



Beaver Dam Lake
Improvement
Association, Inc.

PO Box 33
Beaver Dam, WI 53916

MISSION STATEMENT

Our mission is to improve and protect Beaver Dam Lake for the benefit of current and future generations.

Reminder:

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Newsletter Helpers



Do you know who stamped and labeled this newsletter? Students at Green Valley Enterprises Life Academy have been doing this for BDLIA for some time. They donate their time while learning teamwork and job skills. There are around 400 newsletters distributed each issue which means 400 stamps plus 400 mailing labels. Their assistance is greatly appreciated!



Life Academy builds life skills for independence. Skill areas include but are not limited to community integration, cooking, soft skills for employment, social skills, and work skills. Life Academy partners with many community organizations and businesses to provide authentic opportunities where participants expand abilities and knowledge. If you want to find out more about Green Valley Enterprises, check out their website at <https://www.greenvalleyinc.org/>



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BEAVER DAM LAKE IMPROVEMENT ASSOCIATION, INC. NEWSLETTER

www.bdlia.org

July, 2020
VOL. 18, Issue 1

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BECOME A VOLUNTEER

Volunteers are critical to enable BDLIA to improve the lake's water quality and participate in the growth of the community. Become more involved with our efforts by becoming a volunteer. Contact our office at (920) 356-1200 or visit our website and fill out a Volunteer Form at <https://bdlia.org/volunteer/>



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2020: What a Year So Far!

When the February newsletter came out, we were fully in the thick of things—planning, planning, planning for the Banquet, Great Beaver Paddle Festival, and Fish ‘n Fun. We were starting to wrap-up the solicitation of businesses and individuals for the Banquet and were prepping, prepping, prepping for the Annual Fundraising Banquet. Then early on Thursday evening, March 12th, the brakes screeched our whole world to a brutal and quick stop. On Friday, instead of loading up for set-up and getting the cash ready for the banquet, we were meeting to figure out how to notify banquet attendees, check perishable donations, and figuring out other needed actions to postpone the banquet until later in the year.

By the April Board meeting, it was clear that COVID-19 was a true force of nature. The Board made the hard decision to cancel Fish ‘n Fun for the kids. The hope was still real for Paddlefest because we thought there was a better chance to maintain social distancing standards, but in the end, it was cancelled also. So many volunteer hours were down the drain, but safety is first priority.



Given current circumstances, we will not hold the Summer Celebration this year either. The situation is very fluid and by the time this newsletter is in front of you, things will likely have evolved and changed. The best place for up-to-date information is Facebook or bdlia.org.

It is that time of year for membership renewals and by the time you receive this newsletter you will probably have received your letters. Please take the time to include textable phone numbers and emails if you have them. Those allow us to quickly notify you with updates when needed. The members who had shared emails received weekly Stay-at-home Activities for the first few weeks of quarantine until the weather let us all get outdoors. Currently, we have emails for about 2/3 of our membership. Feel free to fill out

the volunteer form and send it back in with your dues. Volunteers are always needed.

As of this writing the Annual Meeting is still planned for August 29, 2020 at 9:00am at the Watermark.

For those of you who do not know, Marina Wolvaard joined BDLIA as our Administrative Assistant in December of 2019. With Marina in place, the office is open Tuesdays and Thursdays from 9am – 1pm and other times by appointment.



BDLIA member Roman Kaplan wind surfing on Beaver Dam Lake. He is an avid wind surfer and finds Beaver Dam Lake a great place for wind surfing.

OFFICE

PO Box 33, Beaver Dam, WI 53916 | 920-356-1200
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**Beaver Dam
Lake Improvement Assn.**



Gardening for a Healthy Lake with Carolyn and Mike Aita

Capturing pollutant-laden rain water runoff from lawns and impervious surfaces before it enters our lake is an important step toward lake health. To this end, we have been building native plant gardens on the northwest corner of Beaver Dam Lake. These projects are supported by DNR Healthy Lakes grants. In addition to contributing to lake health, our native gardens provide local habitats for a diverse population of indigenous fauna at a time when their global habitats are disappearing.



Our first Healthy Lakes project was a rain garden. Planted in 2016, the rain garden has expanded over the past four years to become a sedge meadow. Four species of sedge form its backbone, interplanted with 12 wildflower species that provide blooms for pollinators throughout the flight season. The rain garden survives yearly spring flooding, and possible temporary flooding, as well as drought, throughout the growing season. It is successful in water infiltration (flooding typically empties within 24 hours) and erosion control (plants do not float around when the garden is flooded). The plants we chose, diverse in growth form below and above ground, act in unison to capture and filter runoff.

