

## PUBLIC SUMMARY OF HIGH CONSERVATION VALUE AREAS IN FMU 17A

High Conservation Value (HCV) 14 assessment for biological and physical elements in Forest Management Unit 17A or known as FMU17A area was carried out using secondary data collected by the management team and other collaborative research agencies. The main objective of this assessment is to enhance relevant information on the HCV elements within the FMU17A area. All 6 HCV elements were assessed and identified in FMU17A area, and appropriate management and monitoring actions have been recommended and discussed with the management team of FMU17A for further actions to be undertaken (Table 1). The demarcation of boundaries of all HCV elements is redundant since most of the entire project area is classified as Class I Protected Area, which is indicated as HCV 1.1, except areas that are still under Class II Production Forest, natural forest buffer is required to protect biological and physical sensitive areas.

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 FMU17A area, it is essential for actions to be taken in setting the entire FMU17A 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 FMU17A area.

On a landscape level (HCV 2), FMU17A area forms part of the forest reserve complex that borders Deramakot FR (eastern), FMU 17D or Tawai FR (northeastern) and FMU 17B (southwestern). HCV fauna assessment has shown that diverse fauna can be found within the FMU17A area. Therefore, FMU17A 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 FMU17A area. Furthermore, the communities verify basic needs or cultural values are identified 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 FMU17A 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 FMU17A area and the management and monitoring recommendations for each HCV.

HCV	Findings	Management Prescription	Monitoring
1.1	Tangkalap, Sg. Talibu and Timbah forest reserves are Class I Protected Forest that prescribe protection and preservation management of ecosystem function and prohibit all forms of destructive activities. Sg Pinangah FR is a production forest and border with Sg.	<ul style="list-style-type: none"> <li>Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities such as encroachment and poaching.</li> <li>In production area (NFM), demarcation of HCV boundaries on the ground and installing clear signage along existing and active road, foot trails and navigable rivers/streams indicating critical values, especially</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Quarterly progress reports in reporting of the progress of activities as prescribed in the approved Annual Work Plan</li> </ul>

	Talibu and Tangkulap FR.	30 m buffer zone of protected area (HCV 1.1)	(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 in the project area 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"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</li> <li>• Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.</li> <li>• The trees listed in the prohibited list, significant fruit trees or nesting sites for wildlife, annotated IUCN red list species found in FMU17A should be clearly marked on the ground and on the maps.</li> <li>• 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.</li> <li>• FMU17A Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes.</li> <li>• 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.</li> <li>• Update current biodiversity conservation status to FMU17A team of the upgrade or downgrading of threat status locally and globally.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>
1.3	The presence of considerably high number of endemic fauna and flora in the project area may conclude that this FMU unit is an important natural plant habitat or for wildlife nesting and foraging habitats.	<ul style="list-style-type: none"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</li> <li>• Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.</li> <li>• 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.</li> <li>• FMU17A Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes.</li> <li>• Field staff is required to attend training courses on plants and wildlife to further enhance their botanical and</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Periodical monitoring of endangered, endemic and migratory</li> </ul>

		<p>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.</p> <ul style="list-style-type: none"> <li>• Update current biodiversity conservation status to FMU17A team of the upgrade or downgrading of threat status locally and globally.</li> </ul>	<p>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.</p>
1.4	Currently, not present.	<ul style="list-style-type: none"> <li>• No HCV area is indicated.</li> <li>• In the event that any salt licks and potential nesting sites are found within the FMU17A 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</li> </ul>	<ul style="list-style-type: none"> <li>• No HCV area is indicated.</li> <li>• In the event that any salt licks and potential nesting sites are found within the FMU17A area in the future, periodic monitoring as prescribed above will be conducted.</li> </ul>
2	Part of FMU17A, especially areas under Class I Protected Forest should be categorised as HCV 2 as potential for linking large forested areas between Deramakot, FMU 17D and FMU 17B.	<ul style="list-style-type: none"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities such as encroachment and poaching.</li> <li>• Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.</li> <li>• 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.</li> <li>• FMU17A Wildlife Management System to be enhanced through collaboration with wildlife experts such as HUTAN, WWF and other research institutes.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Long term monitoring of FMU17A 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.</li> </ul>

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"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</li> <li>• Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>
4.1	Currently, not present.	<ul style="list-style-type: none"> <li>• No HCV area is indicated.</li> </ul>	<ul style="list-style-type: none"> <li>• No HCV area is indicated.</li> </ul>
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"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
4.3	Buffer strips of 100 m inside FMU17A 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"> <li>• Conduct periodic patrolling and surveillance in all designated HCV areas to curb illegal activities, such as encroachment and poaching.</li> <li>• When the Forest Fire Management Plan is available it has to be implemented and updated periodically.</li> <li>• 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 withalang grassland and ferns.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>
5	The community used areas, such as for collection of NTFP including rattan, traditional herbal medicine and fishing ground within FMU 17A are categorized as HCV 5	<ul style="list-style-type: none"> <li>• The management team are to constantly conduct meeting with the village representatives to mitigate any potential problems or discussed issues related to HCV 5 attributes as part of the Community Forestry Programme.</li> <li>• The management team acknowledge communities usage of NTFP collected within FMU 17A for their own</li> </ul>	<ul style="list-style-type: none"> <li>• The designated HCV 5 should be jointly monitored and maintained by the the FMUs management team and local communities under Community Forestry Programme.</li> </ul>

		consumption (HCV 5). A Standard Operating Procedure (SOP) for the entry and collection of NTFP is applied. The villagers are to be briefed on the SOP.	
6	The burial ground found within the project area is categorized as HCV 6	<ul style="list-style-type: none"> <li>• The management team are to constantly conduct meeting with the village representatives to mitigate any potential problems or discussed issues related to HCV 6 attributes as part of the Community Forestry Programme.</li> <li>• Boundary of the burial site located in FMU 17A should be clearly mark on the ground and on map (HCV 6).</li> </ul>	<ul style="list-style-type: none"> <li>• The designated HCV 6 should be jointly monitored and maintained by the the FMUs management team and local communities under Community Forestry Programme.</li> </ul>