

**Upper Mississippi River System Environmental Management Program
Fact Sheet**

Glades Wetland Complex Habitat Rehabilitation and Enhancement Project
Pool 26, Alton Pool, Illinois River, Illinois,
USACE, St. Louis District

Location

The proposed project includes Glades Management Area, Twelve Mile Island, Helmbold Island, and Mortland Island. The project area is located on the lower Illinois River between river miles 12-20 in Jersey and Calhoun Counties and encompasses approximately 2,644 acres (Figure 1). Glades Management Area is part of an un-leveed floodplain on the left descending bank. Helmbold Island was an isolated island in 1940, but has since merged with the mainland on the right descending bank. Twelve Mile and Mortland Islands are independent from the mainland. These sites are General Plan (GP) Lands owned by the US Army Corps of Engineers and are managed by the Illinois Department of Natural Resources (IDNR) through a cooperative agreement with the US Fish and Wildlife Service.

Existing Resources

The island sites are typified by low natural levees near the river banks and ridge and swale topography on the interior. Land cover is predominantly floodplain forest with small ephemeral sloughs. Forest composition is predominantly silver maple, eastern cottonwood and green ash, with scattered pecan.

The Glades has emergent aquatic vegetation located in the interior with a ring of buttonbush-swamp privet-willow shrub land that eventually transitions to floodplain forest. These areas are currently managed as moist soil units and are at a higher elevation than the normal river elevation. The forest communities of the Glades are predominantly maple-ash-cottonwood. However there are remnant pin oak forests scattered along the northern and eastern forests of the management area.

Problem Identification

The Upper Mississippi River Habitat Needs Assessment (2000) has identified the need for restoring depth and connectivity in backwaters of the lower Illinois River and improved water management that mimics historic natural river elevations. Backwater habitat on the lower Illinois River has been degraded due to sedimentation and substrate suspension, reducing the quantity and quality of submersed aquatic vegetation and fishery habitat. Current water level management tries to mimic natural river conditions during the summer by drawing down the backwaters and allowing the sediments to consolidate, increasing backwater depth and reducing sediment suspension. However, current drainage systems, low berms and pumps do not facilitate efficient water level fluctuation or have degraded over time.

Twelve Mile and Mortland Islands – See Figures 2 and 5

There has been a loss of deep water and side channel habitat for fishes due to siltation of the side channels. The occurrence of sunken woody structures would improve feeding and resting areas for the fish and invertebrates.

Glades Management Area – See Figure 3

Currently the site does not drain properly as the drainage channels have silted in. The drainage gates are too small allowing water to be trapped in the backwater for a longer period of time following the spring flood pulse. The backwater does not have sufficient depth to function as a backwater habitat for fishes. Current management for waterfowl is inundating much of the floodplain forests for most of the year resulting in high mortality, especially in the more desirable mast producing species.

Helmbold Island – See Figure 4

Sedimentation has filled in most of the side channel around Helmbold Island. The remaining channel is isolated from the river for most of the year degrading its effectiveness as a fishery. A small backwater has also become isolated from the river and no longer functions as an effective fishery. Current management for waterfowl is inundating much of the floodplain forests for most of the year resulting in high mortality, especially in the more desirable mast producing species.

Project Goals

- 1. Enhance backwater and side channel habitat to benefit fisheries, shore birds and migratory waterfowl**
- 2. Enhance floodplain forest and submersed aquatic communities.**
 - Enhance side channel depth, flow and fishery habitat.
 - Enhance backwater habitat connectivity and depth.
 - Enhance and protect submersed aquatic and native emergent vegetation.
 - Improve water level management.
 - Reduce extensive inundation of floodplain forests due to increased water levels necessary for waterfowl management

Proposed Project

The following are the measures that make up one implementable alternative that is in the Federal interest, addresses the area's problems, and achieves projects goals. If approved, a feasibility study resulting in a definite project report would be prepared. As part of this study, a full range of measures and alternatives would be developed and analyzed. To determine these, the project delivery team would utilize existing literature, historic information, area studies, partner input, and best scientific judgment.

