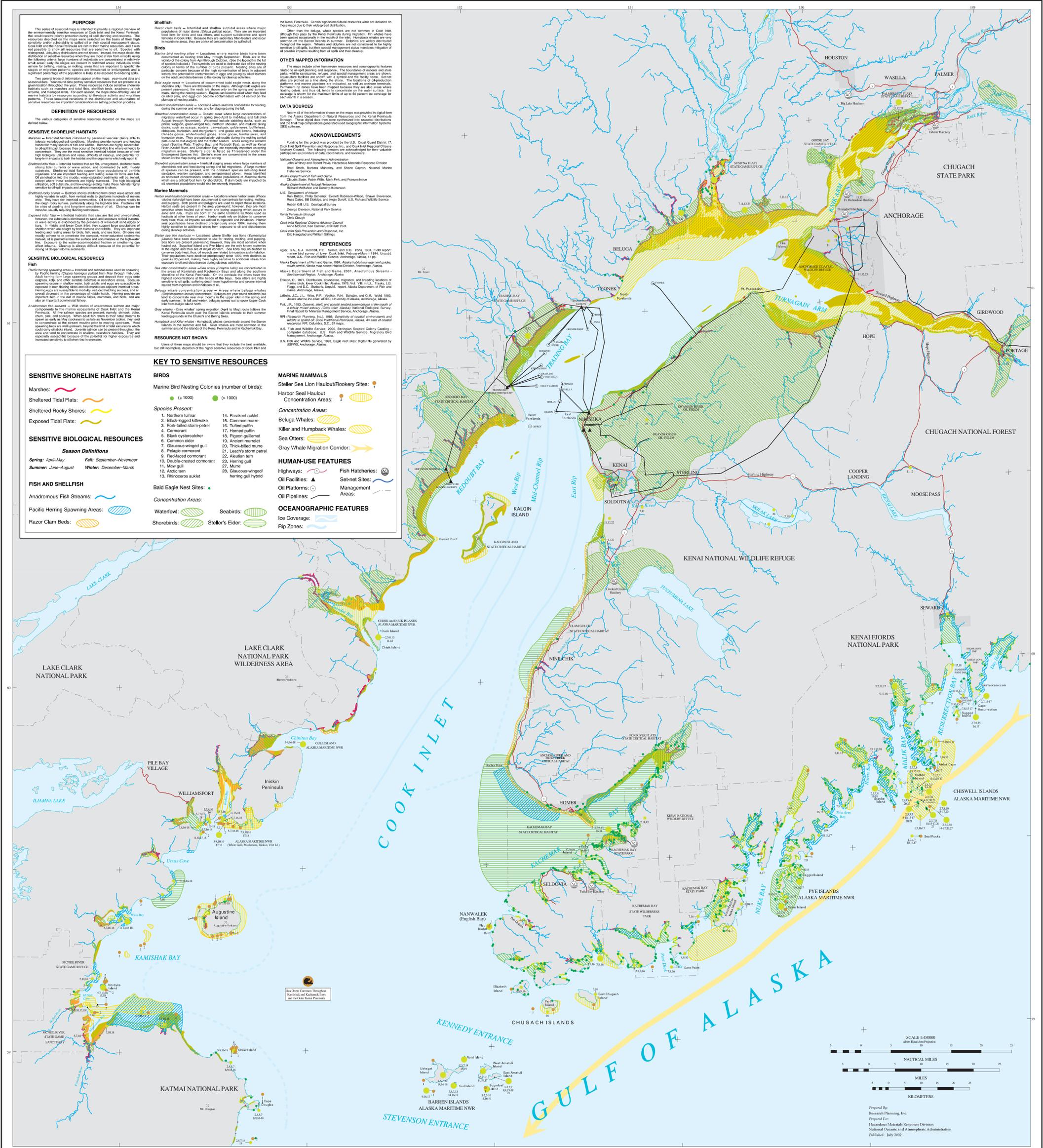




# Cook Inlet and Kenai Peninsula, Alaska

## Environmentally Sensitive Areas: Spring (April - May)



### PURPOSE

This series of seasonal maps is intended to provide a regional overview of the environmentally sensitive resources of Cook Inlet and the Kenai Peninsula. The resources depicted on the maps were selected on the basis of their high sensitivity and vulnerability to the effects of oil spill management activities. Cook Inlet and the Kenai Peninsula are rich in their marine resources, and it is not possible to show all resources that are sensitive to oil. Species with widespread, abundant distributions are not shown. Instead, the maps depict the distribution of sensitive resources where they are most at risk from oil spill. The following criteria were used to select resources for inclusion on the maps: (1) resources that are highly sensitive to oil spill; (2) resources that are highly sensitive to oil spill; (3) resources that are highly sensitive to oil spill; (4) resources that are highly sensitive to oil spill; (5) resources that are highly sensitive to oil spill.

### DEFINITION OF RESOURCES

The various categories of sensitive resources depicted on the maps are defined below.

### SENSITIVE SHORELINE HABITATS

**Marine - Intertidal and shallow subtidal areas** - Intertidal and shallow subtidal areas are those areas that are exposed to the air during low tide and submerged during high tide. These areas are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life. The high biological productivity and value of these areas make them highly sensitive to oil spill impact.

