

Conservation of Southeast Portion of North Selangor Peat Swamp Forest Phase 1 - Bukit Belata (Ext) Forest Reserve (BBEFR) Project

A Brief Progress Update from April until November 2022

1. Introduction

The Global Environment Centre (GEC), a Malaysian non-profit organisation with expertise in peatland conservation, and Prosper Capital Holdings Sdn. Bhd. or Prosper (formerly known as Prosper Palm Oil Mill Sdn. Bhd.), a Malaysian oil palm company, signed an Agreement in March 2020 to support the conservation of the Southeast portion of the 81,000ha North Selangor Peat Swamp Forest (NSPSF), which is the largest contiguous peat swamp forest in Peninsular Malaysia. Phase 1 of the project (2020-2023) is focused on Bukit Belata (Ext.) Forest Reserve (BBEFR), which covers 3,140 ha. It has been designed by Prosper as part of its Recovery Plan. The work is undertaken in the framework of the MoU between GEC and the Selangor State Government, which has facilitated joint forest conservation actions in NSPSF since 2010. This brief report describes the progress of the activities conducted from April until November 2022 according to the project implementation plan.

2. Progress of the activities according to the project implementation plan from April until November 2022

The following table outlines the progress of the activities from April until November 2022 according to the project implementation plan:

Code	Activity	Progress and accomplishment of the activities
Activity 2 : Rehabilitation of 200 ha through rewetting and assisted natural regeneration and selected planting in priority portions of the BBEFR		
Act 2.1	Canal blocking and rewetting	<ul style="list-style-type: none"> ▪ The construction of nine (9) units of canal blocks (large size) was completed: seven (7) units at FC 3 and two (2) units at FC 25, BBEFR (Table 1; Figure 1)
Act 2.2	Seedling procurement and nursery establishment	<ul style="list-style-type: none"> ▪ As of November 2022, about 1,385 tree seedlings have been grown in the nursery, which comprised two types of pioneer species such as Tenggek Burung (<i>Melicope lunu-ankenda</i>) and Mahang (<i>Macaranga pruinosa</i>) (Figure 2). ▪ About 150 Tenggek Burung trees grown in the KWHSTS nursery have been used in the replacement planting at FC 25, BBEFR during the maintenance activities.
Act 2.5	Maintenance of planted trees (20 ha)	<ul style="list-style-type: none"> ▪ Two field staff of GEC, who are also members of KWHSTS conducted the maintenance activities at 6 ha of planted sites of FC 25, BBEFR. ▪ As of the time of reporting, thinning and weeding activities have been carried out in four (4) hectares of mineral soil (Figure 3). ▪ Initial site observations indicate good tree growth in terms of increased height, while the new shoots emerging from the primary stems started to bear flowers and fruits indicating insect pollination at the planted sites. ▪ The following scheduled activities such as tree census, replacement planting and fertilizer application will be conducted after the completion of thinning and weeding

