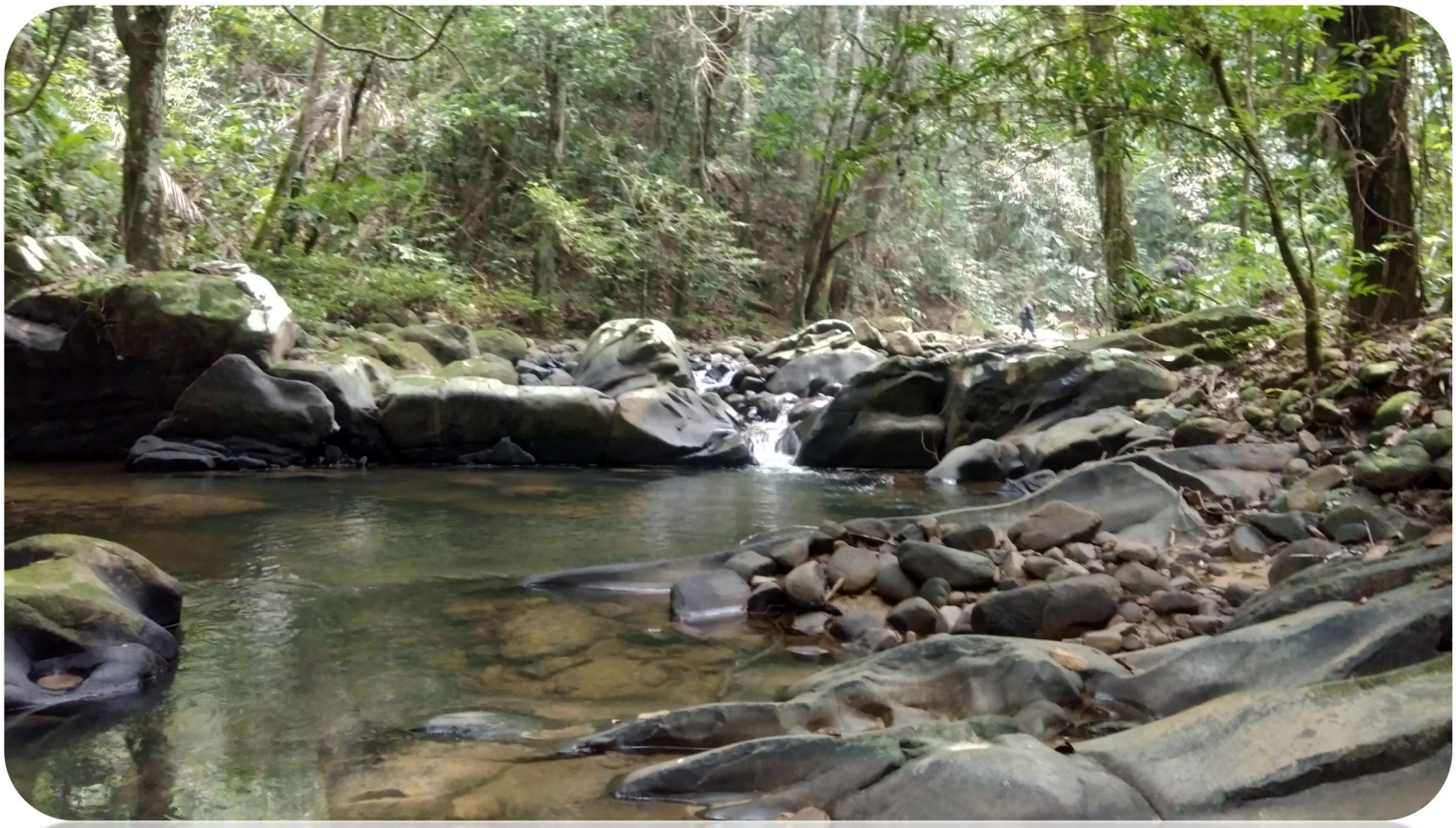
SUMMARY ANNUAL HCV MONITORING AND EFFECTIVENESS EVALUATION IN TIMIMBANG-BOTITIAN SFM PROJECT AREA FOR THE YEAR 2019



