

## **ULU SEGAMA-MALUA SUSTAINABLE FOREST MANAGEMENT PROJECT**

The Ulu Segama-Malua Sustainable Forest Management Project (USM) has entered the second Forest Management Plan (2<sup>nd</sup> FMP) implementation in year 2018. The new management plan provides update of the project description, and activities framework which to be implemented for the next decade (2018 – 2027). The USM administer the largest complex of 11 contiguous protected forest reserves that expand area of 242,884 hectares namely Sapagaya FR, Ulu Segama FR, Sungai Taliwas FR, Mount Louisa FR, Extension Danum Valley FR, Bukit Piton FR, Malua FR, Extension Mount Louisa FR, VJR Kawag Gibong, VJR Sepagaya and VJR Merisuli (Figure 1). The project area received its first Well Managed Forest Certification from Forest Stewardship Council (FSC) in June 2011, and subsequently, was re-certified in June 2016 under the registration number SCS-FM/COC-00141N with an agreement of no commercial harvesting of timber until the 12<sup>th</sup> June 2021 and capitalizing the non-timber ecosystem services provided by the project area is encouraged.

The management objective is to ensure the maintenance and enhancement of the key ecosystem functions (conserve and rehabilitate wildlife habitats i.e. orangutan, pygmy elephants, tembadau, clouded leopard etc.), and to safeguard the environment quality, particularly soil and water resources. The protection of this area is fundamental to the management of the watershed areas of the two major rivers namely, Segama River and Kinabatangan River.

Among activities to be highlighted in this report i.e. forest rehabilitation, wildlife monitoring, resource protection, forest road, community forestry and forest certification. The implementation of the mentioned activities was based on the approved Annual Work Plan (AWP) 2018 and mainly funded under the Sabah State Development Fund (D11) 11<sup>th</sup> Malaysian Plan (RMK11) amounting about RM3.1 million. Some rehabilitation activities were supported by the Heart of Borneo federal fund, Forestry Community Project (PPM) fund, Yayasan Sime Darby, WWF Malaysia and Yayasan Sabah. This report will also cover briefly on other stakeholder programs i.e. INFAPRO, Taliwas Forestry and Recreation Area, and Tropical Rainforest Living Collection.

### **1.0 Forest Rehabilitation**

Forest rehabilitation in USM cover two main activities i.e. silviculture treatment and tree planting. Achievement in both activities are bit minimal compare to previous years due to limited fund. For silviculture treatment in 2018, about 468 hectares was treated in Bukit Piton FR which was funded by the Forestry Community Project (367 hectares) and WWF-Malaysia (101 hectares) as shown in Figure 2. The treatment focus on climbers with the diameter less than 5 cm which give more harm on the natural forest regeneration and structure. Whilst climbers and woody vines exceeding than 5 cm diameter would became alternative food source and provide shelter to the wildlife, in particular bird community.

