**Conservation of Southeast Portion of North Selangor Peat Swamp Forest (Phase 2): Bukit Belata (Ext) Forest Reserve (BBEFR) and Raja Musa Forest Reserve (RMFR)**

**A Summary of the Semi-Annual Progress Report from December 2024 to July 2025**

## 1. Introduction

The Global Environment Centre (GEC) successfully executed the Phase 1 Recovery Project of Bukit Belata (Extension) Forest Reserve (BBEFR) (3,140 ha) in collaboration with Prosper Capital Holdings Sdn Bhd, Selangor State Forestry Department (SSFD), and Komuniti Warisan Hutan Sungai Tengi Selatan (KWHSTS) from March 2020 to September 2023.

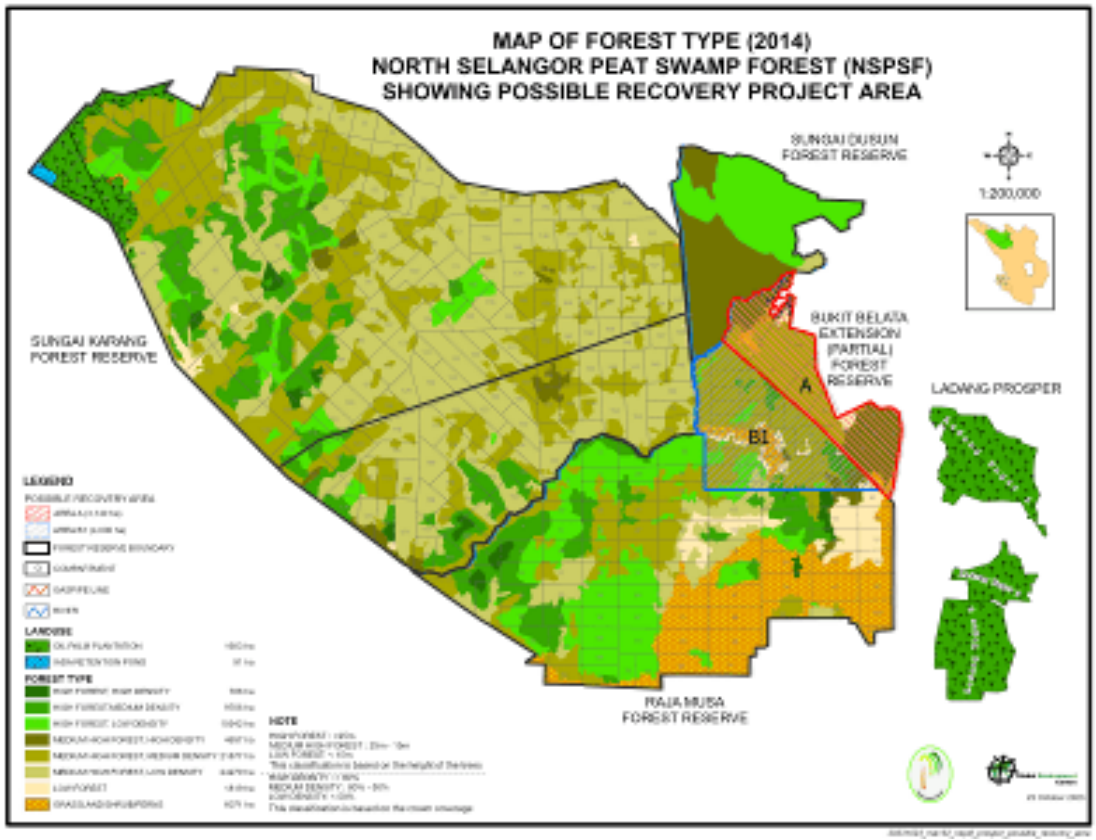


**Figure 1.** Phase 1 Project Site (A) and Phase 2 project site (B1+A) in relation to the location of the three nearby plantations (Ladang Tagar) partly owned by Prosper.

During the Phase 1 project implementation, a range of conservation and restoration measures have been put into action, including development of a rehabilitation plan and strategies for degraded peatland areas in BBEFR, initiation of restoration process in degraded portions of Forest Compartment (FC) FC1, FC2, FC3, FC,4, FC 5, FC 24, FC 25, FC 37, and FC 38, rewetting and rehabilitation of more than 244 ha of degraded peatlands in BBEFR, prevention of fires, and establishment of an informal community-based organization called KWHSTS. However, it is crucial to maintain continuous monitoring and follow-up in order to achieve optimal results in terms of conservation and rehabilitation.

