 8 of 2025 concerning the Third Amendment to Ministry of Trade Regulation No. 22 of 2023 on Goods Prohibited from Export. This regulation indicates that ramin may, under certain conditions, continue to be traded in specific forms. Ramin (*Gonystylus bancanus*; HS code ex 4403.49.90) is permitted for commercial trade in the form of processed timber not exceeding 6 mm in thickness, including timber that has been sawn or longitudinally split, sliced, peeled, planed, sanded, or end jointed.

However, this regulation focuses primarily on controlling the forms of timber permitted for export and does not in itself guarantee protection against the overexploitation of ramin. Likewise, the quota system shows limited evidence of corresponding measures to conserve ramin's natural habitat, which continues to be progressively degraded through development activities and forest clearance for alternative land uses, including mining and plantation expansion. In other words, existing regulations and quota mechanisms have yet to demonstrate a meaningful contribution to sustaining ramin populations in the wild.

Tabel 2. IUCN Red list status of individual Ramin species (*Gonystylus spp.*)

Name	Red list status
<i>Gonystylus pendulus</i>	Critically Endangered
<i>Gonystylus bancanus</i>	Critically Endangered
<i>Gonystylus glaucescens</i>	Critically Endangered
<i>Gonystylus decipiens</i>	Critically Endangered
<i>Gonystylus reticulatus</i>	Endangered
<i>Gonystylus areolatus</i>	Endangered
<i>Gonystylus augescens</i>	Endangered
<i>Gonystylus nobilis</i>	Endangered
<i>Gonystylus eximius</i>	Endangered
<i>Gonystylus affinis</i>	Vulnerable
<i>Gonystylus keithii</i>	Vulnerable
<i>Gonystylus consanguineus</i>	Vulnerable
<i>Gonystylus spectabilis</i>	Vulnerable
<i>Gonystylus nervosus</i>	Vulnerable
<i>Gonystylus calophyllus</i>	Vulnerable
<i>Gonystylus sympetala</i>	Vulnerable
<i>Gonystylus punctatus</i>	Least Concern
<i>Gonystylus confusus</i>	Least Concern
<i>Gonystylus macrophyllus</i>	Least Concern
<i>Gonystylus lucidulus</i>	Least Concern
<i>Gonystylus borneensis</i>	Least Concern

Name	Red list position
<i>Gonystylus pluricornis</i>	<i>Least Concern</i>
<i>Gonystylus brunnescens</i>	<i>Near Threatened</i>
<i>Gonystylus costalis</i>	<i>Near Threatened</i>
<i>Gonystylus stenosepalus</i>	<i>Near Threatened</i>
<i>Gonystylus forbesii</i>	<i>Near Threatened</i>
<i>Gonystylus velutinus</i>	<i>Near Threatened</i>
<i>Gonystylus calophylloides</i>	<i>Near Threatened</i>
<i>Gonystylus acuminatus</i>	<i>Data Deficient</i>

Potential Distribution of Ramin in Central Kalimantan Province

To better understand the current situation, IFM Fund conducted a study using Ecological Niche Modelling (ENM), focusing specifically on conditions in Central Kalimantan.³ This approach applies statistical modelling techniques to estimate the geographic distribution of a species and assess habitat suitability, including for ramin. The method

analyses relationships between species occurrence data and environmental variables such as temperature, rainfall, land cover, and soil characteristics, enabling the identification of areas with high suitability for ramin habitat.

The results indicate that the potential distribution of ramin in Central Kalimantan Province covers approximately 75,947 hectares, of which around 86% (approximately 65,561.43 hectares) is located outside conservation areas and 14% (approximately 10,385.57 hectares) within conservation areas. Following spatial overlay analysis with datasets including conservation zones, concession areas, and deforestation risk projections, the findings suggest that the majority of ramin's potential habitat remains highly vulnerable to land-use change.

Ramin's potential habitat is distributed across 10 regencies and municipalities (Figure 1), with Katingan Regency containing the largest area, covering approximately 18,945.59 hectares, the majority of which lies outside conservation zones. Other significant areas include East Kotawaringin (approximately 15,242 hectares) and West Kotawaringin (approximately 13,412 hectares). From a conservation perspective, East Kotawaringin presents the greatest concern, as the entirety of ramin's potential habitat within the regency lies outside protected areas.