Our other Healthy Lakes grant projects, including one just started, involve native plantings encompassing 1,200 sq. ft. at our lakeshore. New plantings complement mature trees, native shrubs, grasses, and wild flowers

already on site. In contrast to the rain garden, the lakeshore garden is an “open system” with one uncontrollable boundary being the ebb and flow of the



lake itself because we simply could not resist planting in the fertile riparian muck! Plantings range from emergents at the shoreline who like their feet wet to upland species at the boundary of the garden with our lawn. Details of our garden construction and plant selection are online at The Wisconsin Lakes Partnership Convention-Past Convention Archives, 2017 and 2019.

The Healthy Lakes initiative is important to us for both the financial support and the instructive framework it provides. A Healthy Lakes enthusiast can build a garden using designs offered in one of the online companion guides (for example, DNR PUB WY-002) or, as we did, use these guides as starting points to design original garden plans.



Our native plant gardens and the fascinating creatures we observe within have brought us much joy and lots to photograph (see Mike Aita’s Facebook page). An important lesson we learned is to have patience. Take delight in watching the garden “grow up.” It takes three years for a native garden to thrive: the first year it sleeps (lots of underground action), the second year it leaps, and the third year it leaps.



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Glacial Recovery Areas

The Glacial Habitat Restoration Area (GHRA) is a program which takes a regional approach to wildlife management by restoring, creating, and maintaining habitat for waterfowl, wild pheasants, and non-game songbirds. The program's focus is the creation of a patchwork of restored grasslands and wetlands amid the established croplands of Columbia, Dodge, Fond du Lac, and Winnebago counties and thereby maximizing wildlife habitat. In an era of increasing rural development and disappearing farmland and wetland, these areas are critical to the nesting, feeding and overall survival of birds and other wildlife populations.



Area #7 above and with creek below

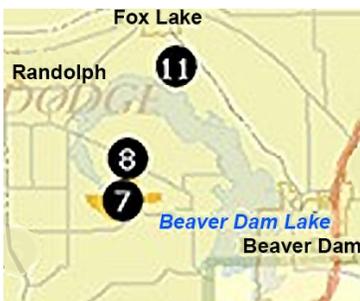


Hunters are invited to utilize the rich habitat found on all GHRA fee title parcels. Whether searching for spring turkeys or tracking white-tailed deer in fall, these properties have a wealth of opportunities to offer. Check the rules and regulations ahead of time. The large communities of open prairie, woodlands, and wetlands found on GHRA properties lend themselves to a rich diversity of resident and migratory birdlife just waiting to be discovered by the casual or serious birdwatcher. Always be mindful of the season and check the WDNR website for hunting seasons. Only those properties purchased by the state through the GHRA program are open to the public for hiking, sightseeing, hunting, and trapping.

DNR Update

WDNR's Laura Stremick-Thompson, NR Region Team Supervisor, provided the following updates:

- Our state hatchery staff stocked Beaver Dam Lake (BDL) with 48,653 small fingerling pike (average length = 3.6 inches) on May 19, 2020.
- Mark, Horicon's Fisheries Technician, set a couple fyke nets on BDL as a training exercise for DNR's new fisheries LTE. Unfortunately, the Safer-at-Home order went into effect the very next day, and the nets were removed accordingly.
- Catfish limits for BDL are the same as the rest of Wisconsin: 10/day from BDL with an individual bag limit of 25/day for an individual who fishes multiple water bodies.
- Due to a hiring freeze, DNR will not be hiring the Horicon position until further notice, but Laura is hoping to have someone on board by fall.
- Fish Camp had pavement/asphalt crack filling and repainted the parking stalls.



The three Glacial Recovery Areas around Beaver Dam Lake are indicated by numbers 7, 8, and 11 on the map.

PRESIDENTIAL LEVEL



A Timely District

The Dodge County Board approved the forming of the Beaver Dam Lake District on March 17, 2020. With this timely action a local voice was established to speak on behalf of the community and the watershed we live in. Not too long ago there were WDNR Field Water Quality Specialists who provided on-lake support and planning. As the DNR has evolved over the past ten years, those positions have been eliminated along with the regional planning which they once provided. With limited resources, at all levels, the key to successful lake management will be the collaboration of the various state, county, and local organizations working together to protect Beaver Dam Lake. Focusing on land and water health, the District, BDLIA, and our neighboring lake districts will continue to provide mutual support to improve our quality of life.