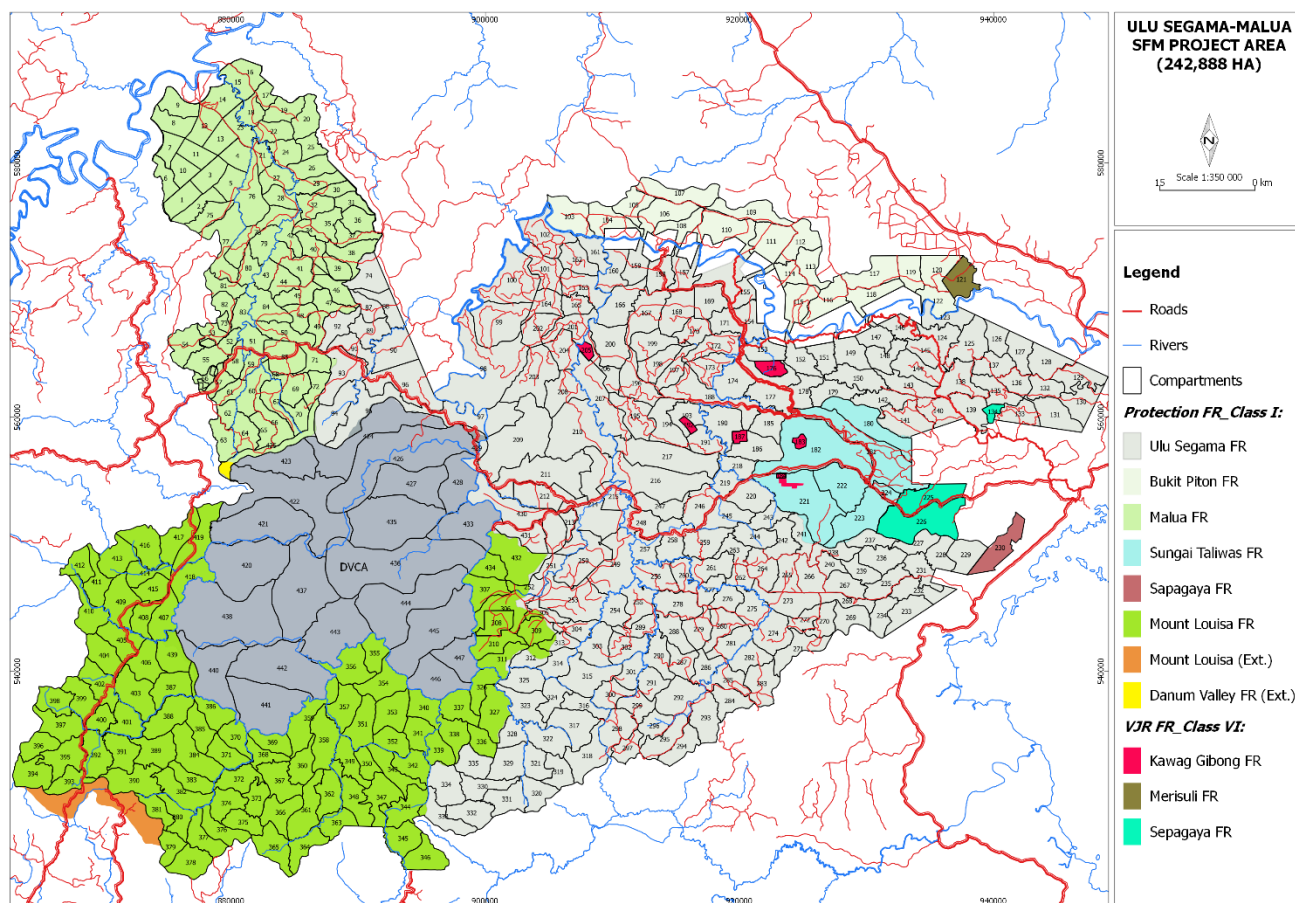


Figure 1: Forest Reserves within USM

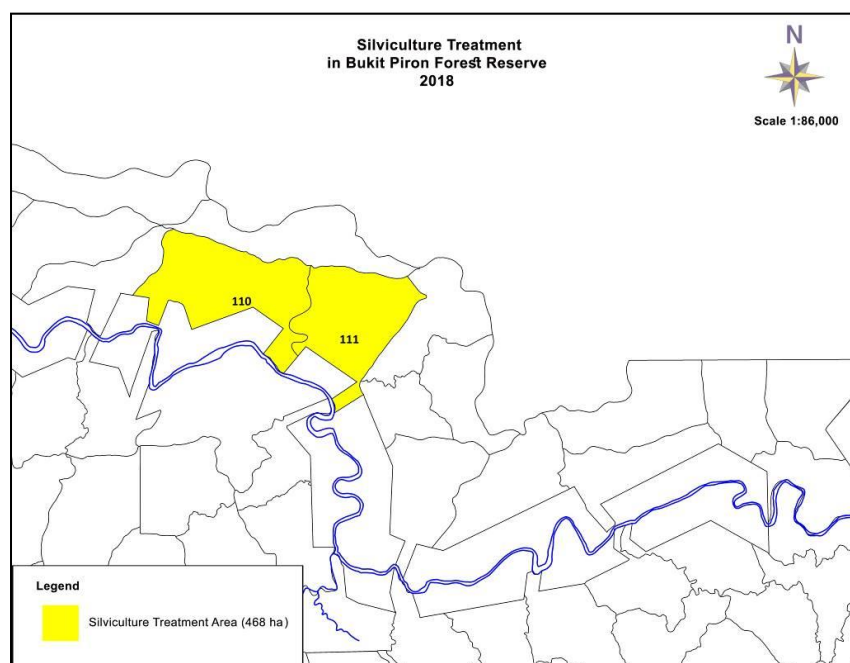


Figure 2: Treatment area in 2018

Before



After



Silviculture treatment at Cpt.110 under the PPM fund

Before



After



Silviculture treatment at Cpt.111 funded by WWF-Malaysia

While for tree planting, about 59.36 hectares was planted by the WWF Malaysia in compartment 111, Bukit Piton FR and 170 hectares planted in compartment 155 and 156, Ulu Segama FR (Lower Kawag) which was funded under the Heart of Borneo 11<sup>th</sup> Malaysian Plan federal fund (Figure 3). Both areas share similar objective to rehabilitate habitat for orangutan and other wildlife. Maintenance works which is crucial part in tree planting were being carried out in certain