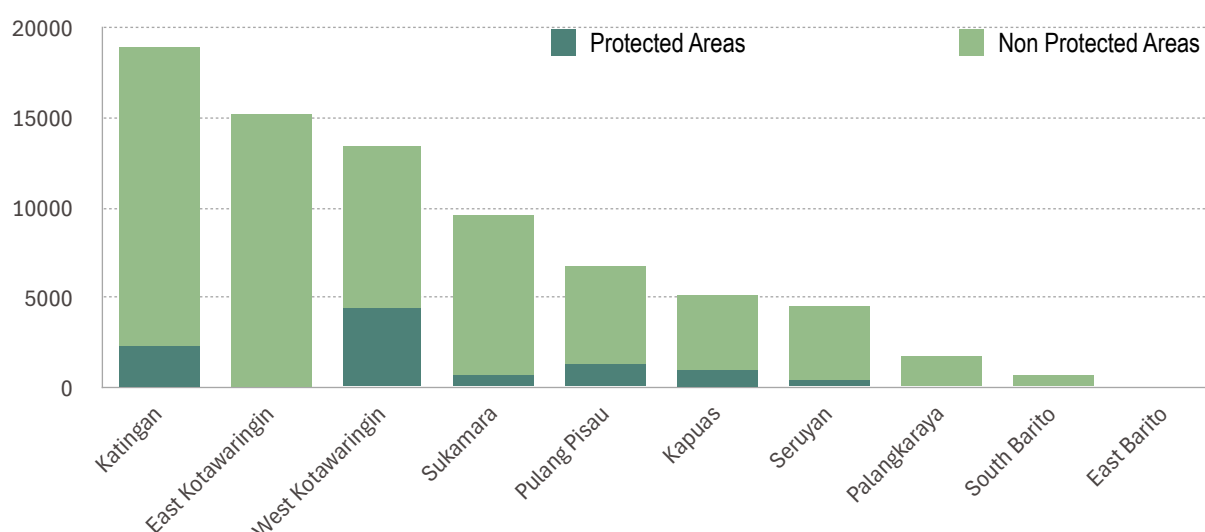


Figure 1. Statistics on ramin potential distribution in Central Kalimantan based on ENM analysis

³ The full study can be accessed in the IFM Fund report, *Potential Distribution of Ramin: An Ecological Niche Modelling Approach for Identifying Species Conservation Management in Central Kalimantan* (June 2026)

In Sukamara and Pulang Pisau, potential habitat ranges from approximately 8,000 to 10,000 hectares, whilst Kapuas, Seruyan, and Palangka Raya City contain smaller areas of distribution (approximately 4,000–6,000 hectares). South Barito and East Barito show relatively limited habitat potential, almost entirely located outside protected areas, placing these areas at elevated risk of habitat loss in the absence of site-level conservation and management measures.

However, these potential distribution data remain predictive in nature and cannot confirm the actual presence of ramin in the field. The ENM approach inherently requires intensive field verification to distinguish between potential habitat and areas that remain genuinely occupied.⁴ Such verification is essential to understand the extent to which ramin protection within conservation areas may be insufficient when compared with field conditions, particularly given that areas with potential ramin distribution continue to face threats from illegal logging and large-scale land conversion.