		at the planted sites.
Act 2.6	Encouragement of natural regeneration in less degraded areas (180 ha) – 3 years	<ul style="list-style-type: none"> ▪ Approximately 20 ha of the degraded site at FC 3, BBEFR underwent a natural regeneration process with canal blocking and regular forest patrolling and fire prevention initiatives (Figure 4). ▪ The regeneration of this area is also anticipated to prepare seeds and dispersal agents to promote the recovery and regeneration of the adjacent degraded forest areas. ▪ This progress only reports the progress that has taken place in FC 3, BBEFR and subsequent reports of other places that have been naturally restored with a hydrological management and fire prevention approaches will be reported
Activity 3 : Enhance the understanding of community and stakeholders on peat hydrology, sustainable management on peatland and fire prevention with local communities and landowners		
Act 3.2 & Act 3.4	<p>Act 3.2 - Organization of meetings with stakeholders, local communities and landowners to discuss on sustainable use of peatland, fire risk and prevention measures &</p> <p>Act 3.4 - Training of local community on peatland water management appropriate to best management practices for agriculture including crop selection</p>	<ul style="list-style-type: none"> ▪ A 3-day and 2-night training comprised of community-based wetlands management forum and peer learning visit to SHBPTS, Johor were conducted at Bayu Balau Beach Resort and Pulau Tanjung Surat from 2nd August until 4th August 2022. ▪ A total of 70 communities from seven (7) community-based organizations (CBOs) participated – among whom seven (7) members (3 males and 4 females) are of KWHSTS. ▪ A SWOT analysis for KWHSTS was performed by the own members, the findings were presented to the other CBOs and existing opportunities and corrective measures for the identified weaknesses were discussed in groups. ▪ Conducted a peer learning visit to a role model community called Sahabat Hutan Bakau Pulau Tanjung Surat (SHBPTS), Johor where KWHSTS members gained some insights regarding the organizational structure and management of a well-established CBO role model, its potential activities and sustainable livelihood programmes. ▪ KWHSTS members participated in mangrove tree planting activities with SHBPTS members. ▪ On 12th October 2022, the members of KWHSTS shared their knowledge and experience regarding the rehabilitation of BBEFR along with GEC, SSFD and Prosper to the delegates from Mekong Peatlands Project (Figure 5).
Act 3.2 & Act 3.3 & Act 3.4	<p>Act 3.2 - Organization of meetings with stakeholders, local communities and landowners to discuss on sustainable use of peatland, fire risk and prevention measures &</p> <p>Act 3.3 - Promoting the Malaysia Good Agriculture Practices (myGAP),</p>	<ul style="list-style-type: none"> ▪ Department of Agriculture (DOA) invited GEC (Mr. Nagarajan) to its workshop conducted on 19-20th October 2022 to share technical knowledge on fire prevention strategies and hydrology management for agricultural activities on existing peatlands (Figure 6). ▪ Approximately sixty (60) staff of the Soil Resource Management Division, Department of Agriculture,

	<p>Malaysian Sustainable Palm Oil (MSPO) and Roundtable on Sustainable Palm Oil (RSPO) Manual &</p> <p>Act 3.4 - Training of local community on peatland water management appropriate to best management practices for agriculture including crop selection</p>	<p>Malaysia participated in the workshop.</p> <ul style="list-style-type: none"> ▪ With a strong reminder that no new peatlands should be opened for new cultivation, Mr. Nagarajan highlighted that the existing agricultural activities on the peatlands need to incorporate best management practices and good agricultural practices (myGAP) to minimize the impact on the environment and society. ▪ During the workshop, Mr. Nagarajan emphasized water management, fire management and action plans, post-harvesting waste management, monitoring of soil and water quality as well as the incorporation of advanced technology in soil restoration as viable solutions in sustainable management of agriculture on peatlands. ▪ GEC emphasized DOA officers should not to support any application for the opening of peat swamp forest areas for agriculture development purposes that are coordinated under the food security agenda. ▪ In addition to that, the implementation of peat swamp forest rehabilitation activities at RMFR & BBEFR has also been presented as a case study to provide a better and clearer understanding of fire prevention approaches, hydrological management as well as monitoring and patrolling work carried out with the involvement of the local community to the DOA staff
Act 3.5	<p>Establishment/guidance of local fire prevention and monitoring team to monitor and communicate with relevant authorities</p>	<ul style="list-style-type: none"> ▪ Two patrollers of KWHSTS from Felda Sg. Tenggi Selatan actively undertook community-based patrolling and monitoring activities at fire-prone peatland areas from April until November 2022 in BBEFR (Figure 7). ▪ The patrollers updated the Fire Danger Risk Warning Signboards according to the Fire Danger Rating System (FDRS) on daily basis. ▪ The appointed patrollers performed water table monitoring activities at the forest and adjacent oil palm plantations twice per week, 16 times a month. ▪ No encroachment, illegal activities or fire incidents were recorded during the patrolling period.

