

The degree and severity of impacts from a spill on resources depend on the spill's location, size, composition, timing, depth, and duration; meteorological conditions including wind speed and direction; various seasonal and environmental conditions; and the effectiveness of response activities. Spills could potentially significantly impact resources in all affected planning areas.

Potential Impacts per Resource Area

(see Section 4.6 of the Draft Programmatic Environmental Impact Statement)



R.1 AIR QUALITY:

- Temporary increases in volatile organic compound concentrations near the spill that could exceed National Ambient Air Quality Standards
- Criteria pollutants could exceed National Ambient Air Quality Standards but would return to pre-spill conditions through dispersion
- Generation of nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter (PM₁₀ and PM_{2.5}) emissions due to burning of oil
- Release of hydrogen sulfide (H₂S), presenting a serious air quality hazard to platform workers and people in close proximity to the spill



R.2 WATER QUALITY:

- Dissolution and dispersion of oil and gas throughout the water column
- Release of natural gas into the water column, potentially reducing dissolved oxygen levels
- Catastrophic Discharge Event potentially creating an oil and/or dispersant plume at depth



R.3 PELAGIC COMMUNITIES:

- Cascading impacts on planktonic habitats
- Impacts on phytoplankton and zooplankton
- Impacts on coral spawning products



R.4 MARINE BENTHIC COMMUNITIES:

- Mostly sublethal impacts on deep-water benthic organisms, including reduced feeding, reduced reproduction and growth, physical tissue damage, and altered behavior
- Contamination of shoreline benthic communities
- Long-term, deepwater habitat exposure to hydrocarbons and potential to be smothered by particles



R.5 COASTAL & ESTUARINE HABITATS:

- Retention of oil by sensitive shorelines, such as marshes, sheltered tidal flats, and sheltered rocky shores
- Thickening of oil and formation of tarballs or aggregations on beaches
- Habitat loss and biota mortality from oil on wetlands or vegetated submerged habitats
- Oiling leading to habitat loss or degradation, especially affecting benthic organisms that reside in the sediments and are an important component of the food web



R.6 FISH & ESSENTIAL FISH HABITAT:

- Sublethal effects on mobile adult fishes from a large spill in open waters
- Reduced effects on adult fish with the ability to avoid adverse conditions, metabolize hydrocarbons, and excrete metabolites
- Effects on early life stages for spills reaching nursery habitat or overlapping with a spawning event
- Mortality of species and life stages residing in the upper water column



R.7 BIRDS:

- Fouling of bird habitats and contamination of food through direct contact with oil
- Damage to bird tissue and organ damage through eating or inhaling oil during feeding and grooming
- Increased mortality rates due to hypothermia, loss of buoyancy, and inability to fly
- Exposure of eggs, young, and adult birds to oil leading to a variety of lethal and sublethal effects



R.8 SEA TURTLES:

- Decreased health, reproductive fitness, and longevity from direct contact with spilled oil
- Ingestion of oil that is acutely toxic to sea turtles
- Oil exposure to nesting females, hatchlings, and eggs on oiled beaches



R.9 MARINE MAMMALS:

- Direct contact, inhalation of fuel, and ingestion of oil potentially leading to decreased health, reproductive fitness, and longevity and increases in disease
- In Alaska, potential severe effect from an oil spill during periods of restricted open water on cetaceans who rely upon ice leads for migration

Human Environment Resources Potentially Impacted by Oil Spills:



R.10

COMMERCIAL & RECREATIONAL FISHERIES:



R.11

ARCHAEOLOGICAL & CULTURAL RESOURCES:



R.12

LAND USE



R.13

CULTURE



R.14

VULNERABLE COASTAL COMMUNITIES



R.15

RECREATION & TOURISM

- Loss of commercial fishing opportunities and temporary revenue declines
- Potential contamination of target species and large-scale fishery closures
- Loss of recreational fishing opportunities
- Alteration of ecological, chemical, or physical status of archeological sites
- Degradation of the cultures of native people through the oiling of land and subsistence resources
- Loss or contamination of food, diminishing physical and mental well-being
- Disproportionate effects on vulnerable communities and populations due to large spills or Catastrophic Discharge Events
- Potential human health risks with cleanup activities, particularly for marginalized communities temporarily employed with oil spill cleanup
- Loss of employment, income, and property value; increased cost of public service provision; and possible shortages of commodities or services
- Decreases in recreational opportunities and tourism revenues, and location-specific increases in visitation revenues due to clean-up activities
- Impacts to land, facilities, beaches, roads, and ports due to contamination and clean-up activities



For More Information:

BOEM Environment page, please visit <https://www.boem.gov/environment/environment>