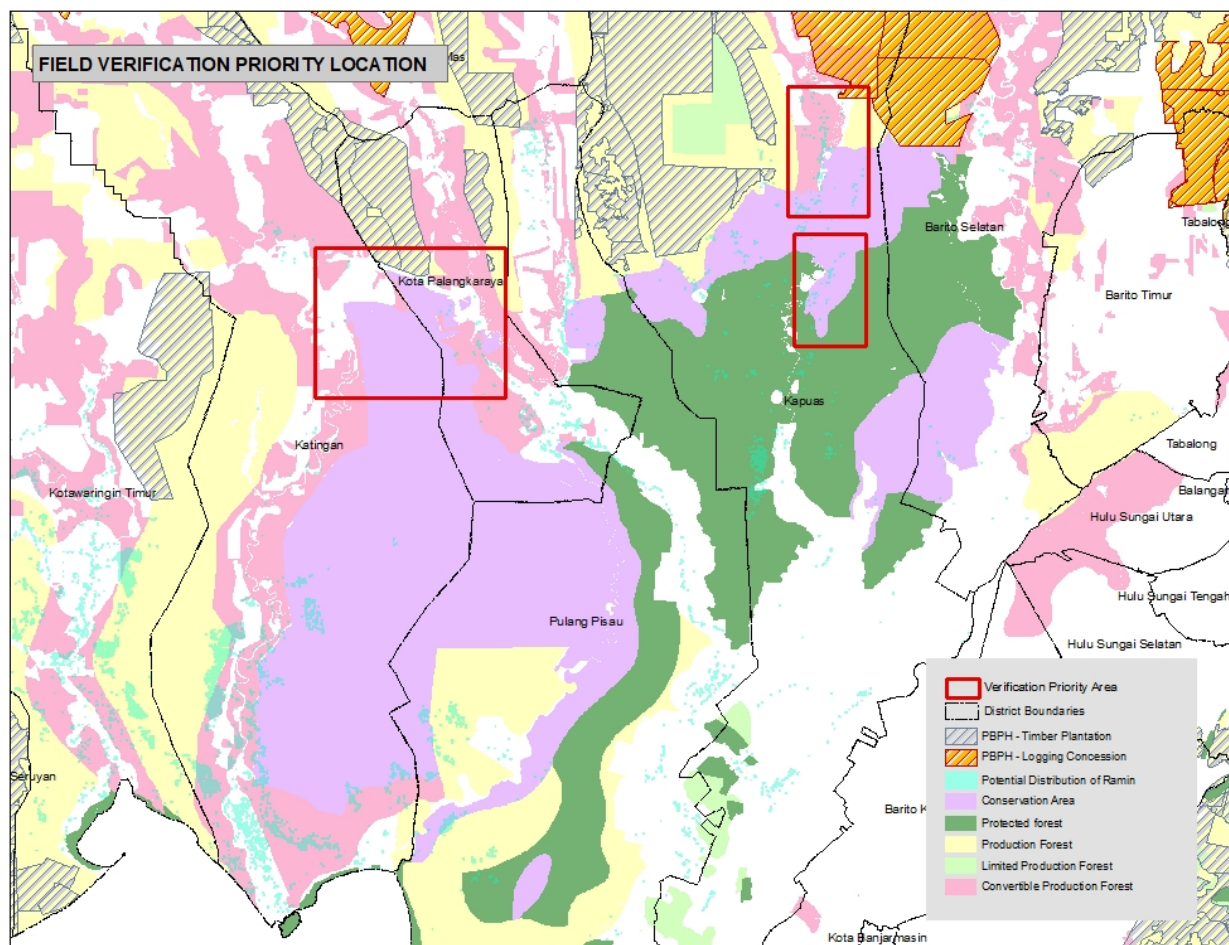


Figure 2. Priority areas for field verification

⁴ A limitation of the ENM study is that existing conservation areas **may be insufficient** to ensure the long-term protection of ramin, as the majority of its potential habitat remains unprotected and continues to face threats such as illegal logging and habitat degradation. One of the principal limitations of Ecological Niche Modelling (ENM) is the potential for **false negatives**, as field findings repeatedly documented the presence of ramin trees in locations *outside* areas previously predicted as suitable habitat. Examples include records of ramin within the Wilderness Zone of Sebangau National Park and within the Barito River Nature Reserve/Protected Area (KSA/KPA), including areas that have since been converted to oil palm plantations. These findings suggest that ramin may persist under highly disturbed or sub-optimal environmental conditions, potentially leading the model to **underpredict** its actual distribution. Another limitation arises from uncertainty associated with historical human activities. For example, the scarcity of ramin within Sebangau National Park was reported by local communities to result from historical forest concession (HPH – *Hak Pengusahaan Hutan*) activities. This suggests that areas predicted by ENM to be highly suitable may no longer support existing ramin populations.

Field verification also addresses a key limitation of ENM, namely the possibility of false negatives. Several findings presented in subsequent sections indicate the presence of ramin outside areas previously identified as having high habitat suitability.

Field verification was therefore an essential step in confirming the presence of ramin within areas identified as having potential habitat suitability. Verification activities were conducted in Katingan Regency, Kapuas Regency, and Pulang Pisau Regency to simultaneously assess habitat suitability, evaluate habitat condition, and identify the pressures and threats affecting each location.

The areas selected for field verification are shown in the figure below:

