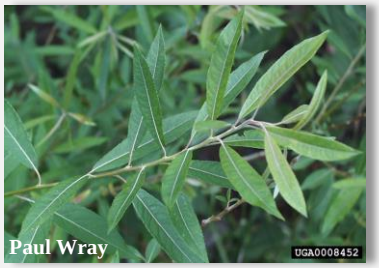
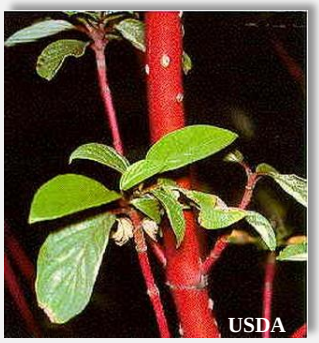
INLAND STRANDED OIL HABITAT FACT SHEET FOR RESPONSE:

SHALLOW MARSH SHRUB HABITAT

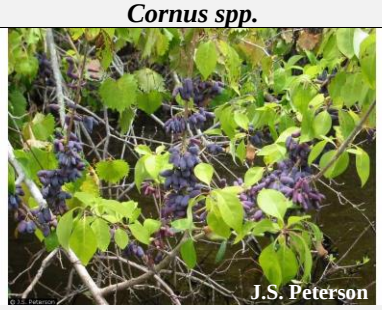
Indicator Species



Willow
Salix spp.



Red Osier Dogwood
Cornus spp.



Swamp Privet
Foresteria spp.

I. Habitat Description

Shrubs along marsh edge

The Shallow Marsh Shrub Habitat represents areas near the shoreline or around lakes, ponds, and backwaters that are >25% vegetated with seasonally flooded shrubby vegetation. It typically grows with mixed emergents, grasses, and forbs. This general class tends to be drier than deep marsh shrubs, but wetter than wet meadow shrubs. Willows (*Salix*) are the predominant shrub type. Other indicator species are Dogwood (*Cornus*), False Indigo (*Amorphia*), and Swamp Privet (*Foresteria*). Shallow marsh shrubs are typically found growing on soils that are saturated or inundated with little water.

II. Sensitivity to Oil Spills

Shallow marsh shrub habitats are highly sensitive to oil spills. This habitat provides a home to many plants and animals. Some of the many animal species that inhabit the emergent wetlands are amphibians, reptiles, fish, and a wide variety of invertebrates as well as a wide variety of migratory waterfowl. There are also a wide variety of plant species.

Oil spills that occur in or near shallow marsh shrub habitats are of particular concern because they are home to many endangered species of plants and animals. Many animal species use this habitat type for reproductive and early life purposes. These animals are most susceptible to the effects oil during these life stages. Significant loss of this habitat would negatively affect the populations of these animals and consequently, the local ecology.

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, USACE, USFWS, USGS, and U.S. EPA sources, March 2017.

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

Exclusion or Deflection Booming

- Boom can be used to exclude or deflect the spill away from sensitive resources.
- Effectiveness is increased by positioning boom at appropriate angles for the current speed.

Natural Attenuation

- 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 wildlife are likely to become oiled during wetland use.
- Seeding or planting may be used to assist in oil degradation.

Sorbents

- Care is necessary during placement and recovery to minimize disturbance of substrate and vegetation.
- Overuse generates excessive waste.
- Forcing contact between pads and the oil drives the oil deeper into the soil.
- Appropriate approval required for chemical additives to sorbents.

Flooding

- Erosion of substrate and vegetation may be a problem.
- Can be used selectively to remove localized heavy oiling.
- Local topography may limit the ability to control where the water and released oil flow and effectiveness of recovery.
- Booms or other methods of trapping and containment are used to collect the oil for removal.
- Effectiveness increases with lighter oils because less residual oil is left in the environment.

Low-Pressure, Ambient-Water Flushing

- If water pressures are too high, the substrate and vegetation may be disturbed.
- Effectiveness increases with lighter oils because less residual oil is left in the environment.

Solidifiers

- Use likely to increase adherence to vegetation and slow weathering/removal rates of residual oil.
- Most effective on lighter oils, which have low viscosity and allow the product to mix into the oil.
- Appropriate approval required.

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.
- Heavy ends will remain unburned and will need to be recovered.
- Requires RRT approval and a state air permit.

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 ground and limiting traffic.

Debris/Vegetation Removal

- The removal of heavily oiled and mobile debris may reduce the tracking of oil off-site and contamination of wildlife.
- May be required in areas used by wildlife. Grass plants are damaged by oil at the root structure; removal of stained or oiled vegetation is to protect users of the habitat.
- Most appropriate for oils that form a thick, sticky coating on the vegetation, such as medium and heavy oils.
- Recovery of the vegetation due to both oil impact and physical destruction by cleanup crews may be reduced by avoiding excessive cutting/removal, controlling access routes, using boards placed on surface, or conducting operations from boats.

Hand Tool Oil Removal/Cleaning

- Used where persistent oil occurs in heavy amounts and where sensitive resources using the wetlands are likely to be oiled.
- Mixing of oil and trampling of vegetation may be reduced by controlling access routes, using boards placed on surface, or conducting operations from boats.
- This includes removal of surface soil contamination..

Most Adverse Habitat Impact

Light Equipment Oil Removal

- Use equipment such as swamp buggies or light equipment on pontoons.
- Damage to vegetation and substrate may be reduced by controlling access routes, using pontoons or mats, or using a helicopter to bring in equipment.

Sediment Removal

- Vacuum/dredge sediments and dewater using geotube/settling tank. Treat the water and dispose of sediment.
- Excavate the sediment. Dewater the area before excavation.
- The hydrology may change and it may be difficult to restore the plant community that existed prior to the spill incident.
- Permits will be required for sediment removal and for water discharge.
- May be difficult to keep excavation dewatered.