

## **UP-TO-DATE OIL SPILL CLEANUP METHODS**

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### **Introduction**

Petroleum is the source of life on Earth.

Today we depend on petroleum products not only for transportation, heating, and to generate electricity, but also for fertilizers and fabrics, plastics, medicines, paints and pesticides, and thousands of other items we take for granted every day. But there are many ecological problems connected with petroleum industry, such as the greenhouse effect, acid rain and oil spills. We'll consider oil spills and its effects in this article.

### **1 Negative effects**

An oil spill is the release of a liquid petroleum hydrocarbon into the environment, especially marine areas, due to human activity, and is a form of pollution.

An oil spill is one of the most devastating environmental disasters that can happen because it affects people, animals, the land and the coastal waters ways. They can kill wildlife, destroy habitats, and contaminate critical resources in the food chain.

They can also wreak havoc on the economies of coastal communities by forcing the closure of fisheries, driving away tourists, or temporarily shutting down navigation routes. And these environmental and economic damages can linger for decades.

Every year it happens a thousand times around the nation.

### **2 Oil Spill Hazards for wildlife**

Oil floats on salt water (the ocean) and usually floats on fresh water (rivers and lakes). Very heavy oil can sometimes sink in fresh water, but this happens very rarely.

Oil usually spreads out rapidly across the water surface to form a thin layer that we call an oil slick. As the spreading process continues, the layer becomes thinner and thinner, finally becoming a very thin layer called a sheen, which often looks like a rainbow. (You may have seen sheens on roads or parking lots after a rain.)

Depending on the circumstances, oil spills can be very harmful to marine birds and mammals, and also can harm fish and shellfish.

It destroys the insulating ability of fur-bearing mammals, such as sea otters, and the water-repelling abilities of a bird's feathers, thus exposing these creatures to the harsh elements.

Many birds and animals also swallow it when they try to clean themselves, which can poison them. Depending on just where and when a spill happens, from just a few up to hundreds or thousands of birds and mammals can be killed or injured.

### **3 Causes of Spills**

Most oil spill incidents are caused by accidents involving tankers, barges, pipelines, refineries, and storage facilities, usually while these hazards are being transported to us, its users.

Other causes oil spill incidents people making mistakes or being careless equipment breaking down natural disasters such as hurricanes deliberate acts by terrorists, countries at war, vandals, or illegal dumpers.

#### **4 World's Worst Oil Catastrophes**

The most publicized environmental effect of using petroleum as a fuel is oil spills, highlighted by the spill of 40,000 tons of oil from the tanker Exxon Valdez off the coast of Alaska in 1989. Although over a billion dollars was spent in the clean-up, many of the beaches were ruined and numerous species of aquatic animals suffered damage that will not be healed for decades. But by world standards this was not a large oil spill.

In 1979, the Atlantic Empress was involved in a collision off the coast of Tobago in the Caribbean, spilling 305,000 tons, and in 1978 the Amoco Cadiz ruined many miles of French beaches with a spill of 237,000 tons. There are lots of smaller spills. U.S. tankers alone spilled an average of 215,000 tons per year in 1970-1974, and 380,000 tons per year in 1975-1979. At any given time, over 100 million tons of oil is being transported by ships, so it is not surprising that some of it occasionally ends up in the water.

The explosion and fire that destroyed the Deepwater Horizon drilling rig in the Gulf of Mexico in April 2010 killed 11 crew members and triggered an environmental nightmare. Before the well was finally capped in mid-July, almost 5 million barrels of oil had been spilled into the Gulf, the National Oceanic and Atmospheric Administration reported, causing catastrophic damage for marine and plant life.

#### **5 Cleanup methods**

1 Booms, which are floating barriers to oil (for example, a big boom may be placed around a tanker that is leaking oil, to collect the oil).

2 Skimmers, which are boats that skim spilled oil from the water surface.

3 Sorbents, which are big sponges used to absorb oil.

4 Chemical dispersants and biological agents, which break down the oil into its chemical constituents.

5 In-situ burning, which is a method of burning freshly-spilled oil, usually while it's floating on the water.

6 Washing oil off beaches with either high-pressure or low-pressure hoses.

7 Vacuum trucks, which can vacuum spilled oil off of beaches or the water surface.

8 Shovels and road equipment, which are sometimes used to pick up oil or move oiled beach sand and gravel down to where it can be cleaned by being tumbled around in the waves.

#### **Summary**

- Spills cause irreversible damage for environment.
- Spills take months or even years to clean up.
- Oil is also released into the environment from natural geologic seeps on the sea floor.
- The best way for cleaning up spills is combination: boom, sorbent, skimming.