Timimbang Forest Reserve

PREPARED BY:
TBSFM PROJECT
30 June 2020

1.0 Objectives:

1. To evaluate the effectiveness by which HCV management and protection measures to maintain and/ or enhance the pertinent conservation attributes
2. As a guidance for Forest Manager to modify/ adjust/ enhance HCV management prescription to cater for any weaknesses
3. To comply with FSC indicator 9.4.3

2.0 HCV Attributes/ Elements found in Timimbang-Botitian SFM Project area, the management prescription and monitoring activities:

HCV	Findings	Management Prescription	Monitoring
1.1	Timimbang and Botitian Forest Reserves are Class I Protection Forest.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities such as encroachment and poaching.	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions. • Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes.
1.2	The presence of considerably high number of high conservation significant fauna and flora from both past research findings and the recent HCV assessment may concludes that this FMU unit is an important natural plant habitat or for wildlife nesting and foraging habitats.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching. • Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna. • The trees listed in the prohibited list, significant fruit trees or nesting sites for wildlife, annotated IUCN red list species found in TBFMU should be clearly marked on the ground and on the maps. • Migratory pathway of wildlife on logging roads, along streams or wildlife trails in the forest should be marked on the map and kept to ensure wildlife are able to use it for movement within and between forest	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions. • Quarterly Progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes. • Periodical monitoring by conducting re-enumeration of the trees in the permanent sample plots to be conducted once every three years to get an indication of changes in tree structure and species assemblages. • Periodical monitoring of endangered, endemic and migratory wildlife species will

		reserves. • TBSFM Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes. • Field staff is required to attend training courses on plants and wildlife to further enhance their botanical and wildlife knowledge on species that are currently listed in the threatened, endemic and forestry prohibited lists to ensure they do not harvest or damage and also for monitoring purposes. • Update current biodiversity conservation status to TBSFM team of the upgrade or downgrading of threat status locally and globally.	be practiced using Wildlife Management System adopted by the management team. Any changes in terms of population count or migratory pathways observed by either researchers or ground staffs, the management team must be alerted. Similarly, this monitoring prescription also applies to endangered and endemic plant.
1.3	The presence of considerably high number of endemic fauna and flora from both past research findings and the recent HCV assessment may conclude that this FMU unit is an important natural plant habitat or for wildlife nesting and foraging habitats.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching. • Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna. • Migratory pathway of wildlife on logging roads, along streams or wildlife trails in the forest should be marked on the map and kept to ensure wildlife are able to use it for movement within and between forest reserves. • TBSFM Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes. • Field staff is required to attend training courses on plants and wildlife to further enhance their botanical and wildlife knowledge on species that are currently listed in the threatened, endemic and	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions. • Quarterly Progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes. • Periodical monitoring by conducting re-enumeration of the trees in the permanent sample plots to be conducted once every three years to get an indication of changes in tree structure and species assemblages. • Periodical monitoring of endangered, endemic and migratory wildlife species will be practiced using Wildlife Management System adopted by the management team. Any changes in terms of population count or migratory pathways observed by either researchers or ground staff, the management team must

		forestry prohibited lists to ensure they do not harvest or damage and also for monitoring purposes. • Update current biodiversity conservation status to TBSFM team of the upgrade or downgrading of threat status locally and globally.	be alerted. Similarly, this monitoring prescription also applies to endangered and endemic plant.
1.4		• No HCV area is indicated. • In the event that any salt licks and potential nesting sites are found within the TBSFM area in the future, demarcation of HCV boundaries on the ground and installing clear signage along existing road, foot trails and navigable rivers/streams indicating critical values	• No HCV area is indicated. • In the event that any salt licks and potential nesting sites are found within the TBSFM area in the future, periodic monitoring as prescribed above will be conducted.
2	The entire TBFMU should be categorised as HCV 2 as potential for linking large forested areas between Bongaya and Ulu Tungud Forest Reserves is applicable.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities such as encroachment and poaching. • Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna. • Migratory pathway of wildlife on logging roads, along streams or wildlife trails in the forest should be marked on the map and kept to ensure wildlife are able to use it for movement within and between forest reserves. • TBSFM Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes.	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions. • Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes. • Periodical monitoring by conducting re-enumeration of the trees in the permanent sample plots to be conducted once every three years to get an indication of changes in tree structure and species assemblages. • Periodical monitoring of endangered, endemic and migratory wildlife species will be practiced using Wildlife Management System adopted by the management team. Any changes in terms of population count or migratory pathways observed by either researchers or ground staff, the management team must be alerted. Similarly, this monitoring prescription also applies to endangered and

