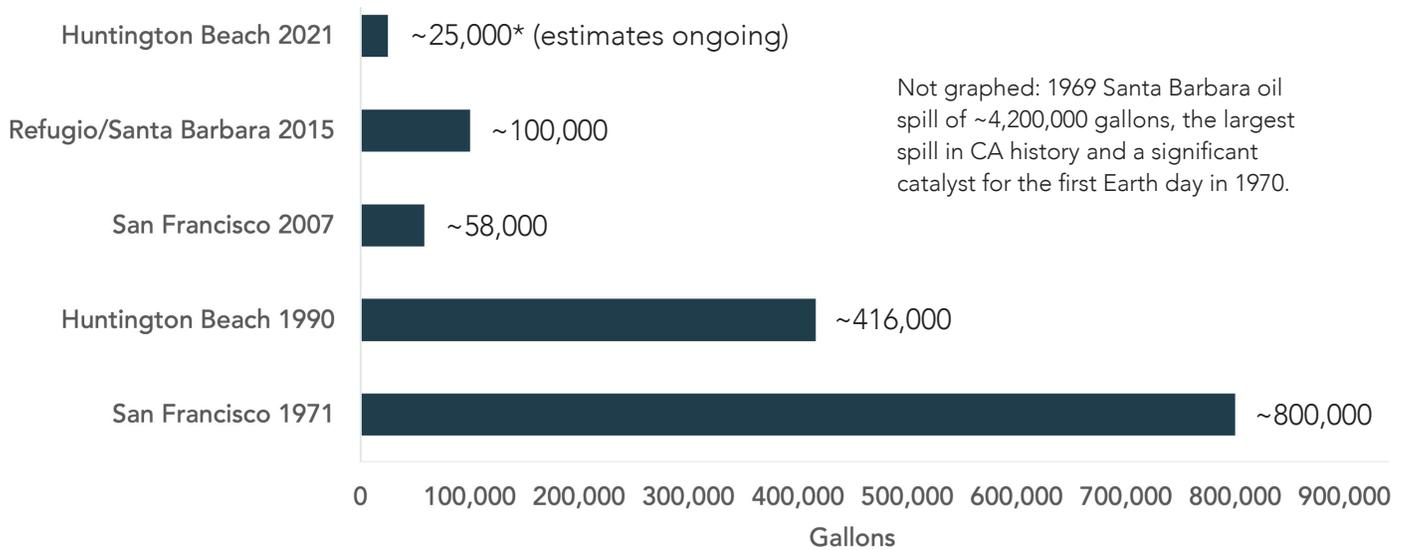


# Environmental & Economic Impacts of Oil Spills

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.

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## 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.

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## 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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