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In This Issue

PREDICTING BOATER BEHAVIOR
Clean Boats Clean Waters (CBCW 2013)

Carl Holmgren, BLPRD Commissioner and CBCW Coordinator

We completed our seventh year of the Clean Boats and Clean Waters (CBCW) program for Balsam Lake that I have been involved with. Our program is successful with the help of Unity High School students who sign up to work both volunteer (Community Service) and compensated hours. The compensated hours are funded in part with the help of DNR Aquatic Invasive Species (AIS) grants that we have received since the start of our program. Our current grant covers the years 2012 – 2014.

We started 2013 the week after the 'Wisconsin Fishing Opener'. This was necessitated by the fact we still had ice on the lake May 4th, 2013 (some anglers even tried ice fishing). Our program started May 10th and ended August 28th (volunteers heading back to school). We scheduled hours at all four public landings which include Balsam Lake Village Beach, 46 Store, East Balsam, and Little Balsam at various times with emphasis on week-ends. This gave us great satisfaction knowing that all four of our public landings at one time during the summer had volunteers to work the CBCW program. Activities included boat and trailer inspections (entering and leaving), data collection, informing boaters of the laws in place, and distribute AIS information.

The number of volunteers decreased, however, review of the statistics shows us in a very positive pattern with Inspection Hours, People Contacted, and Boats inspected. All data collected is entered into the State DNR database where reports and data can be accessed at **http://dnr.wi.gov/lakes/cbcw/**.

We did have some reports of uncooperative boaters that I believe is something to expect with people. I encourage all of our BLPRD members (boaters) to introduce themselves to the volunteers and ask them questions regarding the CBCW program when you meet them at one of the landings. They are working to help us keep our lake free from invasives.

Again, I would like to extend an invitation to anyone interested in the program who would like to volunteer and be part of the CBCW program for 2014 to contact me at 715-485-9421. Our training takes place in April at Unity School prior to the opening of fishing.

Special thanks to Unity School staff for their support with my recruiting student volunteers, the Village of Balsam Lake (Lori Duncan) for helping with the time sheet processing, and the Polk County Land and Water Resources Department (Jeremy Williamson and Katlin Holm) for assisting with the CBCW orientation and training.

CBCW SUMMARY STATISTICS

	2007	2008	2009	2010	2011	2012	2013
Unity Student Involved	17	26	43	44	34	44	21
Total Inspection Hours	506	939	1,050	920	908	1,058	873
People Contacted	1,164	2,412	4,375	3,367	4,225	4,047	3,194
Number of Boats Inspected	587	995	1,838	1,669	1,810	1,825	1,407

(Note: Team Leader hours not included with Inspection Hours)

East Balsam Lake Basin Progress Report

We know that the phosphorus levels in East Balsam reach levels that are twice has high as other parts of the lake topping at 70 micrograms per liter. We know that the secchi disk measurements, the standard for measuring water clarity, deteriorate to less than 24 inches by mid July. In comparison Main Balsam secchi disk transparency measurements range 5 to 8 feet. We also know that correcting this body of water was going to take time, money, help and a great plan. So it is time to update everyone on what we have done and what we are doing:

CITIZENS LAKE SAMPLING

To declare a body of water as impaired the Wisconsin DNR requires three consecutive years of water samples, four months during the summer, June through September, with three of the samples indicating phosphorus levels in excess of 35 micrograms per liter. Enter Milt Stanze and Dick Miller, Citizen Lake Monitoring program. Dick and Milt joined together to ensure that the water samples, also known as grab samples, were properly collected and sent off to a certified laboratory for analysis. Milt, drawing off his experience as a past Lake District Commissioner, spoke with Wisconsin DNR representative and was able to get him to agree to accept a phosphorus study performed in 2010 and 2011 by Barr Engineering. That means instead of three consecutive years of sampling, our timeline was shortened. This year's data completes the requirement.

MANAGING CLP

Curley Leaf Pond (CLP) Weed dies of in late June, early July. That process adds phosphorus to the lake and East Balsam has 55 areas of Curley Leaf Pond Weed. This year the chemical treatment failed to suppress any CLP. These unacceptable results have caused Commissioner Loren Johnson to investigate the benefits of harvesting CLP. In the words of Loren Johnson, "There is no hit and miss with a harvester." (See article on page 4: Aquatic Weed Harvester.)

RECONFIGURING THE LAKE'S DRAINAGE

The 2011 Barr Study determined that Balsam Lake experiences a complete change of water about every 3 months. East Balsam significantly lags this rate of water change, (I'm being purposely vague because I don't have the numbers in front of me, but it could be in the neighborhood of 18 months to completely change the water in East Balsam.) Commissioner Howard Seim is pursuing a course of action that could decrease the change of water time by adding another drainage point to the lake at the Southeast end of East Balsam. From an engineering perspective the proposal is doable. The benefits to the lake are twofold; 1) better water level control particularly during the Spring snow melt; 2) increase flowage to East Balsam. Currently East Balsam has one small creek at the Northeast corner supplying fresh clean water to the East Balsam basin.

