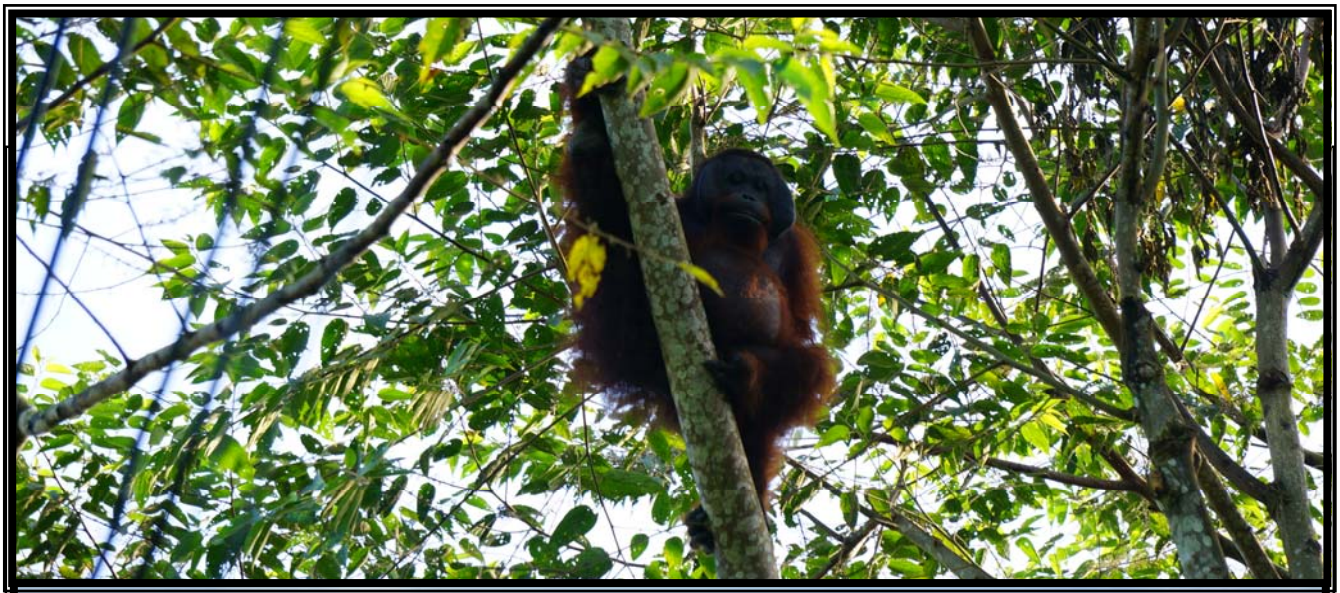
ANNUAL REPORT 2017



ULU SEGAMA-MALUA

SUSTAINABLE FOREST MANAGEMENT PROJECT

ANNUAL REPORT 2017

ULU SEGAMA-MALUA SUSTAINABLE FOREST MANAGEMENT PROJECT

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ULU SEGAMA-MALUA SUSTAINABLE FOREST MANAGEMENT PROJECT (USM SFMP)

1.0 INTRODUCTION

2017 is the final implementation year for The Ulu Segama-Malua Sustainable Forest Management Project (USM SFMP) under the guideline of the first Forest Management Plan (FMP) since it was initiated in 2008. Hence, the Sabah Forestry Department is in the stage of formulating the second FMP for the period of 10 years from 2018 to 2027 that provides a comprehensive update source of information and guidance on the management issues for various agencies i.e. SFD, Yayasan Sabah, other government agencies, NGOs and public within the USM SFMP area.

Over a decade, various activities have been carried out as recommended in the first FMP to address the issue of long-term sustainability of USM. The main objective of the project is to restore and conserve 242,884.00 hectares of contiguous eleven (11) forest reserves namely Sapagaya, Ulu Segama, Mount Louisa, Sungai Taliwas, Extension Danum Valley, Bukit Piton, Malua, Extension Mount Louisa, VJR Kawag Gibong, VJR Sepagaya and VJR Merisuli. All activities that have been carried out such as silviculture treatment, forest restoration, wildlife monitoring, forest resource protection, and community forestry were executed based on the approved Annual Work Plan (AWP) 2017. The Sabah State 11th Malaysian Plan (RMK11) is the project's main source of funds, which contributed an amount of RM3.2 million to support implementation of the activities as mentioned. Besides that, The Heart of Borneo (HoB) Initiative project under the Federal 11th Malaysian Plan has injected an amount of RM6.36 million to support silviculture treatment within Ulu Segama Forest Reserve and Virgin Jungle Reserve Sepagaya (10,000 hectares), as well as Northern Gunung Rara Forest Reserve (5,000 hectares). In September 2016, the project was handed over to the appointed contractor Rakyat Berjaya Sdn. Bhd. and was fully completed in November 2017. Other activities such as forest restoration, wildlife monitoring and forest protection were supported and collaborated by local and international stakeholders i.e. New Forests Pty Ltd and Rakyat Berjaya (The Malua Wildlife Habitat Conservation Bank); Sime Darby Plantation Sdn Bhd and Sime Darby Foundation (Forest Rehabilitation and Protection of Orang Utan Habitats in Northern Ulu Segama Forest Reserve); WWF Malaysia and Yayasan Sabah (Forest Restoration Project in Northern Ulu Segama Forest Reserve); INFAPRO (Forest Rehabilitation in Ulu Segama Forest Reserve); and Tropical Rainforest Conservation and Research Centre (The Tropical Rainforest Seed Bank-Merisuli).

In 2017, the USM SFMP had undergone the first surveillance audit after re-certified (second cycle) in June 2016 by the Forest Stewardship Council (FSC) with a validation period until June 2021. The third party auditor, Scientific Certification Systems (SCS) has issued six (6) new Correction Action Requests (CARs) i.e. (5) minor CARs and (1) Observation which are to be addressed in the next surveillance audit.

The USM SFMP activities will be highlighted in this report which includes other collaboration projects involved such as Malua Wildlife Conservation, Sime Darby restoration projects, INFAPRO, Taliwas Forestry and Recreation Area, and Tropical Rainforest Conservation and Research Centre (The Tropical Rainforest Seed Bank-Merisuli).

2.0 FIELD ACTIVITIES

2.1 Silviculture Treatment

In 2017, the silviculture activity has successfully treated about 10,720 hectares within the USM SFMP area which involved 19 compartments. Various sources of funds were involved to support silviculture treatment i.e. The Heart of Borneo (HoB) Initiative project under the Federal 11th Malaysian Plan at the Ulu Segama Forest Reserve and Virgin Jungle Reserve Sepagaya; and WWF-Malaysia and Community Forestry Projects at the Bukit Piton Forest Reserve. The treatment mainly focused on climber cutting, such as climbing bamboos and other woody veins whereby only climbers below (<) 5 cm were removed to allow wildlife i.e. birds, orang utan etc. get a source of food from larger climbers (> 5cm). The treatment achievement is shown in Table 1. Total silviculture treatment achieved within the USM SFMP since 2006 is about 54,976 hectares (Figure 1, Figure 2 and Figure 3), perhaps the highest in the tropical world in one place.

Table 1: Silviculture treatment in 2017

No	Compartments	Achievement (ha)	Funded by
1.	110	410	PPM Fund
2.	111	25	WWF (Malaysia) Fund
3.	153	561	HoB Fund (RMK 11)
4.	154	500	
5.	155	326	
6.	156	671	
7.	157	504	
8.	169	562	
9.	171	371	
10.	172	597	
11.	174	682	
12.	175	493	
13.	177	595	
14.	178	467	
15.	189	132	
16.	167	840	
17.	168	752	
18.	225	803	
19.	226	1,429	
Total		**10,720**	