planted area to ensure survival of planted seedlings from creepers and shrubs. The activity includes line and point clearance, and resupply of dead seedlings. A total about 2,927 hectares were maintained in several compartments in Bukit Piton FR funded by the WWF Malaysia, Yayasan Sabah and Yayasan Sime Darby, and newly planted in Ulu Segama FR (Lower Kawag) (Figure 3).

Two rehabilitation projects in Bukit Piton FR were handed over to the Sabah Forestry Department in 2018 namely AEON's funded reforestation of 77 hectares within WWF Malaysia's committed area; and Yayasan Sime Darby rehabilitation of orangutan habitat.



Tree planting in Compartment 155, Ulu Segama FR (Lower Kawag)

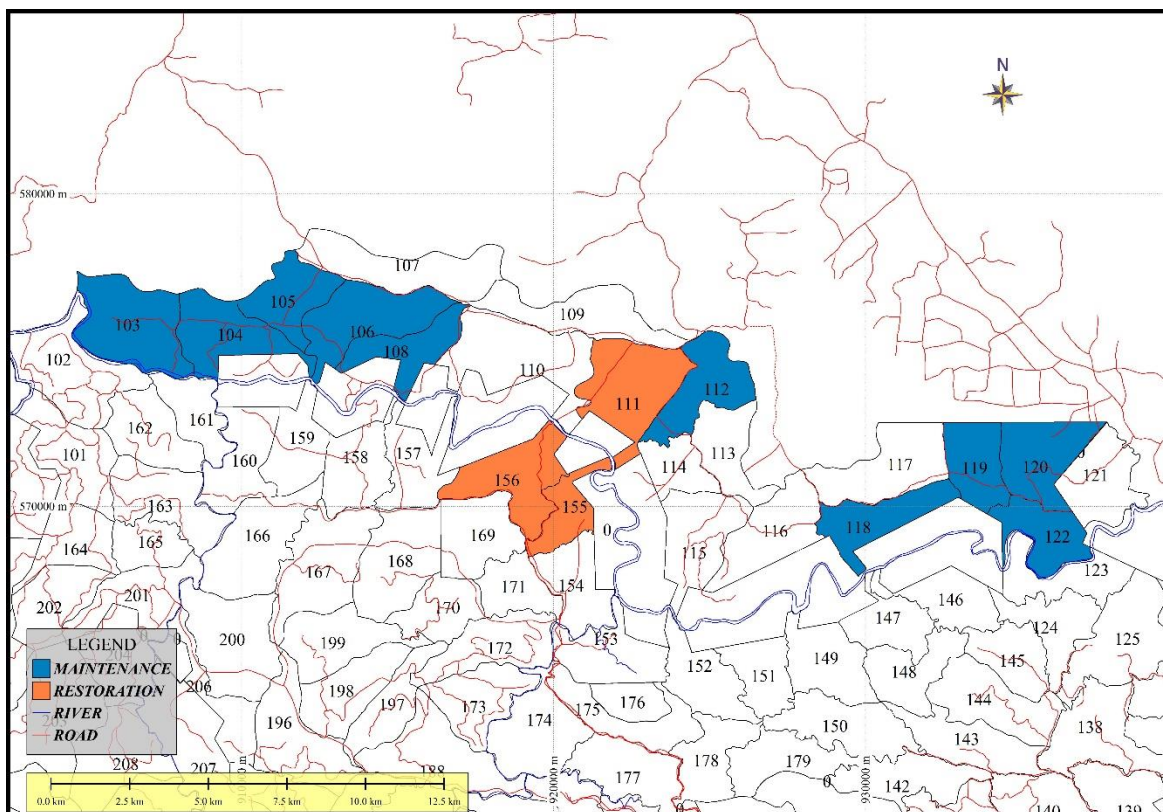


Figure 3: Forest rehabilitation area in 2018.

