

Dock Side

East Balsam Alum Treatment Update

The first of four alum treatments was applied to East Balsam Lake during the week of June 15, 2020. The entire application took six days to complete by HAB Aquatic Solutions, the contractor selected by the BLPRD, with little interruption. The first treatment of 164,400 gallons of alum was applied over 300 acres between June 15th and June 20th.

HAB Aquatics used a boat with injectors and a GPS guided system. The alum was injected into the east basin water, creating an aluminum hydroxide floc that settled to the bottom of the lake at approximately two feet per hour. As the alum floc settles, it binds to the phosphorus in the water. The result of this is it prevents algal blooms that we see in late July and early August.

Before the June 2020 application, East Balsam exhibited high summer phosphorus and chlorophyll levels. These high levels exceeded Wisconsin State water quality standards. The bottom phosphorus was largely responsible for generating algae blooms.

The partial alum treatment in June resulted in substantial improvements in the water quality. Average summer phosphorus declined below the Wisconsin State WQ standards and the chlorophyll concentration also declined, substantially improving average summer water clarity greater than six feet.

Overall, the summer of 2020 saw greater than 50 percent improvement in all water quality indicators. Average summer water clarity improved by more than 80 percent, surface and bottom phosphorus concentrations improved by 50 percent or greater, and algal chlorophyll concentrations were improved or reduced by greater than 60 percent.

While the 2020 alum treatment was largely successful, more treatments will be needed to suppress phosphorus recycling for the sediment of East Balsam Lake. Future partial alum treatments are scheduled for the years 2022, 2024 and 2026.

Thank you to Bill James and his staff at the UW Stout for monitoring the East Balsam project. This monitoring will continue each summer during the months of May through September each year. ●



In this issue...

PAGE 2
Chairman's letter

PAGE 3
Alum improves water clarity in East Balsam

PAGE 4
CLP harvesting wrapup

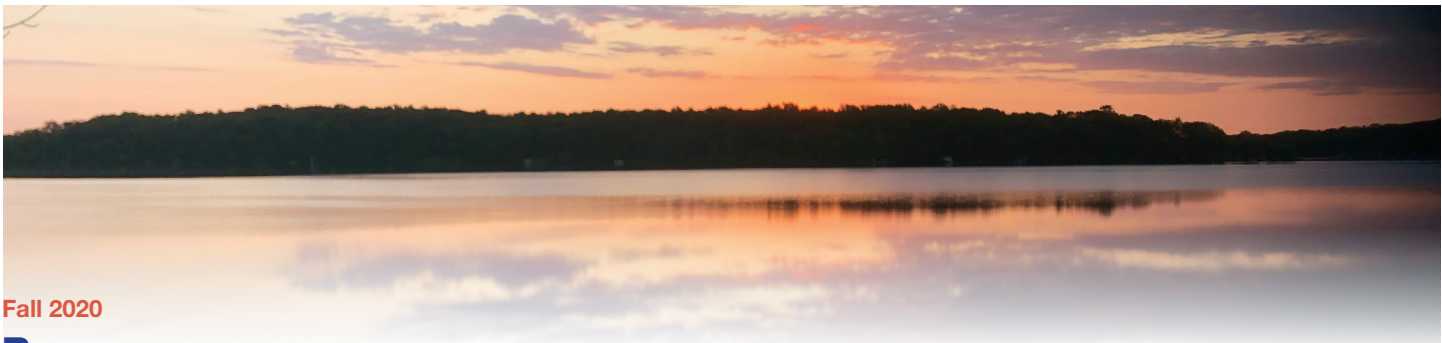
PAGE 5
Purple loosestrife locations
New District commissioner

PAGE 6
Rice Creek Sediment Basin

PAGE 7
No wake zone

PAGE 8
CBCW Update

The HAB Aquatic Solutions barge applying alum to East Balsam Lake this past summer. Water quality improvements were evident over the summer. See page 3 for more information.



Fall 2020

Reflecting on Memorial Day weekend 2020, I witnessed a likely effect of the Covid virus—less activity at boat ramps and on the lake. The summer season then came on like gangbusters as many folks sought refuge from urban areas and took advantage of everything remote.