**Sheltered tidal flats** - Intertidal areas that are flat, unvegetated, sheltered from strong tidal currents or wave action, and dominated by soft, muddy substrates. Sheltered tidal flats support large populations of benthic organisms and are important breeding and nursery areas for many species of fish and shellfish. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Exposed tidal flats** - Intertidal areas that are flat, unvegetated, and exposed to strong tidal currents or wave action. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Sheltered rocky shores** - Intertidal areas that are rocky, sheltered from strong tidal currents or wave action, and dominated by hard substrates. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Exposed rocky shores** - Intertidal areas that are rocky, exposed to strong tidal currents or wave action, and dominated by hard substrates. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Anatomous fish streams** - Wide stretches of anatomous stream are major components to the marine ecosystems of the Kenai Peninsula. All five salmon species are present, namely, chinook, coho, pink, silver, and sockeye. When adult fish return to their natal streams to spawn, they are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Pacific herring spawning areas** - Intertidal and subtidal areas used for spawning by Pacific herring (*Clupea harengus*) from May through mid-June. Adult herring form large spawning groups and deposit their eggs into the water column. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Razor clam beds** - Intertidal areas that are dominated by razor clams. They are highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

### Birds

**Marine bird nesting sites** - Locations where marine birds have been documented as nesting from May through September. Birds are the most vulnerable to oil spill impact because they are highly sensitive to oil spill impact.

**Waterfowl concentration areas** - Coastal areas where large concentrations of migratory waterfowl occur in spring (mid-April to mid-May) and fall (mid-September through November). Waterfowl include dabbling ducks, such as pintail, widgeon, green-winged teal, northern shoveler, and mallard; diving ducks, such as scaup, goldeneye, common goldeneye, and bufflehead; grebe, merganser, and grebe and swans, including Canada goose, whooping crane, snow goose, tundra swan, and trumpeter swan. They are particularly vulnerable during the nesting period (late June to mid-August) and the winter season. Areas along the western coast (Cordova Bay, Trading Bay, and Redoubt Bay), as well as Kenai River, Kodiak Bay, and Chickadee Bay, are especially important as spring migration areas. Steller's eider is listed as Threatened under the Endangered Species Act. Steller's eider are concentrated in the areas shown on the map during winter and spring.

**Shorebird concentration areas** - Intertidal staging areas where large numbers of shorebirds nest and feed during spring and fall migration. A large number of species can be present with the dominant species including least sandpiper, western sandpiper, and semipalmated sandpiper. Other species which are a critical food for shorebirds. If dam birds are impacted by oil spill, shorebirds would be severely impacted.

**Stellar sea lion haulout sites** - Locations where Stellar sea lions (*Eumetopias jubatus*) are concentrated in the region and that are of major concern. See notes on habitat for concentration areas. Oil spill impact is highly sensitive to oil spill impact because they are the primary habitat for many species of marine life.

**Gray whales** - Gray whales spend migration (April to May) north of the Kenai Peninsula south past the Barren Islands in the summer and fall. Kenai whales are not common in the summer around the islands of the Kenai Peninsula and in Kachemak Bay.

**Humpback and killer whales** - Humpback whales concentrate around the Barren Islands in the summer and fall. Killer whales are not common in the summer around the islands of the Kenai Peninsula and in Kachemak Bay.

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### OTHER MAPPED INFORMATION

The map includes other information related to oil spill planning and response. The boundaries of national and state parks, wildlife refuges, and other management areas are shown. The locations of oil production facilities are shown with a symbol and the facility name. Some sites are shown with a symbol and the facility name. Some sites are shown with a symbol and the facility name.

**DATA SOURCES**  
 Needs of the information shown on the map was provided in digital form from the Alaska Department of Natural Resources and the Kenai Peninsula Borough. These digital data were processed into the seasonal distributions and the final map compositions generated using Geographic Information Systems (GIS) software.

**ACKNOWLEDGMENTS**  
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### KEY TO SENSITIVE RESOURCES

#### SENSITIVE SHORELINE HABITATS

- Marshes: [Symbol]
- Sheltered Tidal Flats: [Symbol]
- Sheltered Rocky Shores: [Symbol]
- Exposed Tidal Flats: [Symbol]

#### SENSITIVE BIOLOGICAL RESOURCES

- Season Definitions: Spring: April-May; Fall: September-November; Summer: June-August; Winter: December-March
- Fish and Shellfish: Anadromous Fish Streams; Pacific Herring Spawning Areas; Razor Clam Beds

#### BIRDS

- Marine Bird Nesting Colonies (number of birds): [Symbol] (< 1000); [Symbol] (> 1000)
- Species Present: 1. Northern fulmar; 2. Black-legged Kittiwake; 3. Fork-tailed storm-petrel; 4. Cormorant; 5. Black oystercatcher; 6. Common eider; 7. Glaucous-winged gull; 8. Pelagic cormorant; 9. Red-faced cormorant; 10. Double-crested cormorant; 11. Mew gull; 12. Arctic tern; 13. Rhinoceros auklet

- Waterfowl: [Symbol]
- Seabirds: [Symbol]
- Shorebirds: [Symbol]
- Steller's Eider: [Symbol]

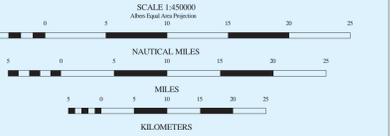
#### MARINE MAMMALS

- Stellar Sea Lion Haulout/Rookery Sites: [Symbol]
- Harbor Seal Haulout Concentration Areas: [Symbol]
- Concentration Areas: Beluga Whales; Killer and Humpback Whales; Sea Otters; Gray Whale Migration Corridor

- Human-Use Features: Fish Hatcheries; Oil Facilities; Oil Platforms; Oil Pipelines
- Human-Use Features: Set-net Sites; Management Areas

#### OCEANOGRAPHIC FEATURES

- Ice Coverage: [Symbol]
- Rip Zones: [Symbol]



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