

Oil Spill Experiment

Learn How Scientists Clean Up Oil Spills With
National Marine Sanctuaries



An **oil spill** occurs when oil leaks or spills into a body of water (oceans, lakes, rivers). Oil spills are often caused by accidents, but can be caused by human error or carelessness. A spill usually involves tankers, barges, oil drill rigs, or oil run-off from a source on land, such as cars.

Background:

Oil floats to the surface when it spills into the ocean because it is less dense than water, and forms a slick on the surface that can harm plants and animals. When oil bogs down birds' feathers, they may be unable to fly and find food. Oil can destroy the insulation of mammals with fur, like sea otters, leaving them at risk of hypothermia (being too cold). Many animals build their nests on the shore, and oil that spreads to the beaches can destroy their nests and harm the eggs or young within them.

Scientists have several methods to help clean up oil spills: boom and skimmer, absorbents, and dispersants. The **boom and skimmer method** requires carefully scooping out the oil, collecting it, and moving it somewhere else. This method is very time-consuming and requires a lot of labor to complete. **Absorbents** are materials with the ability to absorb oil. Scientists use absorbents on the ocean's surface to soak up the oil, which also requires a lot of labor to be effective. **Dispersants**, such as dish soap, help to bead up the oil and spread it out over a larger area. This method effectively dilutes oil spills and lessens their impact but does not remove the oil from the water. Scientists also use dispersants to clean oil off of animals.



How can we protect wildlife by preventing oil spills from occurring in the first place? One strategy is to designate protected areas that prohibit drilling for oil within their boundaries. In our ocean, these protected areas are called National Marine Sanctuaries.

The National Marine Sanctuary System is a network of underwater parks encompassing more than 620,000 square miles of marine and Great Lakes waters. By prohibiting one of the major causes of oil spills, National Marine Sanctuaries help keep marine ecosystems safe and healthy. Learn more at <https://sanctuaries.noaa.gov/>

Materials:

- Tin pan/ baking dish
- Water
- Vegetable oil
- Dawn dish soap
- Medicine dropper
- Spoon
- Paper Towels
- Cotton Balls
- Plastic cup



Procedure:

- Fill the tin pan/dish half full with water.
- Pour oil into the water. Spend a couple of minutes observing what happens when the oil is in the water. Does it stay in one place? Does it spread?
- Test several methods to clean up the oil:
- Try using paper towels and cotton balls to soak it up.
 - Can you scoop up the oil with a spoon?
 - Can you remove it with a medicine dropper?
- As you test out each method, record what happens and how effective it is.
- After attempting to clean up the oil with all available options, try using the Dawn dish soap. Put a couple of spoonfuls of soap on top of the oil. What happens to the oil?
- Review your observations for each method and determine which method you think is the most effective at cleaning up oil spills.