Watercraft safety, lakeshore erosion and dock and equipment damage has been an ever-growing discussion in the past few years. Our Board has initiated information gathering with the assistance of District members, the BLHA and Village of Balsam Lake to attain a greater understanding of the water patrol activities on the lake.

If you missed the 2020 annual meeting, it took the form of an old fashion gathering of our electorate on the courthouse steps (Unity schools). Thanks to all in attendance for an interactive meeting under sunny skies.

Harvesting / Herbicide Our harvesting team had an active season as they continued to successfully reduce Curly Leaf Pond Weed and harvest what appeared to be a healthy crop of native plants for navigational purposes. More information follows in this edition.

East Balsam Water Quality / Alum The initial monitoring data suggests that the District's East Balsam water quality project was successful as the impact on phosphorous, chlorophyll and water clarity was favorable. More information can be found in this newsletter.

Water Runoff / Healthy Lakes Healthy Lakes native plantings, rain gardens and diversion projects will continue to be partially funded through the District and DNR grant funding in 2021. We have received an extension for our unused DNR grant funds that will allow for 75 percent funding up to \$1,000 for approximately ten projects on a first come, first served basis. Please contact me at 612-508-0879 if you have interest in a Healthy Lakes project.

Clean Boats Clean Waters (CBCW) It was a late opening for CBCW in 2020. A state edict, with the blessing of the DNR, prevented us from performing boat and trailer inspections at our boat ramps during the month of May. We typically train inspectors and monitor the boat ramp beginning in the first or second week of May and continue to do so through September/October. We began monitoring June 1 and were eager to continue this important aquatic invasive species (AIS) prevention program.

A warm welcome to our new board member Dale Ulbrich! His appointment fills a vacancy created by a commissioner resignation. Dale previously volunteered for committee work for the District and we look forward to his continued contributions as a commissioner.

Thank you to our District members, commissioners, employees, volunteers, consultants, DNR and suppliers who generously share their time and talents for the benefit of the lake.

Wishing you a healthy winter season. ●
— Tom Kelly

**Balsam Lake Protection & Rehabilitation
District Commissioners**

Tom Kelly, Chairman
1849 Orchard Hill
Mendota Heights, MN 55118
612-508-0879
Email: tkelly56@comcast.net
Term Expires 2022

Dale Ulbrich
1342 185th Avenue
Balsam Lake, WI
612-819-8361
Email: dalerulbrich@yahoo.com
Term Expires 2021

Bill Mork, Vice Chairman
680 Alvarado
Plymouth, MN 55447
763-699-7792
Email: bmork@wmmorkco.com
Term Expires 2023

Andy Wilhoit
2249 Fieldstone Drive
Mendota Heights, MN 55120
651-402-5003
E-mail: Andy@Wilhoit.org
Term Expires 2021

Dave Mariani, Secretary
1875 Pine Island Park Street
Balsam Lake, WI 54810
Home: 651-492-3313
Email: dmmaria@msn.com
(Appointed by Polk County)

Rod Preble
815 Park Drive
Balsam Lake, WI 54810
715-497-8913
Email: rod.preble@outlook.com
Term Expires 2023

Gary Schneider, Treasurer
601 Idlewild St #101
Balsam Lake, WI 54810
612-210-3948
Email: Cheeser13@live.com
(Appointed by the Village of Balsam Lake)

