

DERAMAKOT HCV MANAGEMENT AND MONITORING SUMMARY

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
1.1	There are no protected areas within the forest reserve itself	Reduce the impacts of edge effects exerted on the Class 1 FR caused by logging activities within the Deramakot FR compartments.	Logging activities within DFR do not encroach into Tangkulap & Segaliud Lokan FR.	Mitigate intrusion into Segaliud Lokan and tangkulap F.R	The common boundary between DFR and Tangkulap FR (Class 1)	Common boundary demarcated and marked out clearly No encroachment into Tangkulap FR	Periodic monitoring and patrolling a. Aerial patrol at least 3x/year b. CHP Monitoring Unit at harvesting site at all time	Quarterly Progress and Annual reporting SMART Analysis	Any signs of encroachment should be reported and dealt with immediate mitigation actions.
			Prevent encroachment/ intrusion into the neighboring forest reserve during the harvesting of the compartments at the borders of DFR	Mitigate intrusion into Tangkulap and Segaliud Lokan F.R	A buffer area of 50 meters imposed within DFR compartment areas that border the Tangkulap FR	The buffer zone clearly indicated in the CHP. Timber extraction is prohibited.	The buffer of 50 m from the border of the DFR imposed during the CHP exercise to be monitored a. Aerial patrol at least 3x/year b. CHP Monitoring Unit at harvesting site at all time	Quarterly Progress and Annual reporting SMART Analysis	Any encroachment to be reported to the Director of the Sabah Forestry Department.
1.2	[LISTED Fauna]: Mammals, birds, Orang Utan	Wildlife Management System is	a) To protect and secure special conservation/management areas	Mitigate intrusion into DFR	• DFR boundaries	Curb the occurrence of poaching.	Periodical monitoring and patrolling At least :	Habitat quality surveys (e.g. food plants present)	• Hunting monitoring patrols

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
		to be enhanced and enforced. To conserve and/or enhance the biological diversity in DFR.	and habitats for Orang-utans, Pygmy elephants, Tembadaus and other specific wildlife species. b) To manage DFR in order to provide diverse and productive wildlife habitats and habitat components. c) To protect species of special concern (Orang-utans, Pygmy elephants and Tembadaus) and manage them to sustainable levels.		<ul style="list-style-type: none"> Conservation Area boundaries Southern part of DFR 	Wildlife experts are to be approached to assist in enhancing the present system	<ul style="list-style-type: none"> a. At least 3x aerial/year patrol/year b. 20 km road patrol/month c. 30 km river patrol/month d. In general – adherence/implementation of Deramakot Protection Plan 	<p>Annual orang-utan nest survey/ or complying to enhanced Wildlife Monitoring System</p> <p>Quarterly Progress and Annual reporting</p> <p>SMART Analysis</p>	(more targeted, extensive than operational monitoring) <ul style="list-style-type: none"> opportunistic observations of hunting indicators
	[LISTED Flora] : IUCN Red List & CITES-listed Sabah Red List assessment to be carried out	Adherence to Schedule 1 of the Forest Rules 1969 and under Schedule 1 part II and	a) To provide and improve habitats for a diversity of flora that represent some of the richest stands of Dipterocarp forests in Sabah.	Ensure no depleting factors on entities	Location of identified trees as marked on ground and CHP maps	<ul style="list-style-type: none"> The trees listed in the prohibited lists should be clearly marked out both on ground and the CHP maps. 	<ul style="list-style-type: none"> Strict monitoring of CHPs Botanical training 1x/year 	<p>Establish/Enhance a long term monitoring system for flora and fauna assemblages/richness.</p> <p>Establishment of Continuous Forest</p>	Periodical monitoring of the CFI plots to identify potential threats that leads towards changes within the plots.

