

Glossary

Accelerant: A chemical used to intentionally speed up a fire; gasoline can be used as an accelerant to speed up oil fires.

Aquatic: Habitats and ecosystems that exist in bodies of water; refers to both *marine* and freshwater environments.

Asphalt: A brown to black residue formed from weathered petroleum products, consisting chiefly of a mixture of *hydrocarbons*; varies in texture from hard and brittle to plastic.

Bioaugmentation: The addition of *microorganisms* to the existing native oil-degrading population; also known as microbial *seeding*.

Biodegradation: The breaking down of substances by *microorganisms*, which use the substances for food and generally release harmless byproducts such as carbon dioxide and water.

Biological community: All of the living things in a given environment.

Bioremediation: The act of adding nutrients or *microorganisms* to the environment to increase the rate at which *biodegradation* occurs.

Biostimulation: Also known as nutrient enrichment, the method of adding nutrients such as phosphorus and nitrogen to a contaminated environment to stimulate the growth of the *microorganisms* capable of *biodegradation*.

Boom: A temporary floating barrier used to contain an oil spill.

Cetaceans: A group of related marine mammal species that includes whales, dolphins, and porpoises.

Contingency plan: A document that describes a set of procedures and guidelines for containing and cleaning up oil spills.

Deployment: Strategic placement of equipment and personnel.

Dispersants: Chemicals that are used to break down spilled oil into small droplets (See *surfactant*).

Dispersion: The spreading of oil on the water's surface and, to a lesser degree, into the *water column*.

Ecosystem: The interrelationships between all of the living things in an area.

Emulsification: The formation of a mixture of two liquids, such as oil and water, in which one of the liquids is in the form of fine droplets and is dispersed in the other.

Emulsions: A mixture of small droplets of oil and water.

Evaporation: The physical change by which any substance is converted from a liquid to a vapor or gas.

Facility Response Plan: A detailed plan which must be prepared in accordance with the Oil Pollution Prevention regulation (40 CFR 112.20) by facilities which may cause "substantial harm" to the environment or exclusive economic zone. The plan must contain an Emergency Response Action Plan (ERAP) and demonstrate that a facility has the resources to respond to a worst case scenario oil spill.

Fate: The outcome; the fate of an oil spill is what happens to the oil.

Fertilization: The method of adding nutrients, such as phosphorus and nitrogen, to a contaminated environment to stimulate the growth of *microorganisms* capable of *biodegradation*; also known as nutrient enrichment or *biostimulation*.

Freshwater spill: An oil spill that occurs in or affects bodies of freshwater, such as lakes and rivers.

Hydrocarbons: A large class of organic compounds containing only carbon and hydrogen; common in petroleum products and other oils.

Hydrophobic: Having a tendency to repel water; hydrophobic materials will not easily absorb water.

Incineration: The destruction of wastes by burning at high temperatures.

Marine: Relating to the seas and oceans.

Microorganism: A very small plant, animal, or bacteria; some microorganisms, like larger organisms can be hurt by oil spills; however, some microorganisms actually break oil down into less harmful substances.

Mortality: The proportion of deaths to population or to a specific number of the population.

Mousse: A thick, foamy oil-and-water mixture formed when petroleum products are subjected to mixing with water by the action of waves and wind.

National Response Center: An organization, staffed by officers and marine science technicians from the U.S. Coast Guard, that serves as the national communications center responsible for notifying *On-Scene Coordinators*.

National Response System: A network of individuals and teams from local, state, and federal agencies who combine their expertise and resources to ensure that oil spill control and cleanup activities are timely and efficient and minimize threats to human health and the environment.

National Response Team (NRT): An organization composed of 16 federal agencies, each of which has responsibilities and expertise in responding to oil spill and hazardous materials emergencies.

National Contingency Plan (NCP): A plan designed to ensure that resources and expertise of the federal government will be available in the event of a very serious oil spill. The full name of the NCP is the National Oil and Hazardous Substances Contingency Plan.

Non-petroleum oils: Oils that are not derived from petroleum; this group of oils includes vegetable oils and animal fats.

Oil: Crude oil and refined petroleum products (motor oils, fuels, lubricants, etc.), as well as vegetable oils, animal fats, and other *non-petroleum oils*.

Oil slick: A layer of oil floating on the surface of water.

Oleophilic: Having a strong affinity for oils; oleophilic materials absorb or stick to oils.

On-Scene Coordinator (OSC): The person responsible for overseeing the cleanup efforts at a spill; the OSC represents either the U.S. Environmental Protection Agency or the U.S. Coast Guard.

Oxidation: A chemical reaction that occurs when a substance is combined with oxygen; oxidation may lead to degradation or deterioration of the substance.

Polyaromatic hydrocarbons (PAHs): A family of chemical substances that are found in many types of oil; polyaromatic hydrocarbon vapors can cause harm to humans and animals that inhale them.

Pinnipeds: A group of related species of *marine* mammals that have flippers for all four limbs; pinnipeds include sea lions, seals, and walrus.

Regional Response Teams (RRTs): Thirteen teams (each representing a particular geographic region) that provide assistance to *OSCs*; RRTs are composed of representatives from field offices of the federal agencies that make up the *National Response Team*, as well as state representatives.

Seeding: Adding *microorganisms* to the environment to speed up *biodegradation* (also known as *bioaugmentation*).

Skimmers: Devices used to remove oil from the water's surface.

Slick: A thin film of oil on the water's surface.

Sorbents: Substances that take up and hold water or oil; sorbents used in oil spill cleanup are made of *oleophilic* materials.

