

UPPER MISSISSIPPI RIVER POOL 10 OVERVIEW

Resource Description and General Response Considerations



The Pool 10 Geographic Response Plan CD is developed to address the long-standing concerns about spills of oil and hazardous substances onto National Wildlife Refuge System lands along Upper Mississippi River. The Pool 10 Overview document provides information on project background, geographic description of Pool 10, response considerations and planning tools included in the CD.

Due to long-standing concerns about spills of oil and hazardous substances affecting National Wildlife Refuge properties and associated sensitive resources on the Upper Mississippi River (UMR), the US Environmental Protection Agency, US Fish and Wildlife Service, Minnesota PCA, Minnesota DNR, Wisconsin DNR, US Coast Guard, US Army Corps of Engineers, other agencies, and private sector interests, with the assistance of the Upper Mississippi River Basin Association, have developed a set of planning and response tools for Upper Mississippi River National Wildlife & Fish Refuge. The goal of this effort has been to foster communications, enhance spill contingency planning and preparedness, and to develop site-specific protection strategies that assist responders in prioritizing tactics and recommending strategies and locations to protect the Refuge and the public from releases of oil or other substances.

This overview document provides a description of Pool 10 and its sensitive resources. It also provides general considerations for response. For more information, see the [Site Specific Response Strategies Maps](#) (link) and the [Pool 10 Incident Action Plan](#) (link) included on the Pool 10 Geographic Response Plan CD.

Location of Pool 10

Pool 10 of the Upper Mississippi River (UMR) is the area between Lock and Dam 10 at river mile 615, at Guttenberg, Iowa, and Lock and Dam 9 at river mile 648, near Lynxville, Wisconsin. Pool 10 includes portions of the Upper Mississippi River National Wildlife and Fish Refuge (Refuge), Effigy Mounds National Monument, Pikes Peak State Park (Iowa), Wyalusing State Park (Wisconsin), and Yellow River State Forest (Iowa). Several populated areas along the river include the cities of Prairie du Chien, Wisconsin and Guttenberg, Iowa, the towns of Harper's Ferry and McGregor, Iowa, and the village of Bagley, Wisconsin. There are no public drinking water intakes in Pool 10. There are, however, two industrial water intakes in Pool 11 downstream.

Most of the bottomland in the Pool is owned by the federal government and is administered by the US Fish and Wildlife Service (FWS). Much of what is not federal land is managed by the states. Private land and homes are found along the river north of both Prairie du Chien and Guttenberg. Many permanent and seasonal boat houses and house boats with overnight campers are located on the shorelines in this pool.

Resource Description

The Mississippi River valley is confined to a broad bedrock gorge in Pool 10. The interface between the river floodplain and bluffs is generally abrupt. The main channel of the river crosses the valley several times, each time creating an extensive backwater floodplain. The major tributary to the Mississippi River within Pool 10 is the Wisconsin River. The confluence of the two rivers has created a large delta, covered in part by the Wisconsin River Delta Closed Area. Smaller tributaries include Du Charme Creek, Paint Creek, Yellow River, Sny Magill Creek, and Buck Creek.

Rail lines run adjacent to the river banks along almost the entire western and eastern shorelines. The rail embankments may be the only access point in some parts of the river. Road access is very limited or absent in some areas.

The upper reach of the Pool 10 has sloughs, backwater lakes, wetlands, and bottomland forest. Several fish overwintering areas and rookeries are found in the backwaters between Harper's Ferry, IA and Prairie du Chien, WI. Critical habitat for endangered mussel species is found in lower Harper's Slough and into the main channel. A second critical mussel habitat area lies between Prairie du Chien and Marquette, IA, in both the main and east channels. Effigy Mounds National Monument and nearby archaeological sites harbor a high concentration of cultural resources that are found throughout the Pool. Sturgeon Slough Closed Area, north of the US Highway 18 bridge, is a small closed area used mostly by waterfowl. Use of motors is not allowed and the public is asked to avoid entering the area from October 15 until the end of the Wisconsin duck hunting season.