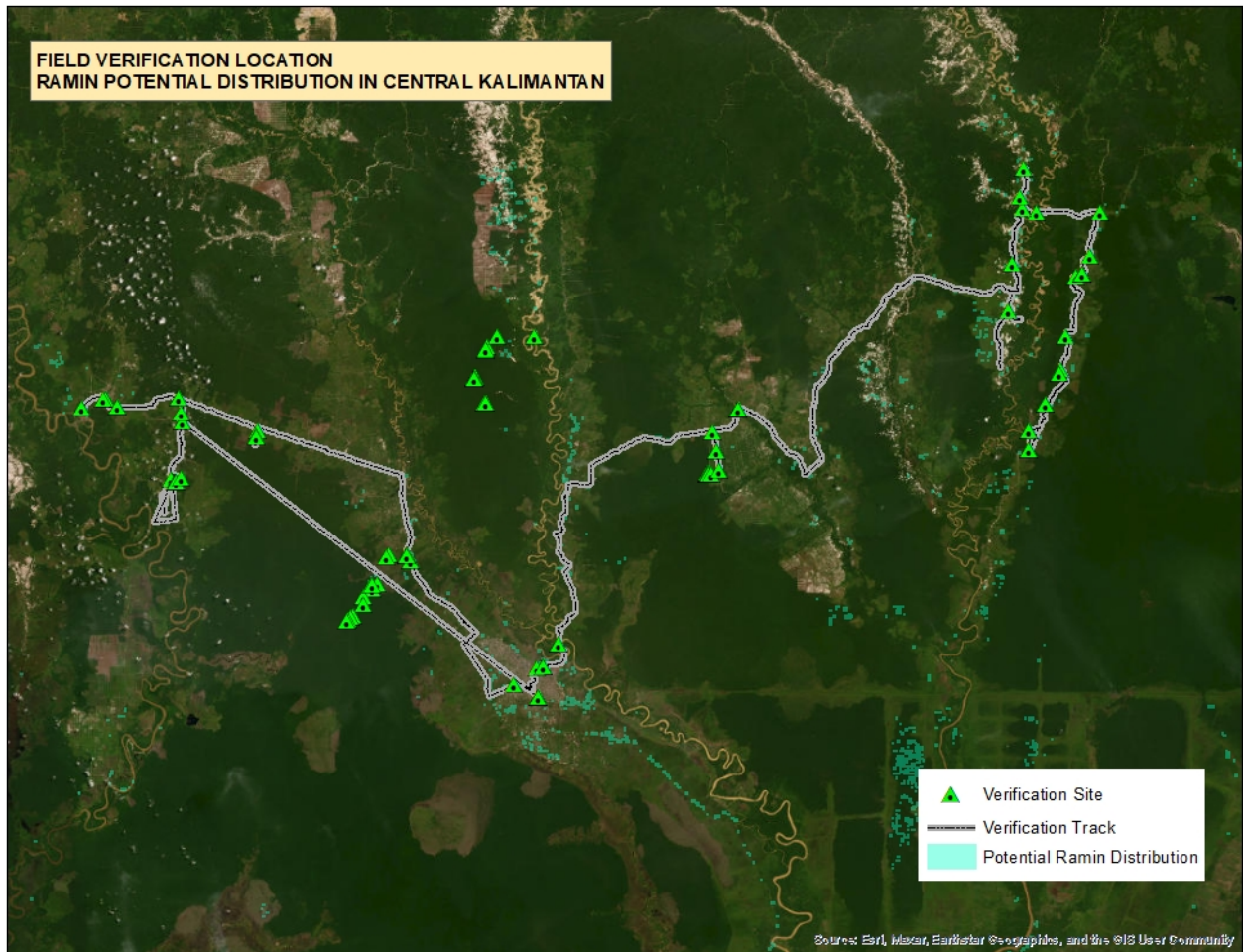


Figure 3. Field verification locations

Overview of ramin discovery sites

In general, during field verification conducted between 17 and 23 November 2025, weather conditions across the verification sites were highly variable, shifting rapidly between sunshine, overcast skies, drizzle, and heavy rainfall within short periods. These conditions significantly disrupted travel, with the verification team at times becoming stranded on access routes and forced to suspend activities whenever rain or drizzle occurred. Waterlogged, muddy, and peat-covered roads in poor condition further compounded access challenges.

Throughout the journey, it was evident that the landscape had undergone substantial transformation. Oil palm plantations, rubber estates, gold mining operations, sand extraction sites, and burned land extended across much of the observed area and were visible along national, regency, sub-district, and village roads throughout the three regencies surveyed.

Upon entering areas where ramin stands remained, the contrast became immediate and striking, forest edges bordered directly on oil palm plantations, both within and outside conservation areas, and across land managed by large-scale companies as well as smallholder producers. The peatland landscapes that

dominate Central Kalimantan have become highly sought after for oil palm cultivation, driven by relatively stable palm oil prices and the perception that peat conditions are suitable for plantation development.

Within the remaining forest areas where ramin was found, peat soils consistently characterised the landscape. During field observations, the verification team noted that several other forest species were consistently associated with the presence of ramin, including jelutung (*Dyera costulata*), meranti (*Shorea* spp.), and pitcher plants (*Nepenthes* spp.).



Figure 4. Ramin breathing roots in swamp peatland

On numerous occasions, without close observation, the team initially mistook meranti for the ramin trees they were searching for. Only after approaching and examining the trunk in detail was it possible to confirm that the tree was not ramin.

A similar experience occurred when the team was repeatedly misled by the breathing roots of jelutung, which closely resemble those of ramin. Careful observation is therefore required to distinguish between the two species. One of the key indicators in identifying ramin is the presence of above-ground roots emerging from the soil surface around the base of the trunk. These emergent roots serve as a visible indicator of ramin's presence. Ramin's breathing roots typically extend several metres from the trunk, making systematic observation of the surrounding area an effective approach for locating ramin stands. These surface roots contribute to peat and soil stability while supporting water retention and absorption. Consequently, the decline or disappearance of ramin may reduce the ecological functions that help regulate peat hydrology, potentially increasing vulnerability to drying during the dry season and flooding during periods of heavy rainfall. In the vicinity of standing ramin trees, signs of bear activity were observed, including claw marks on tree trunks and footprints on the ground. Notably, orangutan nests were consistently recorded in the immediate surroundings of ramin stands.

Field verification of ramin's potential distribution was conducted across three regencies: Katingan Regency (Handiwung Village, Tasik Payawan Sub-district, and the Wilderness Zone of Sebangau National Park); Pulang Pisau Regency (Manen Paduran Village, Banama Tingang Sub-district); and Kapuas Regency (Humbang Raya Village/ KSA/KPA Sungai Barito and Petak Puti Village/KSA/ KPA Tanjung Malatayur). Overall, field findings revealed the occurrence of false negatives in relation to the earlier ENM analysis. In several cases, locations predicted to represent potential ramin habitat had already undergone land-cover change and peat degradation. Conversely, ramin trees were also recorded in locations not identified by the model as potential habitat. These findings confirm that field verification is an essential complement to modelling outputs. Detailed findings from each verification site are presented in the following sections.

Findings in Katingan Regency

Katingan Regency contains the largest area of potential ramin habitat among the 10 regencies identified in the analysis. During field verification, extensive land clearance was observed in the vicinity of the site (latitude -1.984945° , longitude 113.496951°), where five ramin trees were recorded. Administratively, the site is located in Handiwung Village, Tasik Payawan Sub-district, Katingan Regency, and is classified as an Other Use Area (*Area Penggunaan Lain / APL*) under Indonesia's land-use planning framework. Active land clearing for oil palm cultivation was documented at the site, alongside artisanal gold mining activities occurring on peatland. Given the ongoing and uncontrolled nature of these activities, the remaining ramin population at this location faces a high risk of localised decline or loss.

