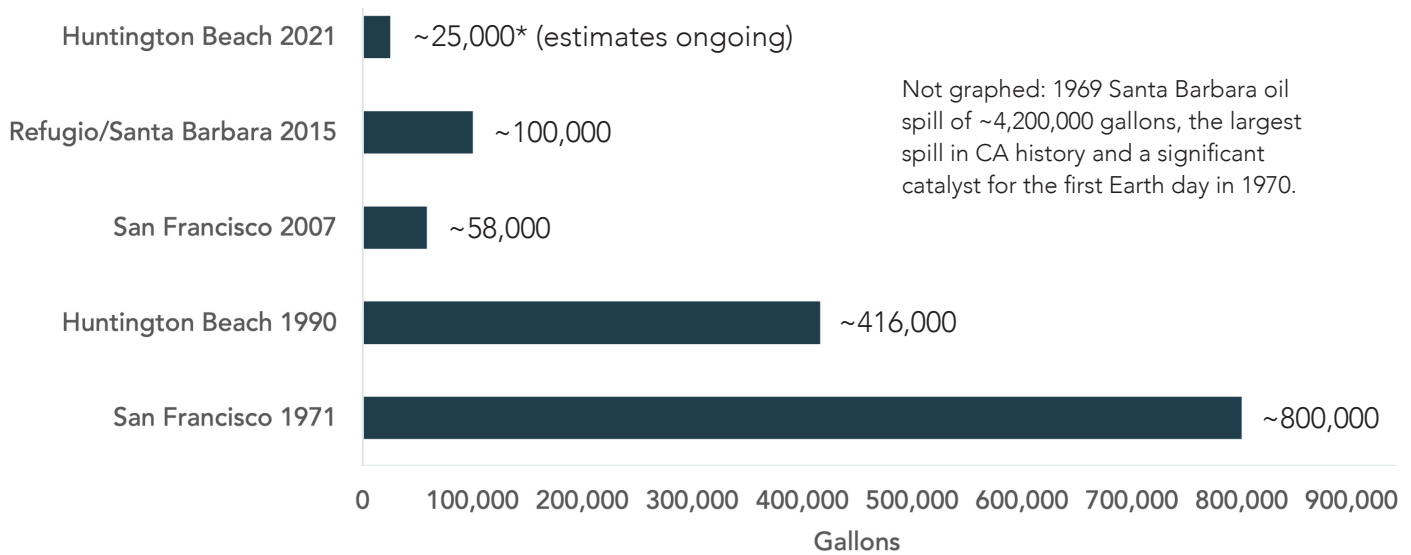


Environmental & Economic Impacts of Oil Spills

Science facts on how oil impacts California's coastal communities and ecosystems, compiled in response to the 2021 Huntington Beach Oil Spill.

Comparison of Historic Marine Oil Spills in California



Data Source: CA Coastal Commission & CA Dept. of Fish & Wildlife - OSPR

Persistence of Oil in Coastal Waters

- Oil spilled at sea goes through physical and chemical changes and persists in the water, as slicks at the surface but also as dissolved compounds at depth.
- The fate of the oil spilled depends on both the type of hydrocarbon spilled (gasolene or propane, etc.) and the environment it is released into (weathering, currents, etc.).
- Natural processes generally reduce the amount of oil over time, but even after oil is no longer visible, chemicals of concern can persist in the environment and affect exposed organisms.
- Predicting oil spill movement is possible and can help with response efforts, but requires data on ocean currents, winds, etc. which are not always instantly available for emergency projections.
- Determining how much oil is released can be difficult. Spills from discrete containers are easy to estimate; blow-outs from a drill or transportation pipeline, like the Huntington Beach Oil Spill, take longer to estimate and are more uncertain.

Oil Impacts on Marine and Coastal Wildlife

- Dolphins, whales, otters, and birds can ingest oil and die from acute poisoning. Fish and shellfish coming in contact with oil may become contaminated and unsafe for human consumption.
- Exposure to small amounts of oil may not cause death, but can impact the physiology & behavior of animals, including marine mammals, birds, and turtles in a range of harmful ways.
- Invertebrate communities (crabs, sea stars, etc.) are also highly sensitive to impacts from oil spills and cleanup activities.

Oil Impacts on Coastal Ecosystems

- Impacts on kelp forests, sandy beaches, and coastal habitats depend on the dynamics of the oil spill and the sensitivity of the ecosystem.
- The abundance of flora and fauna in impacted ecosystems (e.g. wetlands and sandy beaches) typically takes years to recover after oiling.
- In addition to outright poisoning, oil reaching coastal wetlands can smother plants by cutting off oxygen from the plants' root systems and in turn contribute to wetland erosion.
- Oiling of coastal ecosystems might lead to exposure to toxicants in terrestrial animals, including migratory birds that temporarily use those environments.
- The Huntington Beach Oil Spill poses risks to several wetlands (Bolsa Chica, Talbert, etc.), kelp forests, rocky intertidal habitats, and sandy beaches between Long Beach and Laguna Beach.

Oil Spill Impacts on Coastal Economies

- Immediate impacts to communities include beach, water, and fisheries closures resulting in lost and diminished user days to beach use, boating, fishing, and other more specialized activities.
- Diminished activity can have monetary losses and includes a ripple effect through the coastal economy as initial closures impact consumers, suppliers, and other businesses adding to pandemic-associated declines in revenues.
- Beach and wetland recreational area closures lead to additional economic, cultural, and social losses to local communities and tourism.
- COVID-19 homestay has driven increased use of and attachment to natural spaces generally (and sandy beaches in particular), making the loss of beach access even more acutely felt by a wider swath of communities.



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