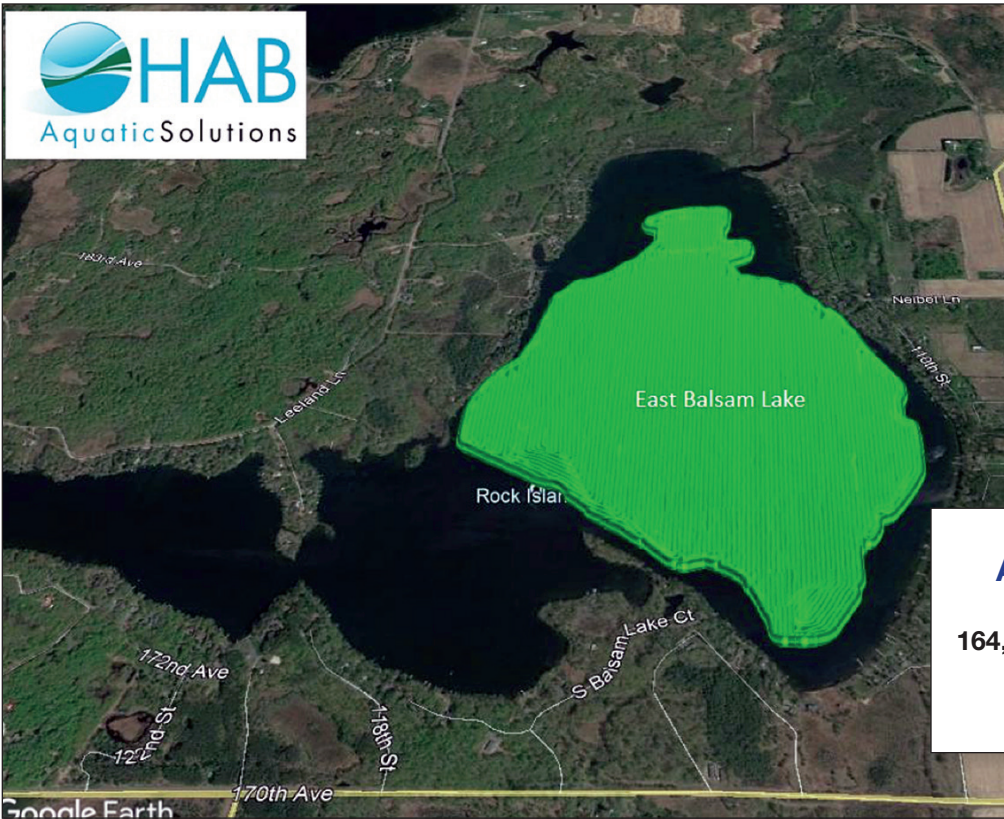
www.blprd.com

Contact us

Please contact the commissioners with any questions, comments or concerns you have. Commissioners meet on the third Saturday of the month, starting at 8:30 a.m. at Polk County Business Center, lower level conference room. You are welcome to attend the meetings.

BLPRD Meeting Schedule

2020	2021	
November 21	January 16	July 17 Annual Meeting
December 19	February 20	August 21
	March 20	September 18
	April 17	October 16
	May 15	November 20
	June 19	December 18

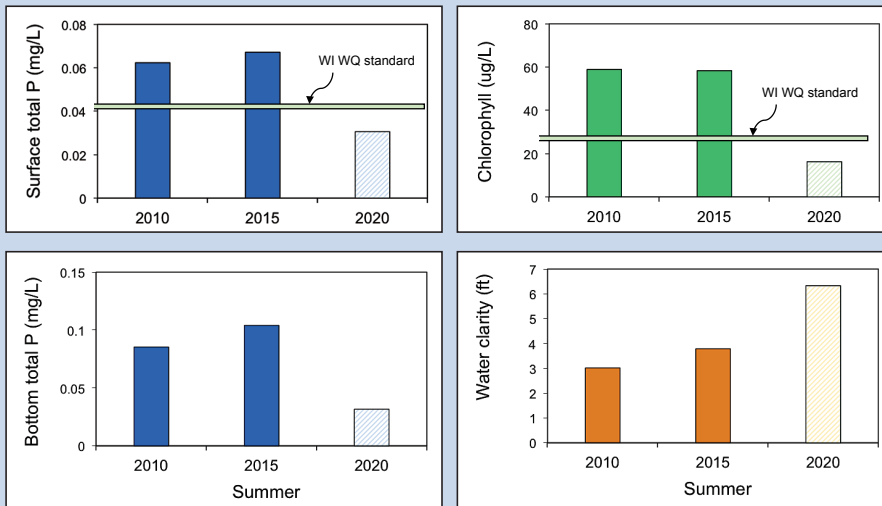


The alum application to East Balsam Lake this past summer resulted in improved measured total phosphorus and chlorophyll levels, bringing them within Wisconsin state water quality standards.

