

## FINAL REPORT-2010

*Nymphoides peltata* Eradication from The University of Wisconsin – Madison's Botanical Garden Pond





## HISTORY

Botany Garden Pond was built in 2006. *Nymphaoides peltata* was first seen in this pond that year, but in small numbers. Each year the population was larger. In autumn of 2008 after the pond was drained, garden staff removed all the plants manually and composted them, but it re-grew in 2009 as if nothing had been done. Plants were manually thinned in 2009, but it re-grew to virtually cover the water surface. Freezing and desiccation over the winter when the pond is drained also has had no effect on this population.

The University of Wisconsin applied for an Aquatic Invasive Species (AIS) Early Detection and Response (EDR) Grant under Wisconsin Administrative Code NR 198. Dr. Fayyaz worked with DNR (Susan Graham) and Dane County (Ron Martin) and eliminated this plant from the pond.



### **ERADICATION EFFORTS – SHORT TERM PLAN**

The short-term plan has already been accomplished, and was determined by UW Garden director and DNR. The pond needed to be drained before a hard frost could damage the plumbing. Before the outlet pipe was opened to allow the water to flow out, the plumbing shop from the UW heating plant installed a filter bag on the outlet pipe from the pond. The filter bag was installed in a manhole and had a stainless steel basket to hold the bag. The pond water drained into this bag before entering the storm system, and caught any seeds. This filter bag was monitored during pond draining to ensure that it didn't come loose, clog up, or show any problems.



### **ERADICATION EFFORTS – LONG TERM PLAN**

The project partners (UW Garden director and DNR) met with Shane Wagner, of the Bruce Company and planned the pond removal, and they followed these steps under supervision of DNR staff and UW Garden Director.



**Removal: 7/6/2010 till 7/9/2010**

1. Shane Wagner, of Bruce Company, supervised his staff in the pond deconstruction and reconstruction according to the DNR Eradication guidelines.





2.UW Physical Plant staff installed and ensured that the pond outlet has the secure filter bag on the pipe through out the project.



3. Contractor installed lath and yellow tape around work site to discourage public from entering the area.



4. All work within the pond work area was done thoughtfully to prevent moving mud or seeds from basin. Boots were hosed off thoroughly, or remain in the basin when workers leaved the pond basin.



5. In the pond, power-washed large rocks surrounding pond border, manually were removed from the pond. They stacked up elsewhere in the garden. These rocks were reused in the new pond. We agreed that power-washing these large rocks would be effective at ensuring no seeds would remain on their surfaces, so these rocks do not need to be disposed of.







6. Wash water was drained from pond.



7. They lined the bed of a disposal truck with a generous sized, double layer of Visqueen plastic sheeting to Prevent contamination of the truck liner for transfer of pond materials to landfill, where all deliveries were tarped.



8. Using flat-tipped shovels, workers scooped up all gravel, place them in buckets, handed buckets up to load on a golf cart, which was driven on paths to a removal truck. Bucket exteriors kept free of mud OR hosed off if they got muddy before taking them out of pond basin to avoid moving mud to the golf cart. At the truck, buckets were dumped into the lined bed of the truck.





9. Shovels, buckets, rubber boots, and anything else that was potentially contaminated were hosed off into the pond. Pond drains were opened to release as much water as possible.



10. As soon as possible after all gravel has been removed, the liner was disconnected from the ground at the circumference, from the waterfall area where it is glued down, and from the 3 drains. It rolled up “like a burrito”, securely tied, and carried to the disposal truck via a crane. Tarp covering the contents was secured.







11. The disposal truck drove directly to the Dane County Rodefild Landfill at 7102 U.S. Hwy 12 & 18, Madison, and disposed of all truck contents, keeping the liner plastic intact to keep the truck bed clean. They were open for drop offs Monday - Friday: 7:00 – 2:45 and Saturday: 8:00 – 10:45. The disposed pond materials were buried within one day by landfill staff.

**Reconstruction: 7/12/2010 till 7/16/2010**

Reconstruction of the UW-Botany Garden pond was done under supervision of Shane Wagner (The Bruce Company) and Dr. Mo Fayyaz ( Director of the Botany Garden). The following steps were taken in order to finalize the reconstruction project.

1. Preparation of the pond bed and cleaning the drainage.



2. Covering the pond with liner.





2. Laying large stones.



3. Sealing Liner to the waterfall.



4. Adding small rock among large boulders.



5. Inserting the skimmer to the pond for drainage of excess water.





6. Using large boulders for the foundation of the pond. They carried to the pond by crane.





7. Adding water to the pond and checking for leak.



8. Finally, the pond was constructed and everything was done according to the schedule.





CONTINGENCY PLAN - Dr. Fayyaz with his staff are monitoring the pond for the invasive plant (so far no reappearance has occurred!) and he has a contingency plan for a response strategy for controlling the reappearance of the aquatic invasive plant. If the plant is found he will;

1. Immediately contact DNR (Aquatic Invasive Species Coordinators for Southcentral Region: Susan Graham 608-275-3329 or Pam Biersach-Pawloski 608-275-3282);
2. Document the plant identity and extent of growth with digital photos.
3. If this is a new infestation (not *Nymphoides peltata* found in 2010-1011), he will fill out DNR reporting form found at this website: <http://dnr.wi.gov/invasives/aquatic/whattodo/>
4. Ensure that the outlet filter is still in place.
5. Lower the pond as soon as possible after finding the plant to expose the full extent of the stems emerging from the bottom;
6. Carefully and completely, manually remove the flowers, leaves, stems, stolons and roots from the gravel layer, being careful to remove each piece of gravel until the intact plant can be removed.
7. Dispose of these plant parts in a secure method/location. It is important that flowers or flower parts are not composted because there is a risk that viable seeds may survive and be spread from the compost material.
8. Refill the pond.
9. Do follow-up monitoring as described above to verify success at eradication.

