

| MANAGEMENT UNIT (MU) (LOCATION) | MANAGEMENT OBJECTIVES | MANAGEMENT STRATEGIES | ISSUE/IMPORTANCE/REASON | RESPECTIVE RESPONSIBLE AGENCIES |
|---------------------------------------|---|--|--|---|
| MU11 | Setback <ul style="list-style-type: none"> Necessary deviations to allow for existing infrastructures and predicted movement of shorelines. | <ul style="list-style-type: none"> Setback have been determined based on the coastal features and important infrastructure. Generally, the DID guidance of landward of the tree line 400m for mangroves and 60m landward of the Highest Astronomical Tide contour for sandy beaches is followed. However, deviations were necessary to allow for existing infrastructures such as roads and bunds where the authorities will be required to maintain the line. In such cases, the setback is placed landward of the infrastructure (see Appendix Bund Mangrove Cover and Setback). The DSS should be used to determine the setback required for future developments. | <ul style="list-style-type: none"> Allow for movement of the shoreline. | <ul style="list-style-type: none"> JPS |
| | Sea Level Rise <ul style="list-style-type: none"> Developments along the shoreline must take into account Sea Level Rise. | <ul style="list-style-type: none"> Determine practical setbacks along the coastal area. To include the sea level rise value (aside from wind setup, storm surge and wave runup) in the calculation of the platform/finish level of a design. | <ul style="list-style-type: none"> Coastal development | |

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| MU11 | Marine Capture Fisheries <ul style="list-style-type: none"> To ensure high standards of fish quality, enhanced food safety and nutritional value through provision of better fisheries infrastructures and facilities. | <ul style="list-style-type: none"> Upgrade the fisheries infrastructure at Teluk Senangin, Batu 3 Segari and Tg. Batu fish landing points | <ul style="list-style-type: none"> Lack of fisheries infrastructure at most fish landing points. | <ul style="list-style-type: none"> Lembaga Kemajuan Ikan Malaysia (LKIM) |
| | 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"> Promote programmes related to the restoration and replanting of suitable mangrove species Prohibition of new development plans within mangrove 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"> Aquaculture activities or coastal modification contributes to mangrove degradation. | <ul style="list-style-type: none"> Department of Forestry Department of Fisheries PlaNMalaysia Perak |

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| | Recreational Fisheries <ul style="list-style-type: none"> • To promote good fishing practices in recreational fishing activities. | <ul style="list-style-type: none"> • Provision of sufficient garbage bins and portable toilets at the recreational beaches. • Promote public awareness by organizing environmental talks on coastal cleanliness and protection of coastal habitats. | <ul style="list-style-type: none"> • Lack of solid waste disposal infrastructure & portable toilets | <ul style="list-style-type: none"> • Local Authority • Department of Fisheries |
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| MU11 | <ul style="list-style-type: none"> Enhancement of Quality of Village Settlement | <ul style="list-style-type: none"> Encourage development on Malay Reserve Land | <ul style="list-style-type: none"> improve rural settlements and provide housing for the village's second generation improving the living standards of the Bumiputera community in line with the rapid development of the surrounding areas in the Manjung District. | <ul style="list-style-type: none"> Manjung Municipal Council State Government |
| | <ul style="list-style-type: none"> Conserve resources in an integrated and sustainable manner | <ul style="list-style-type: none"> Conserve environmental sensitive areas (ESAs) & natural resources | <ul style="list-style-type: none"> ESA Level 2: Restricted Development Area (No urban and agricultural development is allowed, except for recreational activities/tourism based on nature with minimal impact only where the area is all types of water bodies and forest waste areas are allowed without affecting the carrying capacity (carrying capacity). | <ul style="list-style-type: none"> Perak Forestry Department Manjung Municipal Council State Government |

Manjung District Local Plan 2030 mentioned on preservation on ESA in the district. There are also various type of agricultural activities that need proper management because its proximity to water, and poses risk to water quality and wildlife if runoff containing pesticide & herbicide residues from agricultural land enters the water body.

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| MU11 | Mangroves <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"> 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 |
| | 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 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 |

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| | | <ul style="list-style-type: none">• Collect and analyse data to help inform effective mitigation to reduce vessel collisions with marine mammals. | <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 |
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| MU11 | <ul style="list-style-type: none"> Control of solid waste, sewage and sullage discharge from the resorts along the shoreline. | <ul style="list-style-type: none"> Coastal resorts must have frequent septic tanks desludging and maintenance to avoid overflow of the tank during public holidays and festive seasons when the number of tourists increases. This is to avoid untreated sewage discharge that will reduce the water quality. Restaurants along the shoreline must be provided with oil and grease traps and proper solid waste collection. | <ul style="list-style-type: none"> This area is among one of the popular beaches in Perak and is very crowded during public holidays and weekends. Camping areas are available for those who wish to camp on the beach. Toilet facilities and sewage treatment must be well maintained to avoid untreated discharge of sewage. When the beach is crowded, there will also be issues of rubbish and other solid waste. | <ul style="list-style-type: none"> Department of Environment Local Council Indah Water Konsortium |