

Final Report

Aquatic Invasive Species grant # AEPP-079-07

Lake Emily EWM-Crayfish

Grant period 1 April 2007 - 31 December 2009



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Hand-pulling Parties: AIS Field staff, Carly Grant and Morgan Marotz, organized a large EWM “pulling party” on May 31st at the east boat landing of Lake Emily. Over 40 people showed up, including participants from the Friends of Lake Emily and the Wisconsin River Academy. The students from the Wisconsin River Academy dove with snorkeling and SCUBA equipment (figures 1,3), while lake residents assisted in paddleboats and pontoon boats. The divers pulled EWM stems, and let them float to the surface. Gary Nilsen’s specially-outfitted pontoon boat has an attached skimmer system that allows for collection of floating stems (see figure 2), and it was driven through the area after pulling took place to collect the majority of the EWM stems. Strong winds and cool temperatures caused the teams to focus on the wind-sheltered Lutz’s Bay. Additional hand-pulling events with Lake Emily residents involved other parts of the lake as well, weather permitting. For 1-2 days after each pulling party, efforts by AIS field staff and the lake association were focused on cleaning up any fragments that washed up on the shorelines.

Figure 1: Divers from Lake Emily “pulling party”



The Friends of Lake Emily offered a bounty of \$1.00/wet pound of Eurasian watermilfoil, and several divers accepted this incentive. The bounty was capped at \$1500.00, all of which was paid out to divers. Gary Nilsen, Director of the Friends of Lake Emily, reported that the bounty was not as effective as they had hoped, because many of the stems were broken off due to poor hand-pulling practices, and the root systems re-sprouted.



Figure 2. Specially-outfitted pontoon boat with the day’s harvest of EWM from a hand-pulling event.

Figure 3. Divers ready to be towed behind the pontoon boat to scout and pull EWM.



AIS Plant Mapping: The Friends of Lake Emily and AIS field staff used a pontoon boat and kayaks to visually search for EWM in Lake Emily in 2007 and 2008. This was done by zig-zagging back and forth across the littoral zone, and mapping each EWM plant or bed that was found. A Garmin GPSMap76 handheld GPS unit was used for this purpose. 2007 and 2008 EWM distribution maps are shown in figures 4 and 5, respectively. Figure 5 uses points obtained from a point-intercept aquatic plant survey, and polygons were created by interpolating between sample points. Figure 4 also shows densities of *Euhrychiopsis lecontei* weevils in Lake Emily in 2007.

Figure 4. EWM distribution in Lake Emily, 2007, also showing milfoil weevil densities.

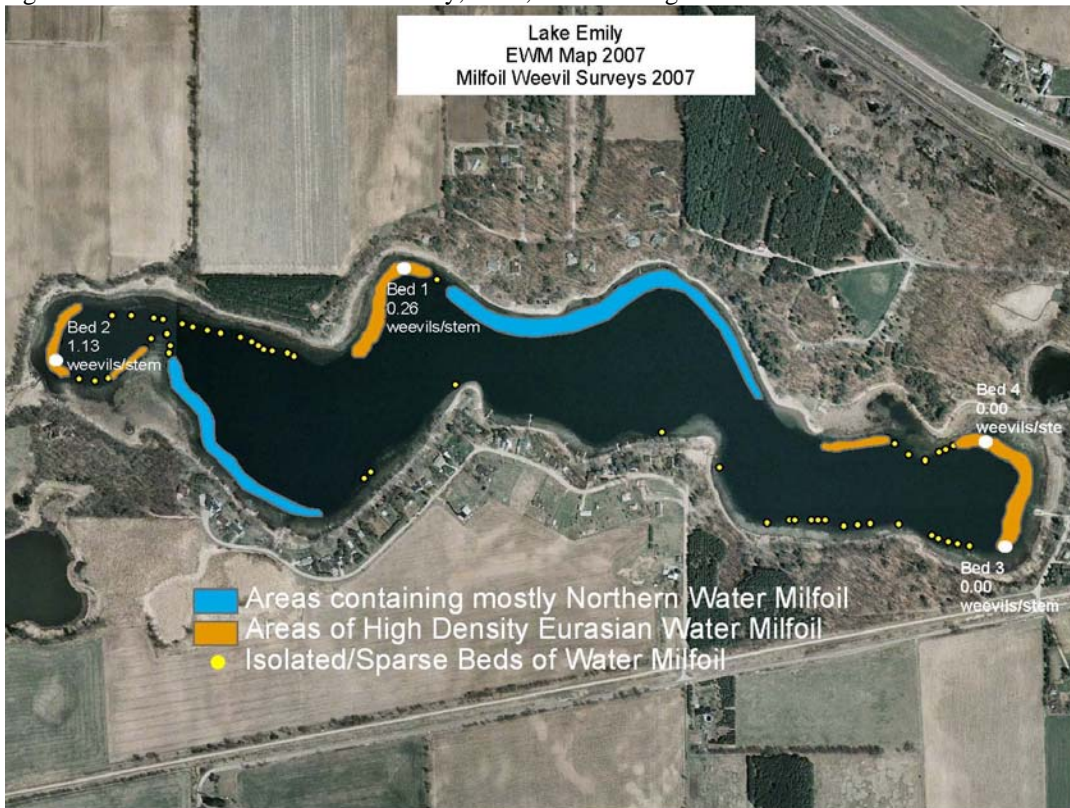


Figure 5. EWM distribution in Lake Emily, 2008.

