



ANNUAL ENVIRONMENTAL MONITORING  
PROGRAMME (EMP) REPORT  
FOR SUGUT CONSERVATION AREA(SCA)  
SUSTAINABLE FOREST MANAGEMENT  
PROJECT  
FOR THE YEAR 2017

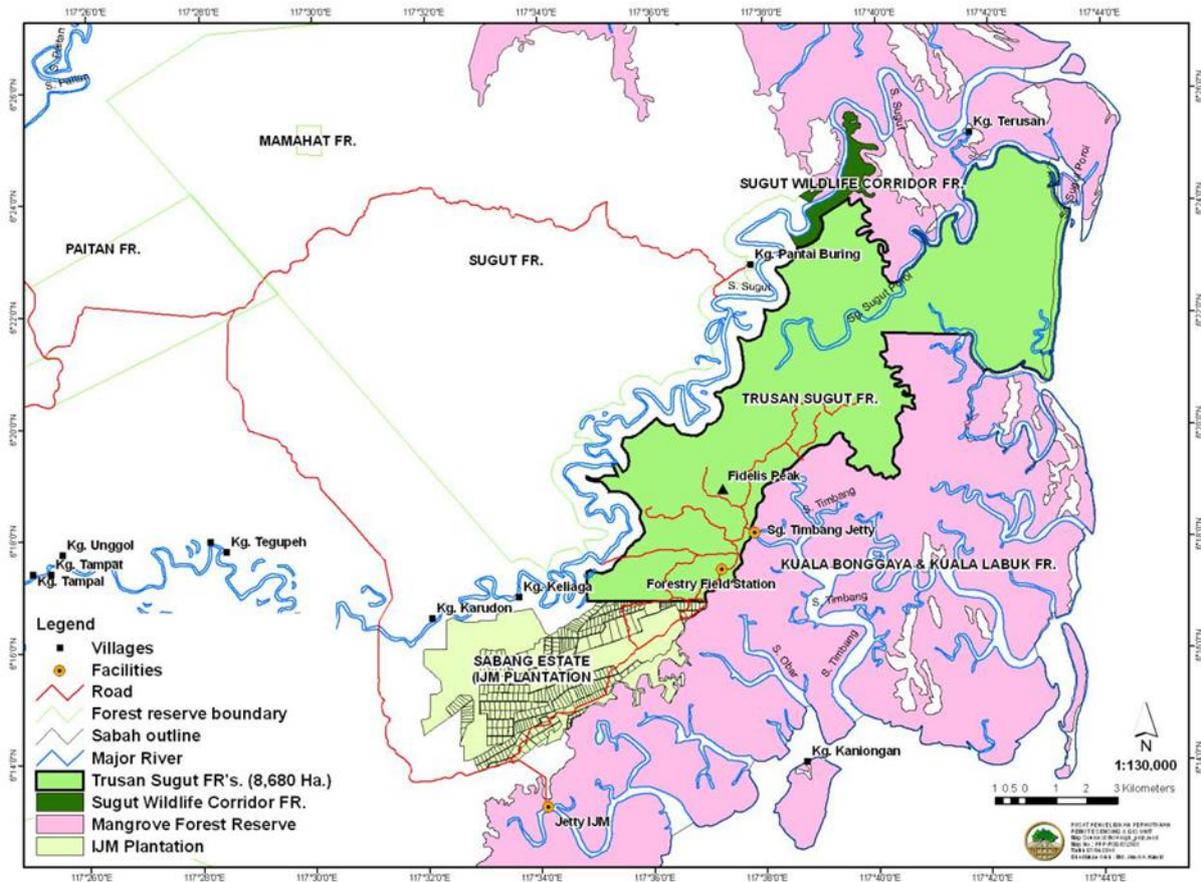
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## 1.0 INTRODUCTION

The Trusan Sugut Forest Reserve is located in the north-eastern part of Sabah and extends over 8,680 ha. It was formerly a Class II (Production) Forest Reserve (FR) that formed part of the larger Sugut FR. In November 2014, it was reclassified as a Class I (Protection) FR. The current management focus in the reserve is to protect ecosystem functions, and prohibit all major forms of destructive human activities (including commercial logging). The management of Trusan Sugut FR comes under the jurisdiction of the Beluran Forestry District.