			endemic plant. • Long term monitoring of TBSFM landscape using remote sensing technology and to be conducted once every three years to detect changes within the reserve and also vicinity areas. If threats are detected, precautionary approached will be taken and potential mitigation measures will be incorporated in the management plan.
3	The forests located below 200 m a.s.l. contain rare, endangered, threatened and also endemic species and appropriate to be categorised as HCV 3.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching. • Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions. • Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes. • Periodical monitoring by conducting re-enumeration of the trees in the permanent sample plots to be conducted once every three years to get an indication of changes in tree structure and species assemblages.
4.1		• No HCV area is indicated.	• No HCV area is indicated.
4.2	All areas with slopes >25° and 30 m riparian buffer strips should be categorised as HCV 4.2 for their importance in erosion control.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate action. • Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes.
4.3	Buffer strips of 100 m inside TBSFM boundaries that border local communities land and northern boundary that bordering oil palm estate are categorised as HCV 4.3.	• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.	• Periodic monitoring and control should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with

		• When the Forest Fire Management Plan is available it has to be implemented and updated periodically. • Forest restoration of indigenous tree species as part of the remedial action to increase forest structural diversity and mitigate any forest fire incidence spreading into the FMU core area, especially area dominated with lalang grassland and ferns.	immediate actions. • Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan (AWP), encompassing reporting of monitoring results of known HCV attributes. • Ensure that all fire prevention procedures (monitoring, fire drills, public awareness campaign and etc) to be practised on a regular basis (at least once a year) especially during the drought season.
5	No community basic need is indicated within TBFMU.	• No HCV area is indicated.	• No HCV area is indicated.
6	No cultural value is indicated within TB FMU.	• No HCV area is indicated.	• No HCV area is indicated.