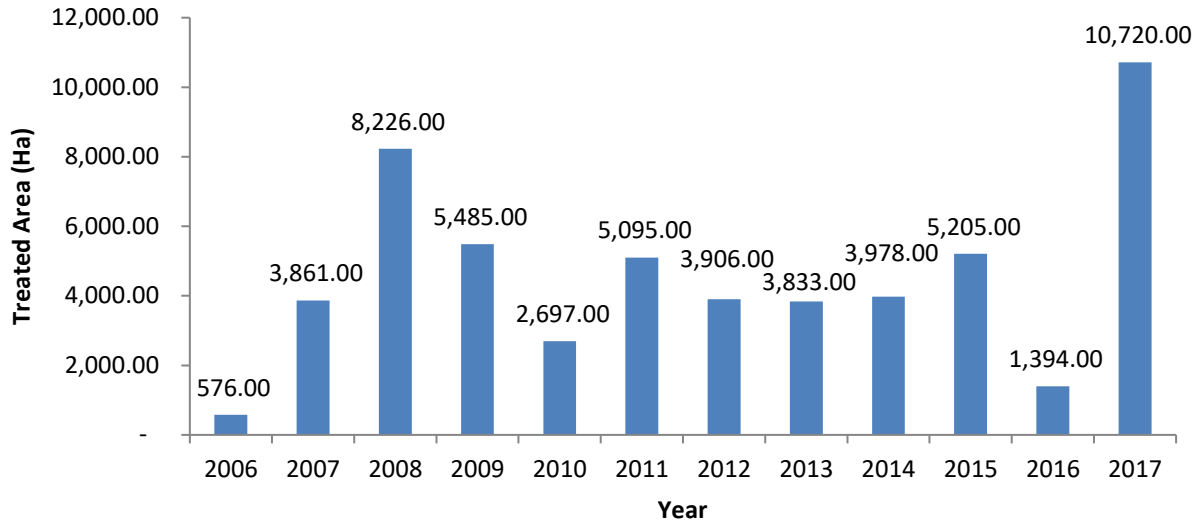


Figure 1: Accumulated silviculture treatment area since 2006

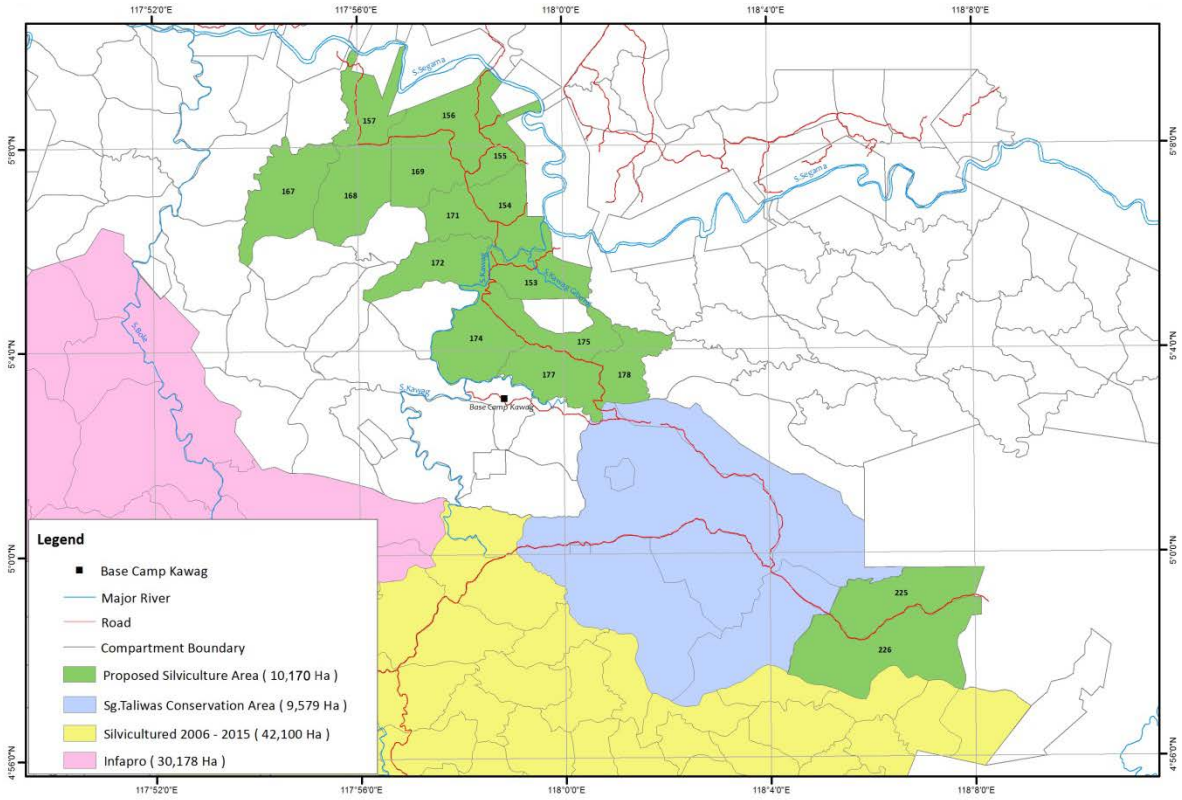


Figure 2: Silviculture area under the HoB Fund (RMK11) in 2017

Silviculture treatment at Cpt 155 and Cpt 156, Ulu Segama Forest Reserves

Silviculture treatment at Cpt.225, Virgin Jungle Reserve Sepagaya

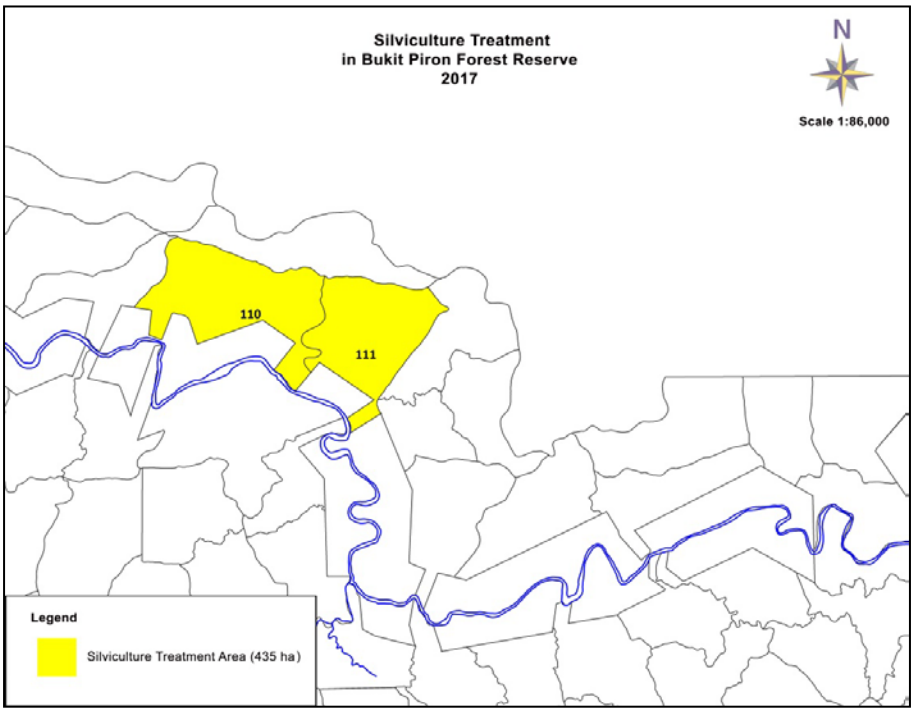


Figure 3: Silviculture treatment in Bukit Piton Forest Reserve

Before and after silviculture treatment at compartment 110, Bukit Piton Forest Reserves

In 2017, the Sabah Forestry Department (SFD) had organised a series of training for the appointed contractor, Kontraktor Maju and Kontraktor Malaysia with regards to standard operations for silviculture and Occupational Safety & Health (OSH) to ensure all field workers are complying with the silviculture standard, and remain safe and healthy in the forest at all times.

Silviculture operation standard and OSH training for the Kontraktor Maju at compartment 225, Ulu Segama Forest Reserves

Silviculture operation standard for the KontraktorMalaysia at compartment 110, Bukit Piton Forest Reserves

2.2 Forest Restoration

It has been a decade since the restoration work was kicked off in 2007 whereby various philanthropies and stakeholders had supported the project by providing sufficient funds to restore habitat and generate enough food sources for orang-utans by planting mixed tree species i.e. dipterocarp, pioneer and fruit trees. In 2017, the restoration projects have successfully planted about 1,118.38 hectares or 94% from the targeted area as stipulated in the AWP (Table 2) under the support of Sime Darby and WWF-Malaysia funds. The accumulated planted area within Bukit Piton Forest Reserve since 2007 is about 11,253.80 hectares (Figure 4 and Figure 5).

Table 2: Actual achievement of forest restoration work in 2017

No	Compt. #	Target (ha)	Achievement (ha)	Zone	Funded By	Contractor
1.	111	0	75.20	Conservation	WWF (Malaysia)	Kontraktor Fajar
2.	119	440	440.00	Conservation	Yayasan Sime Darby	Syt Jaya Suria & Syt Segama Frontier
3.	120	619	567.18	Conservation	Yayasan Sime Darby	Syt Jaya Suria & Syt Segama Frontier
4.	122	125	36.00	Conservation	Yayasan Sime Darby	Syt Jaya Suria & Syt Segama Frontier
	TOTAL	**1,184**	**1,118.38**	**(94%)**		

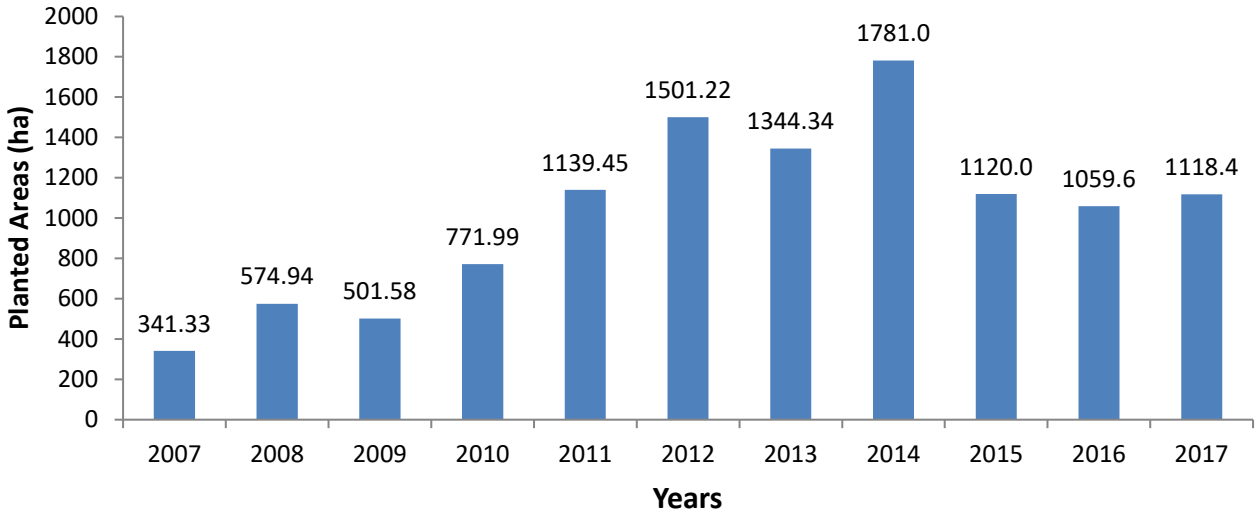


Figure 4: Restoration area in Bukit Piton FR since 2007

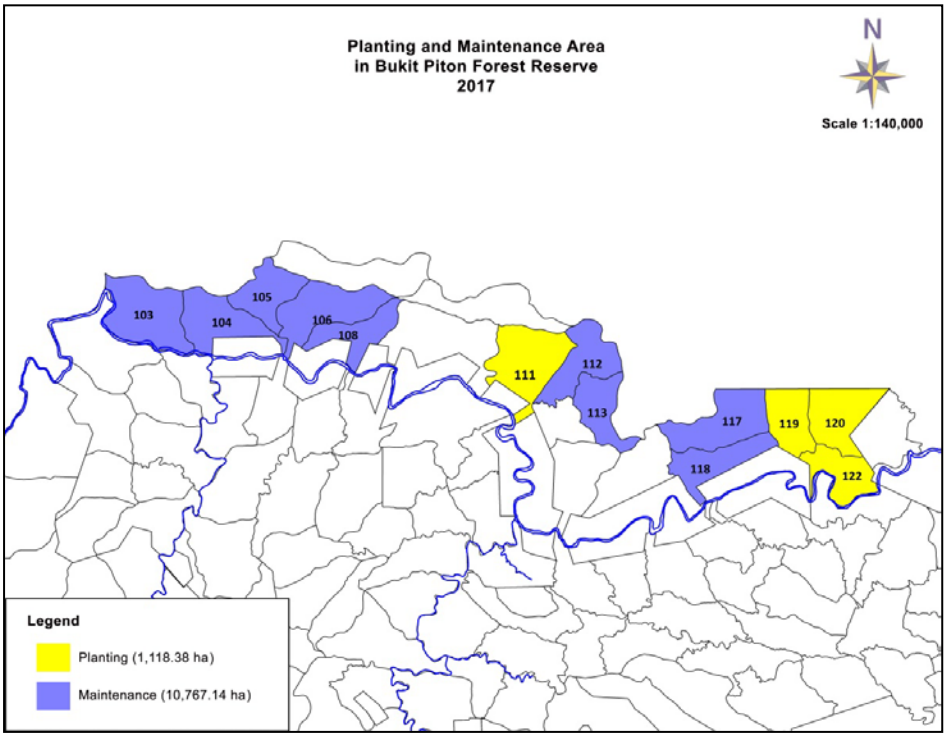


Figure 5: Planted area in 2017

Opening of planting line at Cpt.111, Bukit Piton Forest Reserves in 2017

The maintenance activity plays an important role in the restoration projects to ensure survival of the planted seedlings from creepers and shrubs especially in the open area. In 2017, about 10,767.14 hectares were successfully maintained (planted seedlings inclusive of previous years planting). Maintenance programme consisted of line and point clearance and resupply of dead seedlings. However, for the Sime Darby planting area, the maintenance activity has included fertilizing and application of herbicides, which were strictly in compliance with FSC guidelines and SOP. On the aspect of mortality rate of planted seedlings, it revealed the range of mortality varies from 6% to 17%. The maintenance achievement is shown in Table 3.