Due to its high conservation value, efforts to bring Trusan Sugut FR under effective management and protection were initiated by the Sabah Forestry Department in 2011. As part of this effort, formulation of this forest management plan (FMP) was initiated in June 2014. This FMP defines the scope and prescribes activities for the management of the Trusan Sugut FR for a 10-year period, beginning from 1st July, 2016 to 30th June, 2026. This is to ensure that all management activities are carried out in a systematic and efficient manner.

Figure 1: Map showing the Project Area



## **Management Goals And Objectives**

The primary management goal of Trusan Sugut FR is long-term conservation of various forest types and other ecosystems present in the reserve, the wildlife inhabiting the area, and the ecological functions of forests, and through which to ensure long-term sustenance and enhancement of the environmental services the reserve provides.

This includes the following specific 5 – 10 year management goals:

- i) Protection and restoration of various forest types in the reserve, such as lowland Dipterocarp forest, freshwater swamp forest and mangroves, and the riparian areas;
- ii) Conservation of the rare, threatened and endangered mammal, bird and tree species such as orang-utan, proboscis monkey, helmeted hornbill and the various Dipterocarp tree species;
- iii) Enhancing the forest structure and tree species diversity by facilitating natural regeneration and through enrichment planting;
- iv) Reversing forest degradation caused by past logging activities and fire damages through reforestation type of planting;
- v) Restoring connectivity between Trusan Sugut FR and the nearby forest reserves for expanding habitat for long ranging wildlife species such as the banteng, clouded leopard and Malayan sun bear;
- vi) Management of the identified High Conservation Values in the reserve; and
- vii) Protecting and enhancing the environmental services provided by the reserve.

These goals will be achieved largely by reducing threats to the forests and wildlife and by speedy and effective forest restoration efforts.

The specific threat reduction objectives (1 – 2 years scale) include:

- i) Reducing the threats to forests and tree species by surveillance and enforcement against encroachment and illegal logging;
- ii) Reducing the threats to wildlife species by patrolling and enforcement against poaching and illegal fishing activities;

- iii) Preventing and controlling fire, particularly by being prepared during El Nino drought years;
- iv) Monitoring and protecting rivers and streams from upstream pollution sources;
- v) Engaging local communities to regulate traditional use of forest resources, to provide benefits of environmental services, and to elicit support for protection of the reserve; and
- vi) Promoting regulated recreation and low-impact tourism in the reserve.

Additional management activities such as identifying and sourcing finances, building infrastructure, boundary demarcation, and staff capacity building are support activities for achieving the goals and objectives as stated above. Other activities related to monitoring progress on achieving the goals and objectives, making adaptive changes to the management, and monitoring implementation of the FMP through forest certification, independent auditing and periodic reviews are also covered in this FMP.

## **2.0 KEY ENVIRONMENTAL COMPONENTS IN THE ENVIRONMENTAL MONITORING PROGRAMME (EMP)**

The Environmental Impact Assessment (EIA) documentation for SCASFM Project was prepared in 2016 to assess the impact throughout the implementation of the 10 year Forest Management Plan (FMP) . The SCASFM Project involves wide range of activities, of which some of it may pose negligible impact to the environment. The severity of impact varies depending on the scale of the disturbance. The project implementation may not have severe impact to the environment since no logging will be carried out and the focus of the management will be on conservation.

However, the implementation of this project may result in some of disturbance to the environment from within the project itself or from the adjacent activities. Forestry developments in SCASFM project that may generate impact to the environment consists of infrastructure development (construction & maintenance) of roads and build-up area and forest conservation activities. In addition, illegal encroachment may also result disturbance to the environment.