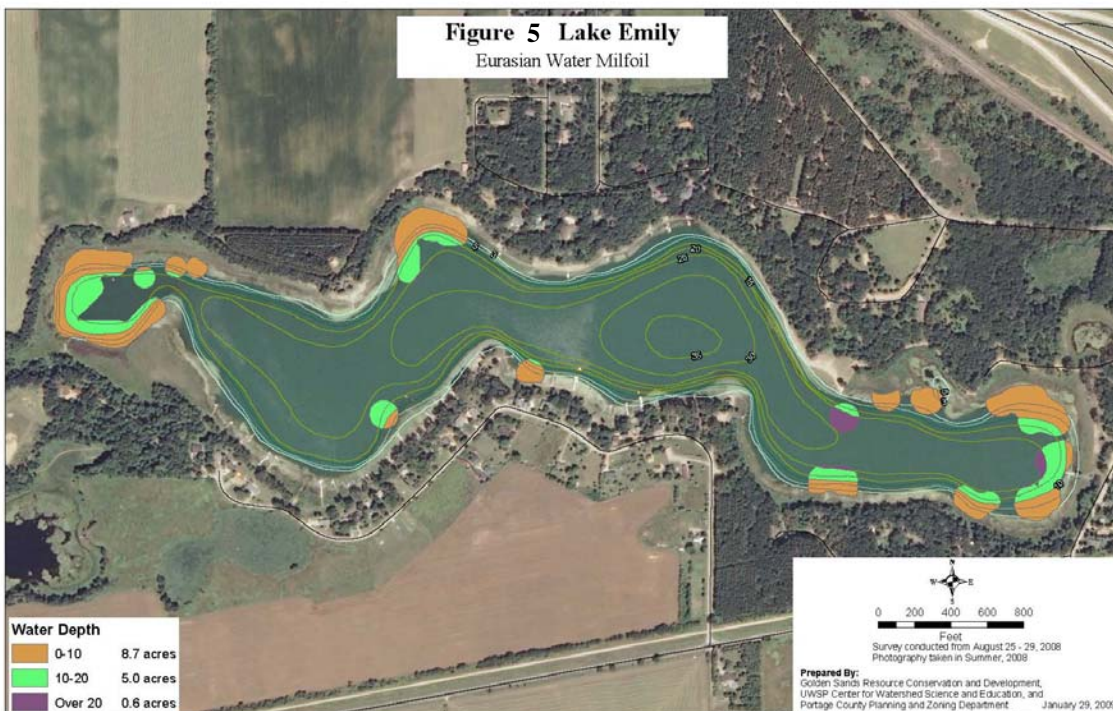


Figure 6. Milfoil weevil densities in Lake Emily, 2008.