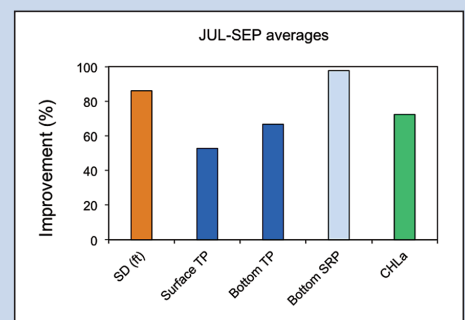
East Balsam Lake Application Coverage Map

164,406 gallons of Aluminum Sulfate applied over 300 acres
June 15-20, 2020

Average (between July and September) summer conditions



Improvement in summer average conditions as a result of alum treatment



SD = water clarity or Secchi Disk
TP = total phosphorus,
SRP = available phosphorus for algal growth
CHLa = algal concentration as chlorophyll

Average summer (July through September) conditions in East Balsam Lake before (i.e., the summer of 2015 and 2015) and after the first alum treatment (i.e., 2020) and the percent improvement as a result of alum application in 2020. WisCalm goal denotes the Wisconsin DNR water quality goal for shallow northern lakes.

	Before alum treatment (2010 & 2015)	2020 alum treatment	Improvement	WisCALM Goal
Surface total phosphorus	65 ug/L	31 ug/L	53%	< 40 ug/L
Bottom total phosphorus	95 ug/L	32 ug/L	67^	
Bottom available phosphorus for algae	51 ug/L	Not detected	98%	
Algae as chlorophyll	59 ug/L	16 ug/L	72%	< 27 ug/L
Water clarity	3.4 ft.	6.3 ft.	86%	

CLP/Harvesting Update Year-End

Another Summer Gone

We began harvesting curly leaf pondweed this year on June 16 and ended on August 27, as compared to 2019 when we started on June 2 and ended on September 10.

This year we started later than in previous years due to the late emergence of CLP. Winter snow cover and spring water temperatures are the major factors in CLP growth.

Again, this year CLP was mixed with native aquatic plants in most areas we harvested and was sparse and spaced in the beds. CLP beds were smaller in area than past years.

In past years we have published the year-over-year comparison of the major harvesting statistics. This year we added *average pounds per day*, one more metric to track harvester operating efficiency. We use this data to do a self-assessment of how well we managed hours to accomplish our goals.

Comparing to previous years, 2020 was very similar to 2018, with 2019 being similar in average pounds per day but requiring more days to harvest. In 2019 the Beds were larger than this year and sparser in growth. This required more time/days to cover the same water surface area.

The outlier is 2017. That was the year we had a major outbreak of CLP, mostly east of Big Island and around Paradise Island, approximately 100 acres of CLP in those two areas alone. Our efficiency in these areas was greatly improved due to the close proximity to Forest Circle landing where we unload the harvested plants.

Another metric is total cost of operation (see tables below).

Going forward we will utilize these tools to track costs and efficiencies.

Have a good winter and see you in the spring. ●

—Rod Preble



Curly leaf pondweed, Potamogeton crispus, is an invasive plant that grows in lake water 3-10 feet deep. It grows well in cold temperatures, even under ice. In spring it can shade out desirable native plants and form dense mats that make it difficult to boat and swim. When the plant dies back in summer it releases nutrients which can cause algal blooms and other problems. It is easily spread by boats and trailers carrying plants from lake to lake.

Harvesting Daily Record (Full Year)	2017	2018	2019	2020
Harvester loads	89	49	61	50
Truck loads	43	24	24	25
Total volume (cubic ft.)	40,050	21,825	30,375	25,000
Total weight (pounds)	653,705	356,233	495,781	408,050
Days worked	22	21	27	23
Average pounds per day	29,714	16,963	18,362	17,741