Therefore, an Environmental Monitoring Program (EMP) was established to mitigate and minimize the scale of impact within the SCA SFM Project area. The key environmental components that were identified in the EMP are as follows:

- a. Forest Fire
- b. Poaching
- c. Waste Generation and Management Issues
- d. Traffic and Transportation Safety
- e. Forest Restoration
- f. Silviculture
- g. Soil Erosion
- h. Ecology
- i. Water Quality

## 2.1 FOREST FIRE

Impact of forest fire could be significant due to the presence of silviculture workers within the project area, the neighbouring plantation estates and trespassers especially illegal hunters / poachers if not controlled. Based on previous records until present, there was no forest fire incident within the project area, however, precautions should be made to the unattended open burning for agricultural plantation and shifting cultivation activity in the surrounding area that could lead forest fires.

In the year 2017, there was a lot of programme related to the prevention of forest fire organised by Sabah Forestry Department. The forest fire programme were participated with the local communities and stakeholder mainly from the neighbouring plantation estates. Besides, continuous monitoring of the hot spot also had been conducted by the SFD mainly from the Head Quarters. Any hot spot detected inside and right near the project area will be notified immediately for further action. At the project level, all data required in the weather monitoring such as the humidity, temperature, wind velocity and so forth are delivered to the Head Quarters every day for the purpose of the Fire Danger Rating System.

**Table 1 Issues of Forest Fire within SCASFM Project**

No	Location	Impact			
		2014	2015	2016	2017
1	SCA SFM Project areas	No Forest Fire	No Forest Fire	No Forest Fire	No Forest Fire

## 2.2 POACHING

Impact of poaching or illegal hunting is expected to be significant if not control as it will affect the wildlife population within the project area.

**Table 2 Issues of Poaching within SCASFM Project**

No	Location	Impact			
		2014	2015	2016	2017
1	SCA SFM Project areas	No	No	No	No

There is no poaching incidents occur from the year 2014 to 2017. The implementation of Forest Checking Station (FCS) at the Sugut Forest Reserve contributed in curbing of poaching activity within SCASFM area as well as conducting regular patrolling. The communities and stakeholder, silviculture and forest restoration workers were informed verbally during a course conducted by the SFD about the do's and don't within the SCASFM areas.

## 2.3 WASTE GENERATION AND MANAGEMENT ISSUES

Silviculture and forest restoration program has been actively implemented within the SCASFM Project area, as well as the infrastructure development of one FCS located at the Sugut Forest Reserve. Road maintenance is also implemented within SCASFM Project area.

All of the activities mention above may potentially generate waste which may also lead to pollution if not controlled. As for the sewage and septic tank, all of it was constructed 50 meters away from any river or stream. The usage of oil material within the project area is minimal as it is limited for the use of grass cutter and the generator set provided at each Base Camp. All the used oil particularly generated from the generator set once the maintenance conducted are commonly taken out from the project area by the maintenance contractor. While, briefing of the SOP of the oil spillage also conducted continuously by the SHO. Spill kit also available at the lubricant store and genset house.

## 2.4 TRAFFIC AND TRANSPORTATION SAFETY

As the transportation route does not pass major human settlements, the potential socio-economic impact is expected to be minimal.

## **2.5 FOREST RESTORATION**

Forest restoration activity has been actively implemented within SCASFM project area as for the rehabilitation of the forest condition. This activity requires the use of fertilizers for its growth rate. However, the uses of pesticides were not applied. Due to the use of fertilizers, it may somehow leads to pollution particularly on any nearest watercourses if not controlled or monitored. On the other hand, contractor involved with this activity were aware of the rules and regulations pertaining forest rules as well as the concept of SFM towards the project area.

There is no pollution issues pertaining restoration activity within SCASFM project area particularly on the use of fertilizers and pesticides as well as the presence of contractors involved with this activity.

## **2.6 SILVICULTURE**

Silviculture activity has been actively implemented within SCASFM project area to ensure the growth of the trees is not affected by the roots of climber. On the other hand, contractor involved with this activity were aware of the rules and regulations pertaining forest rules as well as the concept of SFM towards the project area.

There is no environmental issue pertaining the silviculture activity within SCASFM project area particularly on the trees growth conditions, the presence of wildlife or insects which depending on certain roots climber as its food source and the presence of contractors involved with this activity.