3.0 Summary of monitoring activities and actions taken according to HCV Attributes/ Elements by the Project Team:

HCV		Monitoring activities and actions taken by Project Team
1	1.1 1.2 1.3 1.4	▪ Patrolling was conducted all year round ▪ Aerial surveillance conducted four times or more yearly ▪ Inspection of boundaries ▪ Re-brushing of main boundaries ▪ Establishment of enforcement gates to curb poaching activities and entering without permit ▪ Establishment of two Forest Checking stations for enforcement and monitoring ▪ Wildlife monitoring activities conducted extensively, reporting by quarterly and yearly. Two methodologies were used i.e. camera traps and Opportunistic sighting. ▪ Establishing PSP Plots and yearly maintenance, re-enumeration conducted in every 3 years ▪ Proper signboards were erected at all main boundaries
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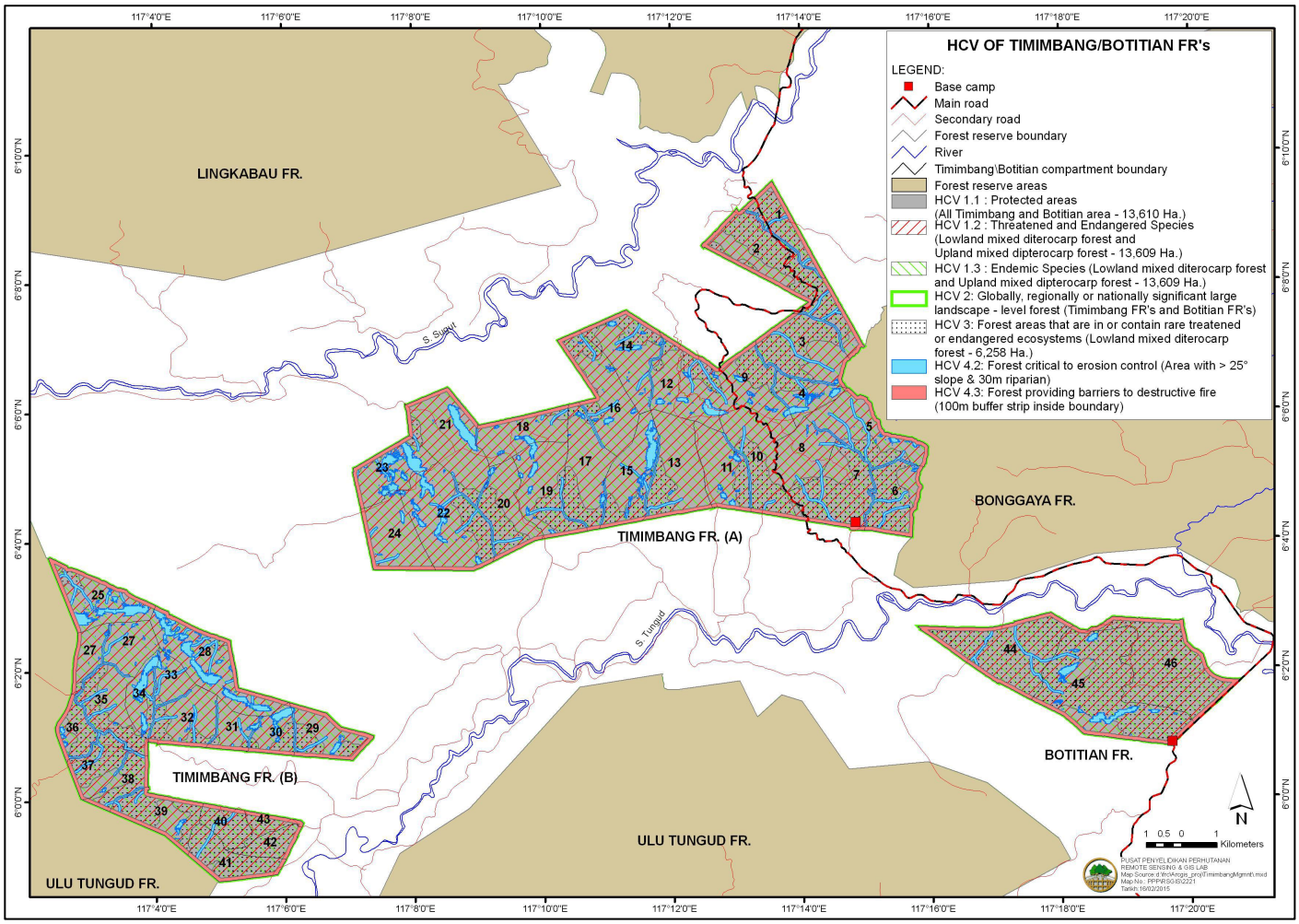
4	4.1 4.2 4.3	▪ Patrolling was conducted all year round to curb illegal activities such as encroachment to steep areas and riparian ▪ Aerial surveillance conducted four times or more yearly ▪ Inspection of boundaries ▪ Re-brushing of main boundaries ▪ Establishment of enforcement gates to curb poaching activities ▪ Establishment of two Forest Checking stations for enforcement and monitoring ▪ Establishing PSP Plots and yearly maintenance, re-enumeration conducted in every 3 years ▪ Proper signboards were erected at all main boundaries, as well as all identified HCV area ▪ Forest Fire Management Plan was made available as well as conducted forest fire awareness to stakeholders and contractors
5		No area known in TBSFM that corresponds with HCV (5).
6		No area known in TBSFM that corresponds with HCV (6).



Map of HCV 1-4

4.0 Effectiveness of monitoring program and enhancements by each HCV Attributes:

Based on the summary and monitoring activities table above, the effectiveness of the monitoring activities can be elaborated as follows:

HCV 1-HV4

The protected areas activities in the TBSFM project are divided into several activities, such as the following:

1. <u>Patrolling and enforcement</u>

Based on the Annual Report 2014 – 2019, occurrence of poachers trying to enter without permission into the project area was remained zero case recorded. There were no arrests made since the year 2014-2109 related to the forest offenses. This indicates that patrolling and enforcement, arrest, prosecution activities were successful. Therefore, the HCVs as a whole were maintained and enhanced with the monitoring program until present.

