Oceanic Environmental Sensitivity Index in Gulf Shores, Alabama

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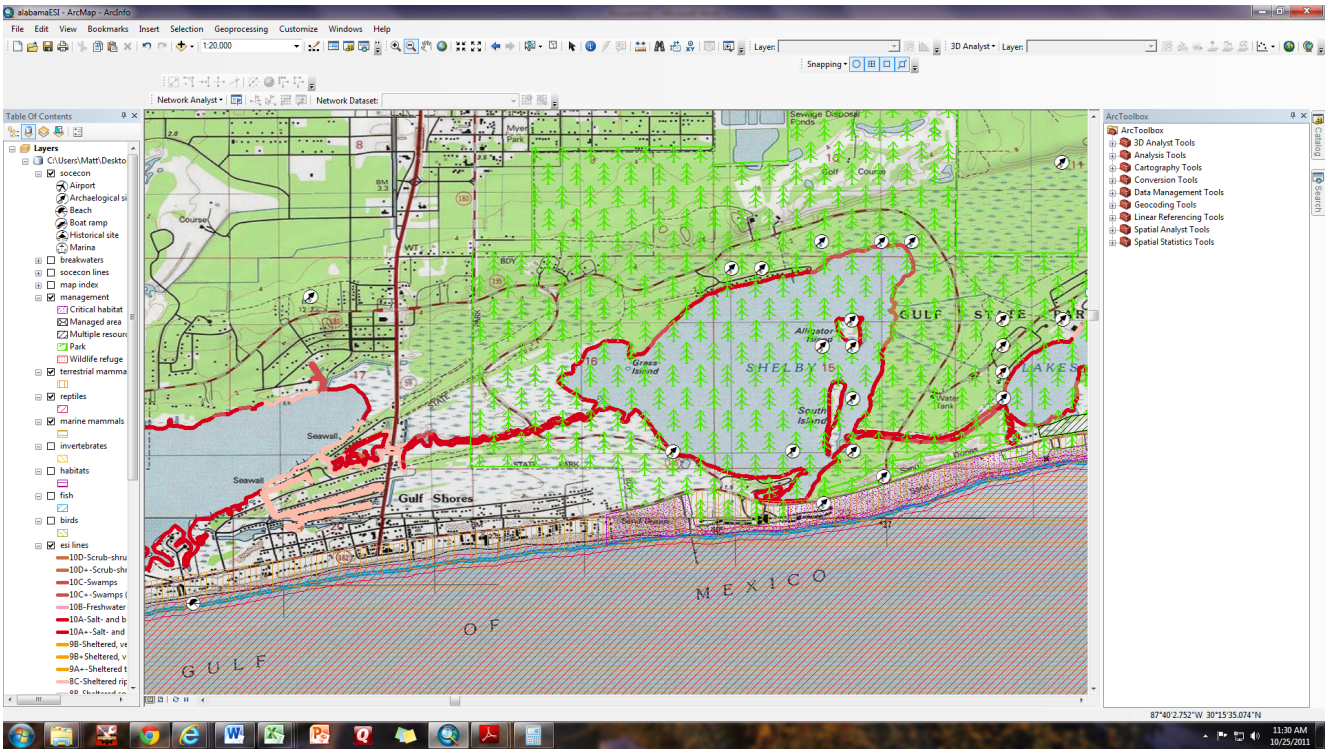
The Office of Response and Restoration of the National Oceanic and Atmospheric Administration (NOAA) has published maps and data of the environmental sensitivity of several high priority areas in the Gulf Coast as well as across the United States. The purpose of this study is to investigate the influence that oil spills in the Gulf of Mexico would have on human use resources, biological resources, and shoreline habitats in the area of interest.

Data for this study has been obtained through the emergency response page of the Office of Response and Restoration of NOAA. These data can be overlaid onto an existing basemap of the region. The GIS data included consist of critical habitats, known locations of plant/animal species, habitat categorization, commercial use areas, wildlife refuges, and archaeological sites. Currently, maps already exists which shows environmental sensitivity data. Tables are included with the existing map of the Gulf Shores which outline the species of fish, bird, plant, and human use resources that exist in that area.

Up to this point, I have noticed that many species of reptiles, fish, mammals, and invertebrates would be affected by oil spilled in this area. The biological ramifications of an oil spill could severely damage the economy of Gulf Shores. Fishing charters and wildlife cruises are a major source of revenue for locals of this city which is 20 % water by area. Not to mention, commercial fishing in this area would significantly decrease as the mortality of animals relevant to human diets would surely increase. Crude oil affects biological species either through direct suffocation, acute toxicity of PAH's, disruption of physical survival mechanism (i.e. oil deposition on feathers of birds), and by other methods which are yet to be fully characterized.

Highly sensitive animal habitats are present throughout the region such as that of the Alabama beach mouse which is listed as endangered because of damaged or destroyed habitats. Shoreline habitats (i.e. freshwater marsh) of sensitive species are ubiquitous throughout the region especially

where water infiltrates inland to create breeding grounds and safe havens for biological diversity. The Bon Secour Wildlife Preserve exists to the Northeast of the coastline and is home to many species which would be directly affected by crude oil. Archeological and historical sites which are represented by spear heads in the map could be stripped of the biological diversity that made them relevant in the first place.



Human use resources such as public beaches, state parks, marinas, boat ramps, and airports could also be affected negatively by an oil spill event. Gulf State Park exists to the immediate east of Gulf Shores. A safe harbor for ships and a sailboat bay exist in Bon Secour Bay. Public Beaces such as Orange Beach known for its clear water, hot sun, windsurfing, and active fishing would be seriously affected. The lack of commerce that would result from an oil spill could seriously affect the ability of the human use resources to be viable any longer.