

Impacts and Management of Oil Spill Pollution along the Chabahar Bay by ESI Mapping, Iran

Authors : M. Sanjarani, A. Danehkar, A. Mashincheyan, A. H. Javid, S. M. R. Fatemi

Abstract : The oil spill in marine water has direct impact on coastal resources and community. Environmental Sensitivity Index (ESI) map is the first step to assess the potential impact of an oil spill and minimize the damage of coastal resources. In order to create Environmental Sensitivity Maps for the Chabahar bay (Iran), information has been collected in three different layers (Shoreline Classification, Biological and Human- uses resources) by means of field observations and measurements of beach morphology, personal interviews with professionals of different areas and the collection of bibliographic information. In this paper an attempt made to prepare an ESI map for sensitivity to oil spills of Chabahar bay coast. The Chabahar bay is subjected to high threaten to oil spill because of port, dense mangrove forest, only coral spot in Oman Sea and many industrial activities. Mapping the coastal resources, shoreline and coastal structures was carried out using Satellite images and GIS technology. The coastal features classified into three major categories as: Shoreline Classification, Biological and Human uses resources. The important resources classified into mangrove, Exposed tidal flats, sandy beach, etc. The sensitivity of shore was ranked as low to high (1 = low sensitivity, 10 = high sensitivity) based on geomorphology of Chabahar bay coast using NOAA standards (sensitivity to oil, ease of clean up, etc). Eight ESI types were found in the area namely; ESI 1A, 1C, 3A, 6B, 7, 8B, 9A and 10D. Therefore, in the study area, 50% were defined as High sensitivity, less than 1% as Medium, and 49% as low sensitivity areas. The ESI maps are useful to the oil spill responders, coastal managers and contingency planners. The overall ESI mapping product can provide a valuable management tool not only for oil spill response but for better integrated coastal zone management.

Keywords : ESI, oil spill, GIS, Chabahar Bay, Iran

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