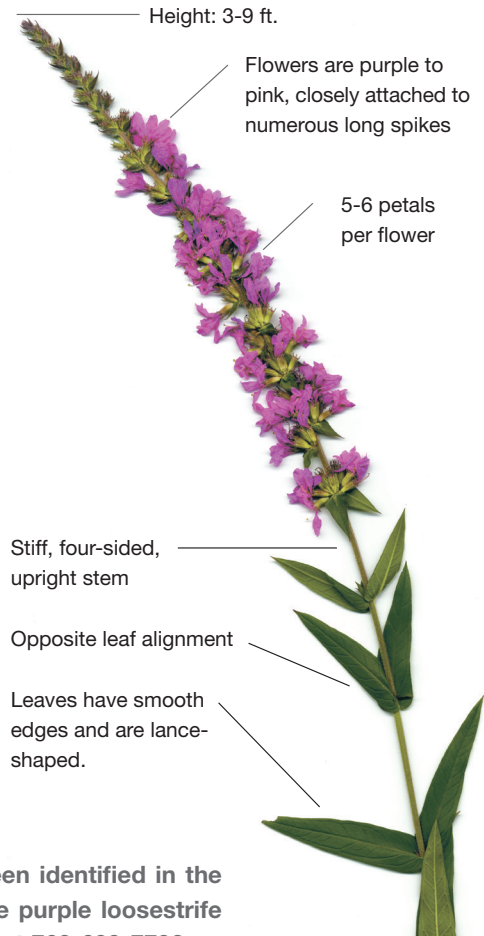
2020 Total Cost of Operation, Expenses	
Total Payroll Cost	\$5,118.00
Total Maintenance Cost	\$469.71
Total Fuel Cost	\$432.15
Total Operating Cost	\$6,019.86

Total pounds harvested	408,050
Total man hours worked	355.50
Cost per pound	\$0.015
Cost per man hour	\$16.93

Learn more

See the spring issue of Dockside for maps of the CLP beds being treated.

Purple Loosestrife Identified Around Balsam



The invasive purple loosestrife, *Lythrum salicaria* & *Lythrum virgatum*, has been identified in the locations shown above, near the Village beach and boat landing. If you notice purple loosestrife around the lake, note the location and contact BLPRD Vice Chairman Bill Mork at 763-699-7792, or email: bmork@wmmorkco.com. Many plants resemble purple loosestrife. Use the information here to help you accurately identify it.

Purple loosestrife grows tall and fast and spreads rapidly, crowding out native plants that support our birds, pollinators, and wetland animals. As a result, recreational opportunities like hunting, trapping, fishing, bird watching and nature study decrease in wetlands. Once established purple loosestrife is difficult to control. ●

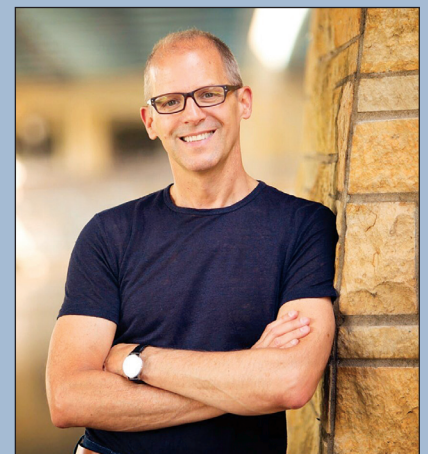
Many garden plants resemble purple loosestrife. Use the information here to accurately identify it.

Meet New Commissioner Dale Ulbrich

Dale Ulbrich joined the BLPRD in June 2020 to replace a departing commissioner after one year of a three-year term. Dale recently built a retirement home on Balsam Lake and moved in during October, 2019. Originally from Chicago, Dale comes to Balsam Lake by way of Minneapolis where he spent the last 30 years working for Medtronic Research and Development.

Dale has two grown children, Andrew and Claire, who he loves spending time with on the lake. Dale is passionate about being on the water—boating, water skiing, and enjoying the ice and snow during the winter.

Protection of water quality and habitat for wildlife is very important to Dale because it is the nature here that keeps life on Balsam Lake ever changing and very interesting. He is happy to have the opportunity to continue the good work of the BLPRD in its mission to protect and improve the quality of life on Balsam Lake. ●



Is Sediment Basin Effective For Balsam Lake Water Quality?

By Dale Ulbrich, BLPRD Commissioner

In 1998, the Balsam Lake Protection and Rehabilitation District created a watershed project involving the construction of a sedimentation basin to reduce phosphorus loading into Balsam Lake. Phosphorus is a nutrient that feeds the growth of algae blooms and the overgrowth of lake aquatic plants.

The goal of a sediment basin is to reduce unnatural levels of phosphorus from being loaded into a lake. Lower levels of phosphorus results in less, more natural levels of algae and aquatic plants living in a lake, leading to improved water quality.

Rice Creek is one of several creeks that feeds water to Balsam Lake, meandering through agricultural land as it makes its way to Balsam Lake. Over the course of Rice Creek, phosphorus in fertilizer runoff and soil erosion from surrounding fields would enter the creek with rainfall and snowmelt.