In consideration of this, the Phase 2 project was initiated from October 2023 to December 2026 (3 years) to continue and expand the Recovery Project by adding 4,000 ha of the adjacent Raja Musa Forest Reserve (RMFR), resulting in a cumulative recovery project area of 7,140 hectares for both phases (see **Figure 1**). The Phase 2 project will continue the implementation of the previous conservation efforts and strengthen the involvement of stakeholders and the local community in the management of priceless North Selangor Peat Swamp Forest (BBEFR and RMFR). This brief report describes the progress of the activities conducted from **December 2024 to July 2025** according to the project implementation plan.

## 2. Progress of the activities according to the project implementation plan from December 2024 to July 2025

The following table outlines the progress of the activities from December 2024 to July 2025 according to the project implementation plan:

| Code | Activity | Progress and accomplishment of the activities |
|---|---|---|
| **Objective 1: To maintain and expand conservation measures for peat swamp and lowland forest at BBEFR and RMFR** | | |
| Act 1.1 & Act 1.2 | Undertake appropriate assessments in the expansion area in RMFR to identify issues related to peat, fire incidents, water management, biodiversity, etc. (Act 1.1)<br><br>Undertake forest cover, status and wildlife monitoring in BBEFR and RMFR and adjacent buffer zone to assess conservation value (Act 1.2) | ▪ Three ecological assessments in SDFR/SDWR revealed peat depths ranging from 0.6 m to 5.15 m, highly acidic water (pH 3.98–5.35), and low dissolved oxygen levels (0.38–1.24 mg/L), indicating classic peat swamp conditions. A total of 15 fish species and approximately 20 plant species were recorded, including endangered and peat-indicator species such as *Betta livida* and *Rubroshorea uliginosa*, highlighting the area's high conservation value. Drone imagery, literature surveys and field assessments validated and confirmed over 1,800 ha of peatland, helped delineate hydrological zones and disturbance-prone areas, and supported ground-truthing efforts for targeted restoration. **(Figure 1)** |
| Act 1.3 & Act 1.4 | Maintain existing canal blocks in BBEFR and install new canal blocks (including piezometers) at high-risk areas in BBEFR and RMFR including enhancement of access in RMFR (Act 1.3)<br><br>Revegetation - tree planting using pioneer and high-quality species at the degraded areas (Act 1.4) | ▪ Targeted peatland restoration activities were planned for Forest Compartment (FC) 23/44 and FC 52 in RMFR and FC 3 in BBEFR. These included tree planting across 8 hectares, construction of 9 new canal blocks, and maintenance of four existing units to improve water retention and reduce fire risks. The full proposal was approved by SSFD in January 2025, followed by coordination meetings and site briefings with the district forestry offices and community contractors. Field implementation is scheduled between August and October 2025, focusing on rewetting, revegetation, peat subsidence monitoring poles and piezometer installations and monitoring interventions. **(Figure 2)** |
| Act 1.4 & Act 1.7 | Revegetation – tree planting using pioneer and high-quality species at the degraded areas (Act 1.4)<br><br>Develop livelihood activities that can generate side income for KWHSTS members (Act 1.7) | ▪ The KWHSTS nursery plays a central role in supplying trees for peatland restoration in BBEFR and RMFR, with over 1,848 trees and vegetables planted and nearly 789 seedlings in stock. Between March and April 2025, 100 enrichment trees were planted in FC 25, while collaboration with corporate partners supported an additional 125 trees planted in Felda areas. The community also established a greenhouse growing 60 eggplant and 45 chilli plants, combining reforestation with sustainable agriculture. Recognised in the IMP-NSPSF 2025–2034, this integrated, community-led approach supports biodiversity, food security, and long-term forest rehabilitation. **(Figure 3)** |
| Act 1.4 | Revegetation – tree planting using pioneer and high-quality | ▪ The tree planting and maintenance efforts at FC 25, BBEFR have shown encouraging progress, with planted trees forming vegetative corridors, flowering, and supporting understorey |