AEON CO. (M) BHD. partnered with WWF Malaysia and SFD came into an agreement since June 2011 to restore 77 hectares of logged over forest in Bukit piton FR through planting of various selective trees in the hopes of building habitats for the orangutan. The handing over ceremony was held in April 2018 after lengthy years of efforts to restore and promote forest recovery.



Handing over ceremony post visit by Datuk Sam Mannan and Mr. Poh Ying Loo, Executive Director of AEON CO. (M) BHD at the AEON's funded reforestation site.

Yayasan Sime Darby had completed the last remaining maintenance works which includes fertilizing and application of herbicides in accordance to FSC guidelines and requirement. After decade of efforts, the project successfully rehabilitates about 5,400 hectares, planted with about 300,000 seedlings with more than 90 tree species such as indigenous dipterocarps, non-dipterocarps, pioneers and fruit trees. The ceremony of handing over project by Yayasan Sime Darby to Sabah Forestry Department was held on the 7<sup>th</sup> December 2018 as to commemorate 10 years of rehabilitation efforts to re-create a healthy vital habitat for wildlife, in particular orangutan, as the umbrella species of Borneo.



Handing over ceremony of the Sime Darby's Rehabilitation of Orangutan Habitat Project which was witnessed by Datuk Mashor Mohd. Jaini, the Chief Conservator of Forests and Mr. Jeffri Salim Davidson, the Group Chief Executive Officer of Sime Darby Berhad.

## 2.0 Wildlife Monitoring Activities

The USM is home to the iconic orangutans (the Bornean endemic *Pongo pygmaeus morio*) and this is where the largest population of orangutans is found. They number some 5,000 individuals (Ancrenaz et al, 2005), which accounts to about half of the total orangutan population in Sabah. The USM constitute part of the largest remaining Malaysian unfragmented forests which play a major role in harbouring what may be the highest numbers of large Bornean mammals at present. This area is an important refuge for key wildlife species such as orangutan, Bornean pygmy elephant, clouded leopard and tembadau. They are the emblems of the forest ecosystems and provide indirect indicative protection to other wildlife species.

Since the previous management plan, various wildlife monitoring activities were carried out in two types of habitat, namely less disturbed forest at the Malua Forest Reserve and heavily disturbed forest at the Bukit Piton Forest Reserve (Figure 4). Both areas recorded sighting of rare, threatened and endangered (RTE) species under the Malaysian National Interpretation which is fall under HCV 1 (Species Diversity). Amongst activities that were carried out i.e. ground orangutan nest census, opportunistic sightings, night and morning drive, and bird survey.

