ANNUAL REPORT (JANUARY – DECEMBER 2025)
CONSERVATION OF COASTAL FOREST AND PEATLANDS IN GUNUNG ARONG FOREST RESERVE, JOHOR






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GLOBAL ENVIRONMENT CENTRE

JANUARY 2026

Global Environment Centre

TH PLANTATIONS BERHAD

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1.0 Introduction

Since 2021, the Global Environment Centre (GEC) and TH Plantations Berhad (THP) with full support from the Johor State Forest Department (JSFD) have been implementing a rehabilitation and conservation project for coastal forests and peatlands in the Gunung Arong Forest Reserve (GAFR), Johor. The project aims to rehabilitate degraded coastal forest areas and approximately 1,500 hectares of peat swamp forest within the 4,300-hectare northeastern portion of GAFR. It is funded by THP and involves collaboration between GEC, JSFD and local stakeholders, community with completion targeted for June 2029. The project emphasizes the protection and restoration of the northeastern portion of GAFR which includes lowland forests and peat swamp forests (see **Figure 1**). A field assessment conducted by GEC revealed that approximately 45% (± 685 ha) of the peat swamp forest has been degraded due to previous drainage, fires and activities such as road construction, logging, and plantation development within and near GAFR.

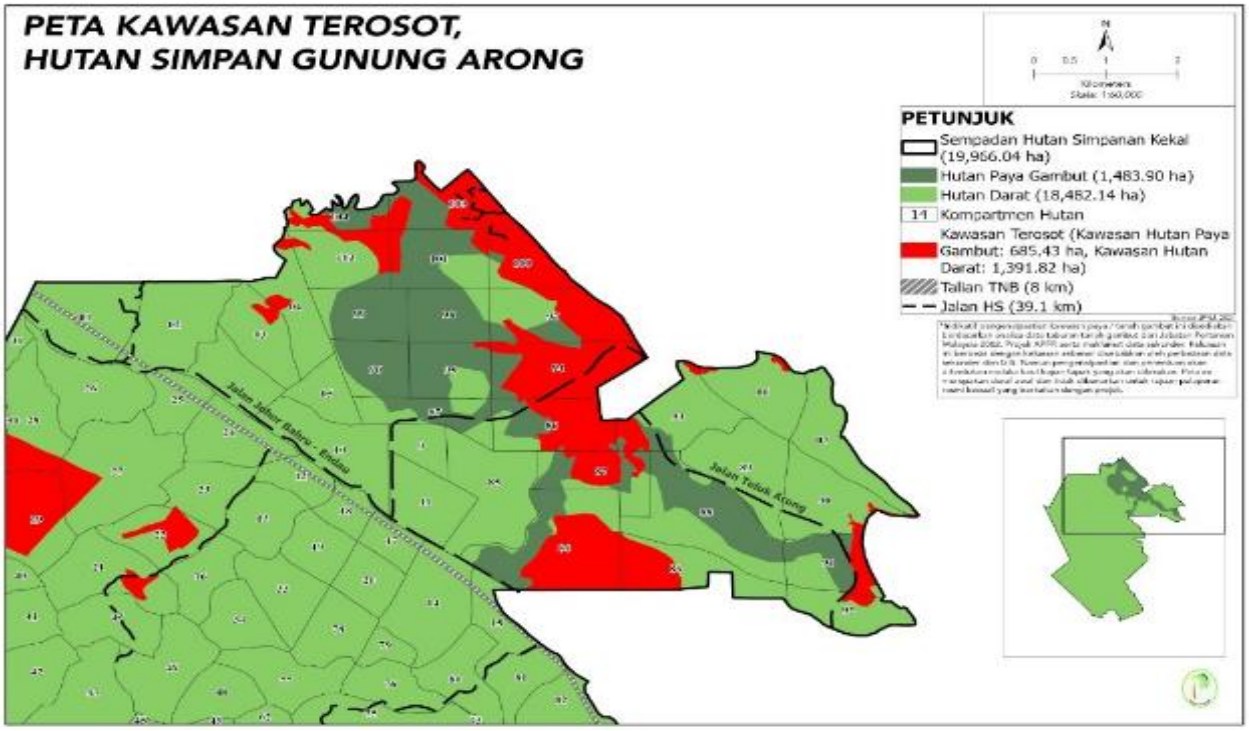

Figure 1. Map of the degraded forest area in GAFR, highlighted in red colour. While the dark green marked the area of peat swamp forest.

This annual report is a compilation and update for the rehabilitation work progression that had been implemented from January to December 2025. In 2025, the project implementation focused on fire prevention and management, degraded forest restoration, community development, and outreach activities in accordance with the approved 2025 annual workplan. The ground action to develop a strong foundation of ownership sense in the community group several actions were taken included strengthening community groups, conducting capacity-building and training programme besides implementing restoration works such as site preparation, planting, and

monitoring, as well as supporting routine wildlife and habitat monitoring in priority areas. Throughout the year, close coordination with the JSFD and East Johor District Forestry Office (PHDJT) were maintained to formulate detailed and strategic rehabilitation plans for the GAFR, reflecting strong inter-agency collaboration. Community-led fire patrols and monitoring were intensified, enhancing local preparedness, early detection, and rapid response to fire risks, thereby safeguarding the progress and effectiveness of ongoing rehabilitation efforts.

2.0 Project goals and objectives

2.1. Project goal

To protect and rehabilitate forests and peatlands in the north-eastern portion of Gunung Arong Forest Reserve.

2.2. Project objectives

i. To develop a rehabilitation and management strategy for the site using a landscape management approach and the participation of relevant stakeholders;
ii. Rehabilitation of degraded areas through re-wetting, assisted natural regeneration and selected tree planting in priority sections of the site; and,
iii. Support the actions of local communities and other stakeholders on sustainable land management and fire prevention in targeted areas.

3.0 Project implementation planning and project activities

3.1 Project implementation planning

In 2025, the project emphasized forest rehabilitation through tree planting, hydrological management via the development of new canal blocks to regulate water flow within the GAFR and strengthened community involvement in conservation efforts. Activities were implemented based on the structured work plan jointly agreed upon by JSFD, GEC and TH Plantations. The work plan focuses on three key components:

1. **Component 1:** Securing community support and commitment for the conservation of coastal forests and peatlands in GAFR.
2. **Component 2:** Rehabilitating and protecting degraded forest areas within GAFR.
3. **Component 3:** Enhancing Communication, Education, and Public Awareness (CEPA).

Table 1 presents the work plan for the Conservation of Coastal Forest and Peatlands in Gunung Arong Forest Reserve, Johor for 2025 while Table 2 highlights the progress and accomplishments achieved during its implementation. Regular updates on the project's progress have been shared with the JSFD and the Johor Timur District Forestry Officer (DFO) to ensure two-way communication and remain well-informed.

Table 1. Work plan for the Conservation of Coastal Forest and Peatlands in Gunung Arong Forest Reserve, Johor 2025

NO.	ACTIVITY (2025)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	**SECURING SUPPORT AND COMMITMENT FROM THE COMMUNITY TO ENGAGE WITH THE CONSERVATION PROJECT OF THE COASTAL FOREST AND PEATLANDS IN GUNUNG ARONG RESERVE FOREST, MERSING, JOHOR**												
1.1	**Empowerment on the local community involvement on the Gunung Arong Forest Reserve conservation project.**												
	a. Reinforce the Komuniti Pelindung Alam Sekitar Mersing (KomPAS) establishment by registering it with the Registrar of Societies (ROS) to ensure the recognition and continuity of the organization.	X	X	X	X	X	X						
	b. Enhance the community involvement in conservation projects through Community-Based Organization (CBO) initiatives and develop a strategic collaborative relationship with the Johor State Forestry Department (JSFD), TH Plantations Berhad (THP), and other relevant agencies.	X	X	X	X	X	X	X					
	c. Conduct regular meetings and follow-ups with the Community-Based Organisation (CBO) to monitor the project progression while providing continuous support for the implementation and capacity building aspects.				X	X	X	X	X	X	X		
1.2	**Empowered and enhance the new established Community-Based Organisation (CBO)'s capacity:**												
	a) Conduct comprehensive training programs to the KOMPAS group on effective nursery management and maintenance practices to ensure an efficient and effective implementation of operations.		X	X	X								
	b) Carry out continuous care and maintenance of community nursery sites, including monitor on the health of saplings and maintain the developed nursery site infrastructure.	X	X	X	X	X	X	X					
	c) Produce 3,000 high quality tree sapling such as Tenggek burung (*Melicope lunu-ankenda*), Pulai (*Alstonia macrophylla*) and other pioneer species for planting programme in GAFR for year 2025. An	X	X	X	X	X	X	X					

NO.	ACTIVITY (2025)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	intensive care conducted to determine the optimum quality of tree can be produced												
2	**REHABILITATION AND PROTECTION ON THE DEGRADED FOREST AREA IN GUNUNG ARONG FOREST RESERVE**												
2.1	**Patrolling and monitoring around the Gunung Arong Reserve Forest (Buffer zone)**												
	a) Implement continuous monitoring on the water table by collecting data using the piezometers following the standard procedure provided.	X	X	X	X	X	X	X	X	X	X	X	X
	b) Regular update on the Fire Danger Rating System (FDRS) signboards in the field and disseminate the updated information through the communication group of the community and project stakeholder group.	X	X	X	X	X	X	X	X	X	X	X	X
	c) Implement continuous fire monitoring and patrolling around the GAFR and adjacent areas for fire prevention and control. Also to ensure the early action can be taken to control the accident from happened.	X	X	X	X	X	X	X	X	X	X	X	X
	d) Implement continuous systematic wildlife monitoring through two methods: - Camera trap installation and maintenance at the strategic location - Wildlife roadkill documentation at the adjacent area of GAFR.	X	X	X	X	X	X	X	X	X	X	X	X
2.2	**Tree planting activity: Second Phase 2025**												
	a) Organise a community-involved tree planting initiative targeting of 3 hectares of degraded site in the second part of the 2025 and contribute to the overall target of 4,600 trees planted in HSGA starting from 2024.										X	X	X
	b) Conduct maintenance activities at the planting site from the first phase (2024) involving 3,000 trees to ensure the health and growth of the trees, thus securing optimum success of the rehabilitation programme.		X	X		X	X	X		X	X	X	
	c) Implement on the regular monitoring to access the growth and survival rates of the tree planted trees.			X			X		X		X		X

NO.	ACTIVITY (2025)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	Included determination on any threat or issues that need to be overcome.												
2.3	**Hydrology management**												
	a) Conduct a comprehensive assessment to identify on the possible canal that need to be managed for the mitigation plan of fire in the peatland area.			X	X	X							
	b) Construct an additional 5 canal blocks in FC 86, FC84 and FC 83 to enhance hydrology management.												
	c) Construct 2 canal blocks at Parit Sembilan, Kampung Air Papan with approval and collaboration from the Department of Irrigation and Drainage (DID).			X									
	d) Conduct a schedule monitoring and continuous maintenance on the installed canal blocks.	X	X	X				X	X	X	X		
2.4	**Update the map of peatland area in GAFR**		X	X									
2.5	**Update the fire potential forecast around the GAFR to the relevant WhatsApp group**	X	X	X	X	X	X	X	X	X	X	X	X
3	**COMMUNICATION, EDUCATION AND PUBLIC AWARENESS**												
3.1	Organise a fire prevention programme in collaboration with local communities and agencies including the Mersing District Office, East Johor Forestry District Office, Fire and Rescue Department and other relevant stakeholders.												
3.2	Organise a peatland forest awareness programme with the local community, stakeholder and students from school and other educational institution.										X		
3.3	Coordinate a tree planting activity involving TH Plantations Berhad volunteers, students and relevant stakeholders.										X		
4.	**PROVISION OF OTHER NECESSARY TECHNICAL SERVICES WITH JSFD**												
	a) Prepare a technical study report based on the Gunung Arong Forest Reserve Scientific Expedition					X							

NO.	ACTIVITY (2025)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	2024 and present it at the GAFR Scientific Expedition Seminar.												
	b) Contribute to the organization of the Gunung Arong Challenge 2025 to ensure the success of the program.								**X**				
	c) Provide support for the development of TER in Teluk Arong, HSGA including contribute to carbon and climate change-related initiatives to ensure sustainable development in line with conservation objectives.								**X**				

Note: The proposed work plan is subject to changes from time to time based on the need for local coordination, the level of support and involvement of stakeholders, current weather and environmental conditions as well as other relevant factors to ensure flexibility in implementation within a dynamic environment while maintaining the achievement of the program's main objectives.

