

FACT SHEET

WEAVER BOTTOMS HABITAT PROJECT POOL 5, UPPER MISSISSIPPI RIVER, MINNESOTA ENVIRONMENTAL MANAGEMENT PROGRAM

LOCATION

Weaver Bottoms is located on the Upper Mississippi River within the Upper Mississippi River National Wildlife and Fish Refuge between River miles 742.5 and 748, just above Minneiska, Minnesota. It is bounded by the main channel on the east and south and the Minnesota mainland on the north and west. The general area is shown in Figure 1.

EXISTING RESOURCES

The Weaver Bottoms area is a 5,500 acre habitat complex dominated by open water, but also includes flowing channels, backwater lakes, isolated wetlands, and forested islands. Weaver Bottoms has several small channels that allow main channel water to enter the area. Although there are a few areas of good vegetation, most areas are poorly vegetated. Experimental growing-season drawdowns were completed in 2005 and 2006. Aquatic vegetation response was good, restoring some of the vegetation. The Whitewater River, a tributary that enters the lower end of Weaver Bottoms, delivers an excessive amount of sediment. Though degraded, this important backwater area supports a diverse population of wildlife including tundra swans, a variety of waterfowl, white pelicans, shorebirds, furbearers, fish, and amphibians.

PROBLEM IDENTIFICATION

Historically, Weaver Bottoms was important for migrating waterfowl and wintering fish, largely due to extensive beds of emergent and submergent vegetation and a series of main channel border islands that protected the area from main channel inflows. Since the late 1960's, Weaver Bottoms has degraded to a large, windswept, shallow lake. A decline in vegetation has reduced its habitat value for fish and wildlife. Island erosion and sedimentation have contributed to this decline. Past channel maintenance efforts to improve habitat had little success in restoring aquatic vegetation in much of the area. Numerous studies have been conducted in Weaver Bottoms to identify causative factors for the loss and continuing lack of vegetation. It is believed that sediment resuspension due to wind-generated wave action and the presence of unconsolidated bottom materials are the primary factors affecting vegetation in the area. Drawdowns in 2005 and 2006 restored some of the aquatic vegetation and consolidated sediments in some areas. However, this temporary response is not sustainable without future drawdowns and/or construction of islands to reduce wind-generated wave action.

PROJECT GOALS

Project goals are derived from the Environmental Pool Plans (EPPs), Pools 1 through 10. The desired future condition for Weaver Bottoms, as described in the EPPs, includes a significant increase in emergent vegetation coverage while maintaining the present acreage of submerged vegetation. Management actions for this area focus on restoring aquatic vegetation, backwater fishery habitat and floodplain habitat. The project goals are as follow:

Protect/enhance/restore quality habitat for all native and desirable plant, animal and fish species

- Protect, enhance, and restore 120 acres of floodplain habitat for a variety of mammals, birds, reptiles, amphibians, etc
- Protect, enhance, and restore 3,500 acres of aquatic habitat for fish, invertebrates, aquatic and semi-aquatic mammals, reptiles, amphibians, waterfowl, shorebirds, etc

Enhance/restore/emulate a sustainable ecosystem (natural water levels, sediment transport and deposition regime, and distribution of water flows across within the Mississippi River floodplain)

- Restore more natural sediment transport and deposition patterns
- Decrease suspended solid concentrations and bedload
- Reduce average wind fetch to 1,000 feet (maximum not to exceed 4,000 feet)
- Minimize adverse effects of elevated water table on soil moisture conditions
- Manage gradient from main channel to backwater areas during below bankfull events
- Optimize flow at varying discharges at specific locations

PROPOSED PROJECT

Proposed project actions include stabilizing existing islands and constructing new islands to provide floodplain habitat, direct flows, reduce impact of wind-generated wave action, and enhance and protect vegetation. These islands would also include trees for future eagle nesting, sand areas for turtle nesting, and mud flats for waterfowl and shorebird loafing and feeding areas. Backwater dredging would be performed to increase connectivity and bathymetric diversity for fisheries. Floodplain forest diversity would be enhanced through planting, elevating islands, and forest management.

The authority for this study and potential project construction is provided by Section 1103 of the Water Resources Development Act of 1986 (Public Law 99-662), as amended.

PROJECT OUTPUTS

The proposed features would protect, enhance, and restore about 3,650 acres of wetland and floodplain habitat for all native and desirable plant, wildlife, and fish species. Targeted animals include eagles, mussels, fish, turtles, migrating waterfowl, waterbirds, and floodplain mammals. Targeted plants include emergent vegetation such as arrowhead, burreed, and bulrush; submerged vegetation such as wild celery and sago pondweed; and floodplain vegetation such as swamp white oak, cottonwood, and button bush.

IMPLEMENTATION CONSIDERATIONS

Backwater dredged material could be used for island construction or topography enhancements. Dredged material from main channel maintenance activities in pool 5 (including dredging for pool-scale drawdowns) could also be used for island construction or topography enhancements. Several actions used in combination, such as island construction and pool-wide drawdowns, can have a dramatic effect on habitat enhancement.

Project features within the closed area must fit with the purpose of the closed area, and construction activities would be restricted during the waterfowl hunting season.

Other actions that may take place in the study area include controlling invasive species, executing pool-scale drawdowns, and habitat management. Sediment input from the Whitewater River will likely continue to be reduced by upland watershed activities.