Table 3: Actual achievement of maintenance work in 2017

Compartment ID	Target (ha)	Actual (ha)	Contractor (Funder)	Funder
103	550	761.09	Pemborong Alam Hijau	Yayasan Sabah
104	300	232.01	Kontraktor Malaysia	Yayasan Sabah
105	150	174.00	Kontraktor Malaysia	Yayasan Sabah
106	500	701.70	Yayasan Sabah & Pemborong Alam Hijau	Yayasan Sabah
108	550	377.40	Yayasan Sabah & Kontraktor Malaysia	Yayasan Sabah
111	25	-	Kontraktor Fajar	WWF (Malaysia)
112	552	837.58	Jaya Suria	Yayasan Sime Darby
113	224	412.60	Segama Frontier, Sinar wawasan	Yayasan Sime Darby
117	458	1,900.80	Segama Frontier, Jaya Suria	Yayasan Sime Darby
118	508	1,272.59	Segama Frontier, Jaya Suria	Yayasan Sime Darby
119	440	2,708.92	Segama Frontier, Jaya Suria	Yayasan Sime Darby
120	619	1,129.74	Segama Frontier, Jaya Suria	Yayasan Sime Darby
122	125	258.71	Segama Frontier, Jaya Suria	Yayasan Sime Darby
TOTAL	**5,001**	**10,767.14**	**(215%)**	

(From Left) Seraya Majau and (Right) Kapur Paji in Cpt.111, Bukit Piton Forest Reserve which were planted in May, 2017 and maintained in November, 2017

2.3 Wildlife Monitoring Activities

The wildlife monitoring activities were carried out mainly at the Bukit Piton Forest Reserve, heavily disturbed forest; and Malua Forest Reserve, less disturbed forest (Figure 6). Both of these areas provide high sightings of wildlife especially threatened and endangered species which fall under High Conservation Value 1.2 (HCV 1.2). The activities involved direct and indirect sightings through transects (night spot, morning drive and hornbill observation), opportunistic sightings and camera trapping. All methods being used were adopted and followed from the comprehensive field manual of monitoring large terrestrial mammals in Sabah by Ancrenaz (2013). Some activities in 2017 were postponed due to bad road conditions and monitoring sites were inaccessible especially within Malua Forest Reserve.

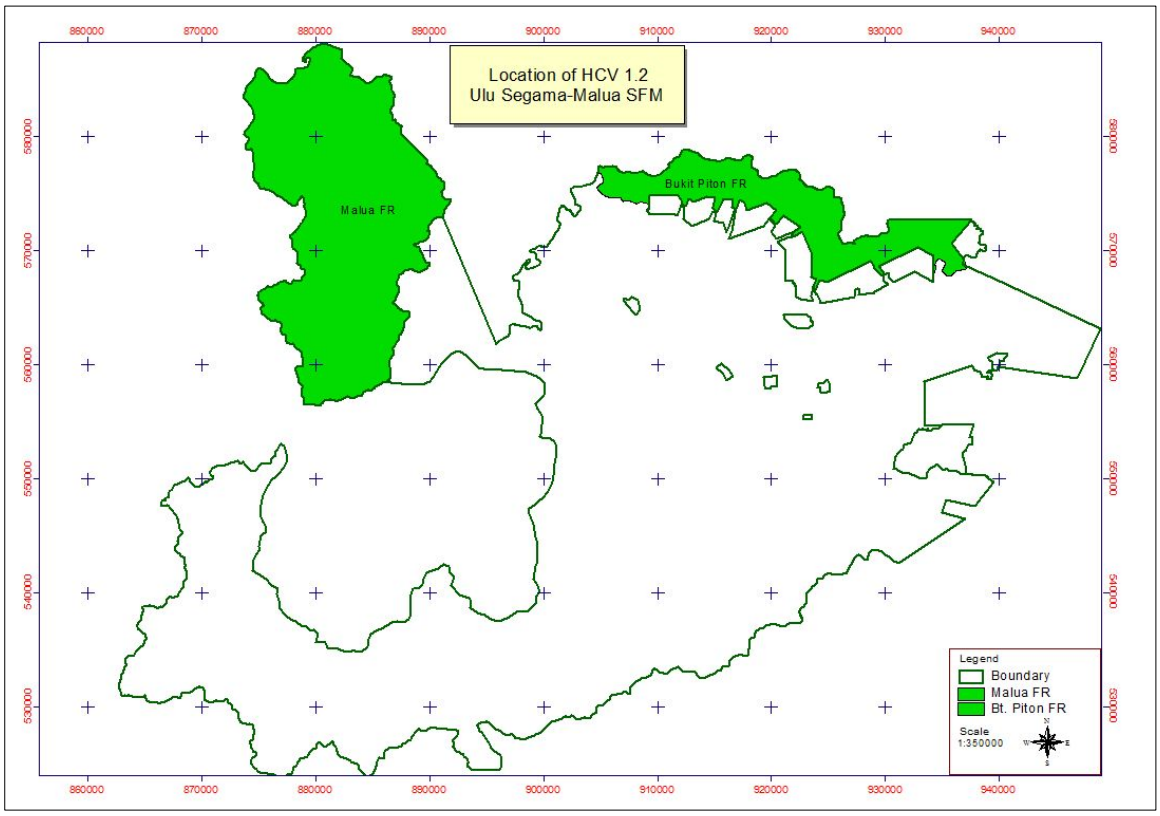


Figure 6: Locations of wildlife monitoring activities in 2017

2.31 Orang-utan Nest Census

In 2017, the current ground Orang-utan nest census suggested that the Orang-utan densities range within Malua FR and Bukit Piton Rehabilitation Project area or between 0.89 - 2.90 individual/km2 and most nests were detected on the medium size trees and lower crowns of dominant trees i.e. pioneer species (Figure 7 and Figure 8).

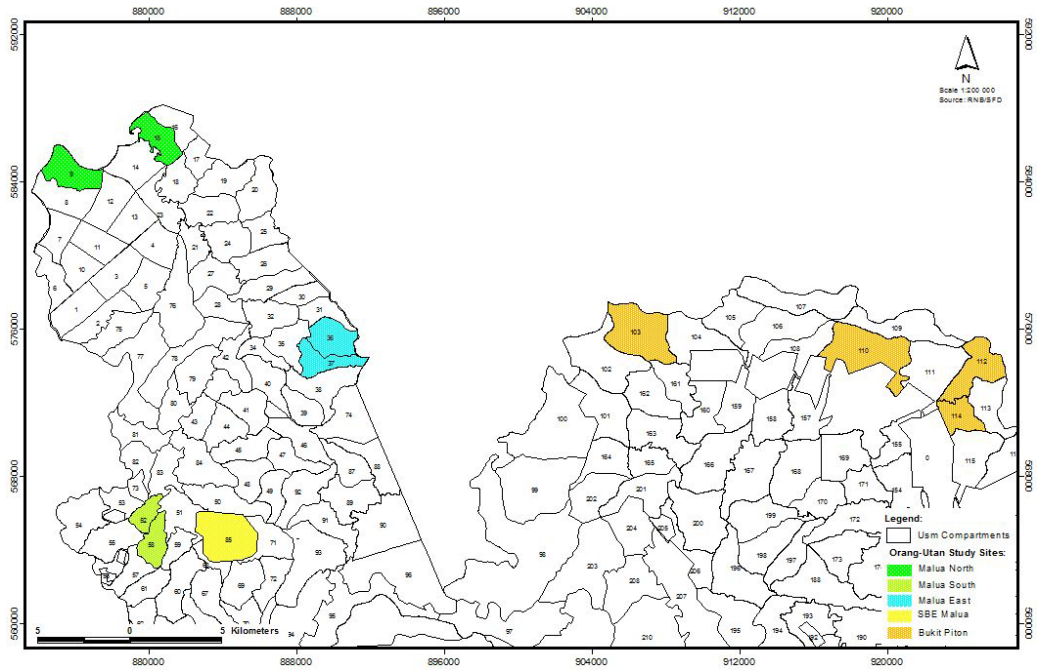


Figure 7: Map presented the five (5) different locations of study sites for ground Orang-utans nest census within Ulu Segama-Malua Sustainable Forest Management project area