- **X**= Marks the activities that have been carried out until this period.
- **Green highlight =** Indicates the proposed workplan according to the timeline

3.2 Project activities

Based on the project's 2025 work plan, Table 2 presents the justification for each activity undertaken during project implementation, together with a summary of progress and outcomes. These activities were strategically designed to align with the project's objectives of conserving and rehabilitating the coastal forests and peatlands of the GAFR, while strengthening community engagement and promoting sustainable management. Table 2 highlights the key milestones achieved between January and December 2025.

Table 2. The list of activities implemented from January to December 2025

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
1	**Securing support and commitment from the community to engage with the conservation project of the coastal forest and peatlands in Gunung Arong Reserve Forest, Mersing, Johor.**		
1.1	**Empowerment on the local community involvement on the Gunung Arong Forest Reserve conservation project.**		
	a. Reinforce the Komuniti Pelindung Alam Sekitar Mersing (KomPAS) establishment by registering it with the Registrar of Societies (ROS) to ensure the recognition and continuity of the organization.	• This year engagement sessions focused on strengthening the organisational and leadership foundation of KomPAS, while fostering a strong sense of ownership and shared responsibility for conservation implementation among its members. • Through a series of structured meetings and discussions, technical knowledge and practical understanding of coastal and peatland forest conservation were systematically transferred to the community thus enhancing their capacity to actively contribute to on-ground activities.	• Komuniti Pelindung Alam Sekitar Mersing (KomPAS) was successfully registered as an official organisation under the Registrar of Societies Malaysia (RoS) in July 2025, with registration number PPM-008-01-25072025. • KomPAS currently comprises 15 registered members representing residents from 6 villages, namely Kampung Sawah Dato', Kampung Air Papan Tengah, Kampung Tenglu Laut, Kampung Tenglu Batu 7, Kampung Triang, and Kampung Semaloi **Progress Percentage: 100%**
	b. Enhance the community involvement in conservation projects through Community-Based Organization	• To strengthen meaningful community participation, a series of targeted meetings and capacity-building sessions were conducted with KomPAS members. These engagements actively involved key	• The community was actively involved in coordination meetings with the PHDJT and other government agencies. During these sessions, the objectives of establishing Komuniti Pelindung Alam Sekitar Mersing (KomPAS) were formally presented by the

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	(CBO) initiatives and develop a strategic collaborative relationship with the Johor State Forestry Department (JSFD), TH Plantations Berhad (THP), and other relevant agencies.	stakeholders and positioned KomPAS as a collaborative partner, enhancing cross-agency coordination while empowering the community to play a proactive role in advancing conservation initiatives across the Mersing District • To date, KomPAS has participated in 4 major multi-stakeholder engagement sessions involving the JSFD, PHDJT, the Department of Irrigation and Drainage (DID) Mersing, and representatives from THP, which led to strengthening institutional linkages and reinforcing community-led conservation efforts.	KomPAS temporary committee, serving as an official introduction and laying the foundation for strategic collaboration between the forestry authorities and the local community. • KomPAS members also participated directly in official site visits by the project sponsor, THP, together with representatives from PHDJT. During these visits, the community was involved in supporting and implementing on-the-ground conservation activities. • In addition, KomPAS representatives took part in meetings with the Mersing District Office to present progress updates on conservation activities. Through this engagement, the district office was formally informed of the establishment of the community-based organisation under the programme, strengthening institutional recognition and enhancing collaboration among community-based organisations within the Mersing District. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	c. Conduct regular meetings and follow-ups with the Community-Based Organisation (CBO) to monitor the project progression while providing continuous support for the implementation and capacity building aspects.	• Throughout 2025, a total of 15 community meetings were conducted to sustain motivation, reinforce collective commitment, and position KomPAS members as long-term implementation partners in the project, rather than passive participants.	The meetings were conducted to monitor project progress and discuss emerging issues among KomPAS members. These meetings aimed to**:** • Track the progress of conservation activities in the GAFR and sustain community motivation to remain actively involved in implementation. • Strengthen communication mechanisms between the community, relevant agencies, and key stakeholders involved in the conservation programme. **Progress Percentage: 100%**
1.2	**Empowered and enhance the new established Community-Based Organisation (CBO)'s capacity**		
	a) Conduct comprehensive training programs to the KOMPAS group on effective nursery management and maintenance practices to ensure an efficient and effective implementation of operations.	• The training focused more on pest management at the nursery, where the plants were attacked by mites, resulting in leaf galls. Advice and technical guidance on controlling the diseases were given to the community to ensure the saplings could grow well.	• GEC provided technical guidance on nursery management, particularly in identifying solutions to address disease outbreaks, improving nursery hygiene, and enhancing irrigation practices within the nursery site. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	b) Carry out continuous care and maintenance of community nursery sites, including monitoring on the health of saplings and maintaining the developed nursery site infrastructure	• Nursery maintenance was conducted regularly but large-scale repairs were done following severe damage caused by strong winds. Subsequently, the community came together to conduct the nursery maintenance and repair the nursery to it's normal condition. • Monitoring of sapling growth and health also conducted regularly to ensure the trees in the nursery could grow well.	• GEC and the KomPAS community carried out continuous monitoring at the nursery site to ensure that seedlings remained healthy and in optimal condition. • Regular inspections were conducted to support healthy plant growth, including weeding activities and the removal or separation of dead seedlings from healthy stock. • GEC also assisted in maintaining and rehabilitating the nursery site following damage caused by storm events. **Progress Percentage: 100%**
	c) Produce and care for 3,000 high quality tree saplings such as Tenggek burung (*Melicope lunu-ankenda*), Pulai (*Alstonia macrophylla*) and other pioneer species for planting programme in GAFR for year 2025.	• Regular monitoring was conducted on the trees at the nursery. The water pump operation and cycle were checked daily by the KomPAS community to ensure an adequate water received by the trees.	• The KomPAS community nursery currently maintains more than 3,256 saplings representing 4 species, all cared for by the community and ready for planting: Merawan Siput Jantan (*Hopea odorata*) – 1,000 seedlings; Bintangor Paya (*Calophyllum* spp.) – 1,000 seedlings; Keruing Neram (*Dipterocarpus oblongifolius*) – 1,000 seedlings; and Tembusu (*Cyrtophyllum fragrans)* – 256 seedlings. **Progress Percentage: 100%**
2	**Rehabilitation and protection on the degraded forest area in Gunung Arong Forest Reserve**		

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
2.1	**Patrolling and monitoring around the Gunung Arong Reserve Forest (Buffer zone)**		
	a) Implement continuous monitoring on the water table by collecting data using the piezometers following the standard procedure provided.	• A dedicated patrol team comprising three KomPAS members was actively deployed to conduct groundwater data recording through the installed piezometer and routine fire patrols for up to 16 days per month, providing critical early-warning data on peat moisture conditions and fire risk within the Gunung Arong Forest Reserve (GAFR). • The data collected were shared with the community group for reference and as early data records for future forecasts. • To date, the patrol team has successfully detected and responded to one fire incident in GAFR, contributing directly to early control efforts and preventing further spread that could have undermined ongoing rehabilitation work. • Fire Danger Rating System (FDRS) signboards were regularly updated by the KomPAS field team, ensuring timely dissemination of fire risk information to surrounding communities and strengthening local awareness, preparedness, and preventive action.	• Regular water level monitoring in the GAFR was conducted using piezometers to assess soil moisture conditions and their effects on the peat ecosystem. Data were monitored and recorded monthly throughout the year to support analysis and future planning. **Progress Percentage: 100%**
	b) Regular update on the Fire Danger Rating System (FDRS) signboards in the field and disseminate the updated information through the communication group of the community and project stakeholder group.		• Fire Danger Rating System (FDRS) signboards were regularly updated in the field and shared within community stakeholder groups. Daily patrols were carried out by community teams and GEC personnel, supported by training on the use of fire prevention and response equipment. **Progress Percentage: 100%**
	c) Implement continuous fire monitoring and patrolling around the GAFR and adjacent areas for fire prevention and control as well as to ensure that early action can be taken to control the incident from occuring.		• Periodic field surveys were undertaken by GEC officers and the KomPAS patrol team throughout the GAFR to identify high-risk areas and implement appropriate fire prevention measures. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	e) Implement continuous systematic wildlife monitoring through two methods: - Camera trap installation and maintenance at the strategic location - Wildlife roadkill documentation in the adjacent area of GAFR.	• Identification and selection of strategic monitoring locations within and adjacent to the GAFR. Camera trap then installed at the targeted location. • Routine maintenance, and data retrieval of camera traps were conducted to document wildlife presence and species diversity. The records on the wildlife were retrieved monthly. • Systematic review, cataloguing, and analysis of camera trap videos were conducted for conservation and management purposes. • Regular wildlife roadkill surveys were conducted along roads adjacent to GAFR to record species, locations, and potential conflict hotspots. • Compilation and analysis of roadkill data were undertaken to identify high-risk areas and support mitigation planning. • Integration of camera trap and roadkill monitoring data was conducted to inform adaptive wildlife conservation and management strategies.	• The installation of camera traps at strategic locations within the GAFR recorded 10 wildlife species from January to December 2025 including threatened species. Monitoring of wildlife mortality due to road accidents or roadkill was also conducted through the collection and analysis of reported incidents. Data from both camera traps and roadkill monitoring were used to inform and strengthen conservation planning and management actions. **Progress Percentage: 100%**
2.2	**Tree planting activity: Second Phase 2025**		
	a) Organise a community-involved tree planting initiative targeting of 3 hectares of degraded site in the second part of the 2025 and contribute to the overall target of	• As a continuation of the first phase of the tree planting activity, the KomPAS community team commenced the preparation at FC103 to plant the remaining trees. • To date, 1,014 trees have been planted there with the remaining 1,586 trees	**Achievements and Challenges:** • Phase 1 (2024): 2,814 trees (1,400 trees planted in 2024 and the remaining 1,414 trees planted in the first quarter of 2025*)*

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	4,600 trees planted in GAFR starting from 2024.	scheduled for completion in the early 2026.	• Phase 2 (2025): 2,600 trees (1,014 trees planted between October to December 2025) • Phase 3 (2026): 1,600 trees planned for planting in 2026. A total of 3,828 trees has been planted across an area of approximately ±4 hectares until December 2025 with a total survival rate of 73% achieved. **Progress Status:** Planting activities are progressing, but due to weather constraints, the completion of the remaining 1,586 trees is scheduled to be completed for early 2026.
	b) Conduct maintenance activities at the planting site from the first phase (2024) involving approximately 3,000 trees to ensure the health and growth of the trees, thus securing optimum success of the rehabilitation programme.	• Regular maintenance activities were successfully implemented at the Phase 1 (2024) planting site involving approximately 2,814 trees including 1,014 trees for Phase 2, ensuring sustained care during the critical establishment period. • Key maintenance actions included, weeding activities and undergrowth control, site cleaning, and routine health inspections, contributing to improved survival and growth rates. • Continuous upkeep of the planting area reduced competition for nutrients and light, enhanced site conditions, and strengthened tree resilience against environmental stressors.	• Maintenance activities to ensure tree health and optimal growth were carried out on a monthly basis throughout 2025, including the replacement of dead seedlings, site cleaning, and weed control. **Progress Percentage: 100%**
	c) Implement on the regular monitoring to access the growth and survival rates of the tree planted trees.		• Regular monitoring was conducted to assess tree growth and survival rates which achieved a 73% survival count. All monitoring data were systematically recorded to inform adaptive management and action planning. Replanting