| Code | Activity | Progress and accomplishment of the activities |
|---|---|---|
| | species at the degraded areas (Act 1.4) | regeneration. Maintenance activities, particularly weeding and enrichment planting of 600 seedlings with majority being *Syzygium myrtifolium*, have enhanced forest structure, biodiversity, and resilience, despite challenges from dry weather and aggressive weed growth such as *Imperata cylindrica*. These restoration activities align with national goals such as the 12th Malaysia Plan, the National 100 Million Tree-Planting Campaign, and the Central Forest Spine Master Plan, while also contributing to global frameworks including the SDGs and UN Global Forest Goals through climate action and biodiversity conservation. **(Figure 4)** |
| Act 1.6 | Undertake regular patrolling, fire prevention and water table monitoring in the project area (Act 1.6) | ▪ During the reporting period, two trained KWHSTS patrollers conducted regular surveillance and water table monitoring across key compartments in BBEFR, with no fire or encroachment incidents recorded. Water table readings from six piezometers between December 2024 and July 2025 showed higher levels during the northeast monsoon (up to +16.5 cm) but declined sharply during the southwest monsoon (as low as −44.65 cm), especially in compartments near oil palm plantations. The data confirm the effectiveness of canal blocks and canopy cover in supporting peatland hydrology, while drier zones such as FC 7 remain vulnerable. To strengthen fire prevention and ecological resilience, it is recommended to maintain frequent patrols, continue twice-weekly groundwater monitoring, scale up rewetting interventions, and enhance fire preparedness in high-risk areas. **(Figure 5)** |
| **Objective 2: To enhance engagement of smallholders and adjacent landowners to help them improve their productivity and protect the Recovery Project site.** | | |
| Act 2.5 & Act 3.2 | Conduct stakeholder workshop (FGDs) on peatland management with SSFD, CFS, CBOs and other relevant stakeholders (Act 2.5)<br><br>Contribute to the development and implementation of IMP for NSPSF 2024-2033 (Act 3.2) | ▪ The IMP-NSPSF 2025–2034 was finalised through a series of structured stakeholder consultations, technical workshops, and review meetings involving over 70 participants representing more than 40 agencies. Key focus areas included hydrology, fire management, and the proposed Sustainable Peatland Transition Management Zone (SPTMZ). The final plan, submitted in May 2025, provides a coordinated 10-year strategy for peat swamp forest conservation. The plan incorporates information from Phase 1 and Phase 2 Prosper recovery Projects. It directly supports Prosper's restoration efforts in RMFR and BBEFR by enhancing zoning, fire prevention, water management, inter-agency coordination, and community engagement. **(Figure 6)** |

| Code | Activity | Progress and accomplishment of the activities |
|---|---|---|
| **Objective 3: To enhance stakeholder engagement and integration of the Recovery Project with the broader landscape including North Selangor Peat Swamp Forest** | | |
| Act 3.5 | Facilitate Junior Peatland Forest Ranger Programme with the participation of primary schools from Kuala Selangor and Hulu Selangor District - conduct a centralized training camp and a talk for JPFR schools (Act 3.5) | ▪ The PFR Carnival 2025 is an environmental education initiative targeting over 490 primary students in Kuala Selangor to raise awareness about peat swamp forests through interactive school-based activities. Organised by GEC with support from the Selangor Education Department, the programme received official approvals and is being planned through coordination meetings with district officers and school headmasters. Planned across four schools in the Kuala Selangor district from 8 to 15 August 2025, the carnival will engage approximately 490 students. It will support Malaysia's education goals and national biodiversity policies while contributing to SDGs 4, 13, and 15, ultimately fostering early environmental stewardship and cultivating eco-literate youth in the RMFR landscape. **(Figure 7)** |
| Act 3.1 & Act 3.5 | Initiate dialogues with potential stakeholders, partners and experts on the implementation of the project activities, awareness creation activities and events. (Act 3.1) &<br><br>Facilitate Junior Peatland Forest Ranger Programme with the participation of primary schools from Kuala Selangor and Hulu Selangor District – conduct a centralized training camp and a talk for JPFR schools. (Act 3.5) | ▪ As part of the Environmental Education initiative, a study visit to RMFR was conducted on 7–8 January 2025 under Monash University Australia's Global Immersion Guarantee (GIG) programme, involving 86 students and 17 staff. The visit provided hands-on learning in peat swamp forest restoration, covering peat soil assessments, hydrology, fire risk management, and carbon estimation. The programme strengthened global academic collaboration, highlighted Malaysia's leadership in nature-based solutions, and promoted cross-cultural environmental education. It also contributed to sustainable development goals by cultivating eco-literate youth through experiential, place-based learning. **(Figure 8)** |