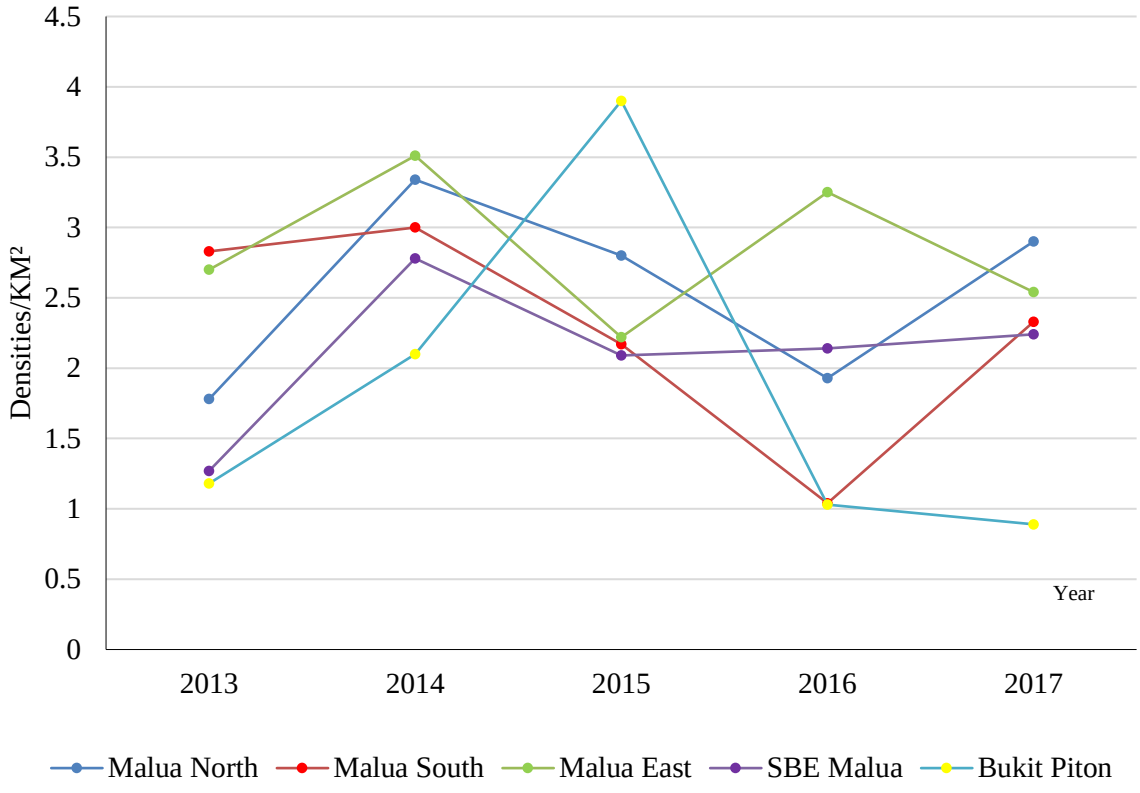


Figure 8: The fluctuations of Orang-utan densities per KM² across five (5) different study sites within Ulu Segama – Malua Sustainable Forest Management project area (Malua forest reserve and Bukit Piton Rehabilitation project area)

2.32 Opportunistic Wildlife Sightings (Adhoc)

Currently, 58 species of terrestrial mammals of 24 families were identified and recorded within the USM-SFM project area since 2009. According to the Wildlife Conservation Enactment 1997 classification, 8 species were recorded under schedule I (protected) such as Bos javanicus, Helarctos malayanus, Nasalis larvatus, Neofelis nebolusa, Pongo pygmaeus, Dicerorhinus sumatrensis, Elephas maximus and Sunda pangolin, and more than 40 species were recorded under schedule II (protected species-limited hunting with license) and 8 species were recorded under schedule III (protected species-hunting with license).

While based on IUCN red list criteria, 36.21% (or n=21) of species are classified as "Threatened Species" (5.17% critically endangered, 12.07% endangered and 18.97% vulnerable), 60.34% of wildlife species recorded as "Low Risk" (46.55% least concern and 13.79% near threatened) and 3.45% wildlife species recorded as "Data Deficient" (Figure 9 and Figure 10).

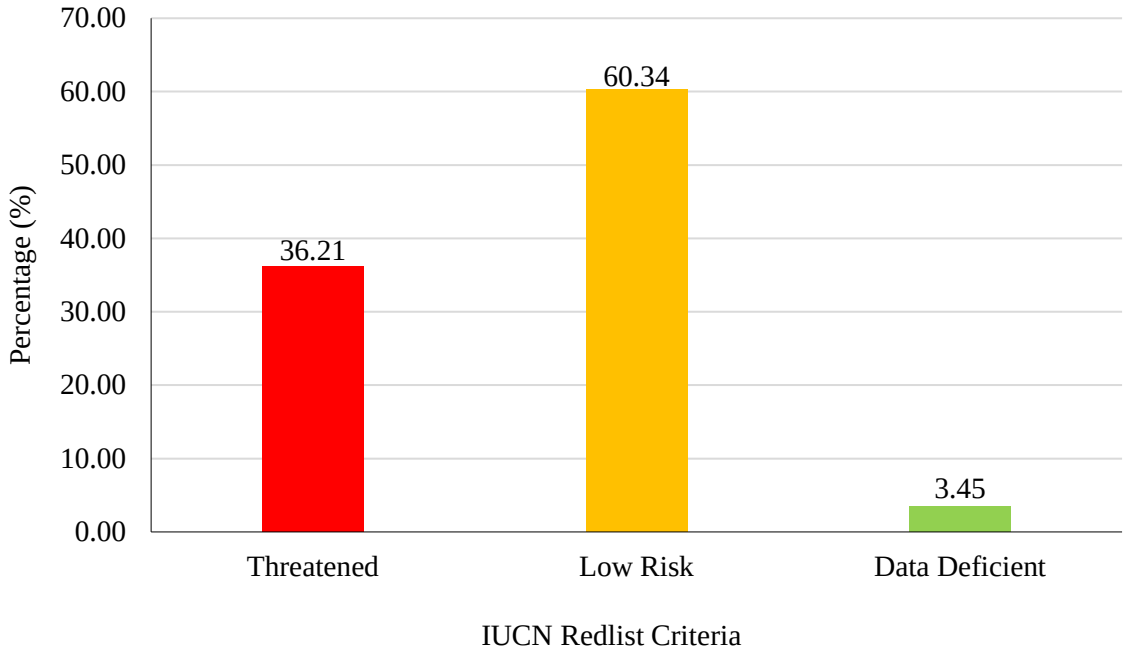


Figure 9: Percentage (%) of wildlife species (terrestrial mammals) recorded in accordance to three (3) criteria under IUCN red list, the numbers based on wildlife monitoring activities carried out in year 2016

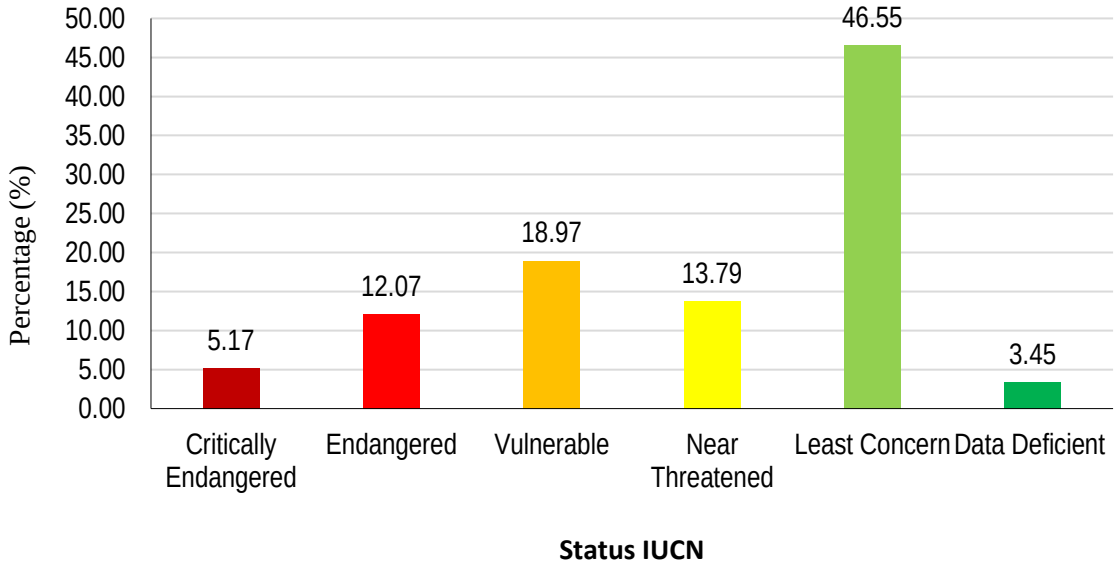


Figure 10: Status in IUCN red list and percentage of terrestrial wildlife species recorded along wildlife monitoring activities carried out within Ulu Segama-Malua SFM project area since 2009 to 2016

Images of orang-utan (top left); storm stork (top right); Large green pigeon (bottom left) and Common palm civet (bottom right) were sighted within Malua Forest Reserve

2.33 Night and Morning Survey

In 2017, morning and night observation activities show that the sighting of threatened wildlife species was low, less than 1 sighting ranging between 0.002 – 0.040 detections/day and 0.02 – 0.024 detections/day respectively (Figure 11 and Figure 12).

Based on morning direct (physical) sightings we discovered that the ungulate species such as deer, Bearded pig and Bornean gibbon are three (3) dominant and common species sighted within Malua, while Orang-utan and Pig tailed macaque are two (2) species dominant and frequently sighted within Bukit Piton Forest Reserve (see figure 11). While for nightspot activity, Sambar deer recorded the highest sighting per day/kilometre in Malua, whereas two (2) species namely Bearded pig and Slow loris are more frequently sighted within Bukit Piton Forest Reserve (see figure 12).

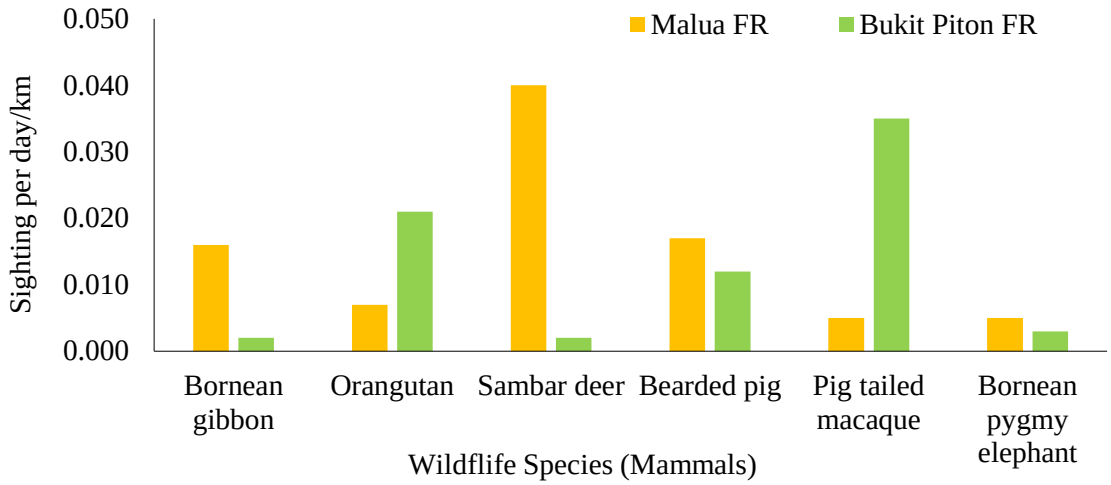


Figure 11: Patterns of some "threatened species" detections (average detection per day/km) during morning drive activity carried out within two (2) different habitat treatments in USM SFM project area for year 2017