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	Including determination of any threats or issues that need to be addressed.	• The systematic maintenance programme has helped secure optimal establishment of planted trees, thereby reinforcing the overall effectiveness and long-term success of the forest rehabilitation programme.	works will be carried out to improve tree survival to at least 80% **Progress Percentage: 100%**
2.3	**Hydrology management**		
	a) Conduct a comprehensive assessment to identify on the possible canal that need to be managed for the mitigation plan of fire in the peatland area.	• A comprehensive field assessment was successfully conducted to identify priority canals requiring management interventions as part of the peatland fire mitigation strategy. • High-risk areas associated with lowered groundwater levels and increased fire susceptibility were systematically mapped, providing a clear basis for targeted action. • Priority canals were identified and classified according to urgency and potential impact on fire prevention and peat moisture regulation. • The assessment outputs now serve as a critical reference for planning canal blocking, maintenance, and hydrological restoration measures, strengthening the effectiveness of the overall peatland fire mitigation plan.	• A field assessment was conducted in 2025 to identify drainage canals requiring immediate maintenance. Priority was given to areas within Compartment 84 and Compartment 83 for the purposes of fire prevention and groundwater management. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	b) Construct an additional 5 canal blocks in FC 86, FC84 and FC 83 to enhance hydrology management.	• Follow-up monitoring was conducted at the proposed canal block installation sites to reassess current site conditions and hydrological dynamics. • The reassessment was necessary following the construction of two check dams in Parit Sembilan, which resulted in increased water levels in the area. Further evaluation was therefore required to ensure that any future canal block installations at the targeted locations remain appropriate, effective, and aligned with their intended purpose of improving water retention and fire risk mitigation.	• A field assessment was conducted in 2025 to identify areas requiring canal block construction, resulting in the identification of five potential sites. However, follow-up reassessments at several locations indicated an increase in water levels following the construction of two canal blocks in Parit Sembilan. • Due to unstable weather conditions that were not conducive to canal block construction, implementation has been rescheduled. **Progress Status:** Due to current weather conditions and the monsoon season in December 2025, the completion of the additional 5 canal block constructions have been rescheduled to the early part of 2026.
	c) Construct 2 canal blocks at Parit Sembilan, Kampung Air Papan with approval and collaboration from the Department of Irrigation and Drainage (DID).	• Two canal blocks / check dams constructed together with the KomPAS community, have contributed to improved groundwater retention and peat moisture stability, directly supporting peatland rewetting efforts and reducing fire risk in the surrounding areas. • The construction process strengthened inter-agency collaboration between DID, GEC, and community partners, while providing hands-on experience and capacity building for local community members involved in implementation. • These canal blocks / check dams form part of a broader hydrological restoration	• Two canal blocks were successfully constructed in the first quarter of 2025, bringing the total number of completed canal blocks to ten (10) as of 2025. • The canal blocks are regularly monitored to ensure their structural integrity and continued effective operation, particularly for the check dam system at Parit Sembilan. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
		strategy, enhancing the effectiveness and sustainability of peatland fire mitigation and ecosystem rehabilitation efforts.	
	d) Conduct a schedule monitoring and continuous maintenance on the installed canal blocks.	• A scheduled monitoring programme was successfully implemented to regularly assess the structural strength and functionality of installed canal blocks. • Monitoring activities enabled the early detection of structural damage and performance issues, allowing timely maintenance interventions before major failures occurred. • Continuous maintenance works were carried out in collaboration with the local KomPAS community, ensuring canal blocks remained effective in maintaining groundwater levels and supporting peatland rewetting.	• Two canal blocks were maintained following monitoring that identified structural damage to the existing constructions. The maintenance works were carried out with the active involvement of the KomPAS community. **Progress Percentage: 100%**
2.4	**Update the map of peatland area in GAFR**	• An updated and validated the peatland extent map in GAFR was produced to support hydrological management, fire mitigation planning, and restoration prioritisation.	The map and boundary have been updated and finalized. **Progress Percentage: 100%**
2.5	**Update the fire potential forecast around the GAFR to the relevant WhatsApp group**	• Fire Danger Rating System (FDRS) data were systematically extracted from the Malaysian Meteorological Department (METMalaysia), analysed, and summarised into user-friendly updates for dissemination to relevant stakeholder groups.	Daily fire risk forecast updates for the GAFR were shared through community and stakeholder WhatsApp groups, ensuring timely information dissemination and enhanced preparedness. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
		• These updates were shared daily on working days, providing timely situational awareness to support early warning, preparedness, and proactive fire prevention actions on the ground.	
3	**Communications, Education and Public Awareness (CEPA)**		
3.1	Organise a fire prevention programme in collaboration with local communities and agencies including the Mersing District Office, East Johor Forestry District Office, Fire and Rescue Department and other relevant stakeholders	• A formal request letter seeking approval and support was submitted to the Mersing District Office to organise a series of outreach visits under the Peatland Forest–Themed Environmental Awareness Programme with the local communities. • A discussion was also held with the Mersing District Officer to brief him on the programme and to secure his support. • In addition, discussions were conducted with the Head of Mukim Tenglu (penghulu) to seek their assistance and cooperation in supporting the programme's implementation.	**Achievements and Challenges:** • Progress was affected by operational constraints and delayed feedback from the Mersing District Office. • Implementation planning for the programme has therefore been rescheduled and is expected to be carried out before mid-2026. • To enhance the dissemination of conservation-related information on the Gunung Arong Forest Reserve (GAFR), GEC participated in several outreach opportunities, including exhibitions held in conjunction with International Day of Forests 2025. During these events, information on peat swamp and mangrove forests was shared with the public. Visitors were introduced to ongoing peatland conservation efforts in GAFR through demonstrations of the Fire Danger Rating System (FDRS), the function of fire risk signboards, canal block construction activities, and educational sessions on peat swamp and coastal forest ecosystems. **Progress Percentage: 100%**

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
3.2	Organise a peatland forest awareness programme with the local community, stakeholder and students from school and other educational institution.	• GEC was invited to an awareness programme that involving students, local community and stakeholders to delivered talk about our effort in rehabilitation work in peat swamp and mangrove forests.	• GEC was invited to participate in 5 environmental awareness programmes involving local communities, stakeholders, and students from educational institutions. Through these programmes, activities included educational talks, exhibitions, and hands-on demonstrations of tree planting techniques. **Progress Percentage: 100%**
3.3	Coordinate a tree planting activity involving TH Plantations Berhad volunteers, students and relevant stakeholders.	• A planting programme was conducted with the THP volunteers at the planting site in Forest Compartment 103 (FC103). • This programme marked the starting of the phase 2 tree planting activity and 250 trees were planted during the programme.	**Achievements and Challenges:** • A tree planting activity was successfully organised in collaboration with the East Johor District Forestry Office (PHDJT) and KomPAS. • However, due to the school calendar and circulars issued by the District Education Office, participation from school students could not be secured. • A meeting to update the rehabilitation project progress also conducted with PHDJT and the team. • Despite this limitation, a total of 250 trees were successfully planted during the programme. **Progress Percentage: 100%**
4.	**Provision of other necessary technical services with JSFD**		
	• Prepare a technical study report based on the Gunung Arong Forest Reserve Scientific Expedition	• A comprehensive technical study report was successfully prepared based on data and findings from the Gunung Arong Forest Reserve Biodiversity	Two scientific papers based on the 2024 biodiversity expedition at GAFR were prepared and presented at the 2025 Scientific Seminar Conference on Forest Biodiversity Expeditions. The two scientific papers presented were titled:

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	2024 and present it at the GAFR Scientific Expedition Seminar.	Scientific Expedition 2024, consolidating ecological, biodiversity, and environmental assessments into a structured reference document. • The report synthesised key scientific findings, identified priority conservation issues, and provided evidence-based documentation of the existence of wetland forests in GAFR. • The findings were formally presented at the Scientific Expedition Seminar, facilitating knowledge sharing among researchers, government agencies, practitioners, and other stakeholders.	• Ecological Importance and Distribution of Durian Paya (*Durio carinatus*) in Freshwater Swamp Forests of the Gunung Arong Forest Reserve. • Ecological Assessment of Wetland Ecosystems in the Gunung Arong Forest Reserve Reveals Unique Resources and Critically Threatened Species Requiring Immediate Conservation Strategies. • The seminar presentation strengthened scientific understanding of GAFR, enhanced stakeholder awareness, and contributed to informed decision-making for the sustainable management and conservation of the forest reserve. **Progress Percentage: 100%**
	• Contribute to the organization of the Gunung Arong Challenge 2025 to ensure the success of the program.	• Assisted in the drone aerial survey to determine the route for the event. • The photos were then shared with PHDJT for event map development.	• Assisted in conducting aerial (drone) surveys to support the development of route planning and logistical layout for the organisation of Gunung Arong Challenge 2025. Support was also extended through the participation and involvement of representatives from TH Plantations Berhad (THP) and GEC as race participants. **Progress Percentage: 100%**
	• Provide support for the development of TER in Teluk Arong, GAFR including contribute to carbon	• A comprehensive survey was conducted to determine the fire potential locations in GAFR. • A technical report and mitigation step recommendations were prepared and	• Assisted in assessing suitable locations for the installation of canal blocks and piezometers as part of fire prevention measures in Forest Compartment 84, Compartment 85, and Compartment 94 of the GAFR. A

No.	Activities 2025	Progress and accomplishment of the activities	Justification and summary of project outcomes
	and climate change-related initiatives to ensure sustainable development in line with conservation objectives.	provided for the JSFD to use as reference.	recommendation report was also prepared to serve as a reference for the Johor State Forestry Department (JSFD). **Progress Percentage: 100%**

4.0 Project progress summary based on the activity conducted in 2025

From January to December 2025, the project was guided by three core pillars to ensure effective and coordinated implementation which are stakeholder engagement and governance, rehabilitation and ecosystem management, and Communication, Education and Public Awareness (CEPA). Through these pillars, the project strengthened it's collaboration, fostered strategic partnerships, and established a strong foundation for the successful delivery and long-term sustainability of the project. The activities conducted under these three pillars are:

a. Stakeholder engagement and governance
   - Engagement with JSFD, PHDJT, DID of Mersing, Mersing District Office and KomPAS
   - Coordination and monitoring visit to GAFR with the stakeholders

b. Rehabilitation and ecosystem management
   - Continuation of fauna monitoring through wildlife and roadkill monitoring at GAFR
   - Monitoring of water table in GAFR throughout the year 2025 for peatland fire monitoring
   - Check dam / canal blocks construction, monitoring and maintenance
   - Tree planting, monitoring and maintenance at FC 103
   - KomPAS nursery management

c. Communication, Education and Public Awareness (CEPA)
   - Mersing District Level - Kem Lestari Madani Programme - Quarter 2 2025
   - Department of Trade Union Affairs CSR and Awareness Programme - Quarter 3 2025
   - Mitsubishi Electric - Asian Environmental Meeting 2025 towards economic and environmental well-being - Quarter 3 2025
   - ESG Programme for Human Capability Development Programme (HCDP) - Quarter 4 2025
   - Tree planting program with community and stakeholders – Quarter 4 2025
   - Exhibition on the peatlands and mangrove forests in conjunction with International Forest Day at Johor State level - Quarter 4 2025

4.1 Stakeholder engagement and governance

The project prioritised strong multi-agency coordination and community partnership. Continuous engagement was maintained with JSFD, PHDJT, Mersing District Office, Department of Irrigation and Drainage (DID) Mersing, and the local community group KomPAS. These engagements strengthened institutional collaboration, improved coordination on conservation actions, and ensured alignment with regulatory and local priorities. Coordination and monitoring visits by THP further enhanced project oversight and adaptive management, while community participation through KomPAS positioned local stakeholders as active implementation partners.

4.1.1 Engagement with the Johor State Forestry Department (JSFD), East Johor District Forestry Office (PHDJT), Mersing District Office, Department of Irrigation and Drainage (DID) of Mersing and the Komuniti Pelindung Alam Sekitar (KomPAS) group

In 2025, a total of 35 meetings and engagement sessions have been conducted comprising 20 formal meetings involving stakeholders and KomPAS, while another 15 engagement sessions

focused on the community. The meeting sessions fostered a participatory and transparent planning process, enabling government agencies, GEC, THP, and KomPAS to develop a shared understanding of the project's direction, scope, and priorities throughout the project implementation in 2025. This sustained collaboration strengthened trust among stakeholders, reinforced community ownership of the rehabilitation programme, and established a solid foundation for the long-term effectiveness and resilience of forest restoration efforts in the GAFR. These engagements also played a critical role in keeping project implementation on track and provided a structured platform for updating relevant agencies on key milestones and progress. A summary of key meetings can be referred in Table 3, while the list of meetings involving government agencies, stakeholders, and community is provided in **Attachment 1.**

Figure 2. The MoU, project coordination and progress update meeting conducted with forestry department at Johor State Forestry Department Headquarter. This meeting was chaired by Mr Mohd Izani bin Abdullah (Deputy Director of Operations) and attended by the senior forestry officers.