The middle reach of the pool includes the Wisconsin River delta and Wyalusing backwaters. This area has sloughs, islands, channels, backwater lakes and wetlands. It contains extensive bottomland forest. Several important fish overwintering areas are present in backwater lakes. The Wisconsin River Delta Closed Area is north of the confluence. This closed area has excellent waterfowl habitat with backwater wetlands and open water, sloughs, and wooded islands. The area is closed to hunting and trapping from November 1 to the end of the Wisconsin duck hunting season. The Wisconsin River is typically shallow, with shifting sandbars. Entering the river may be very difficult in low water conditions.

The lower reach of the pool has more open water, with broad side channels, backwater lakes, and islands. A critical mussel habitat area lies on the west side of the main channel, from Frenchtown Lake south to Guttenberg. Important fish overwintering areas are present in backwater lakes. The 12-Mile Island Closed Area lies between Dam 10, the main channel, east channel, and Ferry Slough. This is a key habitat area of concern when considering spill response actions in the lower pool. It is closed to use of motors and is a voluntary avoidance area from October 15 through the end of Iowa duck hunting season. Fall waterfowl use within the closed area is greater here than any other place within Pool 10.

Response Considerations

Primary Response Goals

The following are primary goals for response in Pool 10:

- In general, any spilled oil product should be excluded from backwaters and kept in the main channel of the Mississippi River. Then, if possible, the oil should be diverted with boom and collected on the main shore.
- Three areas are designated as critical mussel habitat by the US FWS. Consult with resource managers to keep spilled product or response actions from affecting the substrate in these areas.
- Keeping product out of the three closed areas is a top priority in any spill event. Due to seasonal high waterfowl use, deflection and exclusion booming of multiple openings and channels should be prioritized as a response tactic.

Likely Spill Sources

The main potential for spills in this pool is the transportation corridors; railroad, highway, and vessels, tugs and barges on the river. The BNSF Railroad track runs on the Wisconsin side, just above the bottomlands and through Prairie du Chien. It crosses the Wisconsin River about 1.5 miles upstream of

the mouth. CP Rail track runs along the river on the Iowa side, mainly along the shore or above the bottomlands. US Highway 18 crosses the river between Marquette, IA and Prairie du Chien, WI. On both banks, access to the Pool from roads is limited, or potentially restricted by the railroad tracks.

Limited Availability of Local Response Resources

Timely response to spills in Pool 10 will require pre-planning and cooperative agreements with local industry and responders, as local response resources and equipment are limited. The closest response organizations are 2-3 hours from the Prairie du Chien area. The Iowa regional HazMat team for Allamakee County is based in Cedar Rapids, in Linn County. The HazMat team for Clayton County is based in Waterloo, in Blackhawk County. The Red Wing (MN) CAER group is a cooperative that includes Canadian Pacific Railroad, which operates a yard at Marquette, IA.

The Red Wing CAER group maintains US Coast Guard spill response equipment at the Canadian Pacific rail yard in Marquette, IA. A trailer on site contains 1000' of 6" and 12" skirt containment boom, 6 blue/white anchor floats, 5 orange marker buoys, rolls of rope in 25', 50', and 100' lengths, 8 anchors, tow bridles, and small tools. Contact CP Railroad response group at (612) 904-6132. A second trailer is stored at the Winona, MN Fire Department at (507) 457-8266. Sorbent boom may also be found at Lock 10, contact the Lock Master at (563) 252-1261. Local equipment is currently adequate for a small or medium spill, but is not adequate for a large spill. The development of and renewed interest in agreements with a local spill cooperative, and procurement of additional response equipment that may be pre-staged are essential in protecting the natural resources and the public in this area. In addition, consideration of the placement of permanent anchor points for the recommended protection strategies should be evaluated.

Use of Locks & Dams/Coordination with USACE

While limited in its potential impact and duration, modification of hydraulic control at Lock and Dam 9 or 10 to help slow, stop or divert flow of a spilled product to a collection area could be part of a response operation. The Lock and Dams may also be natural collection points for spilled product or these structures may be used to alter the flow of the spilled product and facilitate collection. Additionally, the room to stage equipment and command posts at the Lock and Dams should be considered.

Responders must contact the lockmaster of the appropriate lock for site-specific assistance and information. The St. Paul District Hydraulics Branch must be contacted to request changes to dam gate settings or for river level/flow projections. See the [Emergency Contact](#) (link) list for these numbers.

