We Energies
2013 Annual Report - Nuisance Plant Control Survey
Chalk Hill Reservoir
FERC Project #2394

Background and Methods

We Energies' Environmental department staff, Mr. Mike Grisar and Mr. Bill Braunschweig, conducted a survey from a boat of the entire shoreline at the Chalk Hill Reservoir project on August 2, 2013. All waters and appropriate wetlands accessible from the boat were evaluated. Those species targeted for the survey included purple loosestrife (*Lythrum salicaria*) and Eurasian water milfoil (*Myriophyllum spicatum*). The visual meander survey included areas of shallow water adjacent to the shorelines. Shallow water was surveyed to a point where the water depth and clarity excluded visibility conducive to observing submerged vegetation. On average, this depth was at approximately 7-feet.

Visual observations for Eurasian water milfoil were made and compared to 2012 survey results. Relative changes in the extent and distribution of Eurasian water milfoil were noted. Specific locations of purple loosestrife were mapped using a Trimble XH GPS unit. Each location was identified as a stand and the number of plants, stems per plant, and relative age of the plants were recorded.

Results and Discussion

Purple loosestrife was observed at a new location in the south end of the Chalk Hill Reservoir in 2010. A single plant was located in the back of a secluded bay along the west side. The plant was found immediately adjacent to a wood duck house that was installed by a third party a few years ago. The entire plant was removed including the flowering heads, stems, and root mass. While the entire reservoir was monitored in 2011 for the presence of purple loosestrife, particular attention was paid to the location where it was observed in 2010 and the south end of Miscuono Island where it was last observed in 2008. No purple loosestrife was found at Chalk Hill in 2013.

Specific mapping of Eurasian water milfoil stand extents and densities were not conducted in 2013, but rather visual observations comparing the 2012 results to observed conditions in 2013. Generally, the distribution and density of Eurasian water milfoil appeared to be much less than that observed in 2012. Example stands where reductions in distribution, density, or both were observed in 2013 include Stands 5, 6, 11, 23, & 45.

Conclusions

It was discouraging that a new location of purple loosestrife was observed in Chalk Hill for the first time in 2010. By removing the plant in 2010, the population was managed early in its infestation. This stand has not been observed since 2010. Continued active removal of observed purple loosestrife will help to prevent the infestation from spreading in Chalk Hill.

An influx of purple loosestrife occurring along public roadways leading to many of the reservoirs was reported in 2010. Purple loosestrife infestations were documented to be increasing exponentially along CTH K leading easterly toward the Menominee River between the Chalk Hills and White Rapids project areas. It appears these populations were managed in 2011 as

the populations were very much reduced. Some of these populations were managed in 2012, but the largest populations were not. Continued management by other parties is necessary to be beneficial in reducing the potential for purple loosestrife to spread in the Menominee River system.

Overall, the Eurasian water milfoil infestation in Chalk Hill appeared to have improved from 2012 to 2013. Consistently, changes in the number of stands, overall coverage, spatial distribution of individual stands, and stand densities have been well documented from 2006 through 2012 on all of the We Energies reservoirs where Eurasian water milfoil is present throughout the Menominee River system. Conditions exhibit a majority of negative trends some years, remain relatively constant in others, and also dramatically improve as observed at Chalk Hill in 2013.

These trends indicate the Eurasian water milfoil population is in flux from year to year. Contributing factors include influences of local and annual climate variances (i.e. precipitation and temperature), the presence of the indigenous milfoil weevil population, extent of milfoil hybridization, and others.

Annual fluctuations in the extent and density of Eurasian water milfoil appear to be due, in large part, to the presence of an indigenous weevil population occurring in the system. After four years of monitoring the weevil population, positive trends were being observed between weevil population and Eurasian water milfoil population fluctuations. These trends indicate the indigenous weevil population tends to increase as the Eurasian water milfoil population increases. Evidence shows the milfoil populations ultimately spike before declining. The weevil populations tend to lag behind the milfoil population spike, and it spikes as the milfoil population begins declining and crashes as observed in some reservoirs. The weevil population spikes are followed by substantial decreases in the respective populations. It appears a cycle occurs between these two populations.