2. Inspection of boundaries and re-brushing of main boundaries, and installing of proper signage along the main boundaries of TBSFM

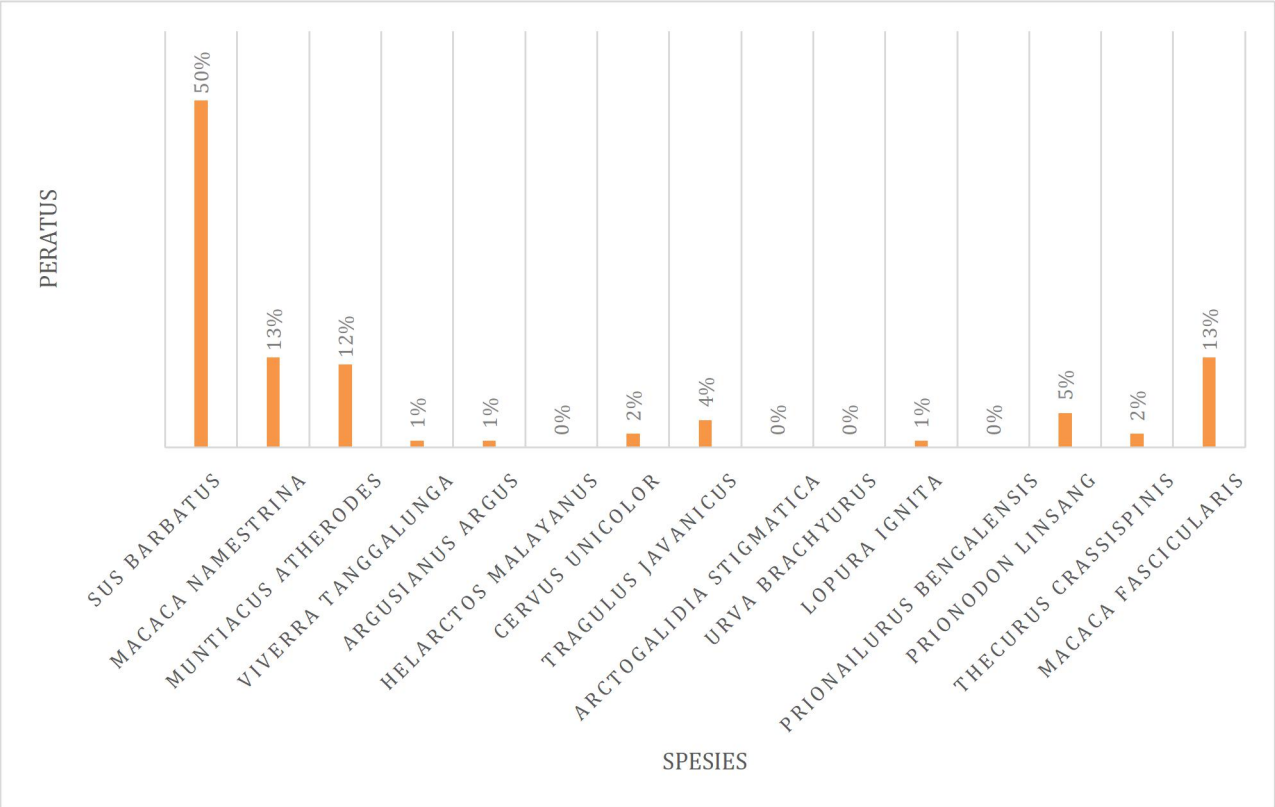
As stated in the AWP 2014 – 2019 and also Compliance Report 2014-2019, the inspection and re-brushing of main boundaries was conducted yearly. This corresponds to the responsibility of the team Management to protect the project area and installing of proper signage to ensure that all the stakeholders are aware of entering the area.
There are few signage had been placed as follow:

a) Project signboards on all entries.
b) Warning signboards on all entries.
c) Safety signage.
d) HCV signage.
e) Enforcement signage.
f) Prohibited activities signage.