Common misconceptions, the Beaver Dam Lake District is not:

- A Permit and Zoning Agency - Dodge County Land Resources and Parks is responsible for lakeshore zoning within 1,000 ft. of the high water mark
- Lake Enforcement - that is the jurisdiction of the DNR Warden
- Lake Water Patrol - either Dodge County Sheriff's Department or city of Beaver Dam police handles this
- In-Lake Permit Practices - still requires WDNR approval

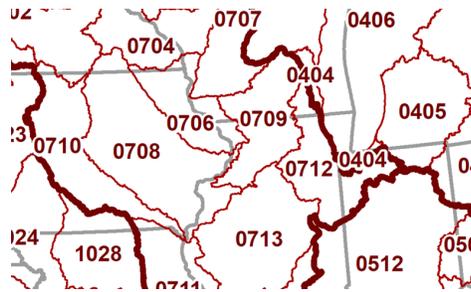
UW-Extension has identified that the purpose of a district "is to maintain, protect and improve the quality of a lake and the watershed for the mutual good of the members and the lake environment." Our challenge will be to identify practices and environmental friendly solutions to maintain our water quality and wildlife habitat. Prevention is more efficient than correcting problems, so properly identifying and ranking these efforts is essential for efficient leveraging of time and funds.

Although Beaver Dam Lake is listed as an impaired waterway due to water quality, we have seen improvement over the past ten years through past and ongoing practices which attempt to keep nutrients and sediment out of the waterways. Our environment continues to evolve with changes in weather patterns with more rain events and warmer temperatures. Addressing these changes to the watershed as they impact the current conditions will be a daunting task; however, improvement can and should continue.

Success will be achieved with community collaboration and volunteer support to protect this great resource for future generations.

9KEs & HUCs:

Why These Acronyms are Important



Our HUC 8 is 0709

9 Key Elements (9KE)

The EPA names nine key planning elements critical for protecting and improving water quality. Plans that reflect the nine key elements help assess the contributing causes and sources of non-point source pollution (NPS) within a defined watershed area and then prioritize pollutant reduction strategies to restore or protect water quality.

Here are the 9 Key Elements:

1. Causes and sources to achieve load reductions
 - Number of dairy cattle feedlots needing upgrading
 - Acres of row crops needing nutrient management or sediment control
 - Linear miles of eroded streambank needing remediation
2. Load reductions expected for the management measures
3. Non-point source management measures to achieve load reduction measures
4. Estimate of technical & financial assistance needed--costs & authorities needed
5. Information/education component for public understanding
6. Schedule for implementing non-point source management measures

7. Description of interim, measurable milestones
8. Criteria used to determine whether loading reductions achieved over time and substantial progress is being made towards attaining water quality standards
9. A monitoring component

The 9 Key Element plans bring county governments, WDNR, citizen groups, producers, municipalities, conservation groups, and industry together to formulate the plan to identify and mitigate the sources of pollutants that impact water quality. The 9KE approach is a standard practice that provides background information needed to acquire grants and develop practices to improve water quality.

HUCs (Hydrologic Unit Codes)

The U.S. is divided and sub-divided into successively smaller hydrologic units. Hydrology is the scientific study of the movement, distribution, and management of water on earth and other planets. HUCs are used to identify groupings of water.

HUC 8 maps the subbasin level, analogous to medium-sized river basins (about 2,200 nationwide, pictured in red in the image); and HUC 12 is a more local sub-watershed that captures tributary systems. In the map above our HUC 8 is 0709.

Why do we care? As we prepare to do a 9 Key Element plan, we must target a specific HUC 12 or HUC 8 area to compile the needed information. The completed 9KE plan is then used for completing projects and grants requested for the targeted HUC area.

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Interview with Mike Sorge

What is your role within WDNR?

I am the Water Resources Field Supervisor for South District, which includes the counties of Grant, Iowa, Lafayette, Green, Rock, Walworth, Waukesha, Washington, Jefferson, Dodge, Dane, Columbia, Sauk, Richland, Crawford, and Vernon. I supervise seven Water Resources staff and oversee water quality related issues that impact lakes, rivers, streams, and wetlands. We work with others to address non-point source pollution reductions. This includes county staff, DATCP (Department of Agriculture, Trade and Consumer Protection), NRCS (USDA Natural Resources Conservation Service), USGS (U.S. Geological Survey), numerous lake associations and districts, non-profits, and non-governmental organizations. We conduct resource assessments on surface water status and perform water quality assessments. We are engaged with numerous producer-led groups working at building soil health and improving water quality.

