

### HCV 3 ECOSYSTEMS

Any forest area that contains an ecosystem/habitat type identified as a priority for protection by the National Conservation Strategy (NCS), PERHILITAN Ecosystem Assessment report, Forestry Departments, FRIM, or SFC, and/or is confirmed as such by current expert opinion, is HCV 3. Some ecosystems are naturally rare, but some others are becoming increasingly threatened by pressure from human activities (WWF-Malaysia, 2009).

### Findings

Trusan Sugut FR is unique in that it contains a diversity of forest types within a relatively small area. The ecosystems that can be found here are lowland dipterocarp forest, lowland mixed dipterocarp and kerangas forest, mangrove forest, peat swamp forest and freshwater swamp forest (Figure 20). Of interest are the freshwater swamp forest and the dipterocarp forest as these habitat types have been reduced significantly over the last decade, and are now considered endangered in Sabah (WWF-Malaysia, *unpublished report*; Appendix 1).

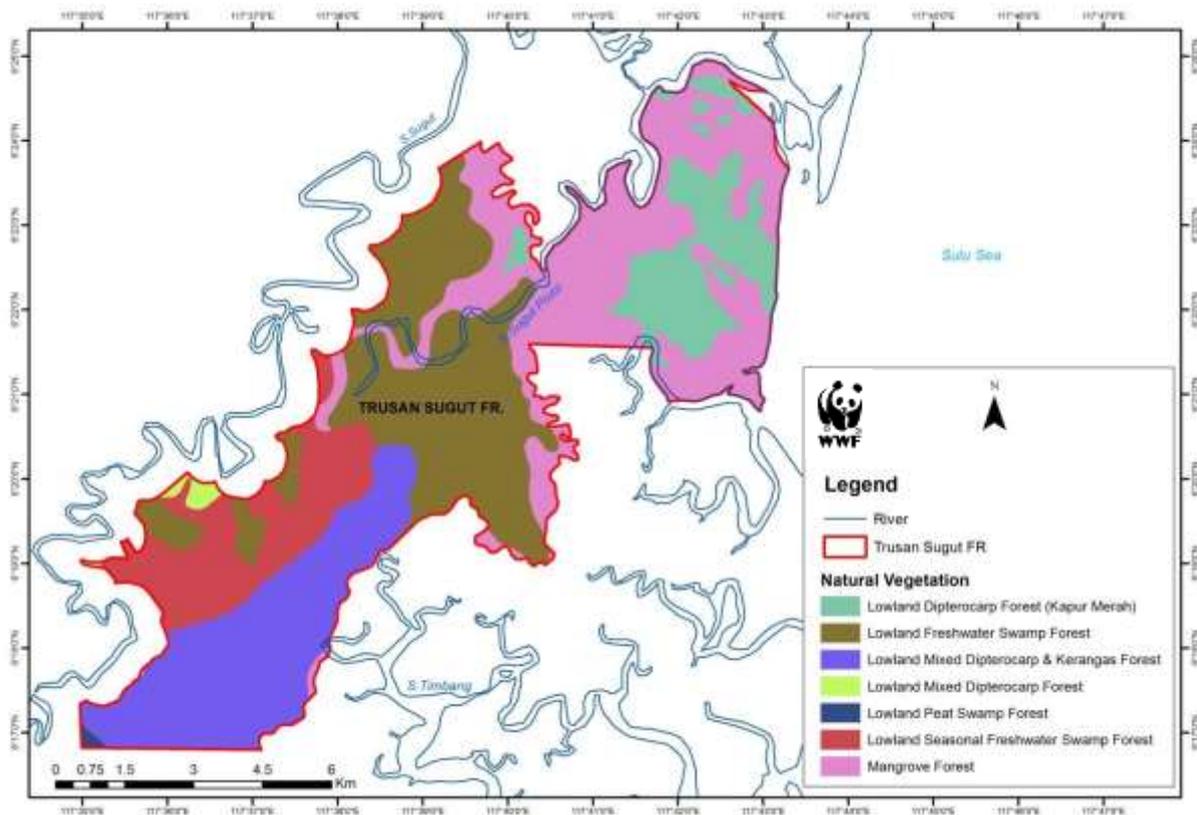


Figure 20 Forest types found in TSFR. Data courtesy of Forest Research Centre (FRC).

Trusan Sugut FR has been subjected to logging and fires (result of hunting and encroachment) in the past, hence some of the areas are considerably degraded (Figure 21).

A potential threat to the ecosystem of Trusan Sugut FR could come as a form of pollution from surrounding land-use (e.g. pollution from run-off from plantations) and could potentially affect freshwater swamps, peat swamps or mangroves.

### ***Management Recommendations***

Similar to HCV 1.4, these endangered ecosystems would generally be protected from any threats. However, the degraded areas will need active replanting/ management to restore the forest back into a healthy condition and to provide habitat suitable for orang utans, and consequently other species too. (refer to restoration proposal by WWF-Malaysia, 2016 and section 5 of the Trusan Sugut FMP).