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
		<p>Schedule 2 part II of Sabah's Wildlife Conservation Enactment 1997</p> <p>To conserve and/or enhance the biological diversity in DFR.</p>	<p>b) To protect listed endangered plant species and habitats critical to their survival.</p>			<ul style="list-style-type: none"> Enhance staff botanical knowledge on species Field staff is required to go for biannual botanical training/refreshers course Mitigation when changes (threats) are detected 		<p>Inventory (CFI) plots using the Dipterocarps as the model family.</p> <p>Quarterly Progress report</p>	
1.3	Fauna: 6 bird species, [LISTED] mammals	<p>HCV 1.3 to be managed in close accordance with HCV 1.2, 2 and 3</p> <p>Enhance the wildlife management plans.</p>	<ul style="list-style-type: none"> To understand the species behaviour and ecology needs better. To maintain and enhance the monitoring to be carried out on an annual basis to allow for effective enforcement of Wildlife Monitoring System 	Wildlife population intact	Whole of DFR	<p>Focusing on endemic birds, as they are sensitive towards environmental changes</p>	<p>Periodical monitoring to be carried to assess population distribution and size for the endemic species.</p> <p>Implementation of DFR Wildlife Monitoring System.</p> <p>RIL adherence</p>	<p>In depth study to be conducted with university/research institutes/NGOs/interested parties</p> <p>Quarterly Progress Report</p>	Wildlife population deterioration

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
	Flora: 176 tree species are recognized as endemics-163 tree species Borneo Endemic;13 Sabah endemics	Maintain species pool According to FSC's Principle and Criteria — Principle 6, Aichi Biodiversity Targets, Sabah Conservation Strategy	<ul style="list-style-type: none"> • Protect rare endemic species • Protect listed species 	Protected species are preserved	Intended harvesting cpts	<ul style="list-style-type: none"> • Rare endemics-record the tree location and mark it on the ground • Species listed are prohibited from harvesting • Trees are clearly marked on the ground for retention in preparation of the CHP. • Directional felling is employed to avoid damage to retained trees. • Trees are also identifiable within the CHP map as trees 	<ol style="list-style-type: none"> 1. RIL Adherence 2. Botany training (1x/year) 		Protected species being felled to make way for road opening/temporary landing

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
						prohibited from felling; and verifiable on the ground. <ul style="list-style-type: none"> • annual species identification training for field staff or contractors 			
1.4	1-Saltlicks 2-Potential nesting sites (winter migratory visitors)		Continuous identification of saltlicks and its preservation as well as nesting sites (north west of DFR)	No intrusion into salt licks Fruit trees/mother trees retained	1- Compartment 9, 49, 63, 88, 108, 120. Generally found within the wetland or swamp forest areas. Buffer zone of 50 m. 2- Potential nesting	1-No harvesting in saltlick and buffer zone 2-Nesting sites retained/not harvested Fruit trees, seed trees and tree species that are known to be nesting sites for Rhinoceros Hornbills are marked out and not harvested.	1-The management team is to keep check on the number of saltlicks and to monitor the species of fauna that utilizes the saltlicks through camera trapping. 2. Implementation of DFR wildlife Monitoring system (camera traps) 3. Adherence to RIL guide on mother trees/fruit trees 4. Annual monitoring on the health of nesting areas (1x/year)	Annual survey of the health of nesting sites Compartment Record Book	Harvesting intrusion into salt licks Degraded /deterioration of nesting sites due to depleting food source

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
					sites (winter migratory visitors) in the north western portion of DFR	Cross check that all salt licks and tree marked out for seeds, fruits or nesting sites are clearly marked out in the CHP map as well.			
2	DFR is part of a large FR complex within the central Sabah, bordered by big complexes comprises of both Class 2 Commercial FR and Class 1 FR, hence the richness in wildlife diversity	Maintain steady landscape diversity	Management and monitoring recommendations as suggested in HCV 1.2 and 1.3. To maintain and restore the full array of ecological functions within and around DFR, through maintaining and restoring forest connectivity.	Ensure no changes to landscape thus provide for easy access – wildlife migratory pathways	<ul style="list-style-type: none"> Logging roads that are commonly used by the wildlife as migratory 30 m buffer areas as according to RIL guidelines 	<p>Establishment of road network</p> <p>Continuous practices of buffers – determine through CHP planning</p> <p>Acquirement of satellite image to observe landscape change</p>	<p>Road network establishments continuously updated (1x/year)</p> <p>Satellite image acquirement (1x/5 years)</p> <p>RIL adherence</p> <p>DFR Protection Plan (aerial patrol at least 3x/year)</p>	<p>Identify changes in terms of migratory pathways</p> <p>Identify changes in terms of the landscape through satellite images</p> <p>Quarterly and annual reporting</p> <p>Compartment Record Book</p>	<p>Changes to landscape size and connectivity</p> <p>Encroachment into corridors</p>