What is your connection to BD Lake?

For the past five years, I have worked with members of BDLIA as part of the Dodge County Non-Point Task Force, now known as the Dodge County Alliance for Healthy Soil and Healthy Water. I met Bill Boettge and we, along with many others, have worked collaboratively to focus on improving soil health, farm economics, and water quality.

What drew you to work in this field?

I grew up on the lower Wisconsin River

and spent my childhood fishing, hunting, and trapping from Prairie du Sac to Prairie du Chien. I have always had a passion for natural resources and habitat management. Numerous family members were dairy farmers in this area and spent my weekends and summers working on their farms. I quickly realized I had a passion for working with land, water, and people. After high school, I attended the University of Wisconsin Stevens Point and graduated with degrees in Biology and Fish Management. I have spent the past 30 years working with natural resources primarily focused on non-point source pollution reduction and assessing the biological, chemical, and physical conditions of lakes, rivers, and streams in southern Wisconsin.

What is a typical day for you?

My days consist of wide range of activities surrounding water quality. This consists of chemical, physical, and biological monitoring. We are involved with a wide range of monitoring activities that address condition assessment. This involves monitoring to collect data for Total Maximum Daily Load (TMDL) development, 303(d) listing for water quality impairments, resource response to habitat restoration, and the monitoring associated with newly emerging contaminants.

What would you us to know?

I have worked hard the past five years with the Dodge County Farmers for Healthy Soil and Healthy Water, the Dodge County Alliance for Healthy Soil and Healthy Water, and members of

BDLIA to find solutions to address non-point source pollution in Dodge County and its surface waters. I have worked collaboratively with these groups to build lasting relationships between the rural



agricultural community and the lake residents. This has been a great opportunity to meet and work with great people that are all working towards a similar mission to reduce non-point source pollution and build resilient functioning soils that protect water quality.

What do you expect from BDLIA?

To continue to work collaboratively with both the Dodge County Alliance for Healthy Soil and Healthy Water and Dodge County Farmers for Healthy Soil and Healthy Water. Working together to continue to break down the division between rural and urban communities. Working together to address soil loss and to build soil health. The conservation and educational outreach of these groups are making a difference one acre and one person at a time. Continue to develop relationships and work towards opportunities to make a difference on the landscape and in the water.



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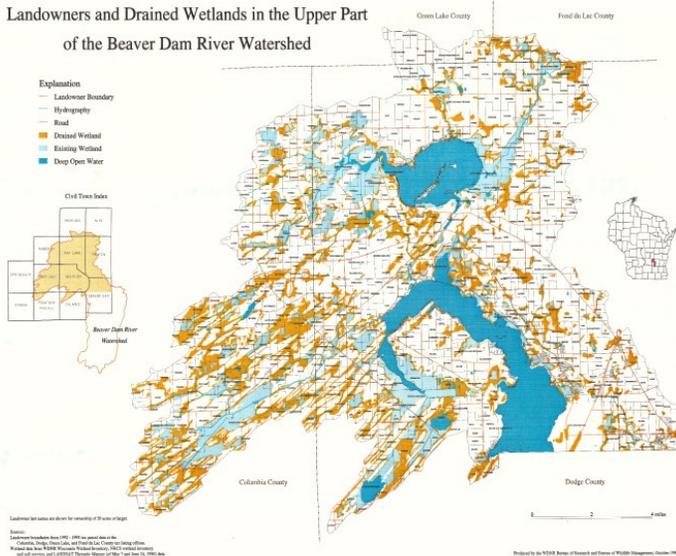
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We Might be on a Lake, but We Live on a Watershed

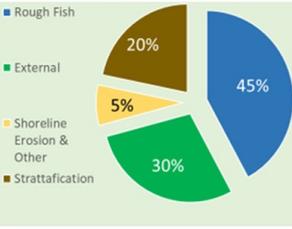
Landowners and Drained Wetlands in the Upper Part of the Beaver Dam River Watershed



Water Quality 'P' Impact



WQ = Habitat 2018 MARS & BDLIA



dissolved oxygen is depleted from the water and game fish die.

Would you allow your kids or grandkids to swim in the green of blue-green algae? Algae can degrade into cyanobacteria (blue-green algae) which in many cases is toxic.

Cyanobacteria can poison your dog (New York Times 8/12/19). Cyanobacteria can affect your respiratory system. Cyanobacteria illness must now be reported by your doctor to the WI Health Department to track hot spot problems. (Madison News 8/11/2018).

