Sensitivity of Coastal Environments to Oil Spills Galveston Bay Region, Texas

This atlas contains a series of oil spill Environmental Sensitivity Index (ESI) maps designed to guide the U.S. Coast Guard and other spill response groups toward evaluating the probable hazards of a particular spill and to effectively plan spill control operations. The ESI is based on the scientific investigation of several of the largest oil spills in history, including *Amoco Cadiz, Urquiola,* and *Metula.* As presented in this atlas, the ESI consists of:

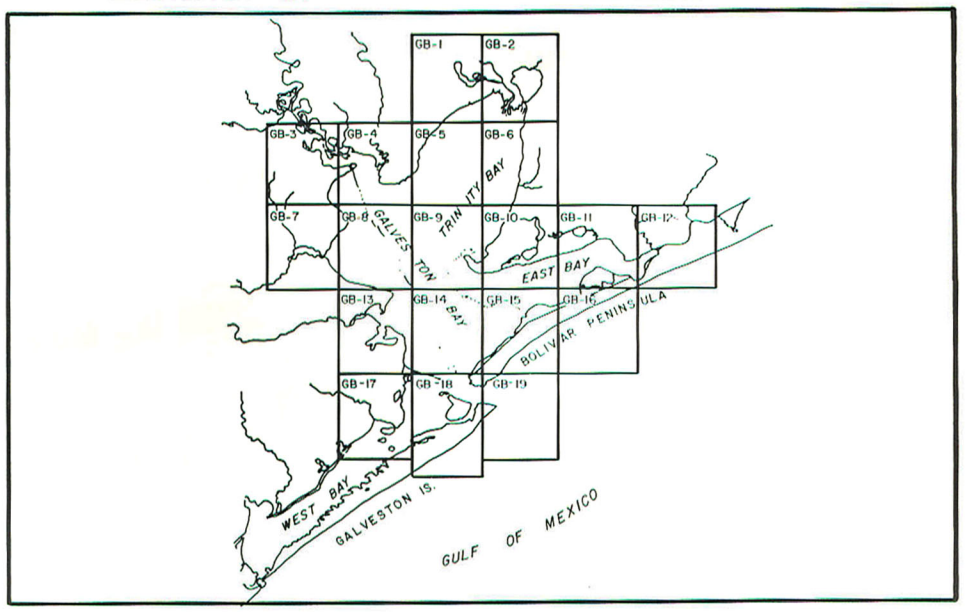
A. Geological information describing shoreline type in terms of probable spill damage and persistence.
B. Biological data delineating the location and range of major marine species or groups.
C. Socioeconomic data showing the location of special-use areas.
D. Spill response information indicating locations for primary spill protection and control equipment.

Further description of the particular ESI selected for this atlas is presented on the next page.

DEVELOPMENT OF THE ESI

The development of the Environmental Sensitivity Index for oil spills dates back to an initial mapping project funded by Alaska (Department of Fish and Game) for lower Cook Inlet in 1976. Since that time, the mapping projects have been expanded to include biological, socioeconomic and spill response information in response to needs expressed by the U.S. Coast Guard, the National Oceanic and Atmospheric Administration and the Bureau of Land Management. Key references describing this development include (1) E. R. Gundlach and M. O. Hayes, Vulnerability of Coastal Environments to Oil Pollution, Marine Technology Society Journal, 1978, vol.12 p.18-27, (2) M. O. Hayes, E. R. Gundlach and C. D. Getter, Sensitivity Ranking of Energy Port Shorelines, Proceedings of a Specialty Conference on Ports, American Society of Civil Engineers, New York, 1980, p. 697-709, and (3) C. D. Getter, L. C. Thebeau, T. Ballou and D. J. Maiero, Mapping the Distribution of Protected and Valuable Oil-Sensitive Coastal Fish and Wildlife, 1981 Oil Spill Conference, American Petroleum Institute, Washington, D.C., p. 325-329.

