

## **Concerns for Wildlife affected by HAZMAT**

The public often expects considerable efforts to be made in helping affected wildlife after oil spills. This was perhaps best evident in the *Exxon Valdez* spill after which the average expenditure on each treated sea otter that survived was about \$320,000. It is not uncommon after large-scale oil spills to have many volunteers emerge wanting to help with the rehabilitation of oiled wildlife.

There is a regrettably large amount of misinformation on how to deal with wildlife in disasters. It is important for responders to be aware that to handle and rehabilitate protected species requires a special permit from the U.S. Fish and Wildlife Services, DNR. The literature published by several humane organizations fails to point out this essential information. By not doing so, the organizations put the unsuspecting public at risk.

It is imperative to remember that dealing with hazardous material requires appropriate training. Unqualified responders to hazmat incidents are a liability to themselves, others, and the environment. Despite their having a vocational education that touches on toxicology and public health, veterinarians who have not sought additional, specialized hazmat training should not consider themselves qualified to deal with hazardous materials that involve public or environmental safety.

**Table 11-6** Some principal characteristics of crude oil and its toxic effects on animals

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Crude oil contains both light and heavy oils

Light fractions are usually more toxic, and cause direct death; sublethal effects include physiologic disruption and decreased reproductive capability

Heavy oil contact with fur and feathers will smother the animal, reduce buoyancy, and predispose to drowning

Direct coating of animals will impair their normal respiration, feeding, and light absorption

Oil-covered animals cannot dissipate heat well and are prone to hyperthermia

Oil will coat the surface of water and ground and prevent the free exchange of gases (oxygen), leading to asphyxiation of marine and digging animals

Ingestion of oil can result in poisoning and intestinal obstructions

Examples of effects on animals:

Crab populations may take up to 8 years to recover

Bird populations may take over 25 years to recover

Deaths of chicks can occur when their parents can no longer provide sufficient food

Covering of plants and sand beaches may prevent birds and other animals from finding food

Birds affected during the winter molt frequently have recovery rates as low as 15%

Injuries are common because oiled animals slip on rocks or try to escape from predators and from humans trying to help them

Some population impacts are change of habitat, decreased species diversity, and changes in population density

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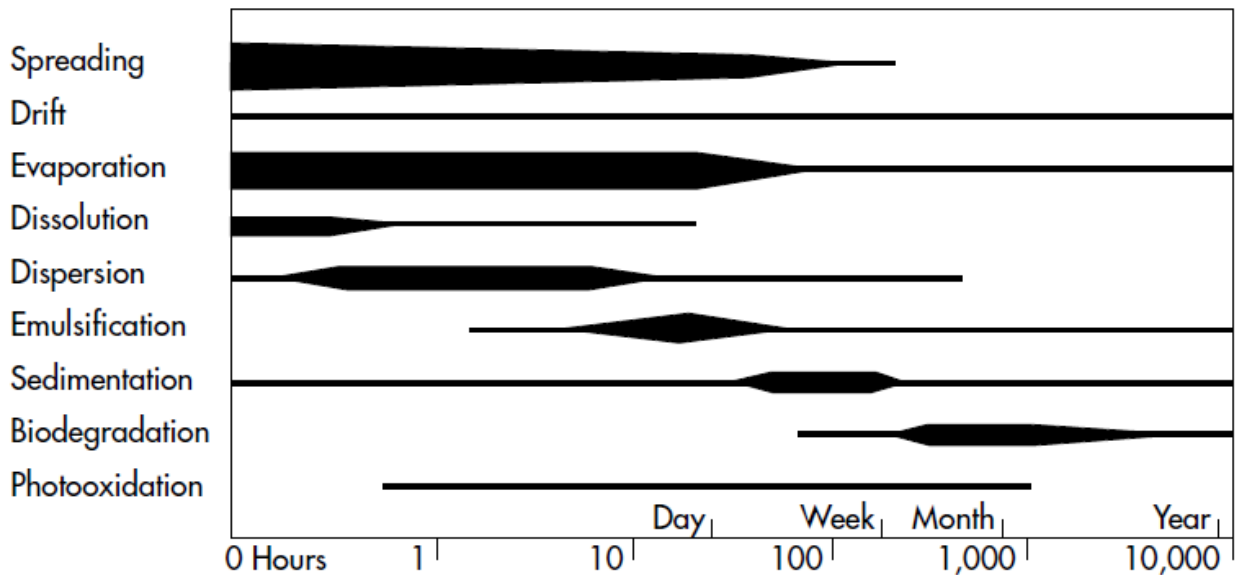


FIG. 11-3 The relative importance of weathering processes of an oil slick over time. The width of the line shows the relative magnitude of the process in relation to other contemporary processes. (From Office of Spill Prevention and Response: *Training guide*, Monterey, Calif, 1991, OSPR.)

Experience has shown that despite good intentions untrained volunteers frequently choose inappropriate methods for cleaning and bathing oiled wildlife and exert undue stress on the animals because of improper handling and inadequate holding facilities. Disease transmission and introduction of new diseases from domestic animals to wildlife are additional problems that untrained personnel can contribute to an already disastrous situation.

Several solutions are provided to give optimal professional help to oiled animals. For example, in California the Office of Spill Prevention and Response has 10 centers along the California coast and responds with trained volunteers coordinated through the Oiled Wildlife Care Network at the University of California–Davis veterinary school. Volunteers help with the capture, treatment, and rehabilitation of oiled animals in a disaster. On the East Coast the Tri-State Bird Rescue and Research in New Jersey provides professional managerial services to coordinate the handling of oiled birds. The greatest impact in long-term programs, however, is likely to be on applied research in the areas affected.

### Methods Used to Contain Oil Spills and Protect Wildlife

Some of the methods used to minimize the impact and to treat oil spills are the use of oil dispersants, oil skimmers, burning, and shorebird hazing. Shorebird hazing uses different methods to disperse birds from threatened sites. Techniques include flying over with aircraft, water spraying, pyrotechnics (propane exploders, shell crackers), and reflectors. Most of these methods are useful only for small flocks that are not dependent on feeding in the area affected. Hazing is also generally effective only over a small area (less than 300 yards).

Oil skimmers are valuable if they can be put in place quickly enough. Oil skimmers take advantage of the fact that oil floats on water. When properly applied, skimmers can be floated around an oil slick to surround the slick. Surrounded oil can then be pumped into containers (an empty ship).

Oil dispersants are useful in some situations but can be used only after the federal on-scene coordinator has determined that their use is appropriate. The federal coordinator bases the decision on consultations with the appropriate regional agencies.

Burning is an option only with the approval of the U.S. Coast Guard, EPA, states affected, NOAA, DOI, and the designated Rapid Response Team. A similar team of experts is needed if bioremediation is to be used. Bioremediation is the introduction of microbes to the affected environment that can metabolize organic contaminants.