3. Problems encountered during the implementation period (April – November 2022)

3.1 Irregular and often unpredictable weather patterns - hot and dry period from July until September 2022 leads to stunted growth of planted trees

The weather pattern of the year 2022 is quite irregular and often unpredictable with sudden episodes of rainfall and extended hot days. Even though this is associated with La Nina, such irregular weather patterns expedite the growth of weeds and slow down the adaptation of the planted trees. This sometimes leads to the death of planted trees which needs to be replaced during the present maintenance activity. The extended hot weather during the dry season has also caused the saplings in their nursery to have stunted growth whereas some died due to surrounding heat. The KWHSTS has taken the initiative to place a canvas to ensure shade and soil moisture in order to increase the survival rate of saplings in the nursery.

3.2 The quick spread and dominance of Lalang grass in the planted site at FC 25, BBEFR

Since FC 25, BBEFR is a peatland fire-affected area, Lalang grass grows very rapidly and dominated this area after each maintenance activity. The overgrown Lalang grass tends to compete with the planted trees and limit their acquisition of adequate nutrients for enhanced growth. Due to insufficiently allocated budget for the maintenance activities as well as problems of access due to periodic flooding, maintenance activities can only be conducted once a year. This impacts the growth of trees and continuous regular maintenance of the planted site will be necessary even after the completion of Phase 1 of the recovery project.

3.3 The frequent rainfall episodes and high-water tables at BBEFR during the end of the year 2022 impede the ground activities such as field visits, site maintenance and tree planting

The frequent rainfall and high-water tables at the forest compartments of BBEFR during the end of the year 2022 are anticipated to cause some delays in the completion of certain scheduled field activities such as field visits, site maintenance and tree planting activities. In addition, some activities were delayed earlier by the movement controls during the COVID-19 pandemic. Therefore, a 6-months of project extension has been requested to complete the pending activities in order to mark the completion of the Phase 1 restoration project for BBEFR.

4. Pictorial report of the activities implemented from April until November 2022

Table 1

Nine (9) units of canal blocks constructed at FC 3 and FC 25, BBEFR

Canal Blocks	GPS Coordinates	Photo (Before)	Photo (After)
FC 3, BBEFR			
cb_1_fr_3	3°35'56.47"N 101°23'45.67"E		
cb_2_fr_3	3°35'51.63"N 101°23'40.30"E		
cb_3_fr_3	3°35'43.69"N 101°23'45.50"E		

Canal Blocks	GPS Coordinates	Photo (Before)	Photo (After)
cb_4_fr_3	3°35'42.04"N 101°23'37.04"E		
cb_5_fr_3	3°35'29.90"N 101°23'44.29"E		
cb_6_fr_3	3°35'31.98"N 101°23'38.73"E		
cb_7_fr_3	3°35'31.33"N 101°23'36.47"E		
FC 25, BBEFR			
cb_1_fr_25	3°33'8.11"N 101°25'29.64"E		
cb_2_fr_25	3°33'5.83"N 101°25'30.93"E		