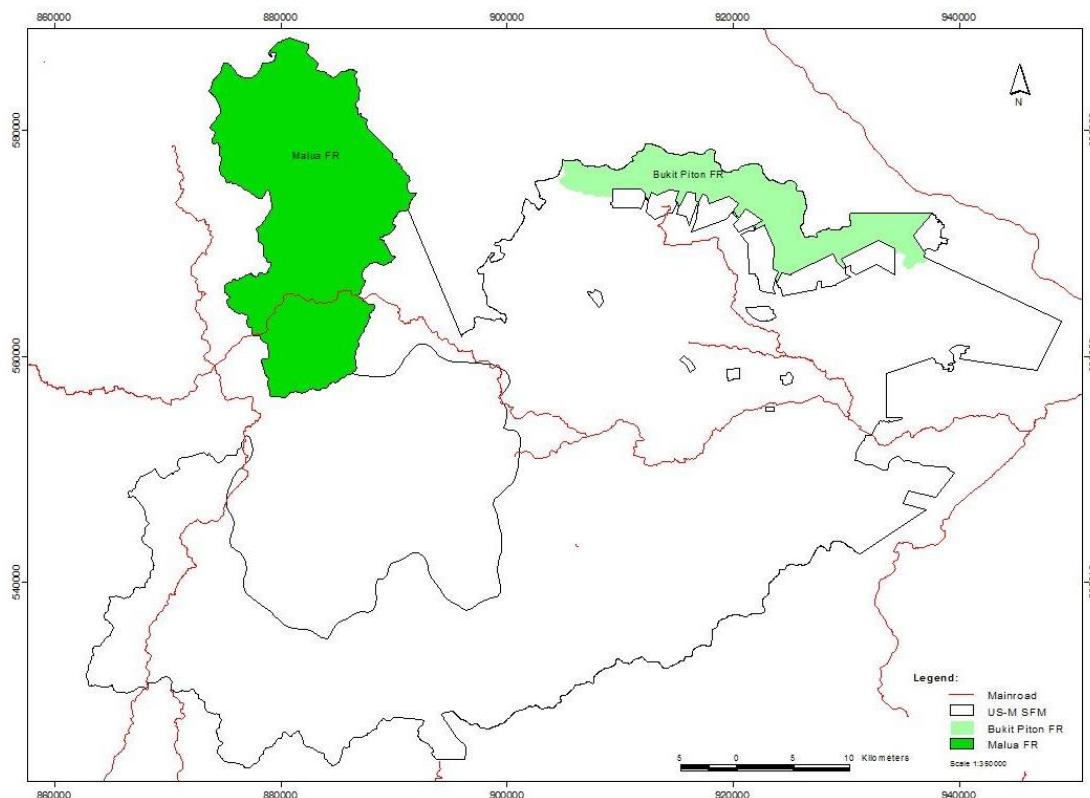


Figure 4: Wildlife monitoring activities

### Orangutan Nest Census

Census results in 2018 recorded that the orangutan densities in Malua FR and Bukit Piton FR are between 1.97 – 5.07 individual/km<sup>2</sup>, and 1.59 individual/km<sup>2</sup> respectively, and most nests were spotted on the medium size trees and lower crowns of dominant trees i.e. pioneer species (Figure 5). Data shows higher densities in less disturb forest in Malua FR compare to heavily

disturbed forest at the Bukit Piton FR. However, ground census in Bukit Piton FR shows an increment number of nest compare to previous years e.g. 1.03 individual/km<sup>2</sup> in 2016 and 0.89 individual/km<sup>2</sup> in 2017. The results indicated number of orangutan is slowly grew as most planted seedlings began to mature and provide suitable canopy for orangutan nest and foods.

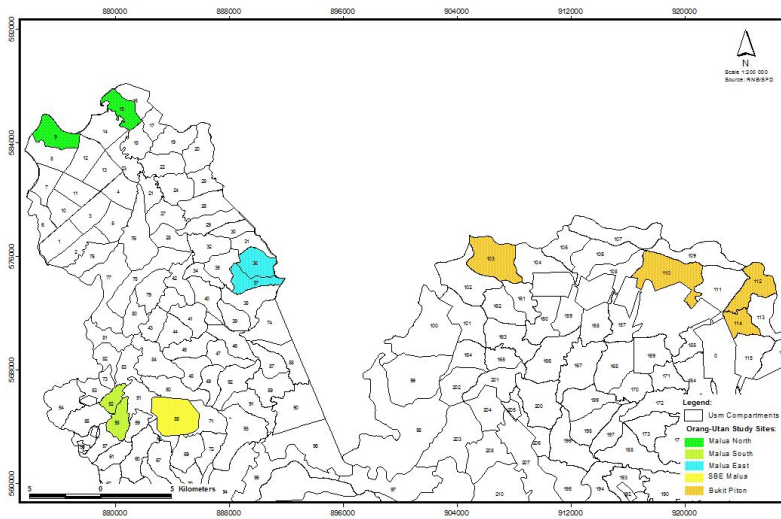
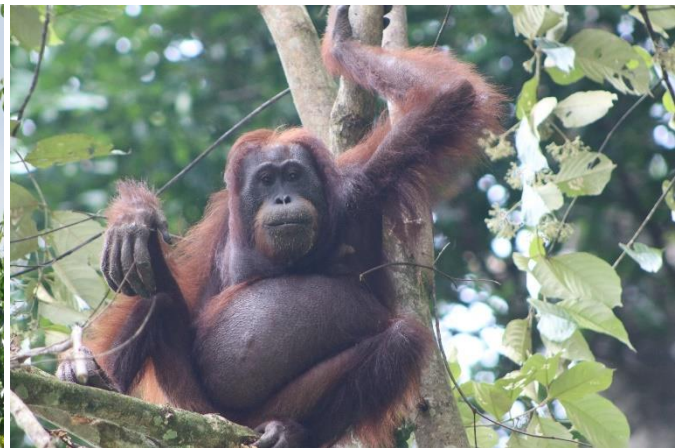


Figure 5: Locations of 5 study sites of ground orangutan nest census in Malua FR and Bukit Piton FR



