



James Knox

## HALFWAY CREEK MARSH WORKHORSE WETLAND FUNCTION WATER QUALITY PROTECTION

LA CROSSE COUNTY



# HALFWAY CREEK MARSH

Property Owner: U.S. Fish & Wildlife Service  
Wetland Types Present: marsh

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### WETLANDS SUPPORT CLEAN WATER

Wetlands are commonly compared to kidneys because of their ability to purify water. Acting as natural filters, wetlands remove pollution in runoff that flows from our streets, parking lots, lawns, golf courses and agricultural lands. Wetland plants and microbes can trap sediments, remove nutrients like nitrogen and phosphorus, accumulate heavy metals, and break down animal wastes and a variety of toxic substances such as pesticides. This wetland function is critical to maintaining clean and healthy waters that are drinkable, swimmable and fishable.

While technological means to remove such pollutants from waters are highly expensive, healthy wetlands can provide this service for free. But the filtering capacity of wetlands is not unlimited. Vegetation patterns in wetlands receiving heavy burdens of pollutants typically become altered to favor tolerant species at the expense of sensitive and rare native species, and a loss in filtering function can accompany such wetland degradation.

### HALFWAY CREEK MARSH & SEDIMENT RETENTION

Halfway Creek Marsh is part of an innovative watershed restoration project led by a team of partner organizations including the U.S. Fish & Wildlife Service, Ducks Unlimited, Town of Onalaska, U.S. Environmental Protection Agency and many others. Halfway Creek, a tributary to the Upper Mississippi River north of La Crosse, drains a small watershed where agricultural land use and expanding residential and commercial development have led to flooding and

sedimentation problems in lower parts of the watershed. In 2005-2006, scientists at U.S. Geological Survey, University of Wisconsin-Madison, and U.S. Environmental Protection Agency conducted a study of the sediment record at the marsh. The project team used sediment cores collected from the marsh, along with historical maps, photos and other documents, to reconstruct patterns and rates of historical sediment retention in the marsh from about 1860 to 2006.

Results showed a link between increased sedimentation in the marsh and watershed agricultural activity, large floods, upstream artificial levee construction, channel alterations, and sudden bursts of sediment-laden flood water from upstream dam failures. Historical deposits in Halfway Creek Marsh are tremendous, covering 250-300 acres with layers of clay, sand and silt up to 6 ft thick. The total volume of sediment retained by this marsh is approximately 1.8 million cubic yards! In 1999-2000, the U.S. Fish & Wildlife Service and partners constructed a diversion channel off of Halfway Creek into constructed and restored wetlands to help keep the main burden of sediment and nutrients from reaching the lower, more pristine part of the marsh. Sediment is periodically removed from these constructed and restored wetlands in order to maintain capacity for future sediment storage and enhance the habitat value for wildlife, especially migrating waterfowl and shorebirds. This marsh is hard at work keeping large volumes of sediment pollution from reaching the Mississippi River.

### ACCESS

Visit the U.S. Fish & Wildlife Service online at: [www.fws.gov/Midwest/UpperMississippiRiver](http://www.fws.gov/Midwest/UpperMississippiRiver).

### OTHER EXAMPLES OF THE WATER QUALITY PROTECTION VALUE OF WETLANDS

Just a few other sites where wetlands provide significant water quality protection values include the Capital Springs State Park in Dane County, La Crosse River Marsh in La Crosse County, Moccasin Mike Wetland Preserve in Douglas County, and Ulao Lowland Forest in Ozaukee County.

### Sources:

- Sedimentation History of Halfway Creek Marsh, 1846-2006. Faith A. Fitzpatrick, James C. Knox, and Joseph P. Schubauer-Berigan. USGS Report 2007-5209
- Wetland Functions, Values, and Assessment. USGS Water Supply Paper 2425
- Wisconsin Department of Natural Resources: Wetland Functional Values
- USEPA Watershed Academy Web Module: Wetlands Functions and Values
- Ramsar International Convention on Wetlands Fact Sheet Series: Shoreline Stabilization and Storm Protection



Sediment deposition along diversion channel — James Knox