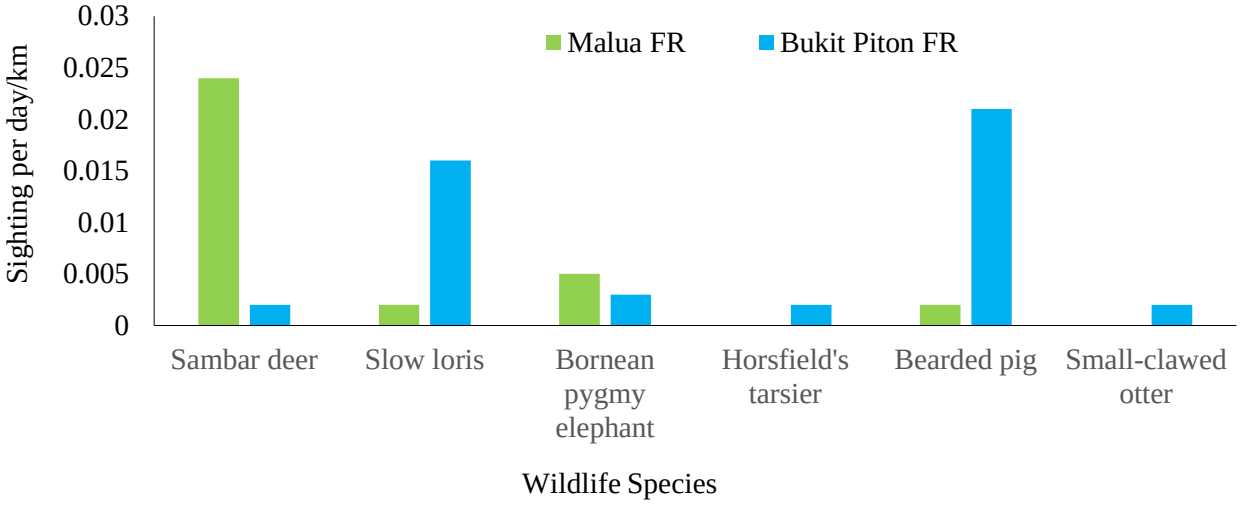


Figure 12: Trend of some threatened species sighting per day/km in accordance to nightspot activity within to USM SFM project area in year 2017, at least six (6) wildlife species classified as "threatened species" under IUCN red list criteria were recorded

Images of Slow loris (left) and Sambar deer (right) were sighted during nightspot and morning drive within Malua Forest Reserve

2.34 Bird Survey

In 2017, at least more than 177 bird species were recorded within Malua Forest Reserve and Bukit Piton Forest Reserve (Figure 13). Based on the IUCN red list criteria (updated list as of 22nd March 2018), 6.21% (or n=11) of bird species were recorded under the threatened species such as Helmeted hornbill, Storm's stork, Black crowned pitta, Blue headed pitta, Bornean wren babbler, Scaly-breasted Partridge, Great slaty woodpecker, Large billed blue flycatcher, Large green pigeon, Short toed coucal and Wallace's hawk eagle (see Table 4). While, 93.79% (or n=166) of bird species were recorded under low risk (see Figure 14).

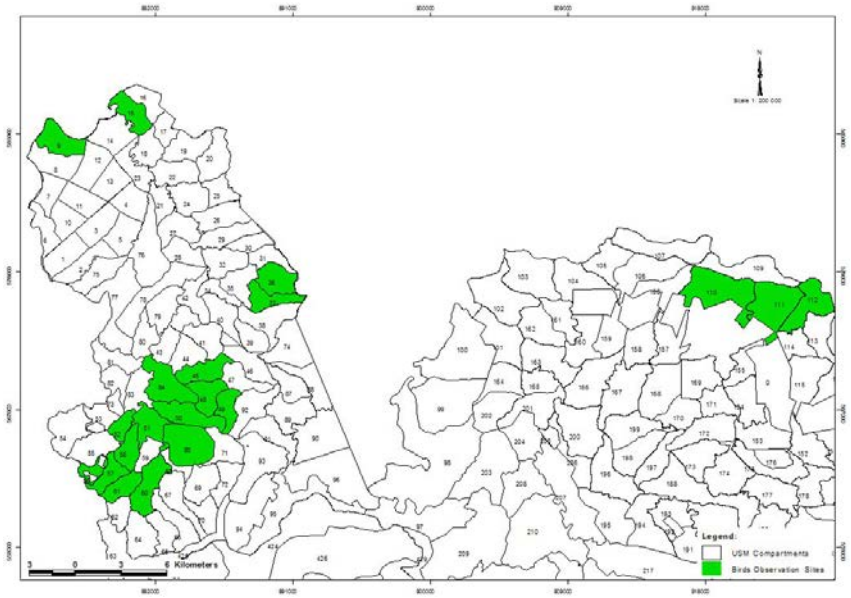


Figure 13: Location of bird survey in Malua Forest Reserve and Bukit Piton Forest Reserve

Table 4: Number of bird species recorded within the Malua Forest Reserve and Bukit Piton Rehabilitation project area and status each species based on IUCN red list criteria, retrieved 22nd March 2018

Common Name	*Scientific Name*	Family	IUCN Red List
Helmeted hornbill	*Buceros vigil*	Bucerotidae	Status: Critically Endangered ver 3.1 Pop. trend: decreasing
Storm's stork	*Ciconia stormi*	Ciconiidae	Status: Endangered ver 3.1 Pop. trend: decreasing
Black and crimson pitta (Black crowned pitta)	*Pitta venusta*	Pittidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Blue headed pitta	*Pitta baudii*	Pittidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Bornean wren babbler	*Ptilocichla leucogrammica*	Timaliidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Chestnut necklaced partridge (Scaly-breasted Partridge)	*Arborophila charltonii*	Phasianidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Great slaty woodpecker	*Mulleripicus pulverulentus*	Picidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Large billed blue flycatcher	*Cyornis caerulatus*	Muscicapidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Large green pigeon	*Treron capellei*	Columbidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Short toed coucal	*Centropus rectunguis*	Cuculidae	Status: Vulnerable ver 3.1 Pop. trend: decreasing
Wallace's hawk eagle	*Nisaetus nanus*	Accipitridae	Status: Vulnerable ver 3.1 Pop. trend: decreasing

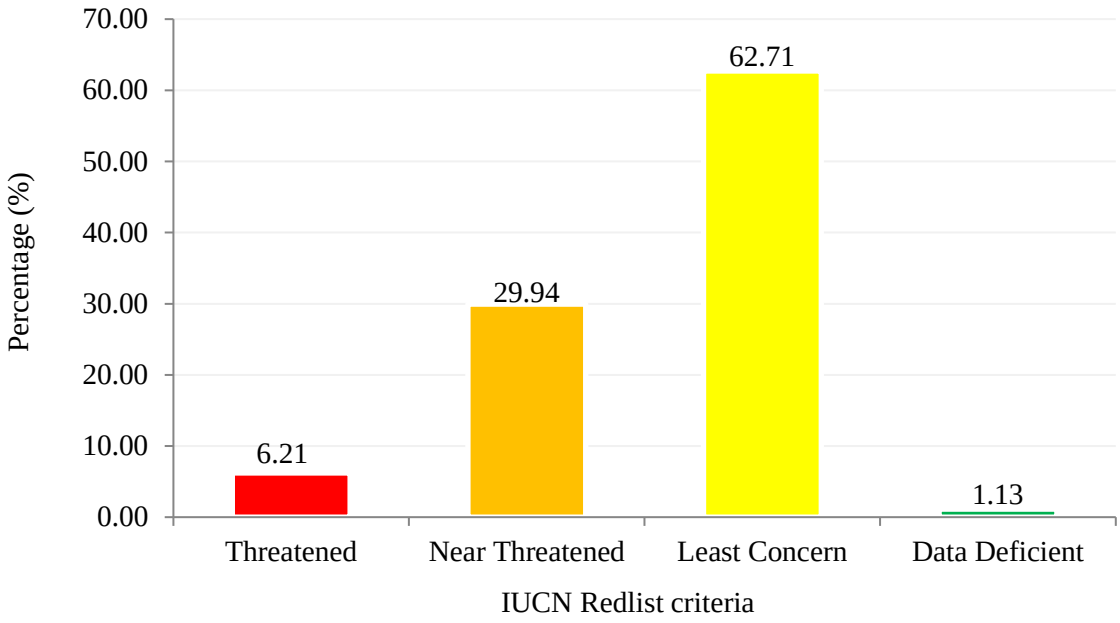


Figure 14: Fractions and percentage of bird species recorded within the Ulu Segama – Malua Sustainable Forest Management project area under IUCN red list criteria in 2017

Image of Blue-Banded Kingfusher was taken during nightspot survey within Malua Forest Reserve

Orangutan ground census activity was carried out at the northern and eastern Malua Forest Reserve

2.4 Resource Protection

The resource protection activities were implemented to prevent, monitor and control the encroachment to the project area, illegal felling, illegal cultivation, occupation, forest fire and poaching by intensive ground and river patrolling, and aerial surveillance. In 2017, no illegal timber felling was recorded within the project area. Anti-Poaching Task Force at departmental (i.e. Ulu Segama-Malua and Lahad Datu Districts) and inter agencies (i.e. Police, Yayasan Sabah, Sabah Wildlife Department) were constantly executed to combat poaching. SFD also identified and dismantled three (3) access roads that are believed to be actively used by poachers to enter at the southern part of Ulu Segama Forest Reserve i.e. Compartments 271, 294 and 318. The dismantling works commenced with great cooperation by the neighbouring oil palm plantations. For patrolling activities, at least 188 days of patrol efforts were carried out throughout the year and identified seven (7) signs of poaching activities (Figure 15). Two (2) incidents were recorded in January, February and December and one (1) in July. Graph in Figure 16 shows that increase of patrolling frequency by 4 activities and an increased number of poaching incidents by 3 cases compared to 2016.