Orangutan grounds census in Bukit piton FR



Orangutan grounds census activity

### Opportunistic Wildlife Sightings (Adhoc)

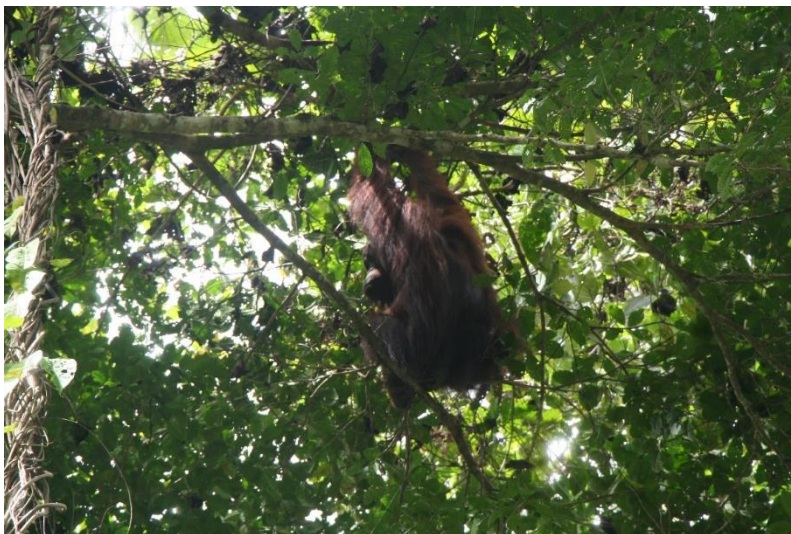
At least five large terrestrial mammals were frequently sighted in 2018 and classified as threatened under IUCN red list criteria such as Bornean pygmy elephant, Bornean orangutan, Pig tailed macaque, Sambar deer and bearded pig. As of to date, 58 species of large terrestrial mammals with 24 families were recorded within USM area since the previous FMP. Eight (8) species are classified as totally protected based on the Wildlife Conservation Enactment 1997 i.e. *Bos javanicus*, *Helarctos malayanus*, *Nasalis larvatus*, *Neofelis nebulosa*, *Pongo pygmaeus mario*, *Dicerorhinus sumatrensis*, *Elephas maximus* and *Sunda pangolin*, and more than 40 species classified under schedule II (protected species-limited hunting with license) and eight (8) species recorded under schedule III (protected species hunting with license).



Bornean pygmy elephant (left) and pig tailed macaque (right) spotted on the forest road.

### Night and Morning Survey

Survey shows low detection of threatened wildlife species in 2018 ranging between 0.007 – 0.028 detections/day for morning drive and 0.002 – 0.040 detections/day for night drive. Ungulates species such as Sambar Deer and Bearded Pig, and some primate species i.e. Bornean orangutan, North Borneo Gibbon and Pig tailed macaque were frequently sighted during morning drive in both areas. Whereas, Sambar deer and bearded pig were frequently spotted during night drive.



Bornean orangutan spotted during morning drive in Malua FR

### Bird Survey

No discovery of new bird species surveyed in 2018. Record for both areas maintain at 177 bird species whereby 6.21% or 11 of bird species were classified as threatened under the IUCN red list i.e. 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. Whereas, 93.79% or 166 of bird species classified as low risk.



Bornean falconet (left) and nightjar (right) spotted in Bukit Piton FR.

### 3.0 Forest Protection

USM is a huge complex area and almost half of its boundaries (mainly on the eastern parts) are bordering with private lands. However, USM is well protected in the west where it shares a common boundary with other forest reserves i.e. Kuamut FR, Gunung Rara FR, Mt. Magdalena FR and Kalabakan FR. Nevertheless, the project area is very accessible with so many existing roads which poses poaching threat to USM. Therefore, forest protection is crucial activities to prevent illegal activities such as illegal felling, illegal cultivation, illegal occupation, forest fire and poaching. Thus far, patrolling activities are the effective way to monitor and detect especially poaching issues via ground patrol, river patrol and aerial surveillance.

A total 201 days of ground and river patrolling (day and night) were carried out in 2018 which include checking of the USM boundaries to private land (oil palm plantations) (Figure 6). Patrolling efforts were also periodically joint by the Lahad Datu Anti-Poaching Task Force and DaMaI Initiative (comprises of Danum Valley, Maliau Basin and Imbak). A total of 31 poaching signs were detected via indirect sightings e.g. observation of irregular vehicle tracks, and direct sightings of nonregistered vehicles mostly at border to private land.