Planning and modeling of the Weaver Bottoms area is an important step to restoring the habitat. Project features within this area should begin at the upstream end and progress downstream, or as opportunities and funding allow.

FINANCIAL DATA

The estimated cost for the general planning, design, and construction of the project is \$10,000,000. The project features would be located entirely on the Upper Mississippi River National Wildlife and Fish Refuge. Therefore, in accordance with Section 906(e) of the Water Resources Development Act of 1986, the total project cost would be 100% Federal. The U.S. Fish and Wildlife Service manages the lands and would be responsible for operation, maintenance, and rehabilitation of project features, in accordance with Section 107(b) of the Water Resources Development Act of 1992. The OM&R costs are estimated to be about \$5,000 annually.

STATUS OF PROJECT

In the mid 1980s, the U.S. Army Corps of Engineers constructed two islands (Swan and Mallard) under the Channel Maintenance program, and have made other modifications to the islands since the initial construction. A pool-scale drawdown was implemented during the summer of 2005, and attempted again in 2006. However, the 2006 drawdown was terminated after about 3 weeks because of flow and associated navigation channel conditions. The drawdowns and other unknown factors have temporarily improved aquatic vegetation in the area.

The Fish & Wildlife Workgroup, the River Resources Forum, and the System Ecological Team (SET) have endorsed this project.

Partnering organizations include the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and the Minnesota and Wisconsin Departments of Natural Resources.

POINTS OF CONTACT

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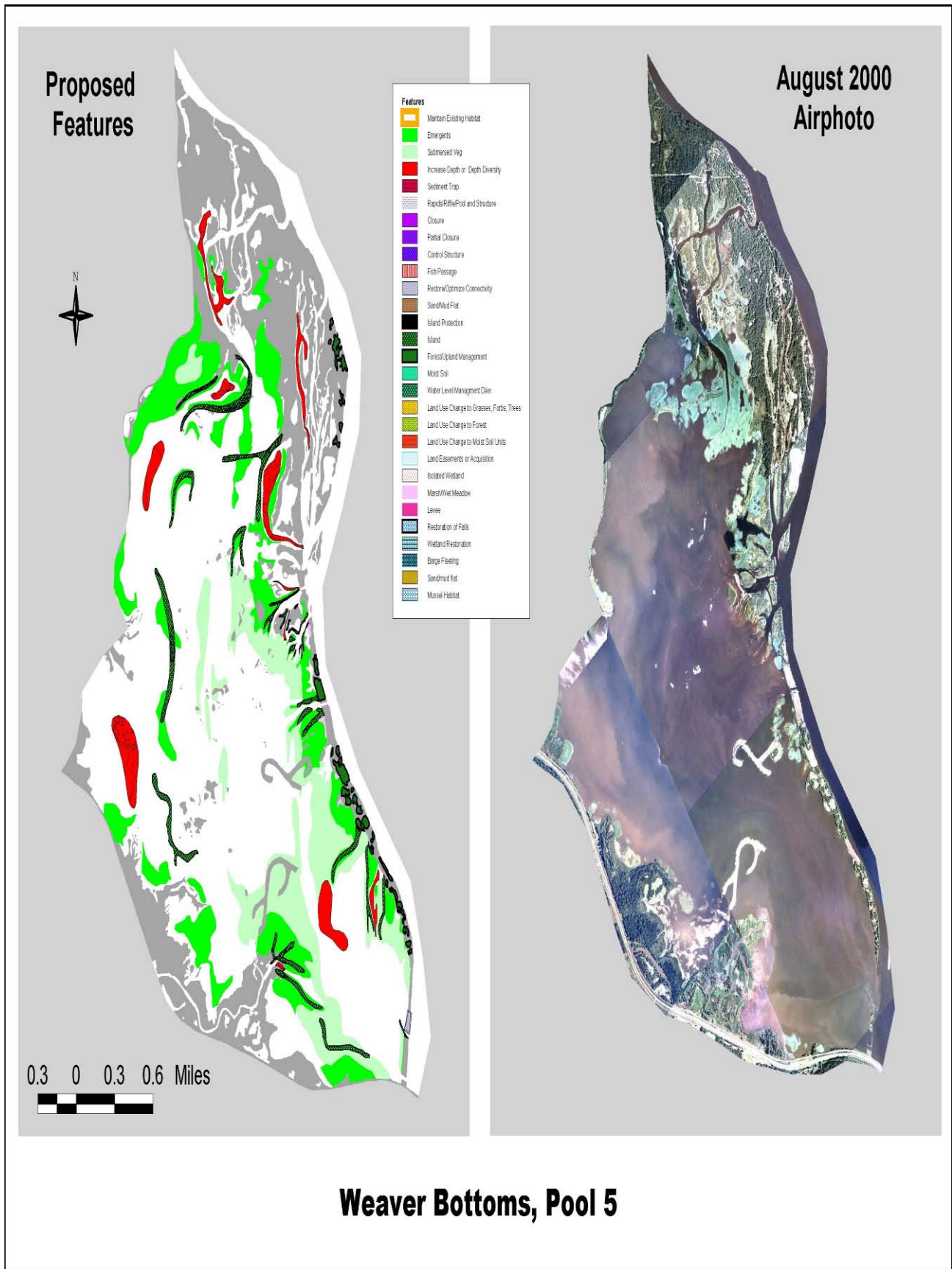


Figure 1 – Weaver Bottoms Proposed Project Features