



The NORTH STAR

Alma Lake – Moon Lake Protection and Rehabilitation District

Date: June 2022

Sue Zauner, Newsletter Editor

Chairman's Chat

By Tony Waisbrot

"Continued shore land development is likely the biggest threat to Alma-Moon lakes and efforts should be taken to protect natural shore lands and restore developed shore lands to protect habitat and water quality" - 2019 Onterra Lake Study

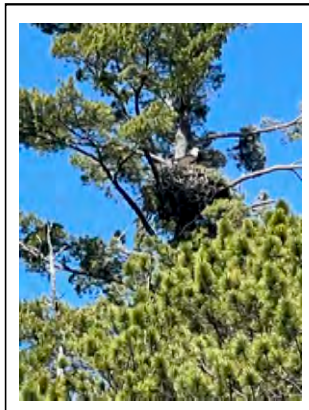
Our Lake District, in coordination with the Town of St. Germain Town Lakes Committee, completed a thorough study of our lakes and updated our lake management plan from 2010. The WDNR approved the plan in July of 2021 and the Town Lakes Committee composed of our lake district, Big St. Germain Lake District, Little St. Germain Lake District, Lost Lake District and the Found Lake Association have been meeting to implement the management goals identified through the collaborative efforts of the Town Lakes Committee, Onterra ecologists and WDNR staff.

Further details of the study will be provided elsewhere in this newsletter along with articles to keep you informed about your lake district activities and information about our lakes. For more information visit almamoonlake.org

Elsewhere in the newsletter, you will also find the details about the **Shore Land Improvement Initