



# Golden Sands

Resource Conservation & Development Council, Inc

1100 Main Street, Suite 150

Stevens Point, WI 54481

(715) 343-6215

[www.goldensandsrccd.org](http://www.goldensandsrccd.org)

## White River Flowage Flowering Rush Post Treatment Survey 09-28-16

### Survey method and area.

On September 28th, 2016, two weeks after a herbicidal treatment, Golden Sands RC&D (Resource Conservation & Development) completed a visual survey for flowering rush on the White River Flowage. Chris Hamerla conducted the survey by kayak and covered the entire shoreline starting upstream ([44.038089, -89.272116](#)) of the treatment area, downstream along the western shore to the dam and back upstream along the eastern shore to the original starting point. All islands, small coves and bays were surveyed as well as shallow areas where native vegetation formed mats on the water surface. These areas historically collect floating rhizomes and young flowering rush plants. All observed flowering rush outside the treatment areas was removed.

A meander survey was completed across the upper portion of the flowage from the treatment area to just downstream of the first dock/house on the west shoreline. This is the area where submersed flowering rush has been observed and hand removal efforts have been focused.

All observed flowering rush locations were recorded using a handheld GPS. The GPS points were added to aerial maps to show the flowering rush distribution. Two maps were created. One shows the entire survey area with all the flowering rush locations and the other is a close up of the treatment area.

A modified PI (Point Intercept) Aquatic Plant Survey was completed. It focused on fifteen points that encompassed the flowering rush treatment area. This survey is done by stopping at predetermined GPS points and using a rake on a pole to record depth, sediment type, and aquatic plant diversity as well relative abundance. The purpose of this survey was to monitor the native plant community for effects from the flowering rush treatment. The entire flowage was not surveyed using the PI method during this survey.

### Results.

In the treatment area, all the exposed pretreatment plant growth was dead. Post treatment regrowth from the rhizomes was observed in an area approximately 250 feet long extending a maximum of thirty feet out from shore. All plants were submersed and roughly six inches tall. This area is the red line on the flowage survey map and the red polygon on the closeup treatment map.

Downstream at the first dock was another area of flowering rush consisting of several dozen plants. These plants were also submersed and roughly six inches tall. They are represented on both maps as a single red point but labeled accordingly.

The remaining thirteen observed flowering rush locations are shown on the map as single red points and are labeled as "plants" if they were rooted in the sediment and "floaters" if they were not rooted. This number is considerably less than what has been found during previous surveys and removal efforts. Of these thirteen locations eight were rooted plants. The other five were floating plants/rhizomes.

No submersed flowering rush plants were observed during the meander survey completed in the upper portion of the flowage. It should be noted that cloudy/rainy conditions made underwater observations difficult.

Data recorded during the modified PI survey was entered into a PI Excel Worksheet so future data can be compared. Flowering rush was observed in this survey area but none was collected at any of the points. Ten native plants were collected: *Heteranthera dubia* - water stargrass, *Ceratophyllum demersum* - coontail, *Elodea canadensis* - common waterweed, *Zazania* - wild rice, *Potamogeton natans* - floating leaf pondweed, *Potamogeton nodosus* - long-leaf pondweed, *Stuckenia pectinata* - sago pondweed, *Myriophyllum sibiricum* - northern watermilfoil, *Lemna minor* - small duckweed, and *Nymphaea odorata* - white water lily. Water stargrass was the most abundant followed by common waterweed, floating leaf pondweed and coontail.

#### **Notable observations.**

The abundance of floating flowering rush plants/rhizomes was much less than previous observations. Three specific hand removal locations showed very little or no regrowth.

The "Down Tree" location on the map used to have two dense areas of flowering rush with random single plants as well. No rooted plants were observed in this location.

By the island, along the western shoreline, there used to be two dense flowering rush locations. One area had only an adult plant and a small plant. The other area had only three medium sized plants. These points are labeled on the map.

Just upstream from the dam, on the eastern shore, is a single point on the map. This was a dense location in 2016 and the flowering rush was in bloom. Only one medium sized plant was observed at this location.

All observed flowering rush outside the treatment areas was removed.