

Physical susceptibility of Strait of Hormuz coasts to oil spill based on environmental sensitivity index (ESI) using NOAA

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Abstract

Oil spills can devastate ecosystems and severely affected water quality. The environmental sensitivity index (ESI) was developed to reduce the environmental consequences of a spill and help prioritize the placement and allocation of resources during cleanup efforts. The aim of this study was to determine of the physical sensitivity of the Strait of Hormuz coasts line using the ESI method (2013). The shorelines of Strait of Hormuz were classified on the basis of environmental sensitivity index (ESI) using satellite data (IRS-PAN & ETM), geological maps, tide and wave energy, slope and field observations. All obtained data and information were fed into the GIS program. The result showed that the 258 km shoreline were concise about 38% exposed, solid man-made structures (1B), 38 % of fine- to medium-grained sandy beaches (3A), 1% of rip rap (6B), 24 % of exposed tidal flats (7), 3 % of Sheltered tidal flats (9A) and finally 34% of mangroves (10D). Also, in the study area 61% were defined as high sensitivity areas 1% Medium sensitivity areas and 38% low sensitivity areas. This means that most of Strait of Hormuz coastlines were as high sensitivity to oil spill, which means clean up is very difficult.

Keywords: Environmental Sensitivity Index (ESI), Oil spill, Strait of Hormuz.