

HCV 1 Biodiversity Value

HCV 1.3 Endemic Species

Definition

Any forest containing endemic species as identified by FRIM, MNS, SFC, Forestry Departments and published literature, particularly in high concentration or highly restricted distribution, can be considered HCV 1.3.

Findings

- The presence of considerably high number of endemic fauna and flora from both past research findings and the recent HCV assessment may conclude that NGR project area is an important natural plant habitat or for wildlife nesting and foraging habitats.

Management Prescription

- Conduct periodic patrolling and surveillance in designated HCV areas to curb illegal activities, such as encroachment and poaching. Any signs of encroachment should be reported and dealt with immediate actions.
- Establish a long term biodiversity monitoring system for critical forest ecosystem, flora and fauna.
- If the management team discover high conservation value plant species (IUCN red list, prohibited species under Sabah Forestry Department, CITES and Sabah Wildlife Enactment) as listed in Appendix II, in permanent sample plots and nature trails in NGR project area, they 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.
- 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.

Monitoring

- Periodic monitoring and control should be carried out to prevent encroachment in the HCV areas.
- 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.
- Periodic monitoring by conducting re-enumeration of all the trees in the permanent sample plots and to be conducted once every three years to get indication of

changes in tree structure and species assemblages.

- Periodic 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.

A. Flora

Site perspective

Based on data compiled from previous studies and Sandakan Herbarium database, there is a total of 162 species that are recognized as endemics to Borneo, representing about 22 % of tree species known from the project area. Of these numbers, 16 species are endemic to Sabah.

A total of 9 endemic plant species are currently protected under Schedule 1 of the Forest Rules 1969; 17 endemic plants are threatened and endangered under the IUCN red list that consist of 9 species as critically endangered, 3 species as vulnerable and 5 species as endangered; 16 endemic plants are protected under Sabah Wildlife Enactment; and one species is listed under CITES. However, the presence of these endemic flora may not be able to verify the stability of population. Therefore, the existing long-term monitoring activities by using permanent sample plots are useful to determine long-term population trends of increase or decrease that can be related to human disturbance or short term fluctuations caused by variations in weather or unpredictable natural catastrophic events.

The rationale for the identification of HCV attribute

In relation to the flora diversity and a number of outstanding conservation values, the assessment indicates that the whole area classified as mixed dipterocarp forest, kerangas forest and limestone vegetation both in lowland and upland altitudinal zonations should be categorized as HCV 1.2 that indicates habitats for endemic flora in the project area area (Fig. 1).

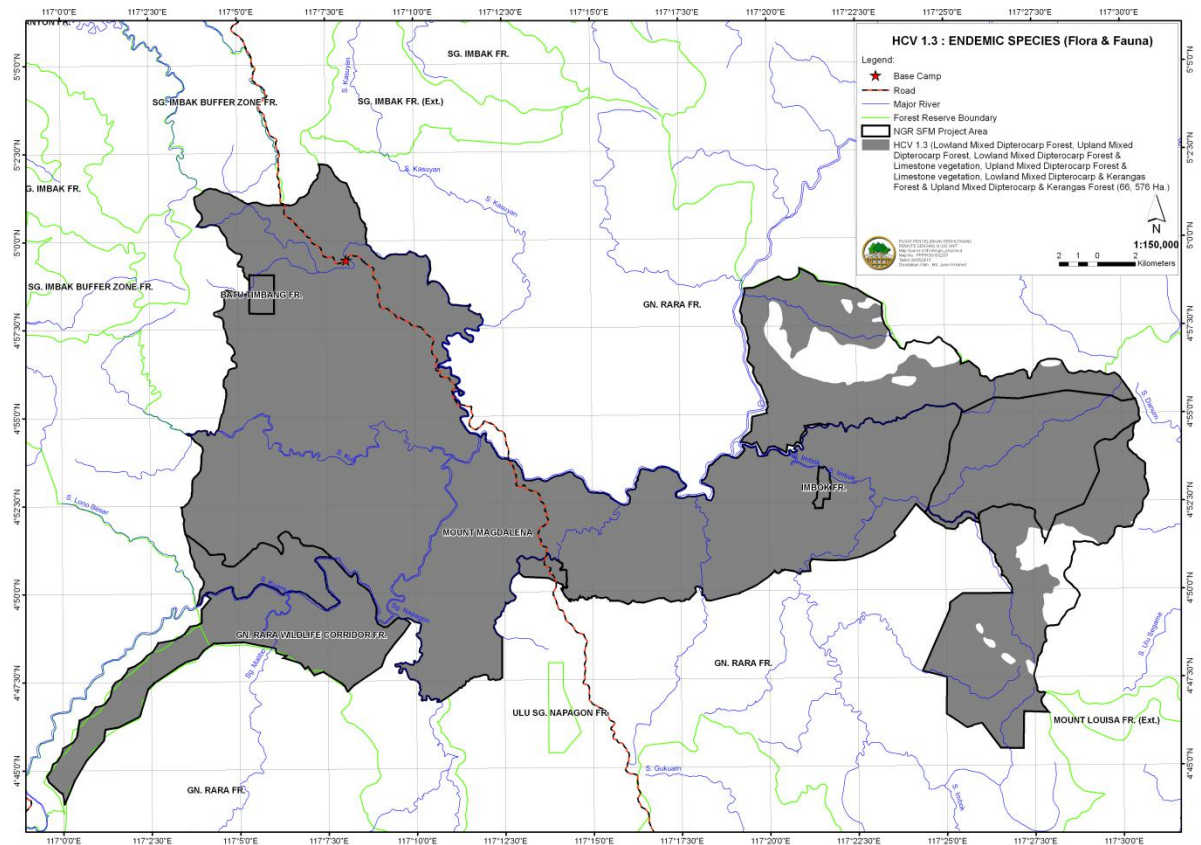


Figure 1. The entire the whole area classified as mixed dipterocarp forest, kerangas forest and limestone vegetation both in lowland and upland altitudinal zonation in Northern Gunung Rara Sustainable Forest Management Project Area is categorised as HCV 1.3 that indicates habitats for endemic flora and fauna.

B. Fauna

Site perspective

At least 25 species of fauna recorded in NGR FMU, i.e. 5 species of mammals, 4 species of birds, 4 species of frogs, 1 species of reptile and 12 species of insects are endemic (Appendix III).

The rationale for the identification of HCV attribute

The management indicates that the whole area classified as mixed dipterocarp forest, kerangas forest and limestone vegetation both in lowland and upland altitudinal zonation should be categorised as HCV 1.3 for its importance in providing potential foraging habitats for endemic wildlife (Fig. 1).