

Mudflat



I. Habitat Description

Most common in tidal environments, mudflats also occupy marginal areas of backwaters, estuaries, lakes, ponds, or shorelines that are prone to seasonal flooding and subsequently exposed to non-vegetated mud. Though typically barren, incursions of emergent vegetation, forbs, grasses, or sedges of less than 10% cover may be present. Water may be present depending on season or weather patterns.



JSA & Brenda Zabriskie
Lakeshore mudflat



Frank Wallace
Dry mudflat



Pbase
Estuary mudflat

II. Sensitivity to Oil Spills

Due to lack of vegetation and low biodiversity, mudflats are moderately sensitive to oil spills. On waterlogged flats, oil will remain on the surface if undisturbed by wind, rising water, rain, or human activity. Dried mudflats will crack, allowing for oil to seep under the surface. Many shorebirds, including the endangered interior population of Least Tern (*Sternula antillarum*) and the threatened Piping Plover (*Charadrius melodus*), utilize mudflats to forage for insects and small crustaceans and to access water. Shorebirds are most sensitive in the early morning hours during the spring and fall. Mudflats are typically thought to not have great socioeconomic value, though they do serve as an important erosion deterrent.

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)

USACE Missouri River Recovery Program (<http://moriverrecovery.usace.army.mil/mrrp/f?p=136:132:0::NO::>)

Oil Spills Along the Shore

<http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/oil-spills-along-shore.html>



Lowell Washburn
Killdeer are common on mudflats



Kelly Riccetti
Mudflats are important stopovers for migrating birds like Dunlins.

INLAND STRANDED OIL HABITAT FACT SHEET FOR RESPONSE: **Mudflat**



III. Sensitivity to Response Methods

The following 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

Sorbents

- Physical removal rates of lighter oil will be fastest and more oil will be mobilized for sorbent recovery.
- Overuse generates excessive waste.
- Snare and pom-poms are used along shorelines or for heavy oil situations.

Low-Pressure, Ambient-Water Flushing

- If water pressures are too high, the substrate may be disturbed and oil may be pushed into lower levels of sediment
- Effectiveness increases with lighter oils because less residual oil is left in the environment
- Most effective on impenetrable surfaces

Hand Tool Oil Removal/Cleaning

- Used where persistent oil occurs in heavy amounts and where sensitive resources are likely to be oiled
- Raking may drive oil into lower levels of sediment.
- This includes removal of surface soil contamination not gross digging

Some Adverse Habitat Impact

Vacuum

- Most effective where access is good and substrate can support vehicles
- Only useful when oil is pooled
- Can be used in combination with flooding to pool oil

Light Equipment Oil Removal

- Mixing of oil and disturbance of sediments may be reduced by controlling access routes or using boards placed on surface
- Needed to remove heavy debris and dead trees

Most Adverse Habitat Impact

Heavy Equipment Oil Removal

- Mixing of oil and disturbance of sediments may be reduced by controlling access routes or using boards placed on surface
- Needed to remove heavy debris and dead trees

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 conditions that existed prior to the spill incident.
- Permits will be required for sediment removal and for water discharge.