WATERFRONT RUNOFF PROGRAM

The Waterfront Runoff program began in 2008. It offered technical assistance, education, and limited cost sharing for the installation of water quality practices. The program has not been as successful as it could have been. The Water Front Runoff program's goal is to prevent water from entering the lake from your lawn during a rainstorm. The reason is phosphorous. Phosphorous occurs naturally in the soil and in lawns. A buffer strip at the water's edge with deep rooted plants, (grass is not a deep root plant,) causes that water to be absorbed before it reaches the lake. The ideal buffer strip is 35' wide and contains low growth ground cover vegetation, mid growth plants such as dogwood, and canopy cover provided by trees. Not practicable for homes, cabins or cottages build less than with a 75' setback. In that case any buffer between the lawn and the water's edge is a plus. If your grass goes to the water's edge...then consider that there is an opportunity.

EAST BALSAM BOAT LANDING

The East Balsam boat landing is in a state of disrepair. It is important to East Balsam for several reasons:

- Recreational access to East Balsam
- Service equipment access between the lake and shore, (think aquatic weed harvester.)
- Emergency service access to the lake, for example, extracting an injured person.

The East Balsam boat landing is the responsibility of Georgetown Township. Dave Turbenson with the Balsam Lake Homeowners Association and Commissioner Ray Sloss spoke with the Georgetown Township board on two different occasions about the need to repair the boat landing. Their response was that their budget is constrained and the boat landing is low on their priority. If you are paying Georgetown Township taxes this is an opportunity to help the township fathers understand your priorities.

WHAT IS LEFT TO DO

- If the decision is to purchase an aquatic weed harvester, then a modification of our lake management plan will be required.
- Collect a lake bottom core sample for analysis. Necessary to understand if the lake bottom is a significant contributor of phosphorous.
- Determine the best and environmentally safest method to remove or bind up phosphorous in East Balsam.
- Identify available grants or funded sources to implement a lake restoration program.

Purple Loosestrife in Idlewild Bay of Balsam Lake on August 27, 2013

RAPID RESPONSE PLAN IMPLEMENTED

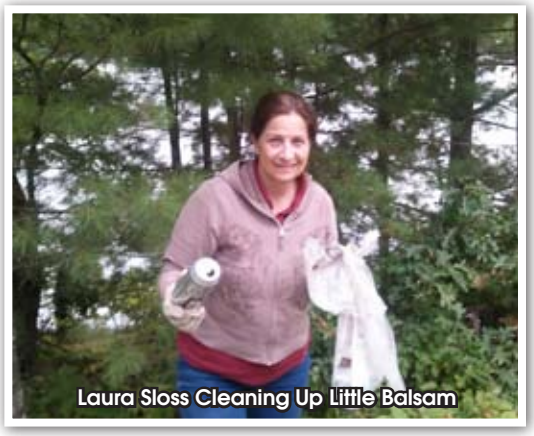
with the discovery of Purple Loosestrife

A letter from Matt Berg, Endangered Resources, LLC, to the Balsam Lake Protection and Rehabilitation Board alerted the commissioners of Purple Loosestrife in Idlewild Bay. Upon receiving notification that Purple Loosestrife, an invasive perennial plant that flourishes at the water's edge and out competes native plant species, Commissioner Howard Seim pulled out the Rapid Response Plan developed just for this type of event.

Balsam Lake District's Rapid Response Plan is designed to bring a management team and with resources to location when an invasive species is identified. The action begins by identifying a project lead, the immediate and intermediate steps to be taken. For this event Commission Loren Johnson accepted the project lead responsibilities and notified Polk County Land and Water Resource Department.

Polk County Land and Water Resource Department will be implementing a biocontrol process. The biocontrol process introduces insect enemies of purple loosestrife. These leaf beetles called Cella beetles feed primarily on the shoots of purple loosestrife. There is also a root-mining weevil species and a flower-eating weevil species that attack purple loosestrife only. They are not a threat to the native plant species. Once the purple loosestrife has been eradicated the beetles and weevils move on or perish.

Before Purple Loosestrife became a controlled (read banned) plant it had a couple of beneficial uses. One of these uses was to provide nectar for honey bees. The other use was decorative and that is how Purple Loosestrife reportedly came to be introduced to Idlewild Bay. It was a garden plant.
If you observed purple loosestrife in your area, "bag it and tag it!" If you observe any invasive species in your area, "bag it and tag it." For plants the process is first to cover the plant with a plastic bag. This keeps the seeds contained. Next remove it at its roots. Finally deliver it to Polk County Land and Water Resource Department along with the meta data, location, date and your best guess of the size of the invested area. Notify any of the Lake District commissioners so that they can follow up on the incident.