Historically, soil and fertilizer were carried with the creek's water flow into the north end of Little Balsam Lake. Then, in 1999, the BLPRD sponsored construction of a sedimentation basin on Rice Creek through a grant from the Wisconsin Department of Natural Resources. This sedimentation basin is essentially a widening of the creek. Additionally, the basin has an increased depth compared to the natural creek depth.

The constructed basin is essentially a pond of about 200 feet in width, 600 feet in length, and a depth of six feet. The Rice Creek sedimentation pond is located west of 155th Street, a half-mile before Rice Creek enters Balsam Lake. The effect of this widening and increased depth is a slowing of the water speed of the creek. The theory is that the slower water speed would allow the fertilizer and soil runoff to settle in the bottom of the pond before the water continues on to enter Balsam Lake.

So, what has happened in the last 20 years since the construction of the sedimentation basin?

A survey of the depth of the Rice Creek sedimentation basin in September of this year revealed that the basin is working exactly as planned. Sediment depth was measured starting from the Rice Creek entry point of the basin. Additional sediment depth measurements were taken every ten feet.

Where Rice Creek enters the sedimentation pond, the six-foot depth of the pond is almost completely filled with soil runoff. A measuring-stick was pushed down through the sediment to the sand and gravel bottom of the sedimentation basin. Only a few inches of water pass over the top of the sediment (see photos on page 7).

For the first 130 feet of length of the pond, sediment is almost six feet in depth. The slowed water flow in the basin allows the phosphorus rich soil runoff to settle in the basin. Today, not quite one-third of the pond is full soil sediment, that before the basin would have ended up in the lake to feed algae blooms and encourage an over-abundance of aquatic plant growth.

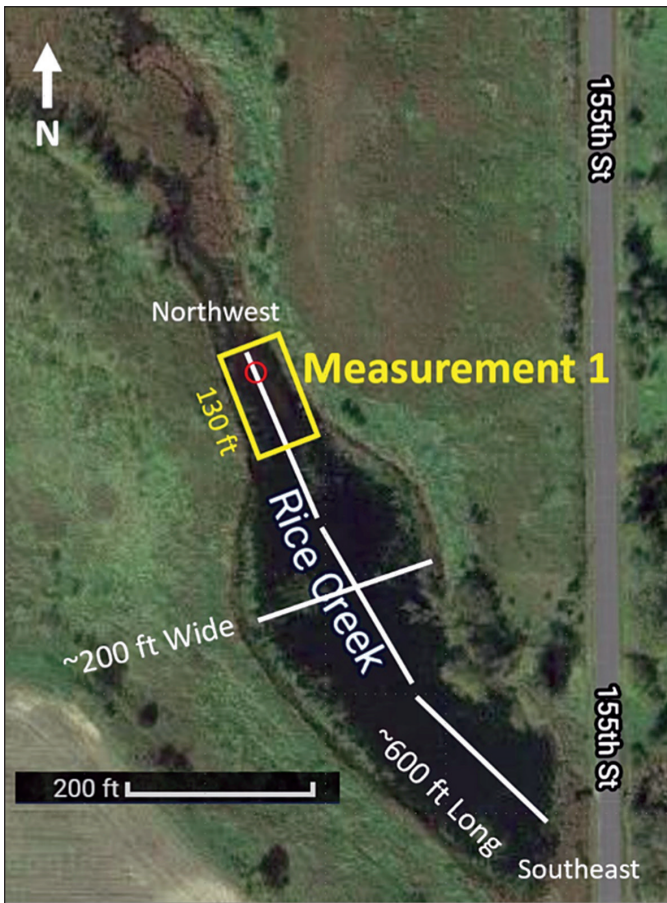
What will happen next to the sedimentation pond?

When the pond is half to three-quarters full of sediment, the sediment will be removed to maintain the proper functioning of the basin. This maintenance will allow the pond to continue to collect soil and nutrient runoff before it can enter the lake.