## **2.7 SOIL EROSION**

As there is no major land clearance and earthwork activity within the project area, the impact of soil erosion was still minimal. However, the upgrading and maintenance of the existing road and construction of new road to Kumbawon area within the project area should be controlled to avoid further erosion as well as water pollution. As a mitigation step, the drain and sedimentation pit had been constructed to control the massive water run off via along the road. Besides, the drain was not heading to the river or stream instead of heading to the forest. In addition, the project management also had been conducted the water analysis.

## 2.8 ECOLOGY

The trespassers especially illegal hunters / poachers should be monitored and controlled.

**Table 3 Issues of Ecology within SCASFM Project**

No	Location	Impact			
		2014	2015	2016	2017
1	SCA SFM Project areas	No	No	No	No

There is no poaching or illegal felling of trees incidents occur from the year 2014 until 2017. The implementation of Forest Checking Station (FCS) at the Sugut Forest contributed in curbing of poaching activity within SCASFM area as well as conducting regular patrolling. The communities and stakeholder, silviculture and forest restoration workers were informed verbally during a course conducted by the SFD about the do's and don't within the SCASFM areas.

## 2.9 WATER QUALITY

Water quality analysis had been conducted in the year 2017. Based on the analysis, the source of water intake for consumption namely from the Sg. Rose was clean and suitable for consumption. However, a conventional treatment is required such as using filter and make sure the water are boiled prior to use for drink.

A river which is pass through the project site had been detected being slightly polluted namely Sg. Sugut Parai Hulu. Monitoring had been conducted to the mentioned river to investigate the source of the pollution as recommended in the Water Quality Analysis report. The source of the pollution were not caused by illegal cases such as encroachment, illegal logging and so forth but caused by the bat feces which are come from the nearest cave namely Sam Mannan Cave. Some of the tributaries of the Sg. Sugut Parai Hulu were flowed or commenced at the hill where the cave is located there. Therefore, there was no significant mitigation action required since the problem was occur naturally.

### 3.0 CONCLUSION

1. **Forest Fire** – There was no forest fire since the year 2014 until year 2017. SCASFM Unit have implemented a fire management procedure which consists of conducting regular patrolling, training and awareness programme, acquire outside assistance particularly Jabatan Bomba dan Penyelamat, nearest company adjacent to the project area and implement the Forest Fire Prevention and Control Plan. Mitigation measures such as regular patrolling, training and awareness programme, acquiring assistance from relevant authority and from the adjacent companies and implementing fire prevention plan must be run continuously.
2. **Poaching** – There was no illegal hunting incidents since the year 2014 until year 2017 and therefore no further action were taken. However, mitigation measure such as regular patrolling must be conducted continuously.
3. **Waste Generation and Management Issues** – All waste generated from the project site had been managed in a systematic manner.
4. **Traffic and Transportation Safety** - As the transportation route does not pass major human settlements, the potential socio-economic impact is expected to be minimal.
5. **Forest Restoration** – There is no environmental issues regarding of restoration activity since the year 2014 until year 2017. However, continuously monitoring shall be implemented to ensure the contractor involved with these activity followed all rules and regulations pertaining forest rules as well as the limits of using fertilizers especially any blocks located near any watercourses.
6. **Silviculture** – There is no environmental issues regarding of silviculture activity since the year 2014 until year 2017. However, continuously monitoring shall be implemented to ensure the contractors involved with these activity followed all rules and regulations pertaining forest rules.
7. **Soil Erosion** – All mitigation action to control the soil erosion had been conducted efficiently.
8. **Ecology** – There is no poaching or illegal felling of trees incidents since the year 2014 until year 2017. Continuous monitoring shall be done especially patrolling, stakeholder consultation with the adjacent companies, contractors involved with silviculture and forest restoration activity and the communities of birds' nest collector.
9. **Water Quality** – Action had been conducted to identified the source of the pollution occurred at the Sg. Sugut Parai Hulu and the result was caused by the bat feces which was occurred naturally.