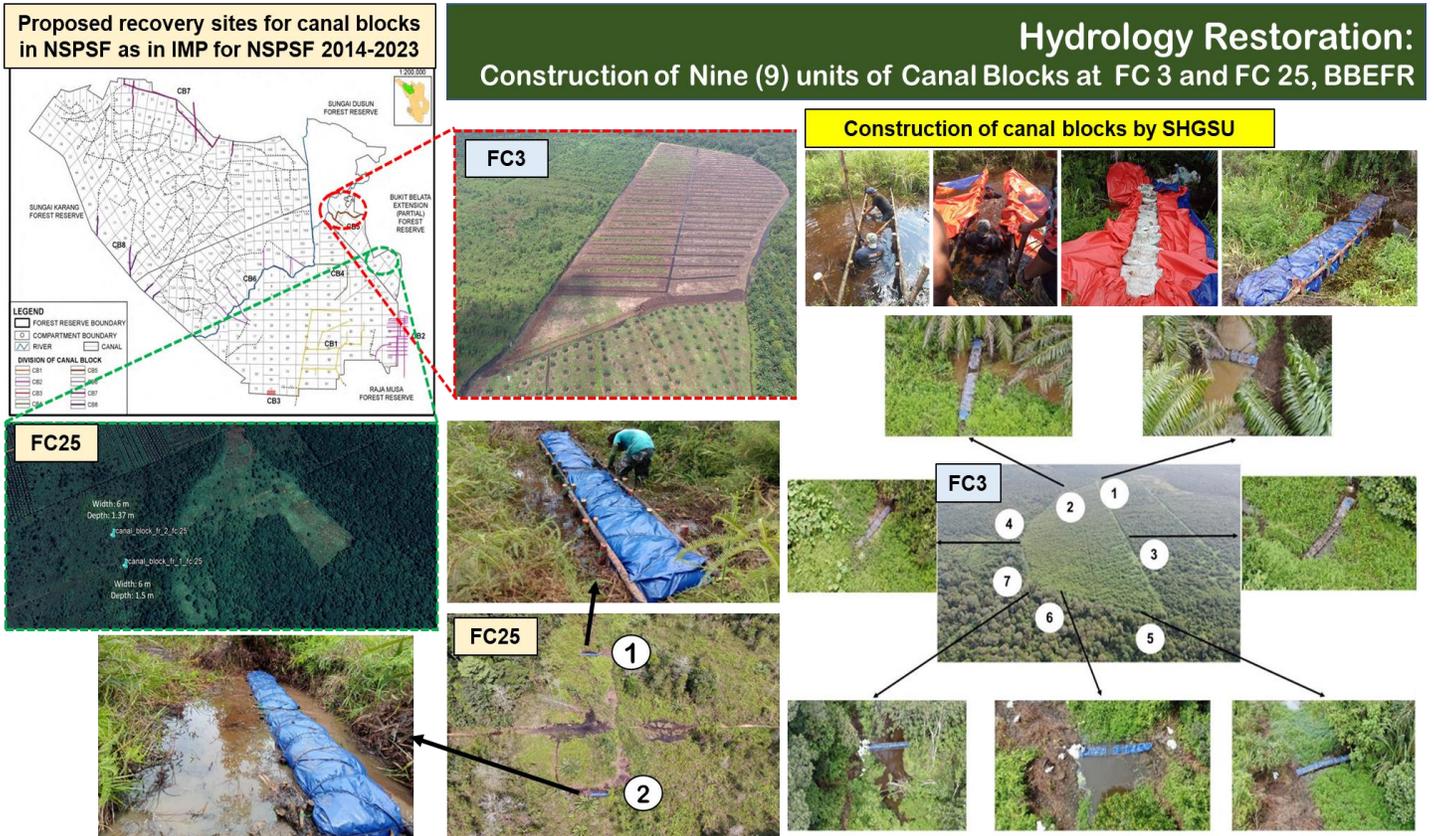


Figure 1. Construction of Nine (9) units of canal blocks at FC 3 (7 units) and FC 25 (2 units), BBEFR



Figure 2. The KWHSTS members are sowing the wildlings of Tenggek Burung (*Melicope lunu-ankenda*)