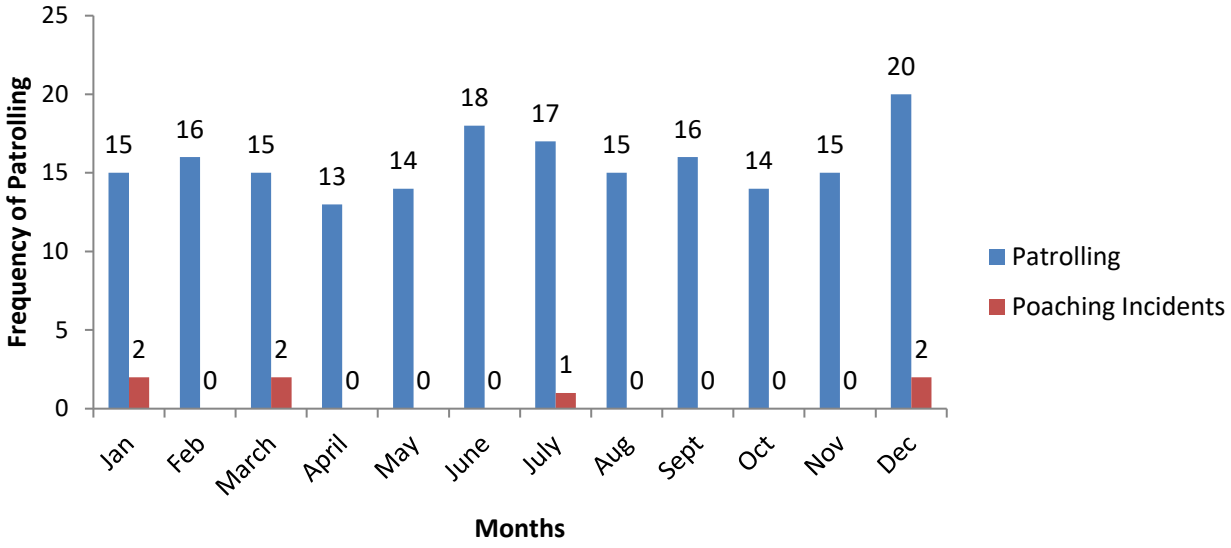


Figure 15: Frequency of patrolling activity and poaching activity within Ulu Segama-Malua SFM area in 2017

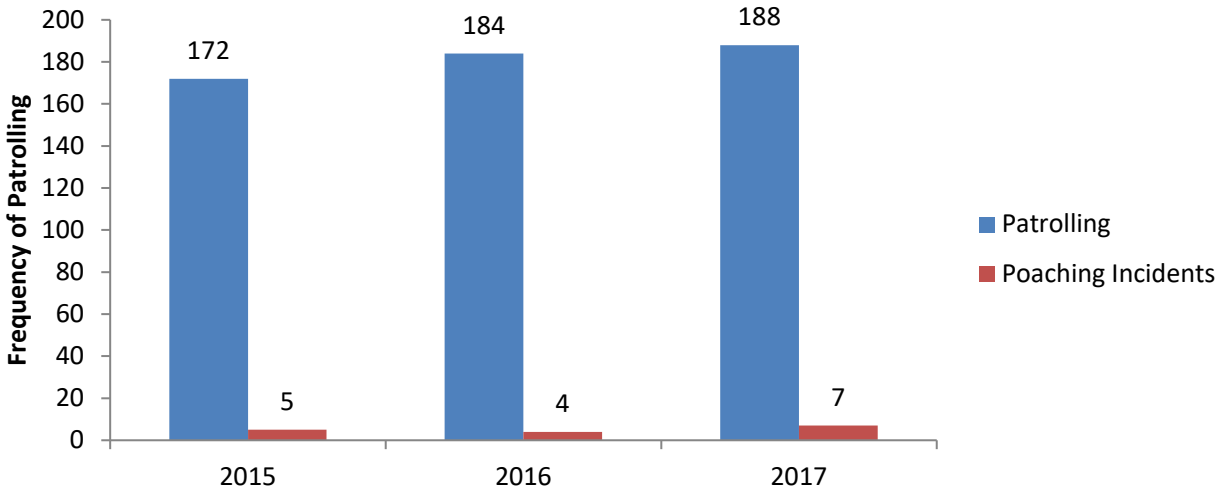


Figure 16: Frequency of patrolling activity and poaching activity within Ulu Segama-Malua SFM area since 2015


Dismantling access road at the South-West Ulu Segama Forest Reserve i.e. Compartment 133 which are believed regularly used by poachers to enter forest reserves illegally

Routine inspections and dismantling illegal access road at the Southern Ulu Segama Forest Reserve i.e. Compartment 294 (left) and Cpt.271 (right)


Boundary inspection at the North Ulu Segama Forest Reserve bordering to AAP plantation (left) and Southern Ulu Segama FR bordering to Dewata Plantation (right)


Joint night patrolling with WWF-Malaysia under the Anti-Poaching Task Force initiative


Boundary checking (Southern Ulu Segama Forest Reserve) and river inspection (Sg Segama at the Northern Ulu Segama Forest Reserve) via aerial survey


Joint patrolling with MCEE Tawau via Anti-Poaching Task Force initiative


River patrolling along Sg. Segama and Sg. Bole

2.5 Forest Road

It is always a challenge for road maintenance especially during the wet season. In 2017, continuous raining weather occurred especially in the third and fourth quarters. To ensure safety of road users and field operations, forest roads were constantly maintained especially at 4 main locations i.e. Bt. Piton FR (Cpt. 121-112), Bt. Piton (Cpt. 109-101), Main Line West (Silam to Malua), and Main Line North (Taliwas to north Ulu Segama bridge) by SFD and Yayasan Sabah appointed contractor (C.T. Enterprise). A total of 323 km was maintained in 2017 as described in Table 5 and Figure 17. In the 4th quarter, most of the roads in USM were not able to be maintained due to bad weather.

Table 5: Road maintenance programme in 2017

No	Location	Target (km)	Achievement (km)	Note
1	Bt. Piton FR (Cpt. 121-112)	20	60	(3) times a year, executed by SFD Team

2	Bt. Piton (Cpt. 109-101)	25	60	(3) times a year, executed by CT Ent., Yayasan Sabah's contractor
3	Main Line West (Silam to Malua)	95	180	(4) rounds a year, by CT Ent., Yayasan Sabah's contractor
4	Main Line North (Taliwas to north Ulu Segama bridge)	40	40	(2) Rounds of maintenance, by SFD Team. 3 old bridges were replaced with box culvert spiral in the 3rd quarter by appointed contractor, Karnia. The maintenance work was stopped in the 4th quarter due to machinery breakdown and bad weather.

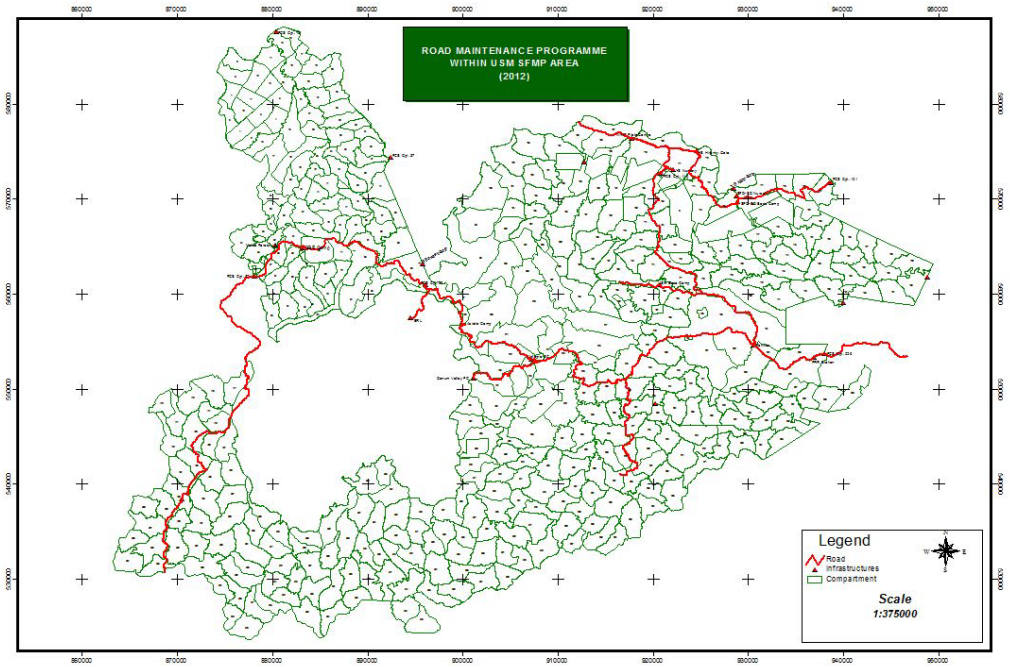


Figure 17: Road maintenance programme conducted in 2017

Road maintenance in Ulu Segama Forest Reserve

Box culverts were constructed in the 3rd quarter to replace the old log bridges by appointed contractor, Karnia

2.6 Community Forestry

SFD has engaged closely with communities for over a decade who are living adjacent to the USM SFMP area to improve their forestry awareness and related to livelihood. In 2017, SFD had assisted the Segama community to supply about 11,200 seedlings for the support of restoration project in Bukit Piton Forest Reserve. Besides that, SFD had carried out eight (8) consultations and meetings with the Segama and Silam communities, and estate workers who are adjacent to USM SFMP to give them awareness on forest certification by the Forest Stewardship Council (FSC) and to discuss issues on forest reserves, poaching, wildlife conservation, roads (especially for estates that are using forest roads).

Consultation with community of Segama Zone (top) and Oil Palm Estate communities (bottom)

Consultation and FSC briefing with community Silam Zone

2.7 Malua Wildlife Habitat Conservation Bank

The Malua Wildlife Habitat Conservation Bank (MWHCB) was a partnership project between the State Government of Sabah and New Forest Eco Products Fund which was started in 2008, to conserve and monetize biodiversity and carbon values within the Malua Forest Reserve. Over a decade, the project has come to its final year of implementation when the New Forest Eco Products Fund decided to exit the project in May 2017. To date, approximately 230,000 Biodiversity Conservation Certificates (BCCs) was successfully sold since the project kicked off, significantly less than the 3.4 million of total inventories. The achievements throughout the period of 10 years show the project has successfully stabilised the Malua Forest Reserve borders against oil palm encroachment, forest regeneration has improved the forest health and biodiversity, and issues of wildlife poaching are continually being tackled. The wildlife monitoring data also shows many species are thriving today.

Prior to the project exits, an obligation of USD 2.5 million via the New Forest Eco Products Fund was transferred to the Sabah State Government to finance activities such as resource protection and wildlife monitoring programme which are still being carried out.