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
3	LMDF and the Freshwater Swamp Kerangas Forest (zoned as conservation area)	To maintain healthy ecosystem	To protect areas of scenic, historic, geological or ecological significance through the establishment of natural forest areas that will remain in an undisturbed state, with development and maintenance being limited to that required for public health and safety.	Maintain and prevent damages to identified conservation-priority area	Recommended 9,115 ha (in Map) +The compartments containing kerangas forest within DFR has to be set aside for conservation purposes and its boundaries mapped out.	Fire prevention measures to be undertaken as per FDRS requirement Prevent adjacent compartment (of areas that has been set aside for conservation) from encroachment	<ul style="list-style-type: none"> a. RIL guidelines adherence as per Continuous harvesting monitoring aspect by CHP Monitoring personnel b. Activation on FDRS requirement when required (warning letters to stakeholders/ c. Aerial patrol (concurrent with OU nest count – 1x/year) 	<p>Long term monitoring of the areas that are set aside for ecosystem protection and conservation using satellite maps</p> <p>Quarterly and annual reporting</p> <p>SMART analysis</p>	Area degradation due to harvesting/fire/encroachment
4.1	Water catchment area 30 m wide buffer areas within production forest	Preserving water qualities and its entities	Water quality is protected, considering that there are water catchment areas along the Sungai Kinabatangan- to prevent a cascading effect to people's	To ensure healthy water qualities all over DFR	Water catchment area in Compartment 109- water catchment for Kg Balat	Protected from any future harvesting and encroachment activities Not to disturb the 30 m	<ul style="list-style-type: none"> 1. (cpt 109) Periodical water assessment should be conducted to ensure safe domestic consumption, following the Water 	<p>Quarterly report</p> <p>SMART analysis</p>	Deteriorating quality and encroached water source

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIO NS			
			livelihood downstream. To consider application of gravity pipe water (from villages).		30 m wide buffer areas located on both sides of the permanent waterways within the production forest	riparian buffer imposed To strictly comply with RIL guidelines	<p>Quality Index (WOJ), special attention should be paid to TCC and FCC values (2x/year)</p> <p>2. Water quality of the 5 rivers located within the FR (Sungai Rawog Besar, Sungai Tabalion Besar, Sungai Tangkulap Kecil, Sungai Balakang and Sungai Deramakot) are to be assessed Periodically (2x/year)</p> <p>3. Continuous harvesting monitoring aspect by CHP Monitoring personnel</p> <p>4. RIL guidelines adherence</p> <p>5. DFR Protection plan as per magnitude</p>		

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
							defined with different risk areas (inclusive of aerial patrol at least 3x/year)		
4.2	Area that contains steep slopes of over 25 degrees	No harvesting or degrading activities inside or near steep areas (conservation areas)	All steep areas (conservation areas) are marked on map	No encroachment/ degrading activities such as harvesting inside steep areas to avoid soil erosion.	19 compartments, generally located on the South East and South West of the DFR.	Steep slope areas within production compartments be set aside as protection areas to be marked out on the CHP maps Results obtained from research studies regarding harvesting effects on soil erosion taken into consideration	continuous monitoring aspect via CHP Monitoring personnel in ensuring no steep area is encroached.	Quarterly & Annual reporting SMART analysis	Soil erosion hence biodiversity degradation

