

Oil Pollution in Estuaries

by Kenn Oberrecht



Oil is an imprecise term applied to various petroleum products, consisting of hydrocarbon compounds and differing widely from one another. Petroleum pumped from the ground is commonly called crude oil, which is distilled and

refined into a number of other products, such as diesel fuel, kerosene, gasoline, benzene, naphtha, machine oils, and lubricating oils of various weights.

Oil is transported in its many forms by rail, truck, ship, airplane, and pipeline. It is also spilled and leaked onto land and into water throughout the world.

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Tankers and supertankers haul vast amounts of crude and refined oil by sea. Smaller tankers also enter estuaries and travel up navigable rivers. Additionally, thousands of naval vessels, merchant ships, and cruise ships carry large quantities of bunker oil as fuel for their engines.

Shipwrecks, groundings, blowouts at offshore oil rigs, and other accidents on water account for the worst oil-related environmental disasters, mainly because oil is difficult or impossible to contain in water. According to the National Academy of Sciences, oil pollutes the global marine environment at a rate of about six million metric tons a year.

Oil pollutes estuaries in a number of ways, including major spills from freighters, tankers, barges, and other vessels going aground or colliding with other ships or structures, and minor spills from small recreational and commercial craft. Emptying of oil-contaminated ballast and bilge water into an estuary is another way of polluting it.

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Runoff from rainfall and snowmelt carries oil from highways, city streets, parking lots, industrial areas, and heavy-equipment yards into the estuary, either directly or through municipal storm-sewer systems. Thoughtless vehicle owners who discard used crankcase oil in storm sewers only compound the problem.

Open seas have a much greater capacity to assimilate spilled oil and reduce its harmful effects. As many learned when the supertanker Exxon Valdez went aground in Alaska's Prince William Sound, however, near-shore spills can be disastrous, especially when they occur within partly enclosed bodies of water, such as a sound, bay, or estuary.

Riverine and estuarine currents make spills and slicks particularly difficult to contain. They quickly carry the oil to shorelines, marshes, and flats where they do their worst damage.

An oil slick is a threat to most creatures in its path, especially sea birds, waterfowl, and fur-bearing mammals. It can blanket and smother whole communities of shoreline and intertidal organisms, kill the eggs and larvae of fish and shellfish, and taint entire colonies of adult shellfish.

In the confines of an estuary, even relatively small oil spills can wipe out whole populations of certain organisms, thus upsetting the food chain there for years to come.

Although oil is a toxic substance, difficult to contain and clean up in the estuary, the sooner cleanup crews can get to a spill or detected slick, the better their chances of alleviating at least some of the harmful effects. So it's important to immediately report spills to the local Coast Guard or other authorities.

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