The next ramin location identified was within the Wilderness Zone (*Zona Rimba*) of Sebangau National Park (latitude -2.143339° , longitude 113.700170°). Only one individual was recorded at this site, a tree with a girth circumference of 128 cm and an estimated height of 25 metres. The site was accessed via Jalan Tjilik Riwt km 24, Palangka Raya, continuing to the boundary of Sebangau National Park (SNP) and crossing into the park area. The ramin individual was located within the Katingan Regency section of SNP, after approximately 1 km of trekking through the forest. The apparent scarcity of ramin within SNP was also reflected in information shared by a plantation worker encountered near the park boundary, who stated that ramin had largely disappeared from the area as a result of historical large-scale commercial timber extraction under forest concession schemes (*Hak Pengusahaan Hutan / HPH*).



Figure 5. Ramin trees found in Katingan Regency, directly bordering an area of active land clearance



Figure 6. Ramin tree found in the Wilderness Zone of Sebangau National Park

Field Notes Summary

The predominance of peatland in Katingan Regency presents challenges for ecosystems that are highly vulnerable to fire and large-scale land conversion. This contrast was especially evident along the route from Palangkaraya to Katingan Regency, where warning signs prohibiting land and forest burning were visible throughout the journey. The approximately three-hour journey to the verification site passed through Handiwung Village, Luwuk Kanan Village, and Tewang Tampang Village, all located outside Sebangau National Park near Kasongan. Along the route, extensive land clearance was observed at multiple locations approaching the destination. The ramin discovery site was in Handiwung Village, Tasik Payawan Sub-district, Katingan Regency, accessed via the Hampangen–Mendawai road followed by approximately 1 km of travel on foot. Five ramin trees were recorded at this location.

Under Indonesia's land-use classification system, the site is designated as an Other Use Area (*Area Penggunaan Lain/APL*) and is currently characterised by active land clearing for oil palm plantation development. The site lies relatively close to another location identified as having potential ramin habitat, which could not be reached due to field constraints, including the absence of access routes, deep peat swamp conditions that were impassable on foot, and artisanal gold mining activities that had left water- and mud-filled pits posing significant safety risks. At the discovery site, native trees were being felled as part of land preparation for oil palm cultivation, with cut logs left scattered across the area and their eventual use uncertain. Many of these fallen trees lay across drainage channels constructed to divert water from peat areas into adjacent rivers in preparation for future plantation development. Given the extent of land clearance observed in the surrounding area, the remaining ramin population at this location faces a high risk of localised decline or loss. Satellite imagery from Google Earth suggested that substantial tree cover remained in the area; however, field verification revealed considerable landscape change resulting from ongoing land clearance for mining, plantations, and settlement expansion.

The next ramin location identified was within the Wilderness Zone (Zona Rimba) of Sebangau National Park (SNP), accessed via Jalan Tjilik Riwut km 24, Palangka Raya, continuing to the park boundary and crossing into the Palangka Raya–SNP area. A full day of trekking through the forest along the Palangka Raya Municipal Drainage Road led the verification team to the administrative boundary between Katingan Regency and Palangka Raya. Only one ramin individual was recorded at this location. The verification team attempted to locate additional specimens by following the directional lean of ramin branches, a field technique used as an indicator of nearby individuals, but without success. Based on field observations, it is possible that this individual represents one of the few remaining ramin trees at the site, potentially having escaped earlier logging activities because it had not yet reached harvestable size at the time. The apparent scarcity of ramin within SNP was also reflected in information shared by a plantation worker encountered near the park boundary, who noted that ramin had largely disappeared from the area due to historical large-scale commercial timber extraction under forest concession schemes (Hak Pengusahaan Hutan / HPH). This location falls within the Wilderness Block Zone of the national park, which covers an area of 258,853.945681 hectares (Subdit Penataan Kawasan, Dit PIKA, August 2018).

Findings in Pulang Pisau Regency

Pulang Pisau Regency is among the 10 regencies identified as having potential ramin habitat. It ranks fifth in area after Katingan, East Kotawaringin, West Kotawaringin, and Sukamara, with an estimated 6,751 hectares of potential ramin habitat occurring on peatland. One of the characteristic modes of transport in this regency is the river ferry, which connects settlements along the Kahayan River. To reach the verification site, the team crossed the river using this route. Throughout the journey, the river landscape was dominated by active gold dredging operations extracting sediment from the riverbed.

During field verification, the team recorded 14 standing ramin individuals growing in clusters in Manen Paduran Village, Banama Tingang Sub-district, Pulang Pisau Regency (latitude -1.863265° , longitude 113.845455°). These were found alongside jelutung trees and several orangutan nests. The discovery site lies directly adjacent to the oil palm plantation operated by PT Citra Agro Abadi (PT CAA), separated only by a plantation road approximately 5 metres wide and a river approximately 4 metres across.

At another location (latitude -1.892829° , longitude 113.857597°), also adjacent to PT CAA's concession area, evidence of recent ramin logging was documented. Timber had been processed on-

site into planks measuring approximately 5 cm in thickness, 20–40 cm in width, and 1 metre in length. Five stumps were recorded at this location. Based on field observations, the logging activity appeared to have occurred approximately 2–5 days prior to the team's arrival, as the cut surfaces remained fresh and the timber showed little evidence of weathering. Several orangutan nests and jelutung trees were also recorded at the site. The principal threats identified in this regency were illegal logging, oil palm plantation expansion, and mining activities.

