

EXECUTIVE SUMMARY

High Conservation Value (HCV) assessment for Timimbang-Botitian Forest Reserves or known as Timimbang-Botitian Sustainable Forest Management (TBSFM) area was carried out in two stages. The assessment was carried out from the 17th–22nd of February 2014 and from the 7th–16th of May 2014. The main objective of this assessment is to enhance relevant information on the HCV elements within the TBSFM area. The assessment was carried out by a multidisciplinary team with experienced assessors from various fields. In the first revision of the HCV, all 6 HCV elements identified are still valid and were elaborated for TBSFM area. Appropriate management and monitoring actions have been recommended and discussed with the management team of TBSFM for further actions to be undertaken. The only amendment is that the demarcation of boundaries of all HCV elements is redundant since the entire project area is classified as Class I Protected Area, which is indicated as HCV 1.1.

One of the major recommendations is to enhance forest resource condition and tree diversity through various activities designed specifically for conservation purposes, especially on forest restoration and the silvicultural treatment on scheduled compartments of the FMP. Through the analysis of the many species recorded, nearly half of the species have yet to be assigned IUCN status and not much research work has been conducted on such species, especially within the flora group. Therefore, by looking at the current condition of the TBSFM area, it is essential for actions to be taken in setting the entire TBSFM area for conservation, consisting of various forest types with the aim to preserve species diversity and also taking into account species that are unique to certain forest types. It is recommended that further studies should be conducted to document the rich flora and fauna diversity within TBSFM area.

On a landscape level (HCV 2), TBSFM area forms part of the forest reserve complex that borders Bonggaya FR (eastern) and Ulu Tungud FR (western). HCV fauna assessment has shown that diverse fauna can be found within the TBSFM area and interviews with the villagers provided information on the frequent sightings of the wildlife that are present and constantly moving in and out of TBSFM area. Therefore, TBSFM does not only provide habitats for the fauna but also acts as a transient wildlife migratory path between the different forest reserves it borders.

From the social aspect, there is no major conflict by the surrounding villages with the TBSFM area. Furthermore, the communities verify that no basic needs or cultural values are placed in the project area. Many of the villages are aware of the Forestry Rules and Law. Their understanding to protect forest reserve and its resources is also part of their role as stakeholder within the management unit of the area. There is much effort undertaken by the Sabah Forestry Department to manage and to ensure the goal set aside for TBSFM area is consistent with the social needs and development adjacent to it and to achieve maximum equilibrium on environment, social and economic aspects in general.

Table 1: The followings are the findings of HCV elements in TBSFM area and the management and monitoring recommendations for each HCV.

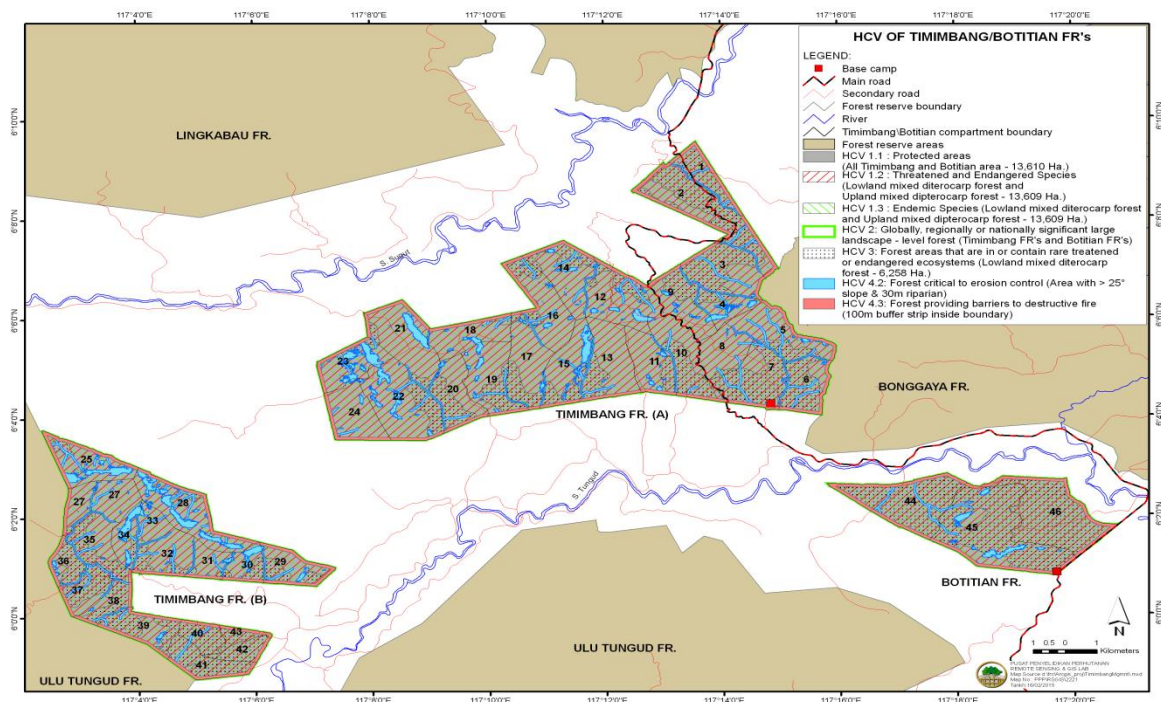
HCV	Findings	Management Prescription	Monitoring
1.1	Timimbang and Botitian Forest Reserves are Class I Protection Forest.	<ul style="list-style-type: none"> • Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities such as encroachment and poaching. 	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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 TBSFM 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 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. 	<ul style="list-style-type: none"> • 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 staffs, the management team must be alerted. Similarly, this monitoring prescription also applies to endangered and endemic plant.
1.3	The presence of considerably	<ul style="list-style-type: none"> • Conduct periodic patrolling 	<ul style="list-style-type: none"> • Periodic monitoring and control

	<p>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.</p>	<p>and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</p> <ul style="list-style-type: none"> • 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 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. 	<p>should be carried out to prevent encroachment in the buffer zone. Any signs of encroachment should be reported and dealt with immediate actions.</p> <ul style="list-style-type: none"> • 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.
1.4		<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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	<p>The entire TBSFM should be categorised as HCV 2 as potential for linking large forested areas between Bongaya and Ulu Tungud Forest Reserves is applicable.</p>	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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

		<p>marked on the map and kept to ensure wildlife are able to use it for movement within and between forest reserves.</p> <ul style="list-style-type: none"> • TBSFM Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes. 	<p>HCV attributes.</p> <ul style="list-style-type: none"> • 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 approach 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.	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • No HCV area is indicated. 	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching. 	<ul style="list-style-type: none"> • 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.

			<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching. 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. 	<ul style="list-style-type: none"> 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. 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 TBSFM.	<ul style="list-style-type: none"> No HCV area is indicated. 	<ul style="list-style-type: none"> No HCV area is indicated.
6	No cultural value is indicated within TBSFM.	<ul style="list-style-type: none"> No HCV area is indicated. 	<ul style="list-style-type: none"> No HCV area is indicated.

Demarcation of HCV boundaries on the ground for all designated HCVs is not required since 100 % overlaps occurred among elements (Map 1).



Map 1. The composite map of all identified HCV elements in Timimbang-Botitian Sustainable Forest Management Project Area, Sabah.