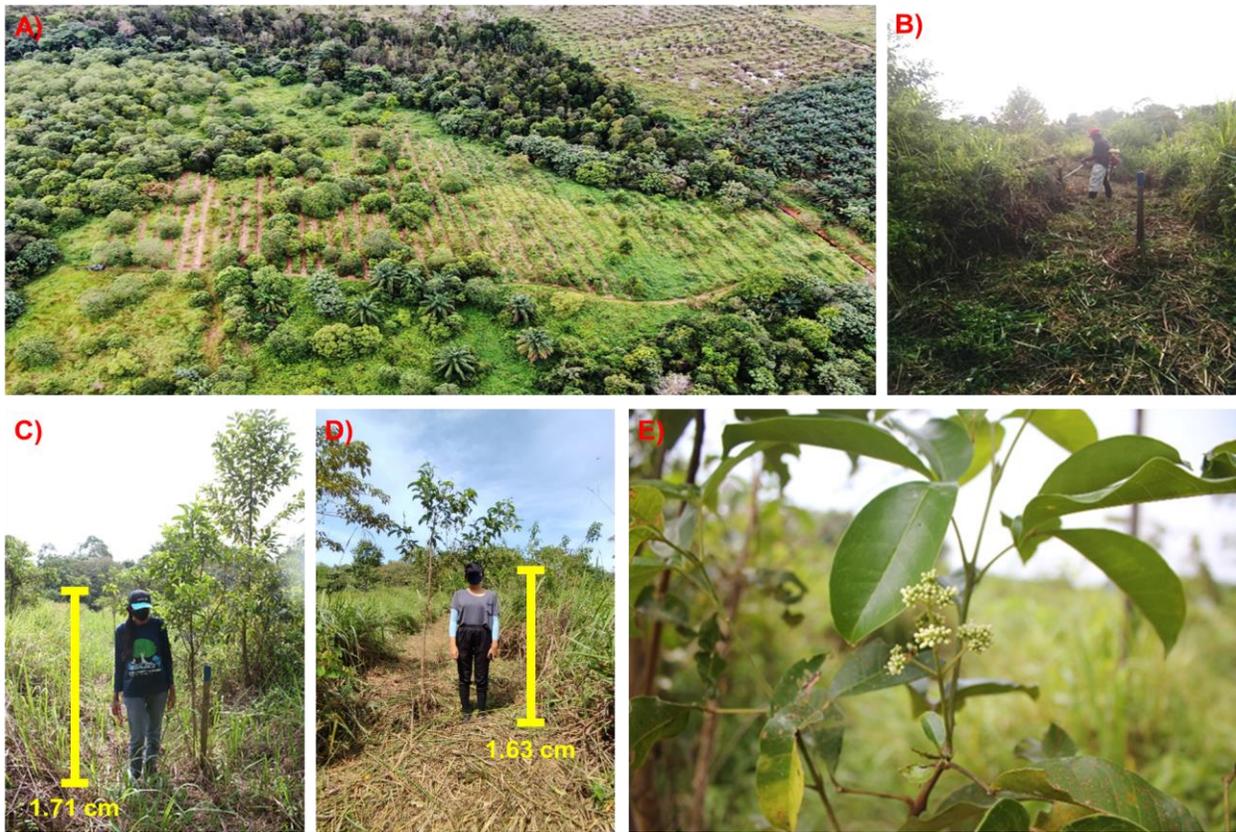


Figure 3. The progression of the maintenance activities at the mineral soil of the planted site at FC 25, BBEFR (A & B). As inspected on October 2022 (D) and November 2022 (C), the field observations are indicating that some of the trees are growing well and healthier and started to bear flowers (E).

