INLAND STRANDED OIL HABITAT FACT SHEET FOR RESPONSE:

Open Water

Indicator Species

Water Meal
Wolffia spp.

Duckweed
Lemna spp.

Duckweed
Spirodela spp.

I. Habitat Description

The open waters habitat includes main river channels and portions of lakes, ponds, and backwaters that remain permanently flooded all year and appear less than 10% vegetated. It also includes areas that are more than 10% vegetated with duckweed (*Lemna*, *Spirodela*, and *Wolffia*) and other nonrooted-floating aquatics. Because duckweed is free-floating, it can relocate day-to-day depending on current and wind direction. Therefore, any area of otherwise open water containing dense duckweed is be classified as Open Water (rather than being placed into any of the vegetation-specific habitat classes). These habitats are subject to varying currents and wave action.

Open Water can provide habitat for threatened plants such as these native phragmites in Pool 8 of the Mississippi River. Image: Matt Jacobson

Oil sheens on the Upper Mississippi River. Image: NOAA

II. Sensitivity to Oil Spills

The open waters habitat is highly sensitive to oil spills. Open waters provide critical habitat for many types of plants and animals, including a wide variety of fish, amphibians, reptiles, birds and mammals. Oil may inhibit the ability of vegetation to decompose, adversely affecting organisms within the detritus food web. Oil removal in this habitat is often driven by the threat of migratory waterfowl and/or wetland animals becoming oiled. Light oils with high water-soluble fractions can result in acute mortality of submersed vegetation, fish, and invertebrates. Heavier oils tend to smother aquatic animals and plants, and coat shorelines.

References/Additional Information:

General Classification Handbook for Floodplain Vegetation in Large River Systems (http://pubs.usgs.gov/tm/2005/tm2A1/)
Inland Oil Spills: Options for Minimizing Environmental Impacts for Freshwater Spill Response (http://www.michigan.gov/documents/deq/deq-wb-wws-FreshwaterResponse_NOAA102706_265069_7.pdf)
NatureServe (natureserve.org)
Natural Wetland Inventory (http://www.fws.gov/wetlands/)
The U.S. National Vegetation Classification (http://usnvc.org/)
Wetland Plants and Plant Communities of MN & WI, 3rd Edition (http://www.bwsr.state.mn.us/wetlands/delineation/WPPC_MN_WI/index.html)

Information compiled by UMRBA staff from NOAA, USFWS, and U.S. EPA sources, March 2016.

III. Sensitivity to Response Methods

The following text describes potential adverse impacts to this habitat resulting from various oil spill response methods and provides recommendations to reduce impact when these methods are implemented. This is not intended to preclude the use of any particular methods, but rather to aid responders in balancing the need to remove oil with the possible adverse effects of removal. More detail about the response methods themselves can be found in the Inland Response Tactics Manual.

Least Adverse Habitat Impacts

Containment Booming

- Use containment boom to keep oil from spreading and to concentrate slicks from recovery.
- Recovery by skimmers or vacuum systems needs to accompany booming.
- Effectiveness is increased by positioning boom at appropriate angles for the current flow, areas where flow decreases and where debris naturally collects.

Sorbents/Sorbent Boom

- Deploy sorbent boom to recover sheens in low-current areas and along the shoreline.
- Overuse results in excess waste generation.
- Pom-pom type sorbents are best for heavy viscous oils that coat the strands; sorbent boom is best for light, low-viscosity oils that can penetrate into the sorbents.
- Absorbent boom must be changed frequently to prevent it from becoming a source of sheen.

Debris/Vegetation Removal

- Collect oiled free-floating vegetation. Minimize the cutting of rooted vegetation when possible.

Some Adverse Habitat Impact

In-Situ Burning

- Less likely to impact plants in areas of open water.
- "Heavy ends" of petroleum product remain unburned and must be recovered. This residue will sink once it is cool.
- The amount and placement of natural fuel in the surrounding area may present challenges to constraining the fire only to oiled areas.
- Authorization of in-situ burning is subject to RRT approval, consultation and concurrence from the state and the Department of the Interior.
- May be one of the least physically damaging means of moderate and heavy oil removal as it leaves plant roots intact.
- May be difficult to protect riparian vegetation.

Most Adverse Habitat Impact

Sediment Removal

- May make it difficult to restore the plant community that existed prior to the spill incident.
- Vacuum/dredge sediments and dewater using geotube/settling tank. Treat the water and dispose the sediment.
- Permits will be required for sediment removal and for water discharge.