### 3. Pictorial report of the activities implemented from December 2024 to July 2025

**Figure 1.** Ecological assessments conducted in SDFR/SDWR

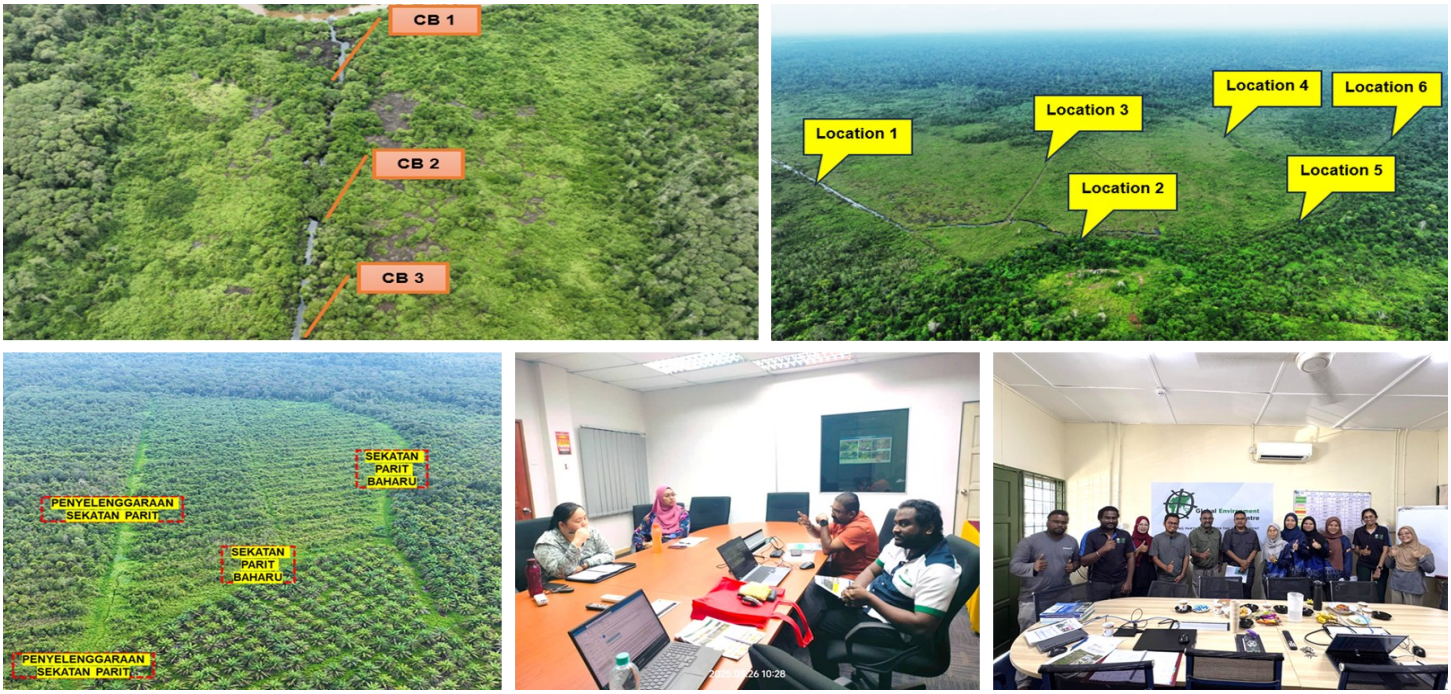


**Figure 2.** The proposed locations for canal block construction and maintenance at FC 23/44 and 52, RMFR and FC 3, BBEFR. Coordination meetings with SSFD to implement the rehabilitation work in RMFR and BBEFR.

**Figure 3.** The planted site at Dataran Alam Felda Sungai Tengi Selatan. Planted trees now exceeding 2 metres in height and beginning to bear fruit.

