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## **Environmental Vulnerability of the Coastal Environments of Western Perak to Oil Spills**

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### **Abstract**

The risk of oil spills is high in the Straits of Melaka. Oil spills caused by collisions of ships and illegal dumping or discharge of oil in the Straits have resulted in massive environmental pollution and degradation along extensive stretches of the West Coast. To mitigate the effects of oil spills, a contingency plan based on assessment of effects of such incidents should be formulated. As a start, an investigation of the vulnerability to oil spills of the coastal environments in Perak was carried out in 2000.

A preliminary classification of the vulnerability of a number of coastal facies was generated based on the Vulnerability Index of Gundlach & Hayes - which uses a scale of 1 to 10. Tidal flats and mangrove swamps were given an index of 9 to 10, as any oil spill would destroy most of the flora and fauna. Sandy beaches are placed 4 in the Index, as an oil spill would result in the oil sinking rapidly into the coarse sand. The rocky headlands, which are mostly exposed to the open seas are not vulnerable and have a scale of 1.

Re-mapping of these coastal environments by remote sensing methods is currently underway. Ground-truthing is complemented by detailed assessment studies of the impact of oil spill on the sediments. Field tests are carried out on selected representative stretches of the beaches, tidal flats and mangrove swamps to characterize their physical properties and to study the infiltration rate of oil into such lithologies. The new maps generated in this study should provide the Perak State Government with the best tools to formulate an updated contingency action plan in the event of an oil spill.