In 2017, various protection activities were carried out such as ground patrolling at Malua Forest Reserve boundaries especially in the northeast (compartments 7 to 38) and southern area (compartments 49, 57, 56, 60 and 71); installation and maintenance of warning plates along Malua's border; inspection of each main security gate i.e. Syarimo 7 & 9 (IOI), Ladang Pin 7 (Tung Hup) and Pintasan 5 and 8 (Kwantas); and river patrolling along Sg. Malua and Sg. Malubuk.

For wildlife monitoring, various activities were conducted such as night and morning observations, orang utan nest counting, opportunistic sighting, hornbill observation artificial saltlick monitoring and camera trapping. Results of the wildlife monitoring are as shown in Table 6.

Table 6: Wildlife activity in Malua Forest Reserve

Activity	Location	Result
1) Night Spotting	Cpt 49, 50, 52, 51, 58, 85 & 71 (main road)	Covered 64km distance (12km/session) where 16 terrestrial mammals were recorded, which four (4) species classified as threatened in IUCN red list i.e. Bornean pygmy elephant, Bearded pig Sambar deer and Bornean slow loris. Species detections per kilometres were low < 1 (range: 0.01-0.12 species per day/km). Sambar deer and Flying squirrels is most common detection along the surveys.
2) Morning drive observation	Cpt 49, 50, 52, 51, 58, 85 & 71 (main road)	Covered 80km distance where, 10 wildlife species (mammals) were recorded whereby Sambar deer recorded the highest species detected (range: 0.10-0.13 ind. per day/km), and 4 hornbill species i.e. Rhinoceros, Asian black, Oriental pied and Wreathed were detceted. At least six (6) species are listed as threatened species in IUCN red list namely Bornean pygmy elephant, Bornean gibbon, Bearded pig, Sambar deer, Orang-utan and Pig tailed macaque. Detection species ranging between 0.01-0.13 species per km/day.
3) Orang Utan nest counting (line transects)	Cpt. 85, 52, 37, 15&16	Completed 7th & 8th ground nest counting which covered four (4) transect with 2000m distance per census. Result shows that the Orang-utan a density ranges across (4) sites i.e. 1) Malua north: 2.25-3.5495.78 individual/km², 2) Malua south: 1.52-3.13 individual/km², 3) Malua east: 0.91-4.17 individual/km² and 4) SBE: 1.90-2.58 individual/km². Overall, average Orang-utan densities in Malua ranging from 0.91-4.17 individual/km². Slightly increase, compared to previous year.
4) Opportunistic sighting	Malua FR roads	18 wildlife species were recorded i.e. 14 mammals and 4 hornbills (Rhinoceros, Asian black, Oriental pied and White crowned). 8 terrestrial wildlifes are listed as threatened species in IUCN red list such Bornean pygmy elephant, Banteng, Tarsier, Orang-utan, Pig tailed macaque, Sambar deer, Bearded pig and Slow loris. Sambar deer and Bearded Pig known as common species and recorded the highest detection per day. Species detections ranging from 0.17-2.0 individual/km

Activity	Location	Result
5) Hornbill observation	Cpt 52, 51, 85,71,49,48, 84	Covered 4000m distance. Three (3) hornbills' species were detected during survey (Rhinoceros, Oriental pied and Bushy crested). All species are listed as near threatened in IUCN red list. Rhinoceros and Oriental pied hornbill were most common species detected throughout the surveys.
6) Artificial saltlick monitoring	Cpt. 60 (1) & 52 (2)	3 artificial saltlicks are still being monitored i.e. one (1) in cpt.60 and two (2) in cpt.52. Large mammals is the most common wildlife visited the artificial saltlick such as Banteng, Sambar deer, Bearded pig, Bornean pygmy elephant, Barking deer. The above mammals are classified as threatened species in IUCN redlist.
7) Camera Trapping	Malua FR	Two (2) units were installed randomly in cpt. 49 and cpt.52. No wildlife was photographed due to camera mechanical failure.

2.8 Sime Darby Restoration Project to Protect & Rehabilitate Orang Utan Habitats in Northern Ulu Segama Programme

The Sime Darby restoration project has come to its ninth year of implementation since the inception in 2009. In 2017, planting activity has come to its final phase whereby about 1,043.18 hectares were successfully planted in compartments 119, 120 and 122 as summarized in Table 7 and Figure 18. The accumulated planted area since 2009 is about 4,751.75 ha in 10 compartments within Bukit Piton Forest Reserve as shown in Figure 19. Although the planting activity is completed, the maintenance work is still being implemented until its final round towards the end of 2018.

Table 7: Summary of Sime Darby restoration project in 2017

No	Field Operation	Target (ha)	Achievement (ha)
1	Survey	185.0	186.95
2	Comprehensive Restoration Plan	850.0	847.01

3	Silviculture	411.0	411.77
4	Planting	1,043.0	1,043.18
5	Maintenance	7861.0	7,861.03

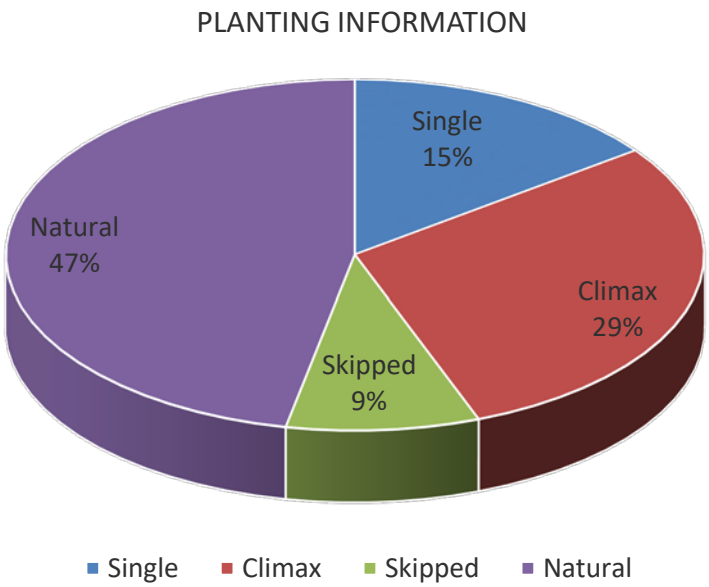


Figure 18: Planting information of Sime Darby restoration project in 2017

The above pie chart shows the summary of planting information in 2017 as follows:-

i) 29% of the area is secondary forest and planted with climax tree species.
ii) 47% of the area is still consisting of better natural regeneration and was skipped from planting.
iii) 15% of the area is dominated by wild ginger, shrubs and weeds, thus planted with pioneer and wild fruit tree species.
iv) 9% of the area is skipped from planting due to unsuitable condition, such as water logged or pond, ex quarry, road and rocky surface.
v) Total of planted seedlings are 14,086 points of a mixed 56 species.

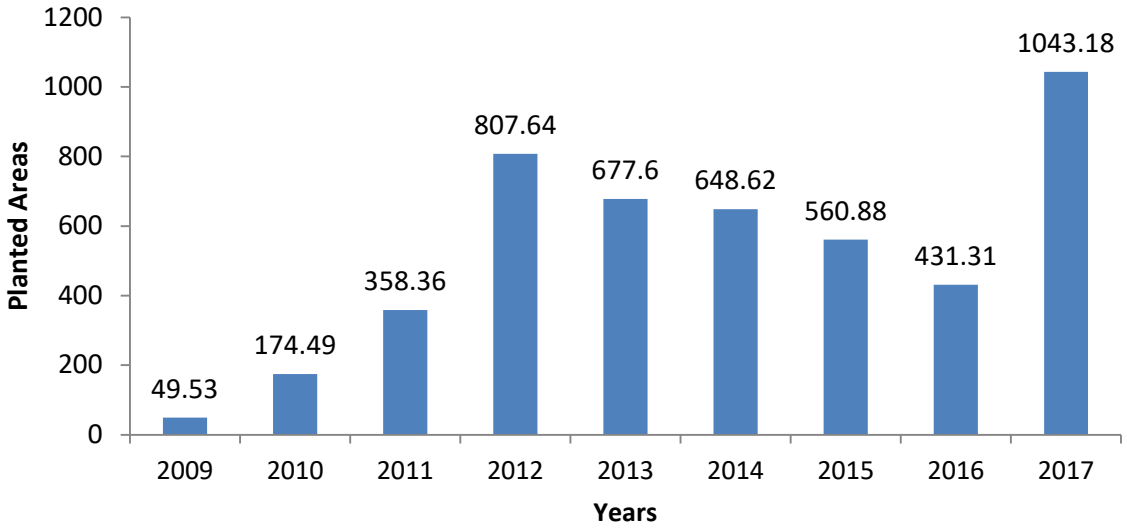
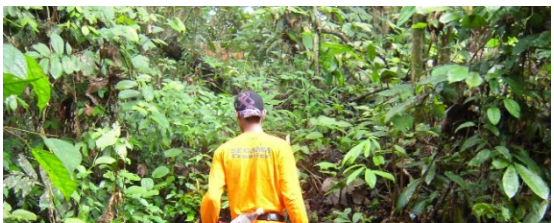


Figure 19: Accumulated Sime Darby restoration project in Bukit Piton FR since 2009

Briefing by SFD's staff to contractor before the maintenance activity started



Maintenance work in Compartment 117 by Contractor Segama Frontier

Verification work by Sime Darby and SFD at Compartment 118

2.9 Forest Certification

In May 2017, the first surveillance audit was carried out after the USM SFMP was re-certified (2nd cycle) in 2016 by the Forest Stewardship Council (FSC). The third party auditor, Scientific Certification Systems (SCS) has closed previous Correction Action Requests (CARs) in 2016. However six (6) new findings that need to be addressed and rectified before the next surveillance audit in 2018 i.e. five (5) minor CARs and one (1) Observation as shown in Table 8, were recorded.

