

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE RESPONSIBLE AGENCIES
MU05 (Pulau Kalumpang)	<ul style="list-style-type: none"> To increase protection as a National Heritage Site under the National Heritage Act 2005 	<ul style="list-style-type: none"> To prepare a Conservation Management Plan (CMP) 	<ul style="list-style-type: none"> Risk of land use changes due climate change and development pressure will impact the archaeology site 	<ul style="list-style-type: none"> JWN Perak State Government Tourism Perak Tourism Malaysia

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MU05	Conservation Area <ul style="list-style-type: none"> Conservation of Environmentally Sensitive Area (ESA) 	<ul style="list-style-type: none"> It has been proposed as a Ramsar Site. To conserve as a State Park Minimal disturbance in this area. 	<ul style="list-style-type: none"> An Environmentally Sensitive Area (ESA). 	<ul style="list-style-type: none"> Jabatan Perhutanan

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MU05	Aquaculture <ul style="list-style-type: none"> To minimize the potential of water quality degradation from aquaculture activities. To promote sustainable aquaculture practice. 	<ul style="list-style-type: none"> Provision of proper wastewater treatment facilities at aquaculture farms to reduce discharge of untreated water directly into the river. Regular maintenance of the wastewater treatment facilities. Encourage aquaculture farmers to get MyGAP certification. 	<ul style="list-style-type: none"> Degradation of water quality due to the untreated wastewater discharge from brackishwater pond culture. 	<ul style="list-style-type: none"> Department of Fisheries
	<ul style="list-style-type: none"> To promote sustainable aquaculture practice. 	<ul style="list-style-type: none"> Promote programmes related to the restoration and replanting of suitable mangrove species Prohibition of new development plans within mangrove areas. 	<ul style="list-style-type: none"> Aquaculture activities or coastal modification contributes to mangrove degradation. 	<ul style="list-style-type: none"> Department of Forestry Department of Fisheries PlaNMalaysia Perak
		<ul style="list-style-type: none"> Restoration of abandoned farms as an alternative to minimize the development of new aquaculture farms. Reforestation of abandoned shrimp farms. 		
	<ul style="list-style-type: none"> To conserve cockle farming through protection of mudflat areas. 	<ul style="list-style-type: none"> Mudflats and natural spatfall areas gazetted as fisheries protected area Propose Aquaculture Industrial Zone (AIZ) for cockle farming. 	<ul style="list-style-type: none"> Lack of protection of the cockle farming activities within mudflat areas off Pulau Kalumpang 	<ul style="list-style-type: none"> Department of Fisheries

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MU05	<ul style="list-style-type: none"> Preserving and Controlling Environmental Quality for Ecological Balance 	<ul style="list-style-type: none"> Management of Environmental Sensitive Areas (ESAs) 	<ul style="list-style-type: none"> Natural assets of different properties need to be integrated for development planning and control purposes. The National Physical Plan 3 and the National Policy on Biological Biodiversity emphasize the conservation of natural resources because natural resources are national heritage assets that must be protected. 	<ul style="list-style-type: none"> Perak Forestry Department PTD Larut Matang dan Selama Perak State Government
		<ul style="list-style-type: none"> Disaster Risk Area Management 	<ul style="list-style-type: none"> Adopt planning and control measures in the report of the National Coastal Zone Physical Plan (RFZPPN). Coastal erosion that occurs at a rapid rate such as in Tanjung Piandang due to development pressures in coastal areas, such as reclaiming mangrove swamps for aquaculture ponds. 	<ul style="list-style-type: none"> PTD Larut Matang dan Selama

Dominant land use in MU05 is the forest which is the Virgin Forest Reserve (VJR). One of the functions of VJR is to protect biological diversity including all species of plants, wildlife and microorganisms live in it. This is in line with the strategy that has been stated above for ESA management. Kuala Gula Bird Sanctuary is an IBA area and is critical in ensuring the conservation and sustainable management effort of protecting critical sites for world's bird as mentioned in avifauna subtopic.