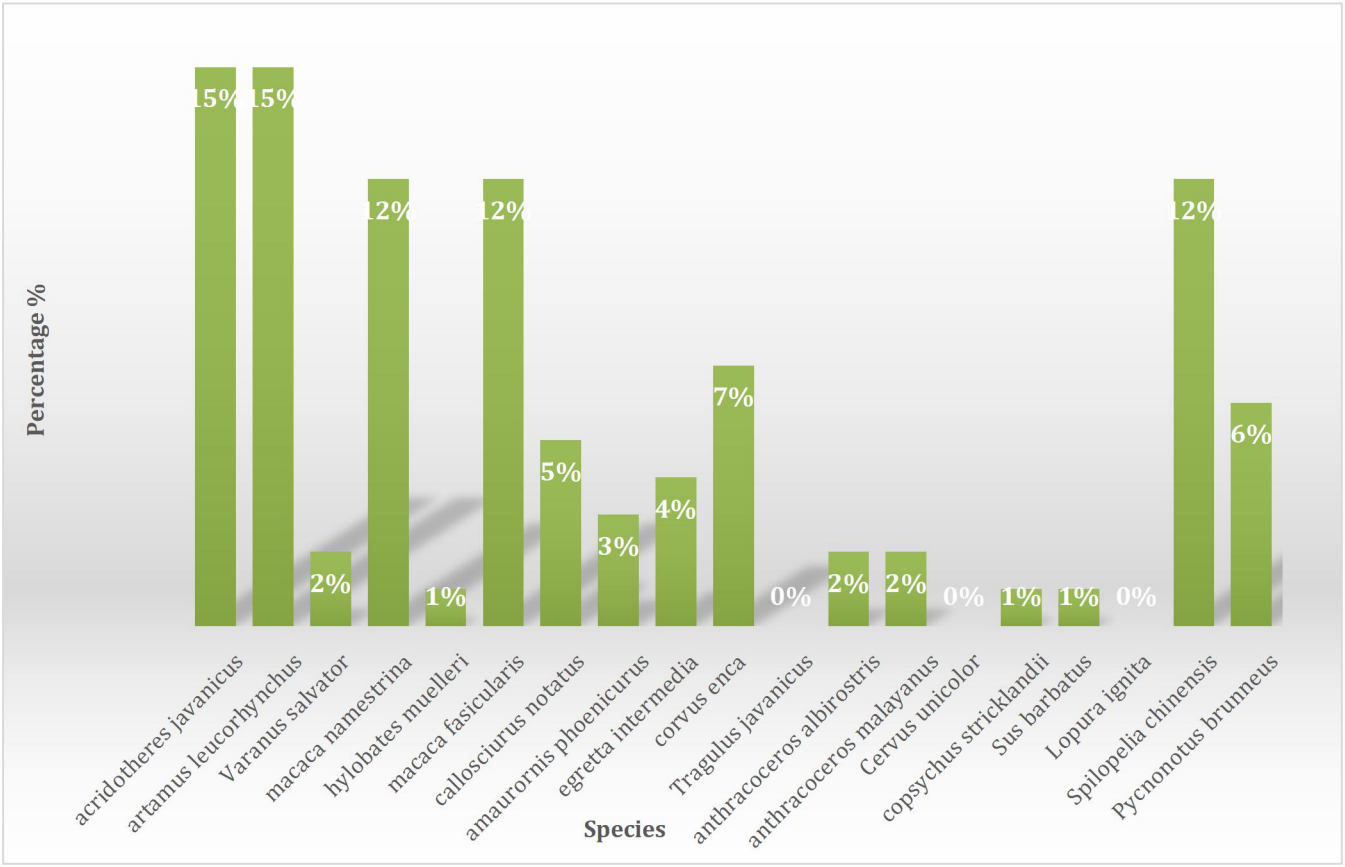
3. Wildlife Monitoring program

Based on the yearly report of Wildlife Monitoring, quarterly report and annual report, there are two (2) methodology of wildlife monitoring program in TBSFM Project Area i.e. camera traps and Opportunistic sighting.