Figure 3. A meeting with District Forestry Officer representative to update on the rehabilitation work progress (fish study) conducted in GAFR.

Table 3. List of the key meeting conducted with the key agencies and community for 2025

No.	Date (2025)	Agency / Stakeholder / community	Results / Remarks
Government agencies			
1.	16th January	Johor Timur District Forestry Office (PHDJT) and KomPAS community	• Coordination meeting with Johor Timur District Forestry Office and KomPAS community at Gunung Arong Conservation Field Office (GEC Mersing) on the formal introduction of KomPAS, including its vision, mission, objectives, and future plans. • Other matters were discussed including the proposed fire prevention sites in GAFR (FC 84 & 83) were reviewed with the DFO. • Upcoming plans for tree planting, canal block installation, and wildlife monitoring. • Request for agency support in fire prevention measures to ensure zero fire incidents in Mersing and planning a fire prevention roadshow in collaboration with local authorities.
2.	14th March	Johor State Forestry Department (JPNJ) Johor Timur District Forestry Office (PHDJT) Mersing Department of Irrigation and Drainage (DID) KomPAS community	• A meeting was held at the Balairaya Kampung Sawah Dato' regarding the degraded mangrove area at Kampung Tenglu Laut, also highlighting the on-going tree planting activities at FC103 Gunung Arong Forest Reserve (GAFR) and canal block installation planning. • The progress of activities undertaken for the conservation project for coastal forests and peatlands in the Gunung Arong Forest Reserve (GAFR) was presented to the attendees aiming to enhance their confidence and secure support for the project.
3.	28th May	Mersing District Office	• Update meeting with Tuan Haji Jamil Hasni bin Abdullah, Mersing District Officer, on planting progress at FC 103, GAFR and the planned peatland awareness tour for the year.
4.	13th November 2025	Johor State Forestry Department (JSFD)	• Presentation on the rehabilitation work undertaken in GAFR and the achievement of the milestone progress for year 2025. • Presentation on the MOU progress for mangroves and peatland conservation effort in Johor. • Discuss on the 2026 workplan for GAFR peatlands rehabilitation activities and the achievement for 2025.

No.	Date (2025)	Agency / Stakeholder / community	Results / Remarks
TH Plantations (THP) group			
	14th April	East Johor District Forestry Office (PHDJT) TH Plantations Berhad	• In conjunction with THP's three-day monitoring visit to their project site in the Gunung Arong Forest Reserve and its surrounding areas, a progress meeting was held together with East Johor District Forestry Officer (PHDJT) and TH Plantations.
	23rd August	TH Plantations Berhad	• Had a meeting session with the THP representatives at GEC Office to present about the rehabilitation progress for the first half of year 2025. • During the day, GEC staff also escorted and assisted the THP delegates who joined the Gunung Arong Challenge.
	14th October	Johor Timur District Forestry Office (PHDJT) KomPAS community TH Plantations Berhad	• Project implementation progress meeting with the stakeholders at PHDJT to update on the third quarter 2025 rehabilitation work undertaken at GAFR. • Discussion with THP and the forestry department together with KomPAS representatives to discuss the work plan for the remaining activities in 2025. • Site visit and tree planting activity were also conducted with the THP representatives at FC 103 marking the beginning of phase 2 tree planting.
Community group			
1..	11th January	Komuniti Pelindung Alam Sekitar Mersing (KomPAS)	• A coordination meeting was held at Balairaya Kampung Sawah Dato' with the KomPAS community to discuss the 2025 workplan. • Key topics included establishing a distinct identity for KomPAS, an upcoming meeting with the newly appointed District Forestry Officer (DFO) of Johor Timur, a review of tree planting initiatives for 2025 and the completion of 2024 activities, as well as preparations for the peatland rehabilitation awareness roadshow, scheduled from July to October 2025.

No.	Date (2025)	Agency / Stakeholder / community	Results / Remarks
			• Outlined a preliminary plan for additional canal block construction with community participation.
2.	17th February		• Meeting at Gunung Arong Conservation Field Office (GEC Mersing) to discuss financial matters (nursery facilities and costs). • The meeting covered initiatives to enhance local knowledge on seedling planting, and proposed a community ID card for those involved in tree planting and seed collection. • Updates were provided on correspondence with DID regarding canal block installation and discussions with Mersing DO on roadshow planning.
3.	1st October		• General meeting conducted with the community for the selection of the new committee members for KomPAS. • The election was important to fulfill the requirement under the Registrar of Societies Malaysia (ROS) for the officially registered organisation. • The meeting also focused on the work progress and updates for the rehabilitation project implementation.
4.	17th December 2025		• Meeting with the KomPAS representatives to recap on the rehabilitation work that had been conducted in 2025. • Enhanced their motivation for moving forward with more sense of ownership on the work that they had made. • Planning for the year 2026 work implementation and the activities that will be conducted.

Figure 4. Election of the new committee members for KomPAS management through their first General Meeting.

The community has progressively taken the initiative to manage its organisation independently with continued coordination and technical oversight provided by GEC. Marking a key milestone in institutional development, the Community-Based Organisation (CBO) was successfully registered under the Registrar of Societies Malaysia (RoS), followed by the convening of its first Annual General Meeting on 1st October 2025 to formally elect committee members.

Following the establishment of the elected leadership, a series of engagement sessions were conducted to align the community's vision and mission with shared conservation goals and to strengthen collective commitment to environmental stewardship. To further reinforce organisational resilience and motivation, a follow-up meeting was held on 17th December 2025, focusing on nurturing leadership confidence, strengthening internal cohesion, and fostering a stronger sense of ownership over conservation outcomes. These efforts reflect the community's transition from project participation towards long-term stewardship and self-driven management of conservation initiatives.

Figure 5. An engagement session conducted with KomPAS community to maintain and boost the community motivation to keep engage in the rehabilitation and conservation work in Mersing.

4.1.2 Coordination and monitoring visit by TH Plantations representative at Gunung Arong Forest Reserve

In 2025, THP conducted a total of four coordination and monitoring visits to the GAFR that was held on 14th –16th April, 23rd August, 14th October and 16th December 2025. These visits focused on reviewing on the ground rehabilitation work implementation, monitoring tree planting activities, and holding coordination meetings to assess overall project progress. The engagements provided an important platform for joint site inspections, technical discussions, and progress updates, enabling timely feedback and adaptive decision-making. THP continued field presence and direct involvement strengthened project oversight, reinforced accountability, and demonstrated strong corporate commitment to achieving effective and sustainable conservation outcomes in GAFR.

Figure 6. The visit conducted by THP representative to the project site and the meeting held with PHDJT and the KomPAS community on 14th October 2025.

4.2 Rehabilitation and ecosystem management

Throughout the year, on ground rehabilitation focused on restoring peatland hydrology, enhancing ecosystem resilience and reducing environmental risks. Key interventions included continuous piezometer-based groundwater monitoring, canal blocks construction and maintenance, and peatland fire monitoring and management to improve peat moisture conditions and minimise fire threats. Ecological restoration was further supported through community-led nursery

management, tree planting activities, and post-planting monitoring and site maintenance at FC 103. In parallel, systematic wildlife monitoring and roadkill documentation provided essential data to support biodiversity conservation and adaptive management within the GAFR.

4.2.1 Continuation of the wildlife monitoring and fauna roadkill in GAFR

Wildlife monitoring in the GAFR is a continuous effort in assess the terrestrial vertebrate diversity and support conservation planning within the study area. Camera traps were deployed along selected wildlife trails to collect data for species identification and to update the wildlife checklist, providing essential information for evaluating conservation priorities and management strategies. Footage from the camera traps was retrieved and analysed monthly, with routine checks conducted to ensure proper functioning of the equipment.

An unforeseen incident at FC 86 resulted in the loss of one camera trap and damage to another, which limited monitoring capacity. Consequently, from mid-2025 onwards, wildlife monitoring continued using a single functional camera trap at FC 103. In 2025, a total of 10 species were recorded from 49 individuals, compared to 17 species in 2024. This apparent decline in species numbers is likely attributable to reduced monitoring effort due to the lower number of camera traps rather than an actual reduction in biodiversity. Factors such as habitat use, temporal movement patterns, and altered weather conditions including the lingering effects of the *El Niño* phenomenon into early 2025 may have influenced animal activity, detectability, and spatial distribution.

Of the 10 species recorded in 2025, two were classified as Endangered which is the Southern Pig-tailed macaque (*Macaca nemestrina*) and the Long-tailed macaque (*Macaca fascicularis*). One species, the Rajah / Brown Spiny rat (*Maxomys rajah*), is listed as Vulnerable, while the Short-tailed mongoose (*Urva brachyura*) is categorised as Near Threatened. The continued presence of these species of conservation concern highlights the ecological significance of GAFR and underscores the importance of sustained, long-term wildlife monitoring to better understand population dynamics under changing climatic and environmental conditions.

Table 4. Species captured by the camera traps from January to December 2025. (Q1 = January – March, Q2 = April – June, Q3 = July – September, Q4 = October - December)

No	Family	Common name	Species	Q1	Q2	Q3	Q4	Total	IUCN status
1	Cercopithecidae	Southern pig-tailed macaque	*Macaca nemestrina*		1	2		3	**EN**
2	Cercopithecidae	Long-tailed macaque	*Macaca fascicularis*	1			1	2	**EN**
3	Muridae	Rajah/Brown Spiny rat	*Maxomys rajah*	1	1	12		14	**VU**
4	Suidae	Eurasian wild pig	*Sus scrofa*	1			1	2	LC
5	Tupaiidae	Common tree shrew	*Tupaia glis*	1		2	3	6	**LC**
6	Hystricidae	Malayan porcupine	*Hystrix brachyura*		1	2	4	7	LC

7	Varanidae	Asian water monitor lizard	*Varanus salvator*		1			1	LC
8.	Tragulidae	Greater mouse deer	*Tragulus napu*			3	8	11	LC
9.	Viverridae	Malayan civet	*Viverra tangalunga*				1	1	LC
10.	Herpestidae	Short – tailed mongoose	*Urva brachyura*			1	1	2	**NT**

Note: LC – Least Concern; NT – Near Threatened, VU- Vulnerable; EN – Endangered

Figure 7. Monitoring and retrieving camera traps data.

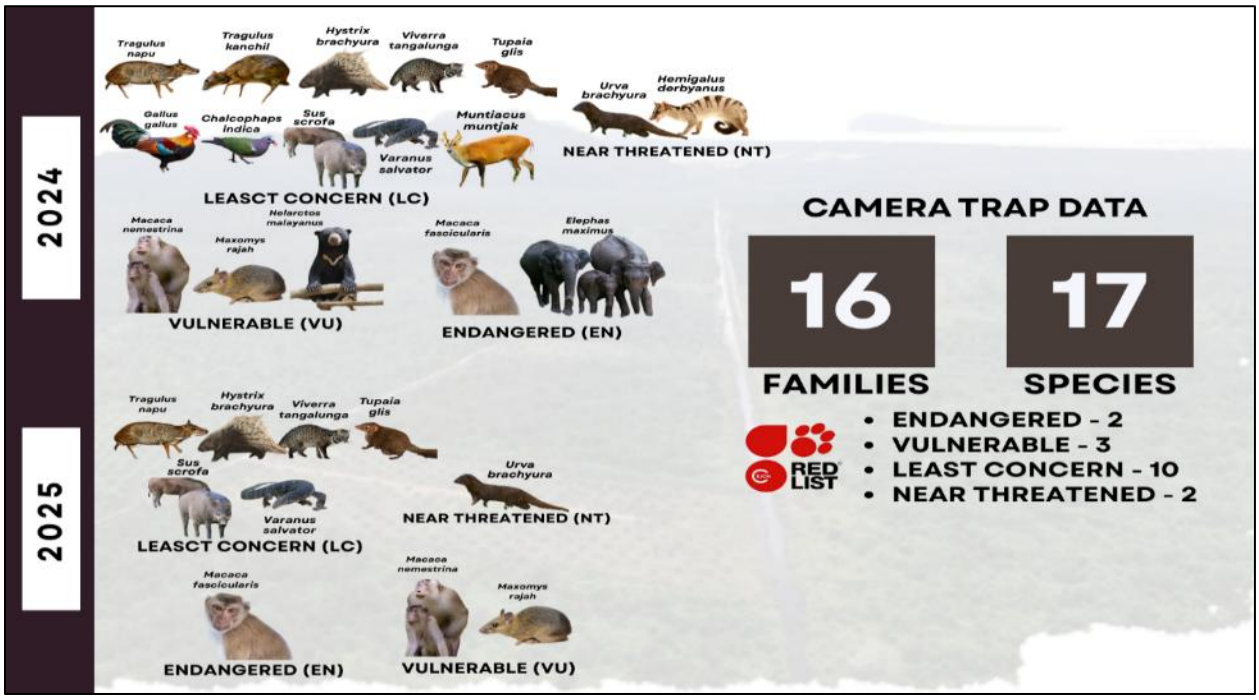

Figure 8: Summary infographic on the wildlife monitored through the camera trap, comparison data from 2024 and 2025.

