

Non-Floating Oil Spill Risks



The 2005 tank barge DBL 152 incident (left) spilled 1.9 million gallons of heavy oil, most of which sank to the bottom of the Gulf of Mexico. Oil absorbent material attached to chains (right) was dragged on the seafloor, which is one method for detecting submerged oil. (Credit: NOAA)

WHY IT MATTERS

When non-floating oils enter the environment, they are toxic to aquatic life and people, just like any oil spill.

Non-floating oils are an evolving and dynamic area of risk that our state is managing. Ensuring the right equipment and processes are in place enables us to assess the potential for containing and recovering non-floating oil, the costs of spills, and the restoration of damaged resources.

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What are non-floating oils?

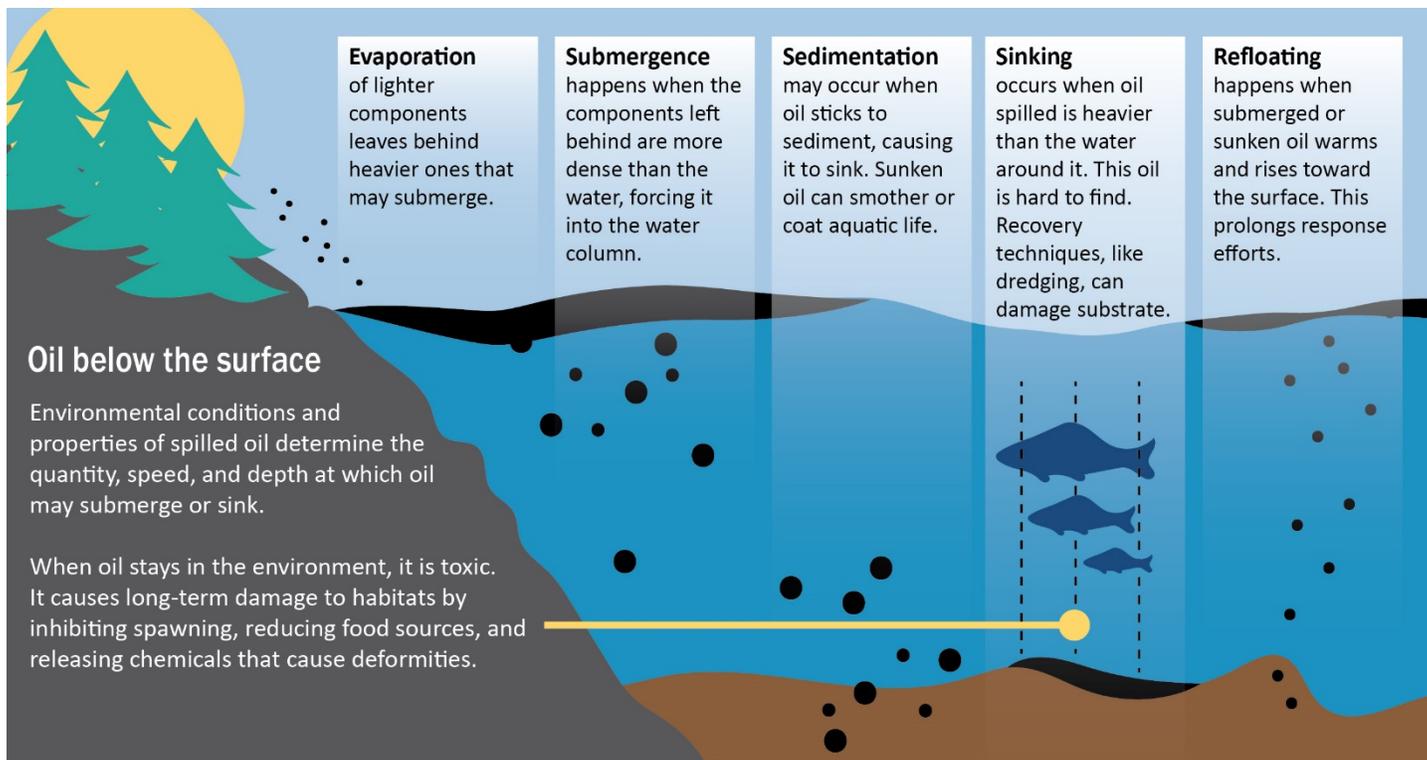
In Washington and around the world, spill response tactics focus on oils that float on the surface of the water. However, some oils such as diluted bitumen derived from Canadian tar sands and heavy bunker oils, may float at first, and then sink or submerge into the water column, depending on the type of oil spilled and environmental conditions. Ecology and industry plan to respond to oils that may sink or submerge, referred to as non-floating oils.

Spills of submerging or sinking oils are more complex

Traditional response and preparedness methods focus on containing and recovering floating oil using containment booms and on-water skimmers. However, not all oils float. Oils that sink or become suspended in the water column cannot be successfully recovered with floating oil techniques. Priority should be given to preventing, minimizing, and containing heavy oil and potentially non-floating oil spills at their source. Additionally, since many oils may initially float, rapid and aggressive surface oil recovery efforts should be pursued in the early phase of a spill.

How Washington is preparing for non-floating oil spills:

- Updating spill response tactics (geographic response plans) to identify water column species and seafloor habitat at risk during potential submerging or sinking oil spills.
- Requiring industry contingency plans to include response strategies for non-floating oils, and demonstrate access to specialized equipment and personnel to detect, contain, and recover these oils.
- Testing response strategies and decision making by including non-floating oil response scenarios in oil spill drills.



Detection and response for spills of non-floating oil

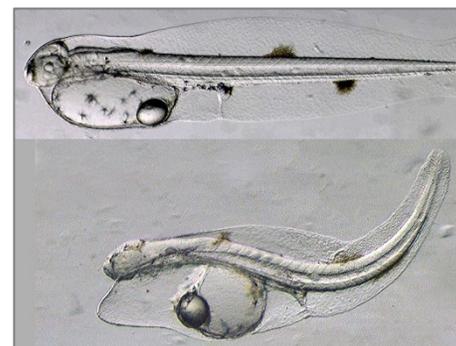
Non-floating oil spills are complex, and the response technology may require multiple techniques or tools. For detection of sunken oil on the bottom of a water body, the use of sonar, underwater cameras, remotely operated vehicles (ROVs), bottom sampling, and diver observation are used to understand the scope of the spill.



This ROV photographed oil that sunk in the Gulf of Mexico during the 2005 DBL 152 spill. (Credit: NOAA)



A diver working on the Davy Crockett vessel salvage (2010) shows heavily oiled gloves. This incident involved submerged oil response in the Columbia River.



Polycyclic aromatic hydrocarbons (PAHs) may cause heart deformities (above, lower pane). Submerged/sunken oils release PAHs over longer periods of time. (Credit: NOAA)

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