Based on the chart, the frequency of presence of wildlife by camera trap were different in the three part of forest reserves. Since there was no cases of poaching and hunting reported, the total of wildlife assumed increase from year to year.



The graph above shows the abundance of wildlife detected via camera trap at the three different locations.



The graph above shows the abundance of wildlife detected by the Opportunistic Sighting Method.

4. <u>Implementation of the functionof the Forest Checking Stations.</u>

The Project team has managed to implement the function of the Forest Checking Stations in regards to the team's responsibility to safeguard the HCVs as a whole. Since the project area consist of 3 parts of forest reserves, hence all the area had been safeguarded to prevent any forest offences occur. Therefore, the HCVs as a whole were maintained continuously. Besides, three gates had been installed at three locations in the TBSFM Project area to lockout people from outside the forest reserve since the both OP's road were not longer used.

New Gate Installation

5. Establishing PSP Plot and yearly maintenance.

Re-enumeration was done every 3 years. There are a total of 11 PSP Plots being established from 2014 onwards, and for the time being 2 more established PSP Plot were made available with total 13 PSP plots. All the plots represented by certain type of forest condition as follow:

a) Good forest silviculturally treated.
b) Good forest not treated silviculturally.
c) Buffer.
d) Steep area.
e) Lowland mixed dipterocarp forest.

Results/Outcomes for HCV management prescription and effectiveness of monitoring and enhancement:

HCV 1

Based on the Annual Report 2014 – 2019, occurrence of poachers trying to enter without permission into the project area was remained zero case recorded. There were no arrests made since the year 2014-2019 related to the forest offences. This indicates that patrolling and enforcement, arrest, prosecution activities were successful. Therefore, the entire area of the project was maintained and enhanced with the monitoring program until present. This also show that the management have manage to implement the enforcement program adequately. Nevertheless, the management must improve on the enforcement practices i.e. increase the rate of patrolling within the area and outside the area, identify possible route of poachers coming in the area etc. Furthermore, the frequency of aerial surveillance must be increased or using another initiative such as using drone.

1. Inspection of boundaries and re-brushing of main boundaries, and installing of proper signage along the main boundaries of TBSFM must be maintained.

2. Based on the wildlife monitoring report compilation from year 2014-2019, the number of wildlife sighting recorded by the two methods use increase exponentially. There are two possible reason:

   a) Data collecting skills and frequency increase.
   b) The population of wildlife increase in the area. This can be attributed to the effectiveness of protection, controlling and enforcement activities.

   This means, that the wildlife monitoring program conducted by the management is getting more improve by each year and the management should maintained for consistency.

3. The two Forest Checking Station i.e. Botitian Forest Reserve and at the Malsa. Sdn. Bhd are to be maintained because these two stations play an integral part of monitoring, control and enforcement activities. Same goes with the three new gate installation

4. All the PSP plot are to be maintained yearly and re-enumeration must be done. . It will be up to the management on how the new plots will be added later i.e. where, how many, distance etc.

HCV 2

Based on the Annual Report 2014 – 2019, occurrence of poachers trying to enter without permission into the project area was remained zero case recorded. There were no arrests made since the year 2014-2109 related to the forest offences. This indicates that patrolling and enforcement, arrest, prosecution activities were successful. Therefore, the entire area of the project was maintained and enhanced with the monitoring program until present. This also show that the management have manage to implement the enforcement program adequately. Nevertheless, the management must improve on the enforcement practices i.e. increase the rate of patrolling within the area and outside the area, identify possible route of poachers coming in the area etc. Furthermore, the frequency of aerial surveillance must be increased or using another initiative such as using drone.

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HCV 3

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HCV 4

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5. Inspection of boundaries and re-brushing of main boundaries, and installing of proper signage along the main boundaries of TBSFM must be maintained.

6. Based on the wildlife monitoring report compilation from year 2014-2019, the number of wildlife sighting recorded by the two methods use increase exponentially. There are two possible reason:

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