

Regional Response Team/Northwest Area Committee

Containment and Recovery of Spilled Oil

General Spill Response Considerations

When prevention efforts fail and an oil spill occurs on the water, spill responders face a difficult battle. They have a number of tools at their disposal. Among the options available are mechanical cleanup methods, such as containment booms and skimmers, non-mechanical methods, such as dispersants or in-situ burning, natural removal, and shoreline cleanup. The selected mix of responses will depend on potential shoreline and natural resource impacts, the quality spilled, location, and type of oil spilled, weather, and other variables.

What Is Mechanical Spill Response?

Mechanical oil spill response uses physical barriers and mechanical devices to collect and remove oil from the surface of the water. Because effective mechanical containment and removal is severely restricted by wind, waves, and currents, only a small percentage of spilled oil has historically been recovered. Mechanical removal of oil uses boom and skimmers.

Oil Containment Boom: Spilled oil floating on the water's surface is affected by wind, currents, and gravity, all of which cause it to spread. This oil may be concentrated or redirected by deploying floating barriers, called a boom. Boom comes in many different shapes, sizes, and styles. They are used for concentrating oil so that it is thick enough to be skimmed, for keeping oil out of sensitive areas, or for diverting oil into collection areas. The success of booming is dependent on the strength of wind, waves and flow rate in rivers. Currents can draw the oil under the booms; waves may cause oil splash over; wind and currents may cause the booms to sink or ride above water; and debris may damage the boom.



Oil containment boom allows water to pass below the boom skirt while stopping the oil floating on the water.

Skimmers: These devices remove oil from the surface at the water and are typically used with a boom that concentrate the oil. The oil and water mixture collected by the skimmer is stored in a tank. A wide variety of skimmers are available. Skimmer operating time is limited by the size of the tank and skimmer effectiveness can be hampered by debris. Skimmers are used to remove oil from open water, while vacuum trucks are often used to remove oil that has collected near the shoreline.

Benefits

- Physically removes oil from the environment.
- Allows recycling or proper disposal of recovered oil.
- Minimizes direct environmental impacts in open water areas.

Downside

- Limitations of mechanical recovery exist. Wind, waves, currents and flow rate in rivers may allow only a fraction of the spilled oil to be contained and recovered.