LOCATION OF GALVESTON BAY REGION ESI MAPS



AVAILABLE ESI MAPS

1. NORTON SOUND AND PRIBILOF ISLANDS, ALASKA (1981)
   Gundlach, E. R., J. L. Sadd, L. C. Thebeau and D. Maiero,
   Oil Spill Sensitivity of Coastal Environments and Wildlife, Norton Sound and the Pribilof Islands. 65 black and white ESI maps + 171 p. text.
2. BRISTOL BAY, ALASKA (1982)
   Michel, J., D. D. Domeracki, L. C. Thebeau, and C. D. Getter,
   Oil Spill Sensitivity of Coastal Environments and Wildlife, Bristol Bay, Alaska. 108 black and white ESI maps + 123 p. text.
3. KODIAK ISLAND - S. SHORE, ALASKA (1979)
   M. O. Hayes and C. H. Ruby,
   Oil Spill Vulnerability, Coastal Morphology, and Sedimentation of the Kodiak Archipelago. 47 shoreline-type maps (work copies) + 150 p. text.
4. SHELIKOF STRAIT, ALASKA (1982)
   Domeracki, D. D., L. C. Thebeau, J. Sadd, C. D. Getter, and C. H. Ruby,
   The Sensitivity of Coastal Environments and Wildlife to Spilled Oil, Shelikof Strait Region, Alaska. 41 black and white ESI maps + 81 p. text.
5. LOWER COOK INLET, ALASKA (1976-77)
   Hayes, M. O., P. J. Brown and J. Michel,
   Coastal Morphology and Sedimentation, Lower Cook Inlet, Alaska: With Emphasis on Potential Oil Spill Impacts. Shoreline-type maps (work copies) + 107 p. text.
6. OUTER KENAI PENINSULA AND MONTAGUE ISLAND, ALASKA (1980)
   Ward, L. G., T. F. Moslow, M. O. Hayes, and K. Finkelstein,
   Oil Spill Vulnerability, Coastal Morphology, and Sedimentation of Outer Kenai Peninsula and Montague Island. 31 shoreline-type maps (work copies) + 105 p. text.
7. PRINCE WILLIAM SOUND, ALASKA (in progress)
8. STRAIT OF JUAN DE FUCA, N. PUGET SOUND, WASHINGTON (1979)
   Gundlach, E. R., C. D. Getter and M. O. Hayes,
   Sensitivity of Coastal Environments to Spilled Oil: Strait of Juan de Fuca and Northern Puget Sound. 36 ESI maps + 78 p. text.
9. SOUTHERN CALIFORNIA (1981)
   Pavia, R., E. R. Gundlach, L. C. Thebeau, J. L. Sadd and W. D. Ernst,
   Sensitivity of Coastal Environments to Spilled Oil: Southern California. 47 ESI maps + 41 p. text.
10. SOUTH TEXAS (1979)
    Hayes, M. O., D. D. Domeracki, C. D. Getter, T. W. Kana and G. I. Scott,
    Sensitivity of Coastal Environments to Spilled Oil: South Texas Coast. 15 printed maps + 89 p. text.
11. GALVESTON BAY, TEXAS (1982)
    Hayes, M. O., D. D. Domeracki, L. C. Thebeau, and E. R. Gundlach,
    Sensitivity of Coastal Environments to Spilled Oil: Galveston Bay Region. 19 ESI maps, no text.
12. FLORIDA (EXCEPT SOUTH FLORIDA), in progress.
13. SOUTH FLORIDA (1981)
    Getter, C. D., J. Michel, G. I. Scott and J. L. Sadd,
    The Sensitivity of Coastal Environments and Wildlife to Spilled Oil in South Florida. 11 printed ESI maps + 150 p. text.
14. SOUTH CAROLINA (1981)
    Thebeau, L. C., T. W. Kana and D. D. Domeracki,
    The Sensitivity of Coastal Environments and Wildlife to Spilled Oil - State of South Carolina. 49 ESI maps + 93. p. text.
15. CHESAPEAKE BAY REGION (in progress)
16. MASSACHUSETTS (1980)
    Gundlach, E. R., D. D. Domeracki, C. D. Getter and L. C. Thebeau,
    Field Report on the Sensitivity of Coastal Environments to Spilled Oil: Commonwealth of Massachusetts. 55 ESI maps + 61 p. text.

ESI Study Areas