The roadkill monitoring conducted in 2025 has recorded a continued decline in both number of species and individuals involved in wildlife–vehicle incident. A total of 12 species were recorded, compared to 15 species in 2024 and 22 species in 2023, while the number of individuals decreased to 37, down from 49 last year. The recorded roadkill incidents in 2025 comprised five reptile species, six mammal species, and one bird species, reflecting continued vulnerability across multiple faunal groups. The particular conservation concern, three endangered species were documented such as *Macaca fascicularis* (Long-tailed macaque), *Tapirus indicus* (Malayan tapir), and *Cuora amboinensis* (Malayan box terrapin). In addition, two Near Threatened species, *Herpestes brachyurus* (Short-tailed mongoose) and *Trachypithecus obscurus* (Dusky leaf monkey), as well as two Vulnerable species, *Rusa unicolor* (Sambar deer) and *Arctictis binturong* (Bearcat), were recorded.

Although the overall reduction in roadkill numbers suggests a positive trend, the continued occurrence of threatened and protected species highlights persistent risks along road networks adjacent to the GAFR. These findings underscore the importance of sustained roadkill monitoring, targeted mitigation measures at identified hotspots, and integration of wildlife-sensitive planning into road management to further reduce wildlife mortality. A complete list of recorded species is provided in Table 5. The extended report for wildlife monitoring and roadkill records can be referred in **Attachment 2**.

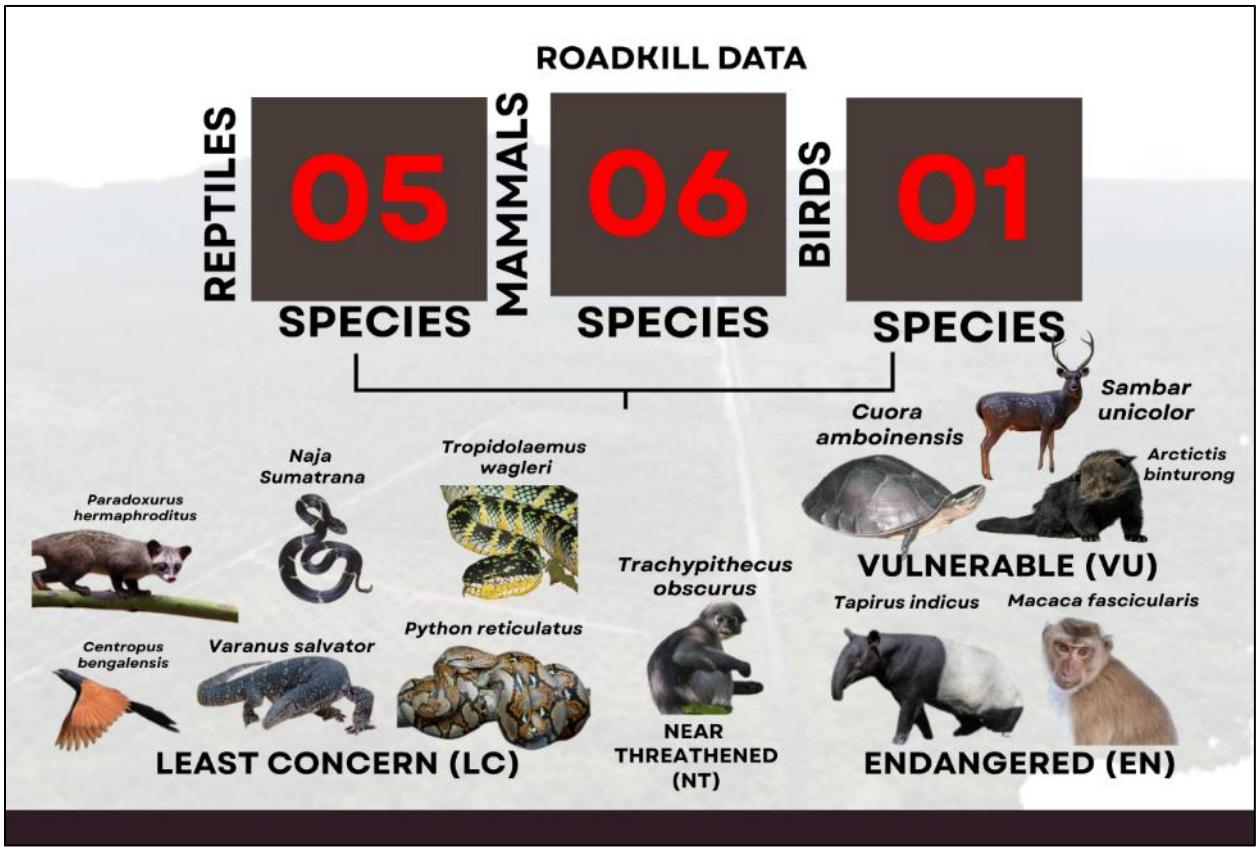

Figure 9. Summary infographic on the wildlife roadkill in 2025 monitored through the patrolling activity

Table 5. Roadkill records from January to December 2025

No	Species	Common name	Local name	No. of individuals in 2025											
Months				**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Reptiles															
1	*Cuora amboinensis*	Malayan Box Terrapin	Kura-kura katup	1	1					1					
2	*Varanus salvator*	Asian water monitor lizard	Biawak air	1			2								
3	*Naja sumatrana*	Spitting cobra	Ular senduk sembur					1	1	1	1				
4	*Python reticulatus*	Reticulated phyton	Ular Sawa batik						1			2			
5.	*Tropidolaemus wagleri*	Wagler's pit viper	Ular kapak tokong							1					
Mammals															
6	*Macaca Fascicularis*	Long-tailed macaque	Kera ekor panjang		1			2					1	1	
7	*Tapirus indicus*	Malayan tapir	Tapir			1									
8	*Paradoxurus hermaphroditus*	Common palm civet	Musang pandan			2	2	3	1						
9	*Trachypithecus obscurus*	Dusky leaf-monkey	Lotong celak									1			
10.	*Sambar unicolor*	Sambar Deer	Rusa Sambar											1	
11.	*Arctictis binturong*	Bearcat	Binturung												1
Birds															
12.	*Centropus bengalensis*	Lesser coucal	Ruak-ruak		1			3							
Total incidents per month				**2**	**3**	**3**	**4**	**9**	**3**	**3**	**1**	**3**	**1**	**2**	**1**
Total incidents recorded				**37**											

4.2.2 Monitoring of water table reading in Gunung Arong Forest Reserve (using piezometers) from January to December 2025

Since 2023, the KomPAS patroller team, with technical guidance from GEC, has implemented continuous groundwater monitoring in the GAFR and adjacent areas as a core peatland fire prevention measure. Monitoring commenced in 2023 with the installation of 10 piezometers at identified fire-prone locations and was further strengthened from 2024 onwards with an additional 11 piezometers, expanding spatial coverage and improving data reliability. Groundwater levels were measured four times per week, enabling early detection of declining water tables that indicate elevated peat fire risk. Weekly average readings were compiled and shared with key stakeholders, including the East Johor District Forestry Office (PHDJT) and local communities, via WhatsApp groups, thereby strengthening collective preparedness and rapid response. This sustained monitoring effort from 2023 to 2025 has generated critical evidence to guide hydrological management, support timely mitigation actions, and enhance the long-term resilience of peatland ecosystems within the GAFR.

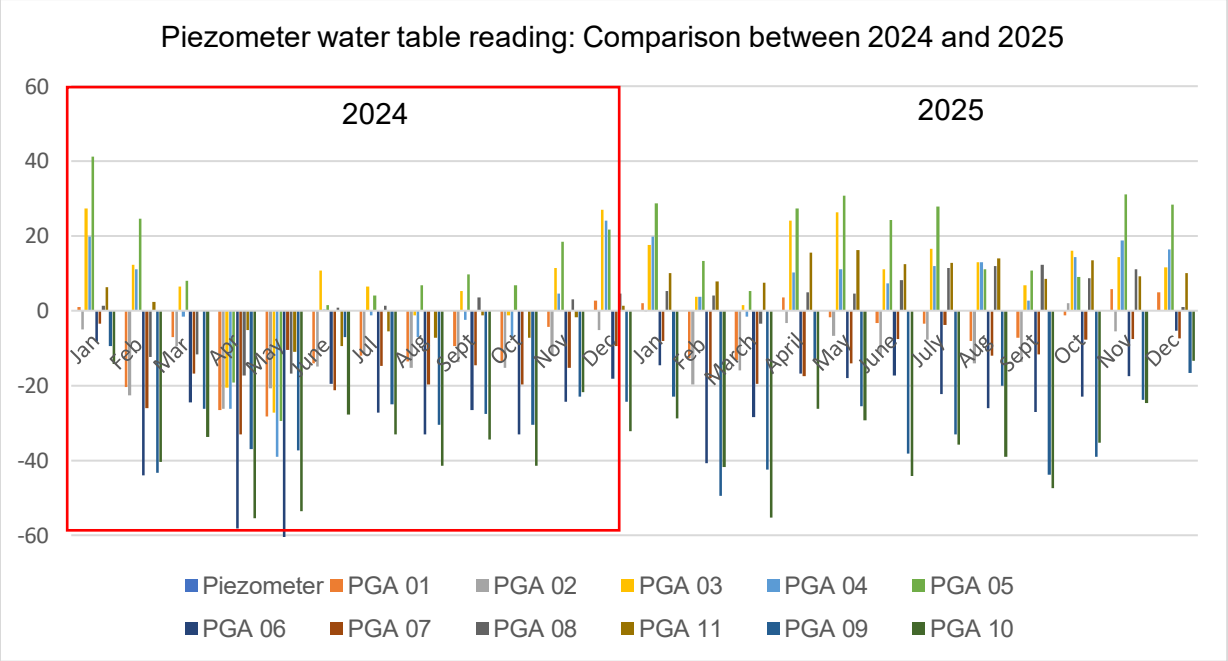

Figure 10. Average water level reading from each piezometer from January to December, comparison between 2024 and 2025.

Based on the piezometer readings recorded from January to December 2025, groundwater levels in the GAFR generally showed improved stability and recovery compared to the critical prolonged dry conditions observed during the peak *El Niño* period in 2024. This trend reflects a combination of post El Niño climatic recovery and the positive influence of hydrological restoration measures, particularly canal blocks installations. Based on the 2025 piezometer readings, the groundwater conditions within GAFR and its adjacent areas show clear spatial contrasts that are important for peatland hydrology and fire risk interpretation. The reading of piezometer water tables were tabulated in **Table 6.**

i. Within Gunung Arong Forest Reserve

Within GAFR (FC 103), groundwater levels remained generally high and stable throughout the year. Piezometers PGA 03, PGA 04, and PGA 05 consistently recorded near surface to above-ground water levels with annual average readings ranging from +10.6 cm to +20.6 cm. Although short-term declines were observed during the early months of the year from February to March, water levels recovered rapidly, indicating strong water retention capacity and effective hydrological conditions. These persistently wet conditions suggest low peat fire susceptibility and confirm FC 103 as a critical peat water storage and buffering zone within GAFR.

ii. Adjacent areas (Outside GAFR)

In adjacent areas within FC 83, groundwater levels exhibited moderate fluctuations. Piezometers PGA 01 and PGA 02 recorded annual average water levels of −2.9 cm and −8.1 cm, respectively. While several months showed water tables below the soil surface, particularly in February, March, and August, these declines were generally temporary. This indicates that the area remains hydrologically responsive, with fire risk remaining manageable provided that continuous monitoring and early intervention are maintained. In FC 84, groundwater conditions showed greater variability. Piezometers PGA 06 and PGA 07 recorded deeper average water tables (−21.4 cm and −11.2 cm, respectively), with the lowest levels occurring during drier months. In contrast, PGA 08 and PGA 11 maintained relatively higher groundwater levels, with annual averages of +6.7 cm and +11.5 cm. This mixed pattern suggests uneven hydrological influence across the area, where some locations benefit from retained moisture while others remain more prone to drying and therefore require continued monitoring and targeted management.

iii. Palm oil areas (Outside GAFR):

In contrast to forested areas, the palm oil plantation sites recorded the lowest groundwater levels across all monitoring locations. Piezometers PGA 09 and PGA 10 consistently showed deeper water tables, with annual averages of −30.7 cm and −35.1 cm, respectively, and several months exceeding −40 cm, particularly during February to March and September to October. These conditions reflect persistent drainage influence and indicate higher vulnerability to peat drying and fire risk. This highlights the plantation-adjacent zones as priority areas for hydrological intervention and fire prevention measures.