Twelve Mile and Mortland Islands – See Figures 2 and 5

Chevrons will be used to enhance the flow and scouring through the side channels around Twelve Mile and Mortland Islands. Multiple structures will be placed in the side channels to provide fishery habitat.

Glades Management Area – See Figure 3

The current 36” gated drainage structure will be replaced with two 42” gated structures to allow the backwater to fill and drain at a rate that more appropriately mimics historic river elevation fluctuations. These larger gate structures will also enhance fish passage, providing access to suitable backwater spawning habitat. A 100 foot hardened spill way will be constructed north of these gated structures in order to protect levee/berm system during flood conditions. A 35,000 GPM pump station will be constructed and replace the current degraded pump. Approximately 8,500 feet of primary and 12,000 feet of secondary channels will be excavated in order to allow for better drainage of the backwater, promoting both emergent and submersed aquatic vegetation. These channels will also provide waterways for fishes moving between backwater holes and the Illinois River. There will be 10-15 of these backwater areas (potholes) excavated throughout the Glades complex to a depth of approximately 8 feet and with a total acreage of 10 acres. Excess fill material from the excavation will be used to construct 14,000 feet of low berm that will isolate hardwood forest on the north side of the Glades complex from long-term inundation. A second berm will provide an additional waterfowl rest area on the south side of the Glades complex. Eight 36” gated drainage structures will be constructed in order to allow water to move through these low berms. Approximately 400 feet of the access road will also be elevated to allow access to the Glades complex and the Coon Creek and Powerline Cabin Subdivisions.

Helmbold Island – See Figure 4

The 11,000 foot Helmbold Island side channel will be dredged 10 feet deep to enhance fishery habitat. Another 8.5 acres of backwater habitat will also be dredged to a depth of 8 feet. Excess fill material will be used to build an outer access road and 3000 feet of low berm. The low berm will allow for better water management within Helmbold and protect hardwood species on the northern part of Helmbold Island. It is not intended to provide for flooded timber on the north side of the berm. Two 4’x4’ box control structures will be installed. These will allow fish passage and enhance water control. Three 36” gated structures will be constructed in the proposed northern berm to drain the forested area through Helmbold.

Implementation Considerations

The project has been endorsed by the River Resource Action Team. A transition plan has been developed for EMP and the Navigation and Ecosystem Sustainability Program (NESP). Ecosystem Restoration projects are being formulated for compatibility between the two programs. It is anticipated that this project could easily transition between the two programs if directed by Congress to do so.

A Value Engineering Analysis will be conducted early on in the study in an attempt to find innovative ways to reduce the total cost of the project without sacrificing key project objectives.

The quantity and type of scouring structures to be used in the side channels around Twelve Mile and Mortland Islands will be determined by hydraulic engineering and bathymetric analysis. Pre-project topographic and forest surveys would aid in identifying the likely location and extent of forest protective berms on the north sides of Glades and

Helmhold Island. The survey will also identify areas that will require drainage structures to ensure that water will not be trapped on the north side of the berms. There are no known mussel beds, eagle nests, or heron/egret rookeries existing within the project area but pre-project surveys would help to determine if there will be any impacts from the proposed structures.

Financial Data

The total estimated cost for this project is \$17.2 million. All of the project features are on General Plan Lands owned by the US Army Corps of Engineers and managed by the Illinois Department of Natural Resources. Accordingly under the provisions of Section 906(e) or WRDA 1986, as amended, the project's first (initial) costs are 100% Federal. Operation, Maintenance, Repair, and Rehabilitation costs are the responsibility of the project sponsor, IDNR. The estimated annual operational and maintenance cost is \$15,000.

Status of Project

This project has been endorsed by the River Resource Action Team.

Points of Contact

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