Table 8: New Correction Action Requests (CARs) in 2017

No	CAR or Observation	Non-Conformity	Remarks
1.	**Minor 2017.1 FSC Indicator 1.5.1**	In section 1.3 Policy Statement of the Forest Management Plan (January 1st 2008 – December 31st 2017 for Ulu Segama-Malua (USM) Sustainable Forest Management Project Area and the mid-term review of the management plan did not contain express policies on the need to protect the FMU from fire, illegal felling, encroachment and poaching and safeguard the forest resources under responsible management.	A policy statement shall be written in the management plan on the need to protect the FMU from fire, illegal felling, encroachment and poaching and safeguard the forest resources under responsible management.
2.	**Minor 2017.2 FSC Indicator 4.4.2**	The policy for local employment had not been stated in the Policy Statement and Management Objectives in the FMP and the mid-term review of the management plan.	The policy for local employment shall be clearly stated in the forest management plan.
3.	**Minor 2017.3 FSC Observation 6.7.3**	Plan for the on-site facilities for secure collection of chemical and solid non-organic waste at Kawag Lodge had yet to be developed in accordance to specific guidance of the FMU.	On-site facilities for secure collection of chemical and solid non-organic waste at Kawag Lodge would have to be developed in accordance to the SOP written for the FMU.
4.	**Observation 2017.4 FSC Indicator 7.3.3**	Records were not maintained as to when each forest worker received training on the implementation of the management plan	Records shall maintained as to when each forest workers received training on the implementation of the management plan.
5.	**Minor 2017.5 FSC Indicator 8.5.1**	Environmental and social impacts of operations and cost, productivity, and efficiency of forest management were not presented in the public summary.	Environmental and social impacts of operations and costs, productivity, and efficiency of forest management shall be presented in the public summary.
6.	**Minor 2017.6 FSC Indicator 9.4.5**	Results of annual monitoring of HCV 6 Cultural Identity of Local Communities were not presented in the publicly available summary.	Annual monitoring shall be conducted on all HCV sites identified and results presented in the publicly available summary.

Interview session with the SFD field staff and inspection of generator store (right) at the Sime Darby camp site by Dr. Yap, SCS


DFO explained on the orang utan census activities in the compartment 112, Bukit Piton Forest Reserve


Dr. Yap visited satellite camp in the compartment 15, Malua Forest Reserve (left) and river cruise at the Malua River (right)

2.10 Ecotourism

Ecotourism in USM SFMP is a business opportunity that enhances and strengthens the SFM principles by creating public awareness and environmental education. The ecotourism ideas will help to create multiple-use for economic, social and environmental purposes as demanded in SFM. The two main ecotourism sites in USM are the Tower of Heaven (Menara Kayangan) and Kawag Danum Riverside Lodge.

The Tower of Heaven (Menara Kayangan) was launched and operational since 2012. Located at the top of Mount Silam at the elevation of 884 meters from sea level, it has attracted thousands of local and international visitors to witness spectacular scenic bird's eye view of Darvel Bay Islands and beauty of ultramafic coastal forest that are home to interesting small orange-red crabs and other wildlife. In 2017, this facility has attracted about 40,000 both local and foreign visitors and generated revenue of about RM200,000.00.

Aerial view of Tower of Heaven (Menara Kayangan)

The Kawag Riverside Lodge (KRL) which is located not far from the USM base office offers and indulges local and international visitors to experience ambience of forest tranquillity, and witness big mammals (i.e. elephant, sambar deer, bearded pig, orang utan etc.) walking through the forest, and a variety of birds (i.e. hornbills, king fishers, frog mouth, trogon, pita etc.). The KRL is operated and managed by Borneo Refugia Sdn Bhd. Facilities provided are tourist lodge, restaurant, staff quarters, bird observation tower and jetty.

Kawag Riverside Lodge

2.11 INFAPRO (Innoprise-FACE Project)

The INFAPRO project was initiated in 1992 which is jointly established by the Yayasan Sabah Group and Face the Future Foundation (formerly known as Face Foundation). This is the largest project on offsetting CO^2 in Ulu Segama Forest Reserve and the tropics. Generally, in 2017, not much work implemented at the INFAPRO as most of the rehabilitation activities have been completed except on road and culverts and bridges maintenance in contract 1 & 9. Census 10 years after planting on planted seedlings was carried out in contract 4 planting compartment. The aim is to find out seedling the survival rate. Other INFAPRO field activities were down scaled due to budget constraint and less operational funds from stakeholder, as voluntary carbon market trend is weakened over the years. The activities as described in Table 9.

Table 9: Summary of INFAPRO activities in 2017

No.	Field Operation	Location	Achievement
1	Planting	NIL	NIL
2	Climber cutting	NIL	NIL
3	Maintenance	NIL	NIL
4	Census	Contract 4	200 ha
5	Road maintenance	Contract 9	8.2 km
		Contract 4	0.37 km
		Contract 3	4.04 km
		Contract 1&2	3.83 km

2.12 Taliwas Forestry and Recreation Area

The Taliwas Forestry and Recreation Area was first established by SFD back in 1975 and was handed over to the Yayasan Sabah Group in 1992. Back in the 80's, about 800 ha of forests were badly burnt due to prolonged drought. In 1985 this area was restored and planted with dipterocarp tree species. Currently, this area is managed by the Division of Conservation and Environmental Management of the Yayasan Sabah Group, purposely for Sg. Taliwas Conservation Area. The main programme was to undertake research integrated with local recreation and ecotourism.

In 2017, several facilities of recreation in Taliwas area were upgraded such as:

1) Demolished and cleaned up old buildings;
2) Improved trail routes and gazebos; and
3) Improved trail routed to waterfalls and lakes

2.13 Tropical Rainforest Conservation and Research Centre (VJR Merisuli)

The Tropical Rainforest Conservation and Research Centre (Merisuli) Project is initiated by the Landskap Malaysia, a non-government organization based in Kuala Lumpur. In November 2012, an agreement was signed between the State Government of Sabah (represented by SFD) and the Tropical Rainforest Conservation and Research Centre Sdn. Bhd. (TRCRC), for a collaboration term of 99 years. TRCRC will responsible for the management of the project and provide funds for all incurred operational and development costs.

The project is located at Compartment 121 (Block 9, 10, 11 and 12), VJR Merisuli and covered an area of approximately 224 hectares. The main goals of the project are:-

(i) To establish a living collection centre to perpetuate tropical rainforest species.
(ii) To set up plant nurseries and to carry out programme for seed collection, germination and propagation for reforestation and restoration.
(iii) To develop and expand existing seed and gene banks and herbarium center.
(iv) To carry out relevant scientific and training programme.
(v) To explore potential of establishment an Eco Park within the project site as to generate awareness on tropical rainforest conservation and protection

In 2017, the progress achieved by the project were:-

(i) Submitted 3rd Draft of 10-year management plan in progress of preparation to be submit to SFM for review (reformat structure and contain);
(ii) Boundary Survey completed by Victes Tan Land and Survey Company. Document was submitted to Jabatan Tanah dan Ukur;
(iii) Successfully transplanted 51 wild fruit into poly bag from germination bag;
(iv) Constructed accommodation quarters (10 rooms);
(v) Completed 3 round of census of planted seedlings from 2016;
(vi) Completed 11 plots of boundary demarcation;
(vii) Successfully planted 11 plots by TRCRC staffs; and
(viii) Organised (2) Raleigh international expedition (volunteer program)

TRCRC nursery in compartment 121, VJR Merisuli

3.0 VISITS

The list of international and local visitors to USM SFMP in 2017 is shown in the following table:

Table 10: List of visitors to Ulu Segama-Malua SFM Project in 2017

No.	Visitors	Month	Purpose of Visit
1.	Deputy Director of Health Department	January	Official visit by YBHG. Datuk Dr. Lokman Hakim bin Sulaiman as Deputy Director of Health Department. The official visited surveyed activities to control malaria infection at the Ulu Segama-Malua Office.
2.	Datai's Resident Naturalist	March	Official visit by Mr. Irshad Mubarak, The Datai's Resident Naturalist to the Malua Forest Reserve to assess potential site for 'Datai Brand Eco-Toursim' in Sabah
3.	Group Chief Sustainability Officer, Sime Darby Group	September	Official visit by Dr. Simon Lord, Group Chief Sustainability Officer, Sime Darby Group to the restoration of orang-utan Habitat Project in Bukit Piton Forest Reserve.
4.	Chief Conservator of Forests	September	Official visit by Datuk Sam Mannan, Chief Conservator of Forests (CCF) to : (i) Tropical Rainforest Conservation and Research Centre (TRCRC); and (ii) Restoration Project areas (i.e TRLC – Merisuli, Yayasan Sabah, Sime Darby and WWF) in Bukit Piton Forest Reserve

Official visit by YBHG. Datuk Dr. Lokman Hakim bin Sulaiman as Deputy Director of Health Department to the Ulu Segama-Malua Office

Official visit by Mr. Irshad Mubarak, The Datai's Resident Naturalist to the Malua Forest Reserve




Official visit by Dr. Simon Lord, Group Chief Sustainability Officer of Sime Darby Group to the restoration of orang-utan Habitat Project in Bukit Piton Forest Reserve


Planting ceremony by Dr. Simon Lord to commemorate visit in the Bukit Piton Forest Reserve

CCF visit at the TRCRC's camp site, VJR Merisuli. (Top) Briefing by Mr Benny, TRCRC Field Officer and (bottom) CCF walk through the nursery


CCF visit at the Sime Darby Restoration Project in Bukit Piton Forest Reserve. DFO enlightening CCF about newly planted area in the compartment 120 (top) and four (4) year old binuang tree in the compartment 118

Group photo with CCF at the Sime Darby camp site


CCF visit at the WWF-Malaysia new planting site at the compartment 111 covering about 134 ha (top); and briefing by Mr. Fredinand of WWF-Malaysia and orang utan nest was spotted on a planted tree (bottom)

CCF visit at the Segama collapsed bridge near the Forest Checking Station 110 (top); and meeting with four (4) new contract staffs

5.0 BUDGET AND EXPENDITURE

In 2017, the Ulu Segama-Malua Sustainable Management Project was allocated RM3.2 million under the 11th Malaysian Plan through the State Government of Sabah (Development Vote D11 111 150801 000200 00000024). The allocation was utilized for operational and development expenditure, mainly for capital expenditure (infrastructure development), vehicles and machineries maintenance, fuel, supervision of field activities, implementation of field activities and procurement of field equipment.

Whilst for the restoration and protection of orang utan habitats at Bukit Piton Forest Reserve, the actual expenditure by the Sime Darby Plantation Sdn Bhd in 2017 was about RM666,034.36 which was channelled through Trust Fund Vot K75 120 150801 00000000 00000 (SFD-SIME DARBY PROJECT). The budget was mainly used for salaries and allowances for contract staff, implementation of field activities (site preparation, planting and maintenance), and procurement of field equipment.

The Malua Wildlife Habitat Conservation Bank Project on the other hand, spent about RM601,241.34. This expenditure covered the salaries and allowances for SFD staff, fuel, implementation of resource protection and wildlife management activities and procurement of field equipment.