Overall, the 2025 groundwater monitoring results indicate that peatland conditions within GAFR remain largely wet and resilient, while adjacent forest edge areas experience moderate hydrological stress, and plantation-influenced areas remain the most vulnerable. The findings underscore the effectiveness of in-forest hydrological management measures, while reinforcing the need for continued monitoring and targeted mitigation within peatland buffer zones and plantation-adjacent areas to safeguard the wider peatland landscape.

Table 6. The average water table readings using piezometers from January to December 2025 at GAFR and adjacent areas.

Month / Piezometer	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average	Location
PGA 01	2.0	-12.8	-13.3	3.5	-1.8	-3.3	-3.5	-8.0	-7.3	-1.3	5.8	5.0	-2.9	Adjacent area of FC 83
PGA 02	-0.3	-19.8	-16.0	-3.3	-6.8	-11.8	-7.8	-14.0	-13.8	2.0	-5.5	0.0	-8.1	
PGA 03	17.5	3.8	1.5	24.0	26.3	11.0	16.5	13.0	6.8	16.0	14.3	11.7	13.5	FC 103
PGA 04	19.8	3.8	-1.5	10.3	11.0	7.3	12.0	13.0	2.8	14.3	18.8	16.3	10.6	
PGA 05	28.8	13.3	5.3	27.3	30.8	24.3	27.8	11.0	10.8	9.0	31.0	28.3	20.6	
PGA 06	-14.5	-40.8	-28.5	-16.8	-18.0	-17.3	-22.3	-26.0	-27.0	-23.0	-17.5	-5.3	-21.4	Adjacent area of FC 84
PGA 07	-8.0	-18.0	-19.5	-17.5	-14.0	-7.5	-3.8	-12.0	-11.8	-7.8	-7.5	-7.3	-11.2	
PGA 08	5.3	4.0	-3.5	5.0	4.5	8.3	11.5	12.0	12.3	8.8	11.0	1.0	6.7	
PGA 11	10.0	7.8	7.5	15.5	16.3	12.5	12.8	14.0	8.5	13.5	9.3	10.0	11.5	
PGA 09	-23.0	-49.5	-42.5	-13.0	-25.5	-38.3	-33.0	-20.0	-43.8	-39.0	-23.8	-16.7	-30.7	Palm oil plantation area
PGA 10	-28.8	-41.8	-55.3	-26.3	-29.3	-44.3	-35.8	-39.0	-47.5	-35.3	-24.8	-13.3	-35.1	

Note: Negative symbol (-) shows that the water level is below the soil surface; PGA (Piezometer Gunung Arong) indicates the codes of piezometers installed in GAFR and adjacent areas. Figures in red are for water levels deeper that 40cm with high fire risk.

Figure 11. The local KomPAS patroller team continues to actively monitor and record the underground water level at the piezometers installed in GAFR and the adjacent area.

4.2.3 Check dam construction and canal block maintenance for year 2025

In March 2025, two check dams were successfully constructed at Parit Sembilan, Kampung Air Papan, with approval and technical collaboration from the Department of Irrigation and Drainage (DID) of Mersing District. The construction was completed over approximately six days, despite recurrent disruptions caused by heavy rainfall. Key installation activities included geobag preparation and placement, installation of HDPE pipes for controlled water regulation, and structural reinforcement using wooden stakes to enhance long-term stability. Special measures, including the use of excavators and wooden planks, were applied to address challenging soft peat conditions and ensure safe material handling. The works were carried out with strong participation from trained KomPAS community members who demonstrated their willingness to be involved in this project. A total of 10 canal blocks has been successfully completed during this period. The plan for an additional five canal blocks was subsequently reviewed following site reassessments that recorded increased water levels at several targeted locations. This rise in water level reflects the positive hydrological impact of the check dams constructed at Parit Sembilan, demonstrating their effectiveness in improving water retention. As a result, further installations are being re-evaluated to ensure that future interventions remain technically necessary, well-targeted, and aligned with site-specific hydrological conditions.

Figure 12. Monitoring and check on the canal blocks built at Parit Sembilan, Air Papan, Mersing, Johor, conducted during the monsoon season in December 2025 to ensure the stability, strength and functionality of the structure.

Table 7. Updated location of 10 canal blocks / check dams that had been constructed in GAFR and the adjacent area.

No	Canal blocks	Specifications			Coordinates	Location
		Length (cm)	Width (cm)	Depth (cm)		
1	Canal block 1	338.0	63.0	39.0	N 02°32’02.18’’ E 103°47’15.32’’	Adjacent to FC 84
2	Canal block 2	344.0	78.0	35.0	N 02°32’04.13’’ E 103°47’18.31’’	
3	Canal block 3	345.0	82.0	35.0	N 02°31’55.39’’ E 103°47’36.17’’	Adjacent to FC 83

4	Canal block 4	245.0	78.0	35.0	N 02°31'55.79" E 103°47'36.91"	
5	Canal block 5	246.0	78.0	39.0	N 02°31'53.74" E 103°47'39.61"	
6	Canal block 6	220.0	58.0	25.0	N 02°31'47.43" E 103°47'59.72"	
7.	Canal block 7	550.0	100.0	200.0	N 2°31'44.11" E 103°48'9.37"	
8.	Canal block 8	550.0	100.0	150.0	N 2°31'32.50" E 103°48'7.82"	
9	Canal block 10	300.0	82.0	64.0	N 02°34'10.73" E 103°47'21.26"	In FC 94
10	Canal block 11	359.0	79.0	64.0	N 02°34'11.72" E 103°47'24.44"	Adjacent to FC 94

Figure 13. The location of canal blocks / check dams constructed adjacent to the FC 83 and FC 84.

Figure 14. The location of canal blocks constructed in and adjacent to the FC 94.

In addition, two existing canal blocks (CB-1 and CB-2) located near Forest Compartment 84, Gunung Arong Forest Reserve, were actively maintained by the KomPAS community following minor monsoon-related damage. This routine maintenance ensured continued performance during periods of high-water pressure and flooding. Overall, the combined construction of new structures and proactive maintenance of existing canal blocks demonstrates an effective, integrated peatland water management approach supported by strong institutional collaboration and community-based stewardship.

Figure 15. Canal block maintenance done by the KomPAS members.

4.2.4 Tree planting, monitoring and tree census and site maintenance at Forest Compartment 103, GAFR

A total of 3,828 trees representing six native species were planted at FC 103 between 2024 and 2025, of which 2,777 trees survived by the fourth quarter of 2025, resulting in an overall survival rate of 73%. Based on the data presented in **Table 8** and the survival count illustrated in **Figure 16**, survival rates varied notably among species, reflecting differences in ecological tolerance, site suitability, and establishment resilience. The planting activities were implemented in phases as follows:

a) **Phase 1 (2024–early 2025):** A total of 2,814 trees, comprising 1,400 trees planted in 2024 and 1,414 trees planted in the first quarter of 2025.
b) **Phase 2 (2025):** 2,600 trees, of which 1,014 trees were planted between October and December 2025. The remaining tree scheduled to be completed in the early 2026.
c) **Phase 3 (2026):** 1,600 trees are planned for planting in 2026.

The Keruing Neram (*Dipterocarpus oblongifolius*) recorded the highest survival rate at 82%, followed by Merawan Siput Jantan (*Hopea odorata*) at 80%, Tenggek Burung (*Melicope lunu-ankenda*) at 78% and Pulai (*Alstonia scholaris*) at 74%, indicating strong adaptability to site conditions and effective post-planting management. In contrast, Bintangor Paya (*Calophyllum ferrugineum*) showed moderate survival (55%) while Kasai (*Pometia pinnata*) recorded the lowest survival rate (46%) that suggesting higher sensitivity to site hydrology, soil conditions, or environmental stressors. Certain planting areas were affected by flooding and wildlife activity, which caused localised damage and reduced growth performance.

To support high survival and healthy tree establishment, regular maintenance and site clearing activities were conducted in collaboration with the KomPAS field team. These activities included the removal of competing weeds and undergrowth, clearing accumulated debris, and selective site cleaning to improve light availability, reduce nutrient competition, and enhance overall site conditions. Consistent maintenance ensured a conducive environment for root development, moisture retention, and seedling stability, thereby increasing survival rates and strengthening the effectiveness of the forest rehabilitation efforts.

Table 8. Tree survival for tree planting activity at FC 103.

No.	Tree Species	Total Trees Planted	Total Trees Survived	Survival Rate (%)
1	Merawan Siput Jantan (*Hopea odorata*)	1,410	1,133	80%
2	Keruing Neram (*Dipterocarpus oblongifolius*)	966	788	82%
3	Kasai (*Pometia pinnata*)	648	296	46%
4	Pulai (*Alstonia scholaris*)	250	185	74%
5	Tenggek Burung (*Melicope lunu-ankenda*)	300	235	78%
6	Bintangor Paya (*Calophyllum ferrugineum*)	254	140	55%
Total		**3,828**	**2,777**	**73%**

These results highlight the importance of species–site matching, targeted maintenance, and that selective replanting is needed to improve overall establishment success. The findings provide valuable guidance for refining future tree maintenance strategies, prioritising more resilient species while adjusting management approaches for species with lower survival performance. These positive outcomes demonstrate the effectiveness of planting and early maintenance efforts, despite challenges posed by unpredictable weather and environmental variability. Continued monitoring and site maintenance are essential to sustain and potentially improve survival rates. The extended report on the activities at the rehabilitation site can be referred in **Attachment 3**.

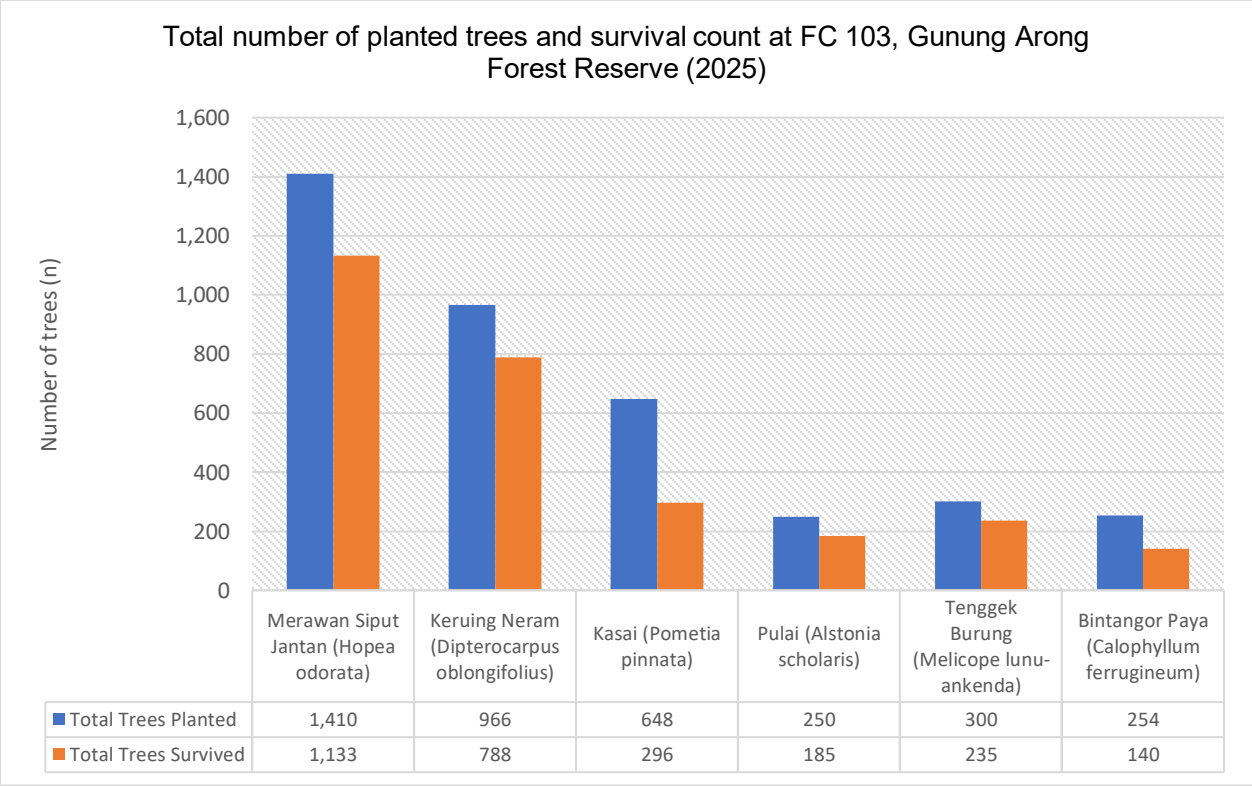

Figure 16: Graph shows the total number of planted trees and survival count at FC 103, GAFR for year 2025.