How can we reduce the impact of our back yards and minimize this damage?

- Limit fertilizer use on lawns and never use fertilizer containing phosphorus
- Do not mow to the waters' edge, leave a buffer of grass, or better yet native plants
- Keep yard waste and grass clippings out of the water
- Clean up after your pets
- Allow downspouts to flow onto the grass and infiltrate into the ground
- Install a rain garden or rain barrels to slow the flow

Our Beaver Dam River Watershed includes the 98,000 acres of land that flows into the Lake. Beaver Creek enters from the northwest near County Road FW, Rakes Bay enters from the southwest at County Road G, Mill Creek from Fox Lake to the north, and then dozens of smaller creeks and shoreline runoff all flow into Beaver Dam Lake. How we use our land and maintain the land along the water directly affects the quality of the natural areas and our future enjoyment of the Lake.

If we captured the runoff from the land in a bottle and we found clean water without sediment and harmful nutrients, the water quality would be pristine. That of course is not the case with erosion, upland sediment, and shoreline deterioration having a negative impact on water quality. Much of this damage is unintentional with contaminants finding a

path into the creeks and then the lake. Water sampling and testing in 2018 has confirmed that 95 tons per year of damaging phosphorus are deposited in our lake. We would prefer to see this level at roughly half that amount or 55 tons per year. Yes, still a very large number but manageable over time with community involvement.

Phosphorous (P) is a triple threat with multiple paths that cause harm - (P) is the limiting factor for the creation of algae with nitrogen and carbon the other two elements. For each pound of (P), 500 pounds of algae are created. (P) as a fertilizer will increase the rate of lake weeds growth which affects your lake access.

Why is algae bad? It smells. It will decompose and sink to the lake bottom creating muck. As it decomposes the

When we performed the Lake Management Study with the UW WRM in 2017-2018, a number of opportunities were identified that would improve water quality and wildlife habitat. Since that time, we have competed:

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-Eight additional Healthy Lakes projects reducing (P) while adding an appealing backyard visual as shown above.

-Producers on working farms have stepped up with improved field practices. In these photos we see the before and after case for a field with significant gully erosion which caused 40+ cubic yards of



sediment to flow into the Beaver Creek (left picture-before). The producer added a grass waterway (right picture-after) with a flow restrictor eliminating the harmful nutrient containing sediment discharge into the creek. He gained a productive field while the creek's water quality and habitat were improved for the fish and fowl that call this their home.

-The Beaver Dam Lake Development Corporation cleared invasive weeds on Big Skunk Island and replaced them with native grasses, creating a natural area.

Sometimes it isn't easy to understand that

how we live and take care of our watershed has a direct impact on our lake. If we walk to the water's edge and look toward the land, you can visualize how much ground and the change in land elevation may occur. For each acre of Beaver Dam Lake surface, approximately ten acres of land discharge runoff into the lake. So, for each acre of lake, the water must absorb outflow of ten times its surface area.

Many of the beneficial practices which improve our land and water are not costly and in most cases require common sense cleaning and upkeep. They will, however, have a major impact on our quality of life.

As we look forward and consider how we live in the watershed, we can choose to positively impact our water quality for our future enjoyment and take advantage of as many of the 100 days of summer as possible.

Improving Water Quality

The Dodge County Alliance for Healthy Soil – Healthy Water is a group who represent the farm community, lake associations, districts, and government agencies to provide quality education, activities, services, and support to improve soil and water health.

One of our projects is to study the use of slag from blast furnaces to reduce phosphorus from water draining from farm fields. The test is currently being set up at Charlie Hammer's and Nancy Kavazanjian's farm. This is part of a test currently being completed in Wisconsin.

Another project involves the Sand County Foundation and is a Conservation Innovation Grant. This is a three-year grant to be paid for phosphorus reduction from agriculture. It will be a "pay for performance" rather than a "pay for practice." The initial plan is to pay \$50 per pound of phosphorus reduction. The reduction will be measured by historic practices and future management changes through modeling. We hope to receive grant notification by late July.

These projects support two of the strategic priorities of the Alliance which are to support projects that gain further knowledge on soil health and improve water quality and promote adoption of best management practices that result in measurable reductions in nutrients and sediment loss.

These projects are very important to improving the water quality in Beaver Dam Lake for the research completed by BDLIA shows that over 30% of the phosphorus in Beaver Dam Lake is from external runoff, primarily from agriculture.

The Alliance has continued to meet via zoom during the COVID-19 pandemic and is developing more information for the website.

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