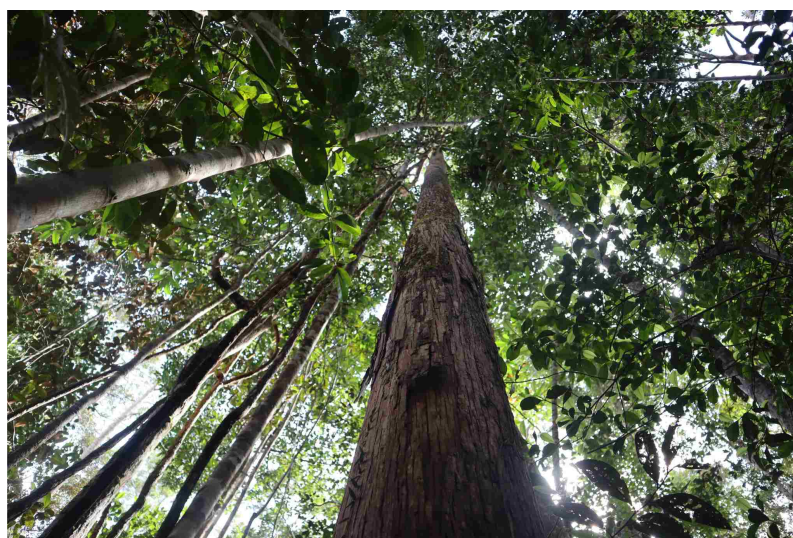


Figure 7. Ramin trees found in Manen Paduran Village, Pulang Pisau Regency



Figure 8. Evidence of ramin felling



Figure 9. Orangutan nest found near ramin trees during field verification

Field Notes Summary

One of the primary modes of transport in this regency is the ferry service that transports passengers and vehicles across the Kahayan River. During field verification, the team used this service to transport the field vehicle across the river. Throughout the crossing, the river landscape was dominated by active gold dredging operations continuously extracting sediment from the Kahayan riverbed. Conditions in this regency were broadly similar to those encountered at other verification sites: numerous potential distribution points were visible on the Avenza map, although many were not sufficiently accessible for field investigation. The predicted distribution areas frequently corresponded with landscapes along roadsides that had already been converted to oil palm plantations, rubber estates, settlements, river corridors, and areas degraded by fire or cleared for alternative land uses.

The team recorded ramin growing in clusters in Manen Paduran Village, Banama Tingang Sub-district, Pulang Pisau Regency, alongside jelutung (*Dyera costulata*) and several orangutan nests. The site lies directly adjacent to the oil palm plantation operated by PT Citra Agro Abadi (PT CAA), separated only by a plantation road approximately 5 metres wide and a river approximately 4 metres across. A total of 14 standing ramin stems were recorded at this location. The surrounding forest was characterised by knee-deep peat swamp water, and the team continued surveying in an effort to document as many individuals as possible before suspending activities due to worsening weather conditions and diminishing daylight.

At a separate location, also bordering PT CAA's concession area, evidence of recent illegal ramin logging was documented. Felled timber had been processed on-site into planks measuring approximately 5 cm in thickness, 20–40 cm in width, and 1 metre in length. Five stumps were recorded at this site. Based on field observations, the felling appeared to have occurred approximately 2–5 days prior to the team's arrival, as the cut surfaces remained fresh and the timber showed little evidence of weathering. Several orangutan nests and jelutung trees were also recorded in the surrounding area.



Findings in Kapuas Regency

In terms of modelled potential distribution, Kapuas Regency ranks among the five regencies with the smallest estimated ramin habitat extent, alongside Seruyan, Palangka Raya City, South Barito, and East Barito. Nevertheless, among these five, Kapuas has the largest estimated area of suitable habitat, covering approximately 5,098 hectares. Despite its relatively modest modelled potential compared with the five highest-ranking regencies, field verification demonstrated that Kapuas supports substantial ramin populations. Within the regency, two Nature Reserve/Wildlife Reserve (KSA/KPA) areas, KSA/KPA Sungai Barito and KSA/KPA Tanjung Malatayur, remain without formally demarcated management boundaries. These two conservation areas are separated only by the Kapuas River.

A ramin occurrence was documented in Humbang Raya Village, within an area overlapping with KSA/KPA Sungai Barito. Part of this protected area has been converted for oil palm plantation development and processing facilities operated by PT Sakti Mait Jaya Langit, covering approximately 13,075 hectares. At the verification site (latitude -1.975454° , longitude 114.118163°), 10 standing ramin individuals and one fallen stem were recorded. Two of the standing individuals were juveniles, with stem diameters of approximately 1 cm and 2 cm. Several orangutan nests were also recorded at the site, together with claw marks attributed to the Bornean sun bear (*Helarctos malayanus*).