Figure 17. Tree monitoring conducted at FC103 GAFR.

Figure 18. Several tree sustained damage as a result of trampling by wildlife.

Figure 19. Phase 2 planting activity conducted by the KomPAS field team.

4.2.5 **KomPAS nursery maintenance and inspection**

As part of the ongoing peatland restoration efforts in Gunung Arong Forest Reserve (GAFR), the Komuniti Pelindung Alam Sekitar (KomPAS) has successfully managed a community-based nursery, which currently accommodates 3,000 tree saplings. Regular inspections of the KomPAS community nursery were conducted throughout the year to ensure seedling health, quality, and overall nursery functioning. Periodic monitoring focused on maintaining optimal growing conditions and early identification of potential issues affecting sapling development. Following the August 2025 strong wind event, additional inspections were carried out to assess potential impacts on seedlings and nursery structures. While tree health remained largely unaffected, targeted checks and maintenance of nursery infrastructure were undertaken to ensure structural stability and continued safe operation. These consistent monitoring and follow-up actions strengthened nursery resilience and supported the sustained supply of healthy planting stock for rehabilitation activities.

Figure 20. Tree monitoring and nursery maintenance done to ensure the trees survival.

Figure 21:Tree monitoring and nursery maintenance done to ensure the trees survival.

4.3 Communication, Education and Public Awareness (CEPA)

Throughout 2025, from January and December, the project also strengthened conservation awareness and knowledge exchange through targeted CEPA initiatives. Scientific contributions included scientific paper development and presentation for the 2025 Forest Biodiversity Scientific Expedition Seminar-Convention, supporting evidence-based forest management. Active participation in Focus Group Discussions (FGDs) for the Johor State Forest Management Plan 2026–2035 ensured that field-based experiences informed long-term planning. Public outreach was further enhanced through involvement in the Johor State–level International Day of Forests celebration, increasing awareness of coastal forest and peatland conservation among stakeholders and the wider public.

4.3.1 Monitoring Visit and Tree planting programme with KomPAS community and stakeholder

A tree planting activity and monitoring visit was successfully conducted on 14th October 2025 at FC 103, GAFR involving 33 participants from THP, PHDJT, GEC and the KomPAS local community. The programme commenced with a briefing on project progress, highlighting hydrological management, ongoing rehabilitation efforts, and the active role of KomPAS in field implementation, followed by a hands-on demonstration of proper planting techniques. During the

activity, 250 trees comprising Merawan Siput Jantan (*Hopea odorata*) and Keruing Neram (*Dipterocarpus oblongifolius*) were planted. The session concluded with a monitoring visit to previously planted plots together with THP representatives and the District Forestry Officer, reinforcing multi-stakeholder collaboration, practical learning, and shared commitment to long-term forest restoration and management in GAFR.

Figure 22. Tree planting activity conducted at FC 103, with THP delegations and DFO of Johor East Forestry Office.

4.3.2 **ESG Programme for Human Capability Development Programme (HCDP)**

On 11th October 2025, GEC was invited to facilitate an interactive knowledge-sharing programme that enhanced participants' understanding of the ecological importance of coastal forests which is mangrove ecosystems, while also extending the discussion to highlight ongoing conservation efforts in the GAFR particularly in relation to peatland hydrological management, fire prevention, and ecosystem restoration. This approach allowed GEC to disseminate broader landscape-level conservation work beyond mangrove forests alone, fostering a more holistic appreciation of interconnected coastal and peatland ecosystems. Participant engagement was further strengthened through an interactive quiz, which received positive feedback and active participation. Overall, the programme successfully integrated conservation action, environmental education, and green-economy promotion, strengthening partnerships and supporting long-term sustainable forest management efforts in collaboration with JSFD.

Figure 23. The programme conducted with the participants from Malaysia Rail Transit System (MRTS) and representatives from Johor Department of Environment (DOE) and PHDJT.

4.3.3 Johor State Level International Day of Forests 2025 celebration

The International Day of Forests, established by the United Nations General Assembly in 2012 and celebrated annually on 21st March, provides a global platform to promote sustainable forest management and highlight the critical role forests play in supporting biodiversity, climate regulation, and ecosystem resilience. The Johor State–level celebration in 2025 brought together approximately 300 participants from government agencies, NGOs, educational institutions, and schools, and was officiated by Yang Berhormat Tuan Ling Tian Soon, Chairman of the Johor State Health and Environment Committee. GEC participated as a key speaker and exhibitor, delivering a presentation titled The Importance of Mangroves in Malaysia: Current Status in Parit Kassim, Muar, Johor, alongside exhibitions focusing on wetland conservation, including mangrove and peat swamp ecosystems. Through the exhibition platform, GEC also showcased ongoing conservation efforts in the GAFR enabling visitors to gain a broader understanding of integrated landscape-level conservation approaches that extend beyond mangroves to include peatland restoration and fire prevention initiatives.

Figure 24. The exhibition conducted and talk session delivered during the Johor-state level International Forests Day celebration 2025 at Laman Bakau Parit Kassim, Muar, Johor.

5.0 Challenges and problems encountered during the project implementation period (January – December 2025)

i. Weather factors and implications for GAFR

During the first quarter of 2025, prolonged hot and dry conditions contributed to peatland fire incidents in FC 83 and FC 84 within GAFR. Although weather conditions had begun to stabilise towards the end of 2024, the fire outbreak in early March 2025 demonstrated that the peatland ecosystem remained highly sensitive to ignition. In addition to climatic drivers, other potential contributing factors including human disturbance, forest intrusions, and hunting activities may have increased fire vulnerability in the surrounding peatland areas.

Subsequently, the Southwest Monsoon (SWM) season posed further operational challenges for the KomPAS community, particularly in conducting groundwater monitoring using piezometers across GAFR and adjacent areas, as well as in implementing tree planting activities in FC 103. Heavy rainfall and strong water flows of current disrupted access to monitoring and planting sites, damaged access routes, and caused trees to block main roads. These conditions delayed field activities and required adaptive scheduling to ensure personnel safety while maintaining project continuity. To address these challenges, road maintenance along the main access route was required to ensure safe and reliable access to planting sites. This includes the installation of culverts to manage surface water flow and the rehabilitation of damaged road sections, such as filling potholes and stabilising eroded areas, to prevent further deterioration and reduce accident risks.

Figure 25. Challenge faced by the patroller group of KomPAS in to recording water table piezometer data during SWM season.

Figure 26. Fallen trees and road damage at the main access route to the planting site, FC 103 due to strong winds and strong water currents during SWM at GAFR

ii. **Community sense of ownership to the conservation effort**

In October 2025, KomPAS formally elected its committee members following the successful registration of the Community-Based Organisation (CBO) with the Registrar of Societies (ROS) Malaysia. The newly elected committee is mandated to lead the organisation, uphold its vision and mission, and guide the development of community-led conservation initiatives.

Despite this important institutional milestone, the level of community ownership over conservation activities remains limited, with members still relying heavily on external facilitation for planning, decision-making, and implementation. To strengthen ownership and ensure long-term sustainability, plans are in place to progressively empower KomPAS is planned to be progressively empowered through greater involvement in activity planning, execution, and reporting, complemented by targeted leadership and organisational capacity-building programmes.

Introducing clear roles and performance responsibilities, mentoring committee members, and gradually transitioning operational responsibilities from project partners to the community are expected to foster greater accountability, build confidence, and strengthen the community's sense of ownership over conservation outcomes.

6.0 Project implementation planning and workplan for 2026

The work plan for 2026 has been developed to strengthen the conservation of coastal forest and peatland ecosystems in the GAFR and its surrounding areas in Mersing, Johor. The implementation approach emphasises integrated, science-based ecosystem management supported by the active participation of the local community, KomPAS, with strategic support from THP. The work plan has been presented to the JSFD and has received formal approval for implementation. Through this plan, JSFD, together with the GEC and THP reaffirms its continued commitment to strengthening forest conservation and promoting sustainable development efforts at the state level.