Laura Sloss Cleaning Up Little Balsam

Adopt A Boat Landing (near you)

Jerry and Mary Shaughnessy were surprised to learn that the lake information sign at the Little Balsam boat landing had been damaged. The three 4"X 4" support poles had been snapped at their base leaving the sign flat on the pavement until someone stood it back up against a tree. Not too serious but it took nine man hours to replace the 4' X 4"s.

At that Mary offered her time. "The Little Balsam boat landing is just down the road from our cottage." With that Mary offered to keep a vigilant eye on the landing.

"That's what we need," said Commissioner Carl Holmgren. Someone living near the lake's boat landings that is willing to check on the condition of the landing and report any anomalies.

Adopt a boat landing near you. Join Mary Shaughnessy by simply checking on the condition of your boat landing and report any adverse conditions to one of the Lake District Commissioners.

Little Balsam Lake Bottom To Be Mapped

The residents on the North end of Little Balsam for years have watched the rush boundary move southward over the years as sediments from the Rice Creek build in. Restoring that end of the lake to its original configuration by removing the sediments isn't that easy. Wild rice took root in the area. With that the Native Americans became stakeholders. Any dredging of lake bottoms has stiff regulatory hurdles. The Wisconsin DNR is the natural resource stake holder.

Commissioner Dave Wagner proposed mapping the lake bottom elevation. The theory is that by mapping lake bottom elevation changes over time, the Lake District can predict the future impact of Rice Creek sediment rates on Little Balsam. If the trend points to an undesirable condition and we have data to support the assertions, then a strong argument can be made to implement corrective actions.

The equipment needed to map lake bottom elevations has been purchased. It is basically a depth finder that works in conjunction with a GPS. The instrument provides depth and position at regular intervals as the operator travels by boat back and forth across the channel shore to shore.

The last bit of information is the need for a fixed elevation point. This fixed elevation point allows the engineer to correct for changing lake levels when take depth measurements which are relative to the lake level. The fixed elevation marker for Little Balsam is located just to the left of the lake information sign at the boat landing. *The first data run on Little Balsam with the new equipment occurs this month.*

Aquatic Weed Harvester Under Construction

The Lake District's use of chemical treatments to control curly leaf pondweed (CLP) yielded poor results this year and this frustrated the Balsam Lake District Commissioners. As reported at the annual meeting by Commissioner Loren Johnson and Biologist Matt Burke the results were nothing short of unsatisfactory.

CLP is a common invasive aquatic species in Wisconsin lakes. The life cycle of CLP is unique and makes it more competitive than other native plants. In the fall, the plant sprouts from dormant stem structures called turions which lie on the bottom of a body of water. Young plants remain alive and active under ice during the winter and in the spring, their rapid growth can create a dense mat which lie just below the water's surface. These mats in turn shade and can suffocate other vegetation. In the late spring and early summer, the flower spikes arise above the water's surface. The plants mature, the fruit drops to the bottom of the body of water and the cycle repeats itself. The end of the cycle occurs when the plant dies, drops to the bottom of the lake and provides a biomass for the next generation.

Loren Johnson
Comissioner

Weed Harvester Revisited

Commissioner Loren Johnson decided it was time to revisit to process of aquatic weed harvesting again. This drew him to Blake Lake to speak with Jim Maxwell and Ford Elliot. The Blake Lake's Lake District has owned an aquatic weed harvester for six years. In that period Jim and Ford gained valuable experience and were willing to share their experiences with Loren and Ray Sloss. Big Blake Lake is a 208 acre lake located in Polk County. It has a maximum depth of 14 feet. Big Blake Lake had an infestation of CLP. (East Balsam is 540 areas, has a maximum depth of 14 - 16 feet and has an infestation of CLP.)

THE RESULTS OF HARVESTING ON BLAKE LAKE HAVE BEEN POSITIVE:

- Five years ago The North end of the lake was not navigational. The dense aquatic weed mat would build on props and inhibit boating navigation. It took five years of harvesting before results were noticeable. Harvesting prevented CLP turions from reseeding. Preventing reseeding of CLP causes a break in the plant's life cycle.
- The harvested weeds are removed from the lake where they were readily accepted by the local farmers for their beneficial characteristics as a biomass.
- The maintenance on the harvester was minimal, 7 grease zerks and routine diesel motor maintenance.