Due to its fire history as mentioned in the previous section, fire prevention and control measures have to be undertaken to prevent the unique ecosystems in Trusan Sugut FR from being degraded or destroyed in the event of a forest fire. Trusan Sugut FR is especially at risk as it is surrounded by land-use where the likelihood of human-induced fire is very high. Specific activities could follow that in the Forest Fire Management Plan for Sugut Conservation Area (Sabah Forestry Department, 2015) and also in section 5 of the Trusan Sugut FMP.

Water pollution is considered at relatively low levels currently due to the high water flow levels of Sg. Sugut. Further engagement must be carried out with oil palm plantations/ mills further upstream to ensure that pollution from fertilisers, pesticides or mill wastes are cut down to the minimum. It is unknown how agriculture pollution affects the flora and fauna of Sg. Sugut and also the freshwater ecosystem in Trusan Sugut FR at the moment so it is recommended that studies be conducted to ascertain the types and level of pollutants running into the waterways.

### ***Monitoring Recommendations***

Similar to the recommendations on fire prevention and control for HCV 1.2 and 1.3.

Pollution can be periodically monitored through the health of potentially affected forest types, such as freshwater swamps and peat swamp forests.

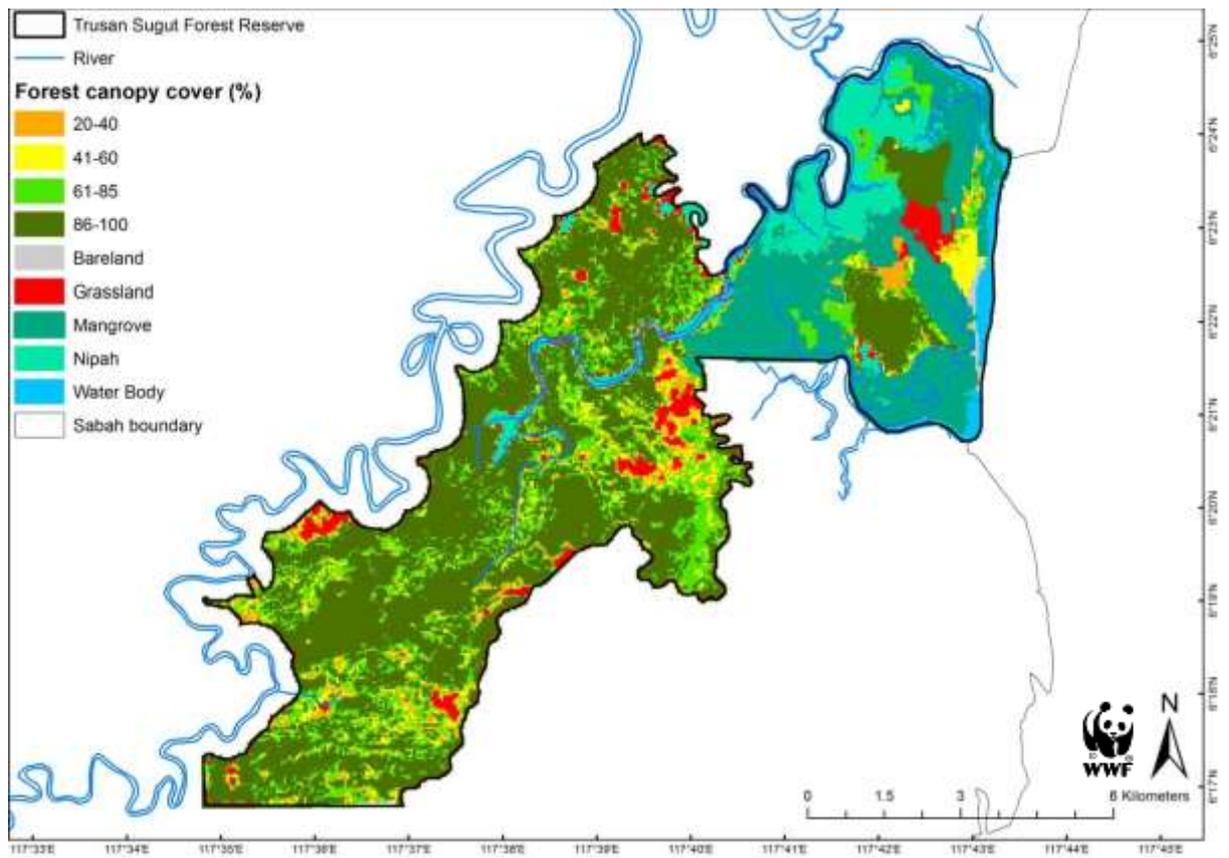


Figure 21 Forest cover map for Trusan Sugut Forest Reserve