**Figure 4.** Maintenance activities at the planted site at FC 25, BBEFR

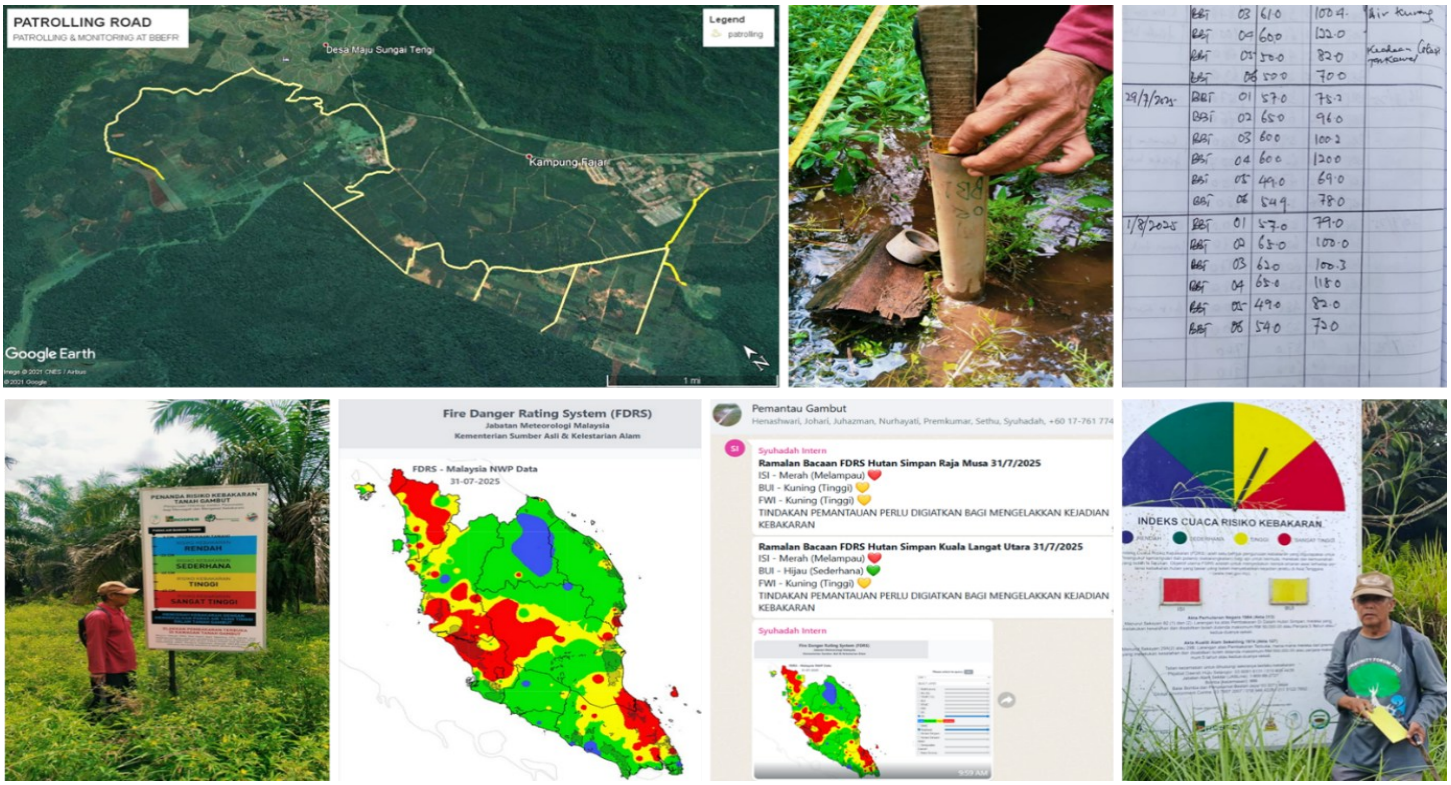


**Figure 5.** The patrolling of forest compartments and water table monitoring at FC 3, FC 7, and FC 25, BBEFR by the KWHSTS patrollers


**Figure 6.** Stakeholder engagement session for the finalisation of the IMP-NSPSF 2025–2034 on 19 February 2025. Submission of IMP-NSPSF 2025-2034 and SPTMZ plan for NSPSF in bilingual to NPMO, SSFD and SMPEM-Selangor.

**Figure 7.** Preparations for the implementation of the Peatland Forest Ranger Carnival 2025

**Figure 8.** Study Visit of Monash University Australia students to Raja Musa Forest Reserve

***Note: A comprehensive progress report detailing the implementation of the aforementioned activities from December 2024 to July 2025 has been prepared and submitted to Prosper. This brief report serves as a summarized version of the full progress report.***