

# News Release

## *National Wildlife Refuge System*



### **Upper Mississippi River National Wildlife and Fish Refuge**

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### **Unusual Weather Patterns Intensify Challenges with Aquatic Plants on the Mississippi River**

The most common question heard on the Mississippi River this summer from Wabasha to Prairie du Chien has been "What is the cause of all the 'weeds' on the river?" During July, huge mats of filamentous algae and duckweed formed on top of aquatic plant beds in main channel borders and backwaters of the Mississippi River. It was a widespread natural occurrence that made boating, fishing, and other recreational activities in the affected areas difficult. In mid August, large quantities of this plant material washed downriver as a result of a quick and substantial rise in water levels, causing a different array of problems.

"The causes for the large mats are many, including clear water, high nutrients, periods of calm weather, low current, warm water and other factors," said John Sullivan, Water Quality Specialist - Wisconsin Department of Natural Resources. "Of these factors, water clarity was likely the most important."

This summer's scenario likely began with the high water clarity on the river last summer, which provided a boost to the development of new plants this spring. Water clarity allows light to reach the bottom, which is necessary for the growth of aquatic plants. This was followed by very good light penetration in May and early June. "Light penetration monitoring at locks and dams near Genoa and Lynxville indicated the highest values in late spring and early summer since we started checking in 1988," said Sullivan. The clear water enabled aquatic plants to flourish even in water that was 5-6 feet deep, and they quickly reached the surface of the water despite an increase in water levels in mid May.

Sullivan believes that the sizeable zebra mussel population that exists in the river was a large factor in the high water clarity values found in May. Zebra mussels in large numbers have the ability to make the river water clearer because an adult zebra mussel can filter a liter of water per day, siphoning out all the small particles they encounter. Water clearing by zebra mussels in the mid 1990s was a contributing factor in the recovery of the aquatic plant beds from the scarcity which existed in the early 1990s.

The river level peaked about May 22 in Pool 8 (near La Crosse, WI) and then receded until mid June, during which time algae and duckweeds grew in a lush manner. Another rise in water levels occurred at that time due to heavy rains, which floated filamentous algae and duckweeds loose, moving them downstream in the current where they accumulated in the quieter water in the lower part of the pools.

The water gradually receded through July and algae and duckweeds grew vigorously in the quiet conditions provided by the extensive beds of aquatic plants that had reached the waters surface in early June. Periods of calm winds, hot weather and an ample supply of nutrients fueled the growth of algae and duckweeds into the green carpet that was so apparent in late July and early August.

Recently the river level rose to the point where the aquatic plants in backwaters and the main channel border were uprooted by the increased current in the river. "Even clumps of emergent plants that grow on the waters edge such as arrowhead were observed moving downriver," reported Jim Nissen, La Crosse District Manager of the Upper Mississippi River National Wildlife and Fish Refuge. "There was just a tremendous amount of underwater vegetation, duckweed, and arrowhead plants on the move downriver which caused problems for facilities such as the water intake at the Genoa plant for Dairyland Power, and machinery used for the island construction in lower Pool 8."

The river is not alone in facing this challenge. Scott Provost, Water Resources Specialist-Wisconsin DNR reports "We are having a bumper crop of elodea and coontail across the state. Inland waters that have large watersheds are showing similar growth patterns. The rain events this year are increasing nutrient loads in Wisconsin's waters that are creating some trying conditions."

Unfortunately, there are no quick and easy answers. The rooted vegetation will be with us until fall, when it dies back. Then the current will move it downstream again. Typically this can continue until late September or early October.

"I don't expect any major change in the foreseeable future," Sullivan said. "If we see a crash in zebra mussels and this is followed by a spring with high flow in the river with turbid or muddy water, perhaps the vegetation will reset to a lower level due to the reduced water clarity." A reduced amount of the plants that grow below the water's surface will result in less algae and duckweed as the plants provide a stable place for their growth.

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*The Upper Mississippi River National Wildlife and Fish Refuge is the most visited refuge in the United States. The refuge extends 261 miles along the Upper Mississippi River from Wabasha, MN to Rock Island, IL, protecting and preserving habitat for migratory birds, fish, and a variety of other wildlife.*

*In addition to being the most visited refuge in the country, the "Upper Miss" Refuge has the added complexity of a major navigation system, including 11 locks and dams, within its boundary. It is also a world-class fish and wildlife area which harbors 306 species of birds; 119 species of fish; more than 200 active bald eagle nests; thousands of heron and egret nests; spectacular concentrations of canvasback ducks, tundra swans, and white pelicans; and several threatened or endangered species.*