At the rate of fill observed over the past 20 years, it will take another 20 years or so to reach a point where the sediment will need to be removed. In the meantime, water quality is improved from the Rice Creek entry source contributing to the health of Balsam Lake. ●

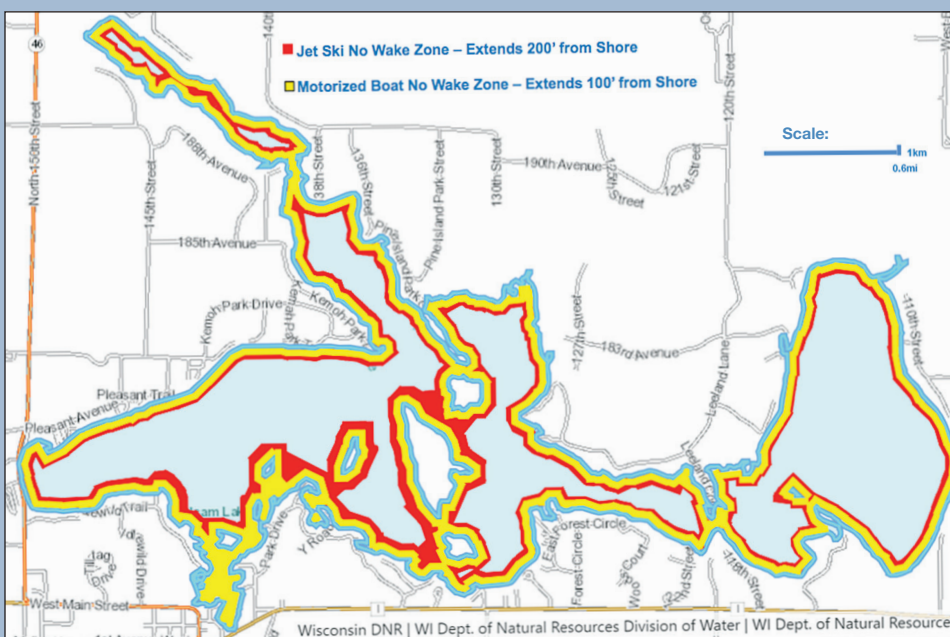


The Rice Creek Sediment Basin location is shown above bordered in yellow.



Measurements of the sediment levels were taken where Rice Creek enters the sedimentation pond. The water depth to sediment is four inches in the measurement area outlined in yellow, above.

Balsam Lake Slow No Wake Zones for Motorized Watercraft and PWCs



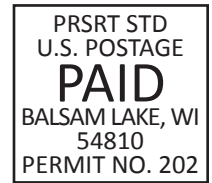
Slow-no-wake means moving as slow as possible while still maintaining control of your boat's direction. These are the Wisconsin slow-no-wake rules:

The 100 Foot Rule While operating a motorboat on any lake, slow-no-wake speed is required when operating within 100 feet of the lake shore, a raft, pier, a buoyed restricted area such as a dam, or a marked swimming area.

The 200 Foot Rule While operating any personal watercraft (PWC), slow-no-wake speed is required within 200 feet of the shoreline. Why? That's where most swimmers, anglers, docks, lifts and overhanging trees are. Not a place for fast operation, sudden turns or careless activities. It's also where most wildlife live.

Dock Side

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



Clean Boats Clean Waters

The Clean Boats Clean Waters (CBCW) monitoring program has completed the 2020 season after getting off to a late start due to COVID-19 restrictions. The number of boats checked at each landing is as follows:

Number of boats checked at each landing 2020	
Village Beach	994
The 46 Store	1,045
East Balsam	442
Little Balsam	266
Total	2,747

Due to the late start we also came in under budget by approximately \$10,000. In addition as of late September, the DNR found no evidence of zebra mussel veligers in any of the lake samples.

If you know anyone who would be interested in working for the CBCW program in 2021, please contact Bill Mork at 612-599-8678. ●



Clean, Drain, Dry... every waterbody, every time. Before leaving the water access:

CLEAN off visible aquatic plants, animals and mud from boat, trailer and all equipment.

DRAIN motor, bilge, livewell and any other water-containing devices.

DRY everything for at least five days before reuse or disinfect.

NEVER MOVE fish or bait from one body of water to another.

stopaquaticinvasives.org

SAVE THE DATE... **2021 Annual Meeting**
Second Alum Treatment of East Balsam vote
And other business matters
July 17th, 8:30 a.m. Unity Schools Performing Art Center