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
						Steep areas are not encroached during the harvesting process			
4.3	FFMP	The Forest Fire Management Plan implemented	DFR is exposed to fire outbreaks especially on areas adjacent to oil palm estates. Not only that, specific actions need to be taken especially on critical period (Fire prone).	Ensure no fire outbreak into the FR especially on critical areas	Previously burnt: southern part of the DFR, Kerangas forest at the North Eastern part of DFR and areas that are adjacent to palm oil	FDRS monitoring and actions as depicted in the FFMP activated when warranted.	DFR staffs and the local community work closely together in forest fire prevention. Continuous talks and public awareness campaign to villages. Water tanks and fire equipment made easily accessible, routinely checked and maintained especially during the drought season Regular training and fire drill to be conducted especially during the drought season. a. Forest fire equipments checks at least 1x/month	Annual remote sensing analysis to derive changes on forest cover/quality Quarterly & Annual Reporting	Fire outbreak within and outside into DFR

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
							<ul style="list-style-type: none"> b. Forest Fire Training 1x/year c. At least 2x/year Social Meetings d. Activation on FDRS requirement when occur 		
5	<p>1.Continuation of NTFPs</p> <p>2. Awareness program among communities thus boundary demarcation/rebrushing to curb illegal encroachment</p> <p>3. Buffer zone established within harvesting cpt when it is adjacent to villagers.</p> <p>4. Employment continuation to the local communities to ensure</p>	Preserve wellbeing of communities	Sustaining economic and wellbeing of communities	<p>Villages are not impacted by harvesting activity.</p> <p>Economic wellbeing of communities preserved</p>	<p>Cpt 117-Tongkat Ali & ferns (km 24, 23, 17 and 15) Salingkawang Cpt 108, Sg Karis-karis & Kg Balat, adjacent to DFR – rotan</p> <p>Buffer zone (if logging is planned adjacent to villages)</p>	<p>Allow communities to continue to collect NTFP for their own consumption with the approval from the DFR Management</p> <p>Set up buffer zone when needed</p> <p>boundary established is clearly marked out both on the map and on the ground</p>	<p>Public awareness program among the community to reduce the issue of illegal Encroachment (at least 1x/year)</p> <p>Observe & record NTFP collection as per S.O.P</p> <p>At least 2x Social Meetings/year</p> <p>RIL guidelines adherence</p> <p>DFR Protection plan as per magnitude defined with different risk areas (inclusive of aerial patrol at least 3x/year)</p>	<p>Quarterly report & Annual report</p> <p>SMART analysis</p>	<p>Harvesting impacting villages.</p> <p>Communities experiencing economic difficulties resulting in them encroaching into DFR (cultural harvesting/poaching)</p>

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
	sound economic wellbeing. 6. Awareness on agricultural plants and NTFP grown along the fringes of DFR, on the potential of crossing over.					Continue to provide employment opportunities Mitigate potential conflict on NTFP or agriculture cultivation at fringes of DFR			
6	Old durian orchard located in cpt 88	Site wellbeing is preserved	Site remained intact inclusive of its entities (fruit trees)	Site not impacted by harvesting activity	Old durian orchard located in Compartment 88 that belongs to Kg. Desa Permai	Boundary clearly marked on the ground and in CHP maps Meetings held constantly to mitigate potential issues	<ul style="list-style-type: none"> a. Social Meetings at least 2x/year b. Boundary rebrushing 1x/year c. CHP Monitoring unit ensure harvesting activity mitigated according to established CHP d. DFR Protection plan as per magnitude defined with 	Quarterly and annual reporting SMART analysis	Further Harvesting activity/impacting site.

HCV	ID	GENERAL HCV MANAGEMENT OBJECTIVE	SPECIFIC HCV MANAGEMENT OBJECTIVE	MANAGEMENT TARGETS	MANAGEMENT STRATEGIES		OPERATIONAL MONITORING	STRATEGIC MONITORING	THREAT MONITORING
					AREAS	PRESCRIPTIONS			
							different risk areas (inclusive of aerial patrol at least 3x/year)		