In-Situ Burning

The uses of these tactics are discussed in the [Upper Mississippi River Spill Response Plan and Resource Manual](#) (link). If in-situ burning is being considered as a response tactic, the in-situ burn checklist found in the UMR Response Plan should be used to evaluate this tactic. In situ burning will require close coordination with the Federal and State Resource Trustees. Some of the response tactics that have been developed in this document do recommend collection and burning of the product if appropriate. This does not constitute a pre-approval for in-situ burning; consulting the checklist and close coordination with Federal and State Responders and Resource Trustees remains necessary.

Chemical Oil Spill Treating Agents (COSTAs)

The use of COSTA's requires approval of the Regional Response Team. If the use of a COSTA was considered it must be registered on the National Product Schedule and the Incident Commander, FOSC, SOSC and State and Federal Trustees would have to be in agreement to utilize the registered product. The use of dispersants is not allowed within the boundaries of USEPA Regions 5 and 7 or by the Regional Response Teams. This is primarily because the dispersants solubilize or drive the product into the water column and the river is utilized as a drinking water resource. Driving the spilled product into the water column can have adverse affects on the aquatic life and vegetation. First Responders should also take into account that fire fighting foams or dispersants such as "biosolve" or other products can also solubilize the spilled product and release with the fire fighting water or storm water and then discharge to the river.

Air Boats

Due to the vast backwater areas, response efforts should consider the use of air boats for reconnaissance and boom deployment. The river contains many wing dams, underwater structures, sunken logs and the like which can impede standard boat response. In addition, cold-weather seasonal response may be limited by ice.

Use of Barges or Vessels to Divert or Exclude Spilled Product

The effectiveness of using barges in response has been demonstrated in nearby areas of the UMR. Barges can be utilized to divert, exclude and collect spilled product. Barges and other vessels could be employed by grounding or anchoring at the designated slough, harbor, or inlet to facilitate the required response tactic.

Communication and Command

Immediate response by local responders, industry and contractors to collect and contain product prior to its release to the main channel or back waters will be essential in protecting Pool 10. If spilled material does reach the main channel, quick notifications and communications and the deployment of a Unified Command and implementation of an Incident Action Plan will be essential to success. An [Initial Incident Action Plan](#) (link) for use in the first response period has been prepared to outline the roles of the agencies, local responders and industry and includes some recommended organizational structures and response tactics. Quick response with deployment of local resources will be essential in the first hours and days of the response until additional resources can be mobilized.

Cold Weather Conditions and Ice Spill Response

Cold weather response and working on ice can create a number of safety concerns. Safety plans will need to take into account such items as ice thicknesses variability, under-ice currents, and water depth. Winter weather can also cause equipment failures. Vortex and drum skimmers can be problematic and inefficient in extreme cold weather conditions as properties such as viscosity changes and equipment doesn't work properly. Recovery hoses can freeze and render vacuum-truck recovery difficult.

For on-ice recovery some of the following practices have been found to be very useful:

Partial-depth ice slotting in the surface of the ice to create recovery trenches and catchment sumps for oil; Contaminated snow and ice harvesting for later melting and recovery; the creation of snow-berms and ice-berms (water-spraying of snow berms) also helps limit the spread of spills.

For in-water recovery during ice and partial ice conditions, cutting recovery holes in the ice is the simplest method. Surface basins can be created in the ice and then opened with ice-auger boreholes for

oil collection areas. Ice augers can also be useful for assessment of under-ice oil. Full-cut ice slots can be cut through the ice to allow for oil collection and recovery. This can be especially useful in flowing river conditions to capture oil traveling under the ice. Plywood diversion barriers can also be placed through a slot so that the barrier freezes in place and diverts under-ice oil to a recovery point. Recovery of contaminated ice for later melting and oil separation is also a good method of oil recovery in extreme cold conditions where new ice is entraining a lot of oil.

Stagnant water may require alternative methods to capture oil under ice such as mop-rope recovery between slots. For small frozen ditches and/or melting runoff, underflow dams and straw-bale dams are often preferred for oil collection and recovery.