NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

Using Booms in Response to Oil Spills

- Oil spilled at sea begins to move and spread into very thin layers. The main purpose of booms is to protect shores or to corral the oil on the water to enhance recovery effectiveness of skimmers or other response techniques.

- There are several types of boom, including hard boom, sorbent boom, and fire boom. All booms need to be place and maintained in a coordinated strategy with other response alternatives to ensure their effectiveness.

- Hard boom is used to contain, deflect or exclude oil from shorelines. Hard boom is typically made of a durable PVC type material and comes in various sizes. These booms have inflated chamber above the water and a skirt below the water level. Ocean boom is designed for high seas and harbor boom is designed for sheltered waters. The primary difference is the strength of the material, size of the floatation chamber, and depth of the skirt

Hard Boom.

- Hard boom can be towed behind boats and concentrate oil in the apex of the boom to allow for skimmers to recover it.

- Hard boom can also be anchored offshore of sensitive areas and exclude oil from reaching those locations. In this scenario, no oil is collected and oil is deflected to other locations.

- Because booms can fail in winds and strong currents, often multiple rings of booms are placed to protect highly sensitive areas. Thus the linear miles of shoreline is not a good proxy for the amount of boom needed.

- Sorbent booms are made of materials that attracts oil but repel water. These materials are placed in fabric socks and look like a long sausage. Sorbent booms don't have the "skirt" that hard booms have; once saturated, the sorbents need to be removed.

- Fire booms are similar to hard boom, but designed to withstand the heat of the burning that can exceed 2,000 degrees F.

Fire Boom.

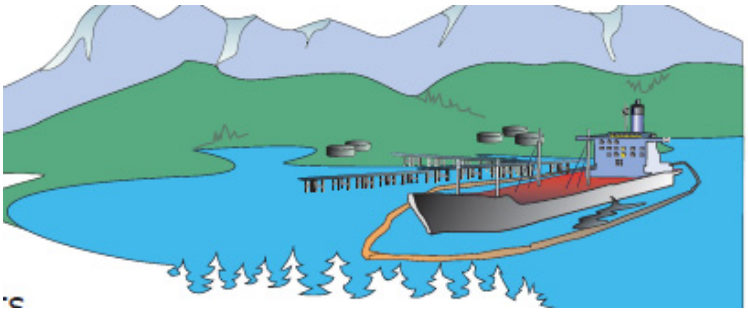
- Shoreline booming strategies are implemented to protect sensitive habitats and minimize the consequences of an oil spill reaching shore. There are tradeoffs in deciding where/when to place booms. Once deployed they are time consuming to tend and relocate. One strategy is to stage booms so that ready for deployment, but to wait to deploy until the oil approaches the area. That will ensure boom is in the optimal spot for the oil – whether that was the original site or a secondary one.

- Once the boom is in the water, it is difficult to move. Booming operations are sensitive to wind, wave and currents and need to be tethered and secured to keep from moving; they cannot be put out and forgotten. Rough seas can tear, capsize and shred booms. Currents over 1.5 knots or even a wake from a passing ship can also send oil over or under the boom.

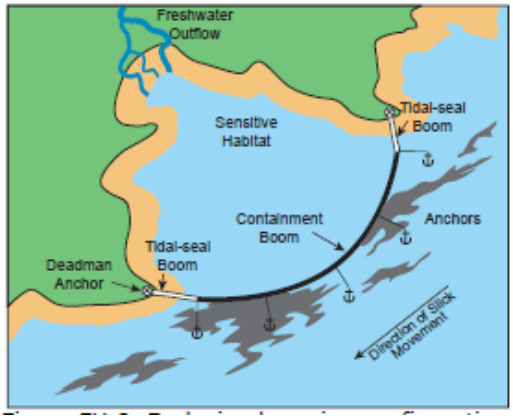
- Untended booms can be a barricade to wildlife. For example, booms can strand on shorelines and become a barrier to sea turtles adults and hatchlings. Boom anchors can damage corals and sea grass beds.

- Booms also can be a barrier to ship traffic. Marinas and navigation channels need to remain open for response vessels and other commercial traffic.

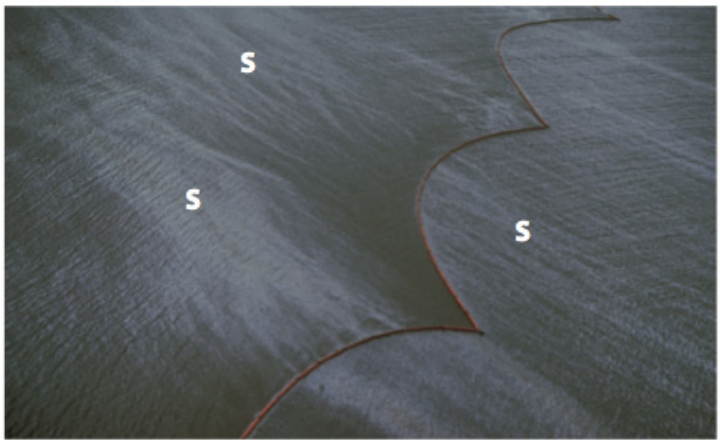
- Commercially available sorbent booms are a stark contrast to the recent reports of a need for human/pet hair and nylon stockings. Sorbent booms are the preferred method by response professionals because they are specifically designed to collect oil. Recent reports of a need for hair are exaggerated and not helpful to the response effort.



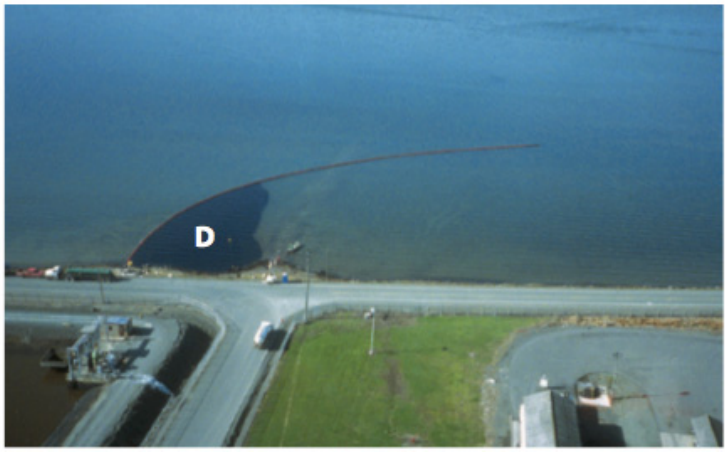
Example of “Containment Boom.”



Example of “Exclusion Boom.”



Example of a boom in high currents. The oil is being pushed underneath the booms intended to contain it.



Example of a containment boom under very calm weather conditions. If currents or tides change, the oil would easily pass past the boom.

Towing boom to collect oil.

Example of a containment boom surrounding a shore yard.

Rolls of Sorbent Boom.