

NET ENVIRONMENTAL BENEFITS ANALYSIS HABITAT FACT SHEET: AQUATIC BED HABITATS

I. Habitat Description

The aquatic bed habitat includes wetlands and deep-water habitats dominated by plants that grow on or below the surface of the water for most of the growing season. The diverse groups of plant communities that live in this habitat require surface water for optimum growth and are therefore best developed in relatively permanent water or under conditions of repeated flooding. The plants are either attached to the substrate or float freely in the water above the bottom or on the surface. They often occur in sheltered areas where there is little water movement. They can also occur in flowing water, in which case they may be streamlined or flattened in response to high water velocities.



II. Sensitivity to Oil Spills

Aquatic bed habitats are highly sensitive to oil spills. The biological diversity in this habitat is significant. They provide critical habitat for many types of plants and animals. Vascular plants that commonly occur in this habitat are pondweed, ditch grasses, wild celery, and waterweed.



Floating vascular plants that commonly occur are duckweeds, water lettuce, water hyacinth, waternut, water ferns, and mosquito ferns. This habitat also supports a wide variety of fish, amphibians, reptiles, birds and mammals. In these habitats, detritus-based food webs are of fundamental importance. Oil may inhibit the ability of plants to decompose, adversely affecting organisms within the detritus food web. Oil removal is often driven by the threat of wetland animals becoming oiled.

III. Sensitivity to Response Methods

Methods Causing Least Adverse Habitat Impacts

Natural Recovery

- Least impact for small to moderate spills and lighter oils; avoids damage often associated with cleanup activities
- Some cleanup may be warranted where large numbers of animals are likely to become oiled during wetland use

Sorbents

- Care is necessary during placement and recovery to minimize disturbance of substrate and vegetation
- Overuse generates excess waste

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Flooding

- Erosion of substrate and vegetation may be a problem
- Can be used selectively to remove localized heavy oiling
- Can be difficult to direct water and oil flow towards recovery devices
- Use on heavy oils is likely to leave large amounts of residual oil in the environment

Low-Pressure, Cold Water Flushing

- If water pressures are too high, the substrate and vegetation may be disturbed
- Use of heavy oils is likely to leave large amounts of residual oil in the environment

Methods Causing Some Adverse Habitat Impact

In-Situ Burning

- May be one of the least physically damaging means of heavy oil removal
- Presence of a water layer on marsh surface can protect roots
- Time of year (vegetation growth stage) is important consideration

Vacuum

- Can be effective in removal of pooled oil from the marsh surface
- Trampling of vegetation and substrate can be limited by placing boards on the surface and limiting traffic

Debris Removal

- The removal of heavily oiled and mobile debris may reduce the tracking of oil off-site and contamination of wildlife

Methods Causing Probable Adverse Habitat Impact

Vegetation Removal

- Used to prevent oiling of sensitive animals using the wetland
- Most appropriate for oils that form a thick, sticky coating on the vegetation, such as medium and heavy oils
- May delay recovery of the vegetation due to both oil impact and physical destruction by cleanup crews
- Trampling of vegetation may be reduced by controlling access routes, using boards placed on surface, or conducting operations from boats

Manual Oil Removal/Cleaning

- Used where persistent oil occurs in heavy amounts and where sensitive resources using the wetlands are likely to be oiled
- Response crews may trample roots and mix oil deeper into the sediments

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Methods Causing Most Adverse Habitat Impact

High-Pressure, Cold-Water Flushing

- High-pressure spray will disrupt sediments, root systems, and animals

Low-Pressure, Hot-Water Flushing and High-Pressure, Hot Water Flushing

- Hot water will likely kill the vegetation

Sources:

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