Aerial surveillances were also carried out as to intensify and support ground patrolling efforts. The survey discovered abandoned camp (suspiciously used for gold panning and gaharu harvesting) at compartment 123, 210, 249 and 283, illegal access point at compartment 393, and an abandoned 4x4 vehicle at compartment 270, were detected. Ground enforcement had been carried out promptly by dismantling abandoned camps and illegal access. Whereas, the abandoned 4x4 vehicle has been seized for further investigation.

River surveillance was carried out mainly at two major rivers i.e. Segama-Bole and Malua, as these were identified as entry hotspot and frequently used by poachers. About 812 km and 315 km total distances were patrolled along Segama-Bole River and Malua River respectively, and no illegal activities detected.

An encroachment case which was detected since 2016 at the adjacent oil palm plantation in compartment 106, Bukit Piton Forest Reserve has been resolved via court order and was enforced by destroying about 5.1 ha of oil palm trees in April 2018

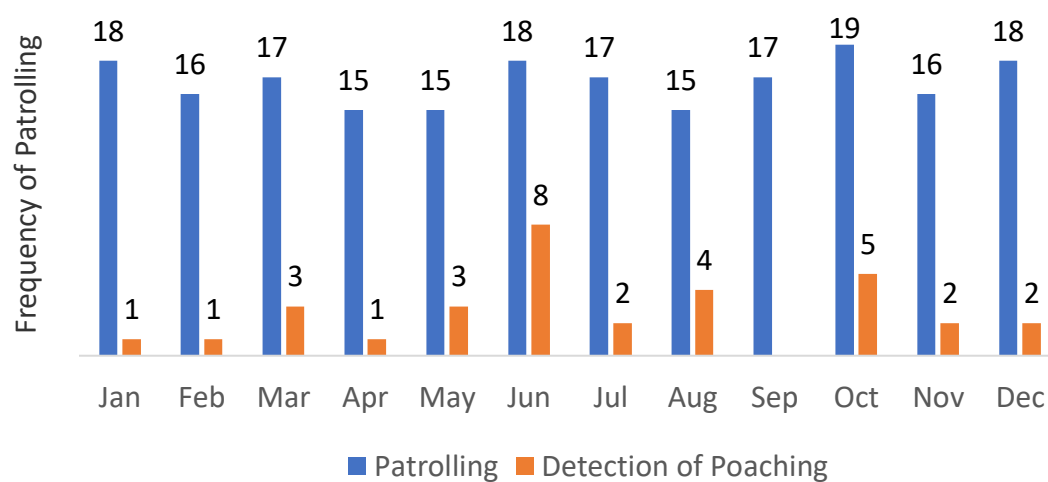


Figure 6: Frequency of patrolling and detection of poaching signs in USM



Joint patrol by WWF Malaysia and DaMaI



River patrolling in Sg Bole (left) and Sg Malua (right)



Ground enforcement on the abandoned illegal camp at compartment 210 (Left); and abandoned 4x4 vehicle at compartment 270 (right) which were detected during aerial surveillance.



Boundary inspection at the Sapagaya FR (left); and northern Malua FR (right)



About 5.1 hectares of illegal oil palm were destroyed in Bukit Piton FR

#### 4.0 Forest Roads

Maintenance of identified forest main roads is very essential to ensure activities such as forest rehabilitation, wildlife monitoring and patrolling can be implemented and achieved as stipulated according to Annual Work Plan (AWP). Forest road is also served to accommodate access and safety for stakeholders to carry out various field operations i.e. INFAPRO, Danum Valley Conservation Area, Borneo Rainforest Lodge, Taliwas Forestry and Recreation Area, Kawag Danum Riverside Lodge, Tropical Rainforest Conservation and Research Centre, WWF rehabilitation project, and Sabah Biodiversity Experiment. There are four identified forest main roads in USM that are still being maintained by the Sabah Forestry Department and Yayasan Sabah. The department had maintained with aggregate road distance about 30 km in Bukit Piton FR from compartment 121 to compartment 112, about 40 km in main Line North from Taliwas to Kawag Complex and Kawag Danum Riversdie Lodge, and partly in Malua FR which cover about 20 km. Whereas, Yayasan Sabah had maintained with aggregate road distance about 30 km in Bukit Piton FR from compartment 109 to 101; and about 90 km in main Line West from Silam to Borneo Rainforest Lodge (refer to Figure 1). All road maintenances were monitored and implemented in accordance to Environmental Impact Assessment (EIA) requirements i.e. no maintenance works carry out during wet season, and no loose soils dump towards river banks.