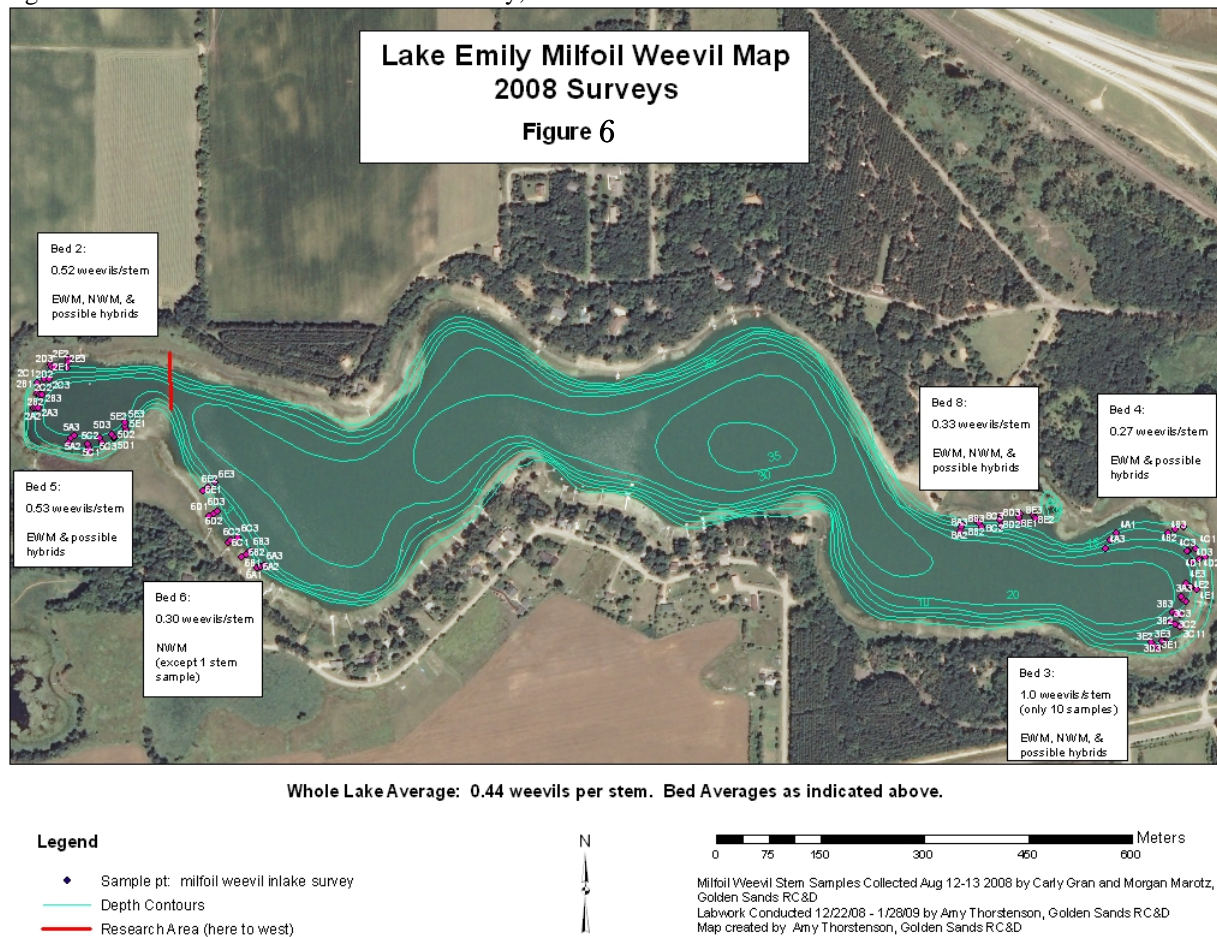


Figure 7. Algal bloom on the west end of Lake Emily, May 6, 2009.



Using maps and their experiences from the year's activities, the Friends of Lake Emily were able to evaluate their success in controlling the EWM. After a public meeting with lake residents and DNR/RC&D staff, the Friends decided that pursuing a chemical herbicide treatment in 2009 was the best option for the future. A liquid 2,4-D application was completed in April of 2009 (9.8 acres) by Cliff's Aquatic Plant Control, with excellent success in killing the EWM. The treatment was so successful that the 2009 point-intercept plant survey did not show any EWM. However, the amount of decaying EWM had an explosive effect on the algal population, evidenced by the bloom

shown in figure 7. The herbicide also bled into the west end of Lake Emily, which was left untreated as part of an EWM study area. Much of the EWM was negatively impacted there as well.

CBCW Boat Checks: On June 10th, Carly and Morgan attended a CBCW workshop at the Weyauwega Public Library, to learn about proper boat inspection strategies. After this training and some hands-on training with Paul Skawinski (Regional AIS Technician), they were ready to perform inspections and train other volunteer inspectors. Carly and Morgan were instructed to staff the boat landing on various days, and at various times, to catch different groups of people at the lake. Paul also trained the AIS field staff on identification of AIS and look-alike native species.

The Lake Emily LTEs partnered with volunteers from the Friends of Lake Emily to conduct boat inspections. This partnership allowed the volunteers to receive interactive training, and allow them to feel more comfortable performing watercraft inspections. When the summer was over, the volunteers were sufficiently trained and experienced to perform inspections on their own.

Build Community Support: AIS field staff developed two newsletters for lake residents and local governments, one in early summer and one in early fall. Two press releases were also distributed to local media, to inform the community about the AIS field staff on Lake Emily, and the progress of the EWM control effort. These pieces also served to encourage and thank volunteers for their donated time helping with AIS management on Lake Emily.

2007 Rusty Crayfish Study: UWSP students planned a rusty crayfish study in Lake Emily, but unfortunately (or fortunately, perhaps), the group could not find many rusty crayfish. Much of the littoral zone in Lake Emily is covered with marl, so rocky habitat is lacking in most of the lake. This may have contributed to the low numbers of crayfish caught by the UWSP group. They decided to continue their study on the Plover River, where the habitat is much more conducive to abundant crayfish populations. See attached report for details.

2008 Study: With permission of DNR, the 2008 study was to assist in collection of baseline data to set up Lake Emily as a study lake for milfoil weevil studies being conducted by UW-Stevens Point. Figures 5 and 6 display the results of survey data collected in 2008. Summary statistics are attached.

2008 Control Methods: Control strategies for combating EWM in 2008 were discussed between the Friends of Lake Emily, with assistance from WDNR and Golden Sands RC&D. Hand-pulling continued, but a biological control assessment also took place. AIS field staff conducted a *Euhrychiopsis lecontei* density survey on Lake Emily, and Amy Thorstenson (Regional AIS Specialist) continued studying the EWM and *E. lecontei* populations in the westernmost bay of Lake Emily (see figures 4, 6).

Figure 8. Carly and Morgan inspecting a boat.