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MU05	Mangrove <ul style="list-style-type: none"> To protect, conserve and rehabilitate the mangrove areas. To facilitate mangrove regeneration by implementation of appropriate tools and methods. 	<ul style="list-style-type: none"> Prohibit land use conversion within MMFR into other development projects. 	<ul style="list-style-type: none"> Extensive protected mangroves area i.e., Matang Mangrove Forest Reserve (MMFR). 	<ul style="list-style-type: none"> Land Office
		<ul style="list-style-type: none"> Prohibition of new development plans to facilitate the regeneration of mangrove within respective areas. 	<ul style="list-style-type: none"> Regeneration and re-establishment of mangroves. 	<ul style="list-style-type: none"> PlaNMalaysia Perak Land office
		<ul style="list-style-type: none"> Promote programmes related to the restoration and replanting of suitable mangrove species. Provision of buffer zone between mangrove and development areas. Restoration of abandoned farms as an alternative to minimize the development of new aquaculture farms. Reforestation of abandoned shrimp farms. 	<ul style="list-style-type: none"> Potential mangrove forest degradation due to coastal and aquaculture developments. 	<ul style="list-style-type: none"> Department of Forestry Land Office PlaNMalaysia Perak Department of Fisheries
	Mudflats <ul style="list-style-type: none"> To protect and conserve the mudflat areas 	<ul style="list-style-type: none"> Minimize coastal developments in respect to mudflat areas. No land reclamation and coastal development at MMFR areas. 	<ul style="list-style-type: none"> Coastal development within Perak coastline possesses adverse impacts towards adjacent mudflat areas. 	<ul style="list-style-type: none"> Pejabat Tanah dan Galian (PTG) Perak
		<ul style="list-style-type: none"> Mudflats and natural spatfall areas gazetted as fisheries protected area. 	<ul style="list-style-type: none"> Mudflat areas serve as important grounds for 	<ul style="list-style-type: none"> Department of Fisheries

		<ul style="list-style-type: none"> Protect mudflat areas due to its importance as cockle farming area. 	cockle farming off Pulau Kalumpang	
	Marine Mammals <ul style="list-style-type: none"> To conserve and protect marine mammals 	<ul style="list-style-type: none"> Minimize large-scale coastal developments and modifications near identified core habitats of cetaceans. Minimize coastal modifications i.e., coastal shrimp farming, coastal reclamation, and the clearing of fringing mangrove forests in Matang. 	<ul style="list-style-type: none"> Potential marine mammals' disturbance due to coastal developments and modifications 	<ul style="list-style-type: none"> PlaNMalaysia Perak Department of Fisheries Department of Forestry Land Office
		<ul style="list-style-type: none"> Implement and enforce fisheries regulation to restrict the use of high-risk bycatch gears especially within marine mammals' hotspot areas. Promote utilization of sustainable fishing gears within Important Marine Mammal Area (IMMA). 	<ul style="list-style-type: none"> Utilization of unsustainable fishing gear could impose significant threat towards marine mammals within Perak coastline. 	<ul style="list-style-type: none"> Department of Fisheries
		<ul style="list-style-type: none"> Collect and analyse data to help inform effective mitigation to reduce vessel collisions with marine mammals within MMFR. 	<ul style="list-style-type: none"> Marine mammals are susceptible to injury and mortality from vessel collisions. 	<ul style="list-style-type: none"> Department of Fisheries Marine Department
	Avifauna <ul style="list-style-type: none"> To protect and conserve important bird areas. 	<ul style="list-style-type: none"> Enhance and promote the sustainable ecotourism for birdwatching at MMFR. 	<ul style="list-style-type: none"> MMFR and its mudflats areas serve ecological importance as important staging sites and stopover location for coastal migratory waterbirds and migrant forest birds along the West Coast of Peninsular Malaysia. 	<ul style="list-style-type: none"> PERHILITAN
		<ul style="list-style-type: none"> Prohibit land reclamation activities within MMFR coastlines. 	<ul style="list-style-type: none"> Coastal development possesses adverse impacts towards important bird 	<ul style="list-style-type: none"> PlaNMalaysia Perak PERHILITAN

			areas within Perak coastline especially within MMFR	<ul style="list-style-type: none">• Land Office
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MU05	Aquaculture <ul style="list-style-type: none"> Implementation of MyGAP for aquaculture To minimize the potential of water quality degradation from aquaculture activities. To promote sustainable aquaculture practice. 	<ul style="list-style-type: none"> Provision of proper wastewater treatment facilities at aquaculture farms to reduce discharge of untreated water directly into the river. Regular maintenance of the treatment facilities. No development or conversion of the mangrove forest to other uses will be allowed. Only research activities are allowed. 	<ul style="list-style-type: none"> Degradation of water quality due to the untreated wastewater discharge from brackishwater pond culture. Encroachment of mangrove forests for conversion to other uses 	<ul style="list-style-type: none"> Department of Environment Department of Fisheries Department of Forestry Local Council
	Conservation of the Mangrove Forest Areas <ul style="list-style-type: none"> The mangrove forests must be preserved. 			