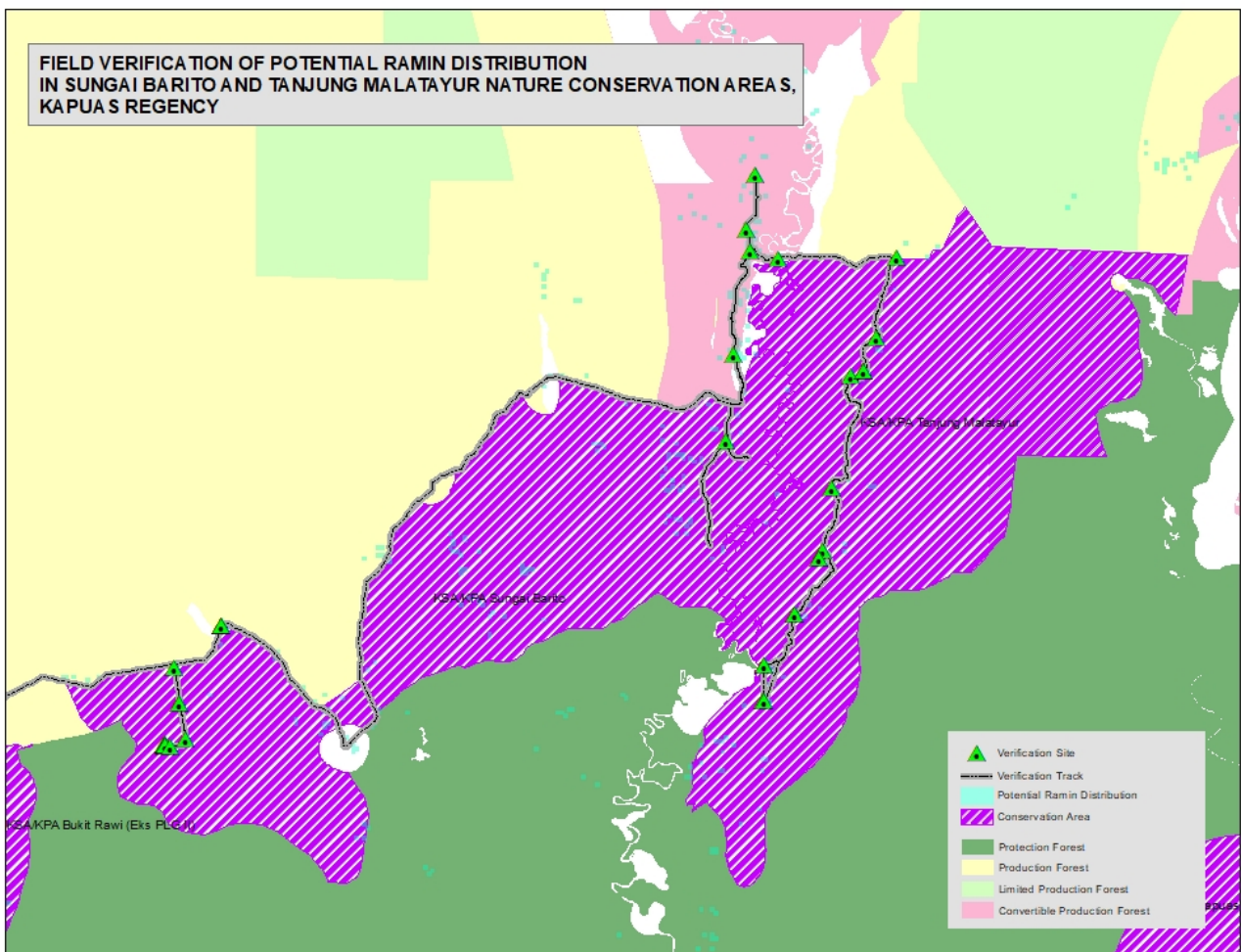


Figure 10. Verification sites at KSA/KPA Sungai Barito and KSA/KPA Tanjung Malatayur



Figure 11. Bear claw marks on a tree trunk at the ramin discovery site



Figure 12. Orangutan nest found near ramin stands



Figure 13. Fallen ramin stem found in Humbang Raya Village

Field Notes Summary

Although Kapuas Regency ranks among the lower-potential areas when compared with the five highest-priority regencies, field verification revealed that it supports substantial ramin populations. Within the regency, two Nature Reserve/Wildlife Reserve areas (KSA/KPA), namely KSA/KPA Sungai Barito and KSA/KPA Tanjung Malatayur, remain without formally demarcated management boundaries. These two conservation areas are separated only by the Kapuas River. The regency is characterised by extensive settlement and a diverse range of community livelihood activities, ranging from subsistence agriculture to larger-scale economic activities, including oil palm and rubber cultivation, artisanal gold mining, fishing, and timber extraction from surrounding forest areas.

Within both conservation areas, the team found that most predicted ramin distribution points were located along roadsides and characterised by secondary forest, settlements, oil palm and rubber plantations on peatland, gold mining areas, burnt land, scrubland, agricultural plots, and various other degraded landscapes, all predominantly underlain by peat. Poor road conditions were a defining feature of travel throughout the area and significantly constrained vehicle access to target verification sites. Peat conditions further increased both the difficulty and safety risks associated with field verification activities. In addition, the degraded condition of the forest made the identification and detection of ramin increasingly challenging.