Specific gravity: The ratio of the density of a substance to the density of water; substances with a specific gravity greater than one are denser than water and sink; substances that have a specific gravity less than one are less dense than water and float.

Sub-lethal effects: Injuries that affect the health and physical condition of organisms (including eggs and larvae) but do not result in the death of juvenile or adult organisms.

Surface tension: The attractive force exerted upon the surface molecules of a liquid by the molecules beneath the surface. When oil is spilled on water, this tension makes the oil behave as a continuous thin sheet that is difficult to separate or break up.

Surfactant: A substance that breaks oil into small droplets; this helps to increase the surface area of the oil spill, which increases the rate at which the oil can be degraded or weathered into less toxic substances (See *dispersant*).

Tar balls: Dense, black sticky spheres of *hydrocarbons*; formed from weathered oil.

Viscosity: Having a resistance to flow; substances that are extremely *viscous* do not flow easily.

Viscous: The tendency of a liquid to hold itself together; viscous liquids do pour freely and having the consistency of syrup or honey.

Volatile organic compounds (VOCs): A family of chemical compounds found in oils; VOCs evaporate quickly and can cause nerve damage and behavioral abnormalities in mammals when inhaled.

Water column: An imaginary cylinder of water from the surface to the bottom of a water body; water conditions, temperature, and density vary throughout the water column.

Weathering: Action of the wind, waves, and water on a substance, such as oil, that leads to disintegration or deterioration of the substance.

Weir: An underwater structure that controls the flow of water; weir-type oil *skimmers* use a dam-like underwater barrier that lets oil flow into the skimmer while holding back the water.

For Further Information

PUBLICATIONS

Exxon Valdez Oil Spill Trustee Council. *Legacy of an Oil Spill, 10 Years After Exxon Valdez*. March 1999.

Frink, L., and E. A. Miller, Tri-State Bird Rescue and Research, Inc. *Wildlife and Oil Spills: Response, Research, and Contingency Planning*. Newark, Delaware, 1995.

LaFleur, Joseph. *Pennsylvania State Response to the Ashland Oil Spill*. Conference Presentation at Pittsburgh Oil Spill, Past Response, Future Plans, March 1989. (Available from the U.S. Environmental Protection Agency, Region 3, Philadelphia, Pennsylvania.)

National Research Council. *Spills of Non-floating Oils: Risk and Response*. National Academy Press, Washington, D.C., 1999.

National Oil and Hazardous Substances Contingency Plan. 40 CFR 300.

Spill Prevention, Control and Countermeasures (SPCC) Regulation 40 CFR 112: Facility Owners/ Operator's Guide to Oil Pollution Prevention. EPA Publication EPA540K98003.

Tri-State Bird Rescue and Research, *Wildlife & Oil Spills* (periodical). Available from Tri-State Bird rescue and Research, 110 Possum Hollow Road, Newark, Delaware 19711.

U.S. Environmental Protection Agency. *EPA Oil Spill Program Update*, vol. 2, no. 2, January 1999, and vol. 1, no. 4, July 1998. Special issue on vegetable oils and animal fats. The *Oil Spill Program Update* is available on line at www.epa.gov/oilspill

U.S. Environmental Protection Agency. *Evaluation of the Response to the Major Oil Spill at the Ashland Terminal, Floreffe, Pennsylvania, by the Incident-specific Regional Response Team*. U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

U.S. Environmental Protection Agency. *Oil Pollution Prevention; Non-Transportation Related Onshore Facilities Rule*. 40 CFR Part 112. October 20, 1997.

Walton, William D., and Nora H. Jason, eds. *In-situ Burning of Oil Spills*. Proceedings of the 1998 Workshop on In-situ Burning of Oil Spills, New Orleans, Louisiana. November 2-4, 1998.

WEB SITES

U.S. EPA Oil Program: <http://www.epa.gov/oilspill>

U.S. EPA Publications:
<http://www.epa.gov/epahome/publications.htm>

National Response Team: <http://www.nrt.org>

Exxon Valdez Oil Spill Trustee Council:
<http://www.oilspill.state.ak.us/>

National Response Center: <http://www.nrc.uscg.mil>

Oil Wildlife Care Network:
<http://www.vetmed.ucdavis.edu/owcn/>

Tri-State Bird Rescue and Research, Inc.:
<http://www.tristatebird.org/>

FEDERAL AGENCIES

**U.S. Environmental Protection Agency
Oil Program Center**
401 M Street, SW
Mail Code 5203G
Washington, DC 20460
<http://www.epa.gov/oilspill>

U.S. Coast Guard
2100 2nd Street, SW
Washington, DC 20593
<http://www.uscg.mil>

**Department of the Interior
U.S. Fish and Wildlife Service**
1849 C Street, NW
Washington, DC 20240
<http://www.fws.gov>

**National Oceanic and Atmospheric Administration
Office of Response and Restoration**
1305 East-West Highway
Silver Spring, MD 20910
<http://response.restoration.noaa.gov/index.html>

BIRD REHABILITATION

International Bird Rescue Research Center
699 Potter Street
Aquatic Park
Berkeley, CA 94710

Tri-State Bird Rescue and Research, Inc.
110 Possum Hollow Road
Newark, DE 19711

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MAMMAL REHABILITATION

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312 Sutter Street, Suite 316
San Francisco, CA 94108

Defenders of Wildlife
1244 19th Street, NW
Washington, DC 20036

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P.O. Box 221220
Carmel, CA 93922

Monterey Bay Aquarium
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***To Report
Chemical And Oil Spills:
Call The National Response Center
at 1-800-424-8802***