There are four control methods for treating curly leaf pondweed infestations:

CHEMICAL

Diquat, endothal and fluridone are three good control options, especially when applied early, prior to production of turions. Diquat and endothal are both fast-acting contact options that will quickly kill the foliage they touch. Both options can be used for spot treatment or treatment. Fluridone is a systemic option that will kill the entire weed root and all. This option is best applied early spring to new growth. It must be applied to the entire lake and is not recommended for spot treatment. (Endothal was the chemical used on Balsam Lake's CLP beds.)

MECHANICAL

Hand pulling is labor intensive and time consuming. Timely cutting the plant at its base with a harvester can prevent turion production. It also removes the biomass from the lake. The risk with the harvester is that the process may create weed fragments. Weeds will re-root from fragmentation, so removal of all fragments is necessary.

BIOLOGICAL

Grass carp will consume Curly Leaf Pondweed. Recommended stocking rates are 7-15 fish per surface acre.

BARRIERS

Barriers that block sunlight that weeds need to grow. This option will have to be anchored and routinely maintained.

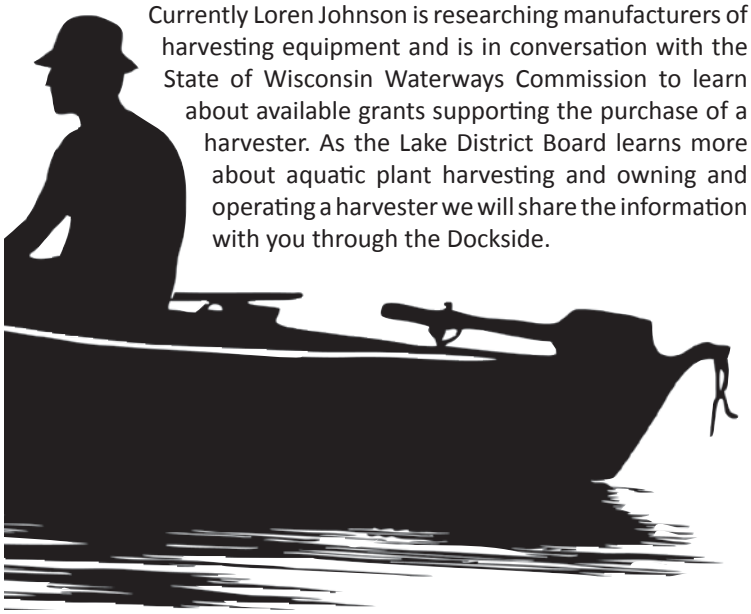
Prevention is an ideal way to prevent spread of Curly Leaf Pondweed. Be sure to clean your boat and trailer of any weed growth before launching or removing your boat from any water body. Commissioner Carl Holmgren runs the Clean Boat Clean Water (CBCW) program each year monitoring Balsam Lake's public boat landings. This program help to keep invasive species out of Balsam Lake. It also helps keep our CLP from spreading to other lakes.

- The unit uses vegetable oil as its hydraulic oil. I assume that this makes a catastrophic event less damaging to the environment.
- The Wisconsin DNR does maintain some operating restrictions;
  - No operation within 10 feet of docks,
  - No harvesting Lilly Pads,
  - There were other distances restrictions that I can't accurately recall.

THERE WERE SOME NEGATIVES:

- Some lake residences objected to the harvester's appearance on their lake. Some objected to the noise. Understandable, the harvesters are not "pretty" to look at and Big Blake Lake is narrow and is located in a valley. The physical configuration would tend to concentrate noise.
- The maximum harvesting depth is about 6 feet.
- Blake Lake's Aquatic Weed Harvester.
- Harvesting can create weed fragments and weed fragments will germinate if not removed.
- There is some support equipment required such as a trailer for transporting the unit when moving it to and from storage. Harvesting The trailer doubled as a transport for hauling harvested vegetation.
- Occasionally the harvester will pick up a turtle or fish. The good news is that they enter the harvester above the cutting head and can easily be returned to the water unmolested.

Currently Loren Johnson is researching manufacturers of harvesting equipment and is in conversation with the State of Wisconsin Waterways Commission to learn about available grants supporting the purchase of a harvester. As the Lake District Board learns more about aquatic plant harvesting and owning and operating a harvester we will share the information with you through the Dockside.



MILL POND COUNTY I BRIDGE

Construction Began September 16th

Completion by Halloween

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Available for Balsam Lake properties only

Dock Side

Balsam Lake Protection & Rehabilitation District
P.O. Box 202
Balsam Lake, WI 54810

2013 - 2014 Meeting Schedule

March 16th
April 20th
May 18th
June 15th
July 20th - Annual Meeting
August 17th
September 21st
October 19th
November - No Meeting
December 21st
January 18th, 2014
February 15th, 2014

Polk County Business Center
Lower Level Conference Room
Third Saturday of the Month
8:30 a.m.

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