On several occasions, what initially appeared to be an access track into peatland areas proved to be either a dead end or an impassable peat swamp. Although reaching these locations on foot was theoretically possible, it was often impractical given that distances to target verification points shown on the map sometimes extended to 5 kilometres, requiring a full day of travel with considerable uncertainty regarding conditions along the route. Following assessment of the feasibility and associated risks, the team discontinued attempts at these locations and redirected verification efforts towards more accessible alternative sites. Similar conditions were encountered throughout the area, including in Lawang Kajang Village.

Residents of Petak Puti Village reported that around 1990, ramin trees were abundant in the area, but *illegal logging* and commercial timber concessions (*HPH*) during the New Order era caused the species to virtually disappear. According to villagers, physical remnants of ramin still survive in the Village Forest (*Hutan Desa*), covering approximately 4,000 hectares, accessible via a 1.5-hour river journey followed by approximately 1 hour on foot. The team had initially intended to visit this site but cancelled owing to weather conditions. Heavy rain was forecast for that day and the next, based on the national meteorological agency (BMKG) prediction. Residents of Petak Puti Village are aware that ramin is now a rare species that may no longer be traded freely as it was three to four decades ago. This suggests that local-level awareness of the species' precarious status is, in fact, adequate; the challenge lies with traders who continue to seek out remaining ramin stands for international sale.

After departing from this village, the team continued to other locations and documented a ramin occurrence in Humbang Raya Village. This site falls within the KSA/KPA Sungai Barito area, a substantial portion of which has been converted for oil palm plantation development by PT Sakti Mait Jaya Langit. At the verification site, the team recorded 10 standing ramin individuals and one fallen stem. Two of the standing individuals were juveniles, with stem diameters of approximately 1 cm and 2 cm and could easily have been overlooked without careful observation of key identifying characteristics. Several orangutan nests and claw marks attributed to Bornean sun bears were also recorded at this location. The site is situated directly opposite an oil palm plantation established adjacent to the forest area. Access to the site was marked by a welcome sign for the PT Sakti Mait Jaya Langit Oil Palm Plantation and Palm Oil Mill, which covers approximately 13,075 hectares, alongside a notice indicating asset seizure by the Corruption Eradication Commission (KPK) covering assets at that location.





Conclusion

An examination of the quota and trade system, the potential distribution of ramin, and field findings relating to both the species and its habitat collectively indicate that ramin faces a genuine risk of extinction in the absence of informed and effective intervention. This risk is driven by several interconnected factors: the continued allocation of harvest quotas for wild ramin; the persistence of an open market for high-value timber that fails to reflect the species' increasing rarity in nature; and the continued lack of meaningful action to address large-scale peatland conversion and logging. This study demonstrates that ramin is likely to face extinction if ongoing land conversion, both within and outside conservation areas, together with continued harvesting and trade at current scales, is allowed to persist. Such an outcome would have cascading consequences for other species

dependent on peatland ecosystems associated with ramin, including orangutans.

Comprehensive and sustained action is required to prevent the extinction of this species. Measures that could make a meaningful contribution include formally classifying ramin as Protected Flora and Fauna (*Tumbuhan dan Satwa Liar* / TSL); advocating for the uplisting of ramin to CITES Appendix I; and undertaking a comprehensive review and revision of government policies governing the conversion of forests and peatlands for oil palm plantations, rubber cultivation, and gold mining, all of which contribute to the degradation of ramin habitat. The following recommendations are therefore proposed as practical actions for implementation.

Recommendations:

1. **Ministry of Forestry:** To develop a comprehensive policy package, underpinned by robust analysis, to strengthen targeted and effective protection for ramin through its formal designation as a protected species under the Flora and Fauna (Tumbuhan dan Satwa Liar/ TSL) framework. Such action is justified given ramin's current Critically Endangered (CR) status and continuing population decline within its natural habitat.
2. **National Research and Innovation Agency (Badan Riset dan Inovasi Nasional/ BRIN):** To undertake an in-depth assessment of the status and distribution of ramin (*Gonystylus bancanus*) to strengthen understanding of its conservation status and support improved satellite-based monitoring of the species. This assessment should form part of a broader analytical process developed in collaboration with relevant policy and research stakeholders.
3. **Law Enforcement Agencies:** To strengthen and consistently enforce monitoring, investigation, and action against illegal ramin logging, while enhancing oversight and traceability at points of export.
4. **Natural Resources Conservation Agency (Balai Konservasi Sumber Daya Alam/BKSDA):** To improve transparency regarding ramin population data and trade quota information. Although quotas are established within the CITES framework, access to the underlying field evidence and supporting data remains limited.
5. **Non-Governmental Organisations (NGOs):** To actively participate in monitoring and reporting activities that may threaten ramin habitat or affect remaining ramin populations.
6. A critical cross-cutting consideration across all efforts to strengthen ramin protection is the full and meaningful participation of Indigenous Peoples and local communities. Such participation should ensure that the knowledge, perspectives, and priorities of Indigenous Peoples and local communities are meaningfully recognised and incorporated into biodiversity conservation initiatives within their respective territories.



A photograph of a tree trunk in a forest. A person's hands are visible at the bottom right, holding a white tape measure around the trunk. The bark is rough and peeling, showing a mix of brown and greenish-grey. The background is filled with green foliage and other trees.

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