Road maintenance in main Line North from Taliwas to Kawag Complex (top left); Bukit Piton road from compartment 121 to compartment 112 (top right); and Malua road (below)

## 5.0 Community Forestry

There is no community residing within USM area. However, there are several villages located adjacent to the project area i.e. Kg. Opak, Kg. Tawayari, Kg. Bukit Balacon and Kg. Litok Pulau of Segama Zone, and Kg. Tampenau, Kg. Lamak, Kg. Bumiputera, Kg Dewata and Kg. Batu 21 of Silam Zone. Consultations with the villagers were carried out periodically and some 15 identified locals from Segama and Silam zones were invited to participate Honorary Ranger course which was organised by the SFD at the Sabah Forestry Institute, Telupid in 2018, for awareness, and trained as certified ranger in the involvement forest protection activities.

There is no specific basic need required by communities residing directly outside of project area, except for Kg. Bumiputera and Kg. Silam depend on water derived from Mt. Silam catchments. An old burial site in Tampadung Cave at the VJR Merisuli was claimed by the communities of Kg. Opak and has been identified as HCV 6 (cultural value). Occasionally the communities seek permission from the management team to visit and clean the burial site. Due to this cultural claim, the management team establish boundary surrounding the burial area and periodically carried out maintenance of the boundary to protect and monitor the important community cultural site.



Maintenance of Tampadung Cave boundary by community of Kg Opak in April 2018

## 6.0 Forest Certification

USM received its first Well Managed Forest Certification from Forest Stewardship Council (FSC) in June 2011, and subsequently, was re-certified in June 2016 under the registration number SCS-FM/COC-00141N with an agreement of no commercial harvesting of timber until the 12<sup>th</sup> June 2021 and capitalizing the non-timber ecosystem services provided by the project area is encouraged. The certification is annually monitored and evaluated by the third-party auditor, Scientific Certification Systems (SCS) Global to ensure management of the ongoing projects comply with requirements and standards of the certification. Evaluation outcomes in 2018 had closed all five Minor Corrective Action Requests (CARs). However, five new Minor CARs had been raised and need to be addressed within a year, before the next surveillance audit 2019.



Inspection of orangutan ground census in Bukit Piton FR (left); and Tekala Bridge at the Sg. Danum (right) by Dr. Yap, SCS Global.



Taking opportunity to meet up with Pn. Roslinah, community of Kg. Bukit Belacon, Segama Zone



Inspection of genset room at the Kawag Complex (left); and private land boundary to Ulu Segam FR (right)

## 7.0 Other Programs

Several other programs that are still being carried out by stakeholders such as INFAPRO, Taliwas Forestry and Recreation Area (TFRA), and Tropical Rainforest Living Collection (TRLIC) in VJR Merisuli. The INFAPRO is the largest project on offsetting CO<sub>2</sub> in Ulu Segama Forest Reserve and the tropics, which was initiated since 1992 by the Yayasan Sabah Group and Face the Future Foundation. Not much work was done in 2018 except for road maintenance in Contract 1, 2, 4 and 9.

The TFRA is also managed by the Yayasan Sabah Group since it was handed over by the Sabah Forestry Department since 1992. As in 2018, the program focuses more on recreational activity from local and international students. Some minor maintenance and upgrading of facilities i.e. main gate and forest trails to waterfall and lake.

Tropical Rainforest Conservation and Research Centre (TRCRC) has established a 224-hectare of ex-situ conservation site known as Tropical Rainforest Living Collection (TRLIC) in VJR Merisuli in 2014, where seeds from threatened plants are collected, germinated, planted and eventually re-introduced into their native habitats in the future. To date, the project has nurtured

about 28,000 seedlings, with about 4,000 trees planted out in the wider site and has an overall mortality rate of 67%. Since its establishment, TRLC has rescued 72 species of trees, of which 24 are Critically Endangered, 13 are endangered, 6 are Vulnerable, and 29 species that are not threatened. Several facilities were completed in 2018 i.e. Nursery C which to provide hardening open space; and staff quarters' kitchen, dining area, toilet and bathroom.