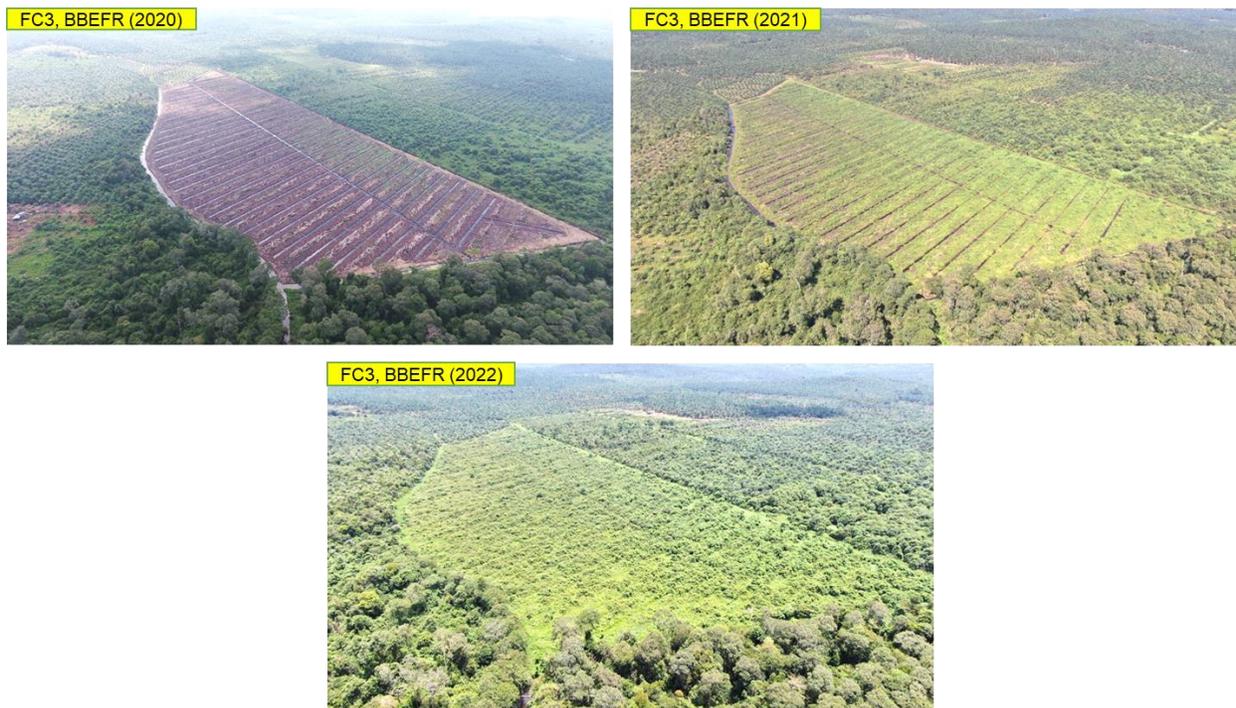


Figure 4. The natural regeneration process of 20 ha of degraded area at FC 3, BBEFR from 2020 to 2022.



Figure 5. The participation of KWHSTS in the community forum and a sharing session with the delegates of Mekong Peatlands Project (Cambodia and Lao People's Democratic Republic).



Figure 6. Mr. Nagarajan is rendering a talk on peatland management focusing on fire prevention and control measures and hydrological management for agricultural activities on cultivated peatlands to the states' and districts' agriculture officers from Peninsular Malaysia on 19-20 October 2022 at the D'Wharf Hotel, Port Dickson.



TARIKH	PIZO METER	PAIP	KAYU
3/1/2022	B&T 01	35.0	39.0
	B&T 02	66.0	47.0
	B&T 03	51.0	18.0
	B&T 04	50.0	76.0
	B&T 05	45.0	48.0
	B&T 06	48.0	48.0
4/11/2022	B&T 01	34.0	28.0
	B&T 02	66.0	62.0
	B&T 03	50.0	60.0
	B&T 04	50.0	82.0
	B&T 05	42.0	37.0
B&T 06	39.0	28.0	

Latest Piezometer Reading FC. 3, 7 & 25 BBEFR (Bacaan Piezometer Terkini di Kompt. 3, 7 & 25 BBEFR)		
Sites	Piezometer	10/11/2022 (cm)
FC25	BBT01	24
	BBT02	26
FC7	BBT03	6
	BBT04	-1
FC3	BBT05	19
	BBT06	21

(-) Negative indicate water level below ground
Update by GEC- FCP



Figure 7. Patrolling and water table monitoring activities conducted by KWHSTS community patrollers at the adjacent land of BBEFR

Note:

Detailed report of each of the activities described in this summary report and associated pictures has been included in the semi-annual progress report for April – November 2022.