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	**SECURING SUPPORT AND COMMITMENT FROM THE COMMUNITY TO PARTICIPATE IN THE COASTAL FOREST AND PEATLAND CONSERVATION PROJECT IN THE GUNUNG ARONG FOREST RESERVE, MERSING, JOHOR**												
1.1	**Strengthening Community Engagement around the Gunung Arong Forest Reserve in the Implementation of Conservation Projects**												
	a. Strengthen the role of Komuniti Pelindung Alam Sekitar Mersing (KomPAS), which is officially registered under the Registrar of Societies Malaysia (RoS), to ensure organisational sustainability and effectiveness in supporting conservation programmes.												
	b. Expand community participation through Community-Based Organisation (CBO) programmes and strengthen strategic collaboration with the Johor State Forestry Department (JPNJ), TH Plantations Berhad (THP), and relevant agencies to achieve more impactful programme implementation.												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	c. Organise regular meetings with KomPAS for monitoring progress, planning activities, and providing continuous support for community capacity development.												
1.2	**Empowerment and Capacity Enhancement of the Newly Established Community-Based Organisation (CBO)**												
	a) Implement advanced training for KomPAS members covering management, operations, and maintenance of community nurseries, as well as hands-on activities for the restoration of degraded peat swamp forest areas.												
	b) Undertake continuous care and maintenance of the community nursery, including regular monitoring of seedling health and upkeep of nursery infrastructure to ensure optimal growing conditions												
	c) Produce 3,000 high-quality seedlings for the next planting phase in GAFR in 2026, using suitable restoration species such as Tenggek Burung (*Melicope lunu-ankenda*), Pulai (*Alstonia scholaris*), and other pioneer species. Intensive nursery management will be maintained to ensure seedlings meet optimal quality standards for successful field establishment												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	**CONSERVATION AND REHABILITATION OF DEGRADED AREAS IN THE GUNUNG ARONG FOREST RESERVE**												
2.1	**Monitoring and Patrols in the Gunung Arong Forest Reserve and Surrounding Areas (Buffer Zone)**												
	a) Conduct regular (weekly) groundwater level monitoring by recording piezometer data in accordance with established SOPs. The data will be used to assess peatland ecosystem conditions and fire risk.												
	b) Update Fire Danger Rating System (FDRS) information on field signboards and disseminate the latest updates through communication groups involving the community and relevant stakeholders												
	c) Carry out continuous surveillance and patrols for fire control and prevention with GAFR and surrounding areas to enable early detection and prompt response												
	Implement systematic wildlife monitoring using two approaches: • Installation and maintenance of camera traps at strategic locations; and • Documentation of wildlife mortality cases resulting from road accidents in adjacent areas.												
2.2	**Tree Planting Programme: Phase Three (2026) and Maintenance of Phase One (2024) and Phase Two (2025)**												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	a) Implement a tree planting programme of 1,600 trees for Phase Three (2026) with community participation to rehabilitate degraded areas in Compartment 83 and Compartment 84, covering 3 hectares. This activity contributes to a cumulative target of 7,000 trees planted in GAFR since 2024. Phase status note: • Phase 1 (2024): 2,814 trees planted • Phase 2 (2025): 2,600 trees planted / in progress • Phase 3 (2026): 1,600 additional trees planned to complete the 7,000-tree target												
	b) Undertake comprehensive maintenance works at Phase 1 (2024) and Phase 2 (2025) planting sites, including weed control, scheduled fertilisation, watering as required, repair of planting stakes and markers, and replacement planting for non-surviving trees.												
	c) Conduct regular monitoring to assess growth performance and survival rates of planted trees, and to identify issues requiring immediate corrective action. Any technical challenges - such as pest or disease outbreaks, drought stress, flooding, or wildlife damage will be addressed promptly.												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2.3	**Hydrology management**												
	a) Conduct a comprehensive assessment to identify drainage canals requiring maintenance as part of peatland fire containment and mitigation efforts.												
	b) Carry out regular maintenance and monitoring of canal blocks located in FC 86, FC 84, and FC 83, as well as canal blocks at Parit Sembilan, Kampung Air Papan, in collaboration with the Department of Irrigation and Drainage (DID). These efforts aim to strengthen hydrological management systems to maintain groundwater levels, reduce fire risk, and support peatland ecosystem conservation												
	c) Undertake continuous monitoring of all existing hydrological structures, including clearing of water flow paths, minor repairs, and functionality inspections, to ensure the effectiveness of canal blocks and overall hydrological performance throughout the year, particularly during dry seasons or extreme weather conditions.												
2.4	Regularly update the peatland area map within the Gunung Arong Forest Reserve (GAFR)												
2.5	Update and disseminate fire risk forecasts for areas surrounding GAFR through designated communication channels (WhatsApp). Monitoring includes current weather data, the Fire Danger Rating System (FDRS), peat soil moisture levels, and site conditions to enable timely preventive action when fire risk increases.												
3	**COMMUNICATION, EDUCATION AND PUBLIC AWARENESS**												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.1	Organise and implement one (1) awareness, training, and simulation programme on peatland fire prevention and control, through strategic collaboration with local communities and relevant agencies, including the Mersing District Office, East Johor District Forestry Office, Fire and Rescue Department of Malaysia (JBPM), and other related stakeholders. The programme will include both theoretical and practical training, covering the use of basic fire-fighting equipment and activation of emergency fire response plans.												
3.2	Implement two (2) public education and awareness programmes on the importance of sustainable peatland management, involving local communities, government agencies, and schools. The programmes will focus on peatland ecology, hydrological importance, fire risks, and best management practices (BMPs) to support conservation efforts and disaster risk reduction.												
3.3	Coordinate tree planting activities as part of peatland ecosystem restoration efforts, involving volunteers such as TH Plantations Berhad staff, local communities, school students, and relevant stakeholders. These activities will also provide participants with exposure to the importance of habitat restoration, proper planting techniques, and shared responsibility in environmental conservation.												
4.	**PROVISION OF ADDITIONAL TECHNICAL SERVICES AS REQUIRED, IN ALIGNMENT WITH JPNJ MANAGEMENT**												

No.	ACTIVITIES (2026)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	a) Contribute to the planning and implementation of the Gunung Arong Challenge 2026 through technical, logistical, and coordination support with relevant stakeholders, to ensure smooth event delivery and achievement of objectives related to nature-based recreation promotion and forest conservation awareness.												
	b) Provide support for the development and management of the Teluk Arong Eco-Forest Park (Taman Eko-Rimba, TER) within GAFR and selected surrounding areas, including conservation and sustainability-based planning, recommendations on best practices to minimise environmental impacts, development of carbon and climate change, related initiatives aligned with low-carbon forest management strategies, and technical support to ensure compliance with biodiversity conservation requirements and JPNJ guidelines												

Note: *The proposed work plan is subject to periodic adjustments based on local coordination requirements, the level of stakeholder support and participation, prevailing weather and environmental conditions, and other relevant factors. These considerations are essential to ensure flexible and adaptive implementation within a dynamic operating environment, while maintaining focus on achieving the core objectives of the programme.*

7.0 Pictorial report of the activities implemented from January to December 2025

Figure 27. Regular monitoring and inspections conducted on the camera traps installed in GAFR.

Figure 28. KomPAS patrollers team monitoring and patrolling routines around GAFR and its adjacent area.

Figure 29. A series of meeting and discussion with Johor State Forestry Department (JSFD).

Figure 30. A series of meeting and discussion with Johor Timur Forestry Office (PHDJT)

Figure 31. A series of meetings and discussion with Mersing District Officer.

Figure 32. A series of meeting and discussion with Mersing Department of Irrigation and Drainage (DID).

Figure 33. A series of meetings and discussion with Komuniti Pelindung Alam Sekitar Mersing (KomPAS)

Figure 34. KomPAS nursery maintenance and monitoring.

Figure 35. Tree planting and maintenance at FC 103, GAFR.

Figure 36. Tree census and monitoring at FC 103, GAFR.

Figure 37. ESG for HCDP: Thriving Sustainable Human Capital Programme by MRTS together with PHDJT and DOE of Johor.

Figure 38. Tree planting activities with TH Plantations Berhad delegates

Figure 39. Johor State-level International Forest Day 2025 at Laman Bakau Parit Kassim, Muar.

8.0 Summary of Key Achievements and Outcomes in 2021-2025

Since 2021, the GEC in collaboration with TH Plantations Berhad (THP) and with full support from the Johor State Forestry Department (JSFD), has been implementing a rehabilitation and conservation project in the GAFR, Johor. Funded by THP and scheduled for completion in June 2029, the project focuses on restoring degraded coastal forests and approximately 1,500 hectares of peat swamp forest within the 4,300-hectare northeastern portion of GAFR. The following is a summary of the key achievement and outcome under the conservation project in GAFR:

No.	Component	Achievement	Details / Outcome
1.	**Community Organization Strengthening**	Formal establishment of KomPAS	Komuniti Pelindung Alam Sekitar Mersing (KomPAS) successfully registered with the Registrar of Societies (RoS) in July 2025 (Reg. No: PPM-008-01-25072025), ensuring organizational recognition and continuity. KomPAS comprises 15 registered members representing six villages: Kampung Sawah Dato', Kampung Air Papan Tengah, Kampung Tenglu Laut, Kampung Tenglu Batu 7, Kampung Triang, and Kampung Semaloi.
2.	**Capacity Building and Engagement**	Strengthened local leadership and ownership	Structured engagement sessions and meetings since 2021 have enhanced organisational leadership, technical knowledge, and practical understanding of coastal and peatland forest conservation among community members, as well as with JSFD and the East Johor District Forestry Office (PHDJT). These activities have also strengthened the collaborative relationship with JSFD through the formal Memorandum of Understanding (MOU) between GEC and JSFD, effective from 2023 to December 2028, supported by regular updates and ongoing engagements to ensure alignment and continuity in conservation efforts.
3.	**Community nursery establishment**	Sustainable planting material supply	The community nursery established at Kampung Triang in January 2024 is a key component of the long-term rehabilitation and biodiversity objectives of the GAFR, supporting restoration efforts from 2021 to 2029. Developed on land provided by KomPAS members and strategically selected for accessibility and water availability, the nursery strengthens community ownership and participation in forest rehabilitation.

			The nursery has the capacity to accommodate up to 3,000 trees and is actively managed by the community. As of 2025, the nursery maintains approximately 2,500 saplings of key native species, including Merawan Siput Jantan, Bintangor Paya, and Keruing Neram, with 1,600 saplings allocated for the current planting phase. The tree species being raised in the nursery include Pulai (*Alstonia scholaris*), Tembusu (*Cyrtophyllum fragans*), Kasai (*Pometia pinnata*), Bintangor Paya (*Calophyllum spp*), Tenggek Burung (*Melicope lunu-ankenda*), Keruing Neram (*Dipterocarpus oblongifolius*), and Merawan Siput Jantan (*Hopea odorata*).
4.	**Reforestation / Tree Planting**	Planting target exceeded	3,828 trees planted in 2025 exceeding the annual target and contributing towards the overall project target of 7,000 trees.
5.	**Hydrological Management**	Improved peatland water regulation	Construction and maintenance of 10 canal blocks to enhance water retention, reduce fire risk, and support peatland restoration. Total Target:15 Numbers of canal block constructed in 2025: 2 canal blocks (check dams) To date:10 units operating and maintenance in progress
6.	**Monitoring Infrastructure**	Groundwater monitoring strengthened	**i. Water table monitoring (11 units of piezometer)** The selected patroller team from KOMPAS community conducted the peat water table monitoring by recording the underground water level through the installed piezometers at the adjacent and within the GAFR areas, that focusing on FC 84, 83, 103 and the oil palm plantation throughout the year. **ii. Forest fire patrolling and monitoring** Fire monitoring and forest patrolling actively conducted throughout the year by the patroller group. The patrollers shared on-site reports with photos through a WhatsApp group to inform relevant agencies and stakeholders about current site conditions.

7.	**Forest Protection and Safety**	Enhanced site management and awareness	Installation of 39 signages throughout the reserve, including fire risk warnings, access restrictions, and planting site markers. **Installation of the Enactment, FDRS, and Fire Risk Marker Signages** **Signage Installed in GAFR (Total: 39 units)** • Fire Danger Rating System (FDRS): 5 units • Enactment Signages: 9 units • Fire Risk Warning Signages: 4 units • "No Entry" Signages: 20 units • Planting Site Marker (Papan Tanda Tapak Penanaman Pokok): 1 unit
8.	**Community Engagement and Awareness**	Increased public participation	10 CEPA programmes (Community Engagement and Public Awareness) conducted between 2023–2025, promoting environmental stewardship and stakeholder involvement.

Collectively, these efforts demonstrate the project's commitment to restoring and conserving the unique peat swamp and coastal forest ecosystems of GAFR. Through sustained reforestation, hydrological management, fire prevention, and stakeholder engagement, the project is enhancing biodiversity, building resilience against environmental threats, and promoting sustainable forest management practices that serve as a model for coastal and peatland conservation in Malaysia and the region.

9.0 Conclusion

Overall, the conservation of coastal forests and peatlands in the Gunung Arong Forest Reserve (GAFR) has demonstrated steady progress and increasing resilience through a combination of science-based interventions, strong multi-agency collaboration, and growing community involvement. Despite challenges posed by climatic variability, peatland fire incidents, and access constraints, key objectives were achieved through adaptive management, including hydrological restoration, systematic monitoring, rehabilitation through tree planting activities, and proactive fire prevention measures. The strengthening of KomPAS as a registered Community-Based Organisation (CBO), alongside continuous capacity-building and hands-on involvement in monitoring, nursery management, and field implementation, has laid a solid foundation for long-term community stewardship. Hydrological management efforts, particularly canal blocks construction and maintenance, have shown positive impacts on groundwater stability, contributing to reduced fire risk and improved peatland conditions.

Collectively, these efforts reflect a holistic and integrated conservation approach that balances ecological restoration, risk reduction, governance strengthening, and public awareness. The experience gained during this period provides valuable lessons for refining future interventions

and reinforces the importance of sustained partnerships, adaptive planning, and community ownership to ensure the long-term sustainability and effectiveness of conservation outcomes in GAFR.

10.0 Acknowledgement

Special appreciation is extended to the Johor State Forestry Department (JSFD), the Mersing District Office, the East Johor District Forestry Office (PHDJT), and the Drainage and Irrigation Department of Mersing (DID) for their invaluable guidance and support. We are also deeply grateful to our funder, TH Plantations Berhad, as well as to the project community members from Kampung Tenglu Batu 6, Kampung Tenglu Laut, Kampung Penyabong, Kampung Air Papan, Kampung Triang, and Kampung Semaloi, Mersing, for their active participation and commitment. Our sincere thanks are further extended to all other stakeholders and agencies who have continuously supported the successful implementation of this project. We look forward to continued collaboration and support as we move into the third phase of the project in 2026.

List of attachments:

1. **Attachment 1:** List of meetings with JSFD and community groups and other stakeholders.
2. **Attachment 2:** Wildlife and roadkill monitoring at Gunung Arong Forest Reserve
3. **Attachment 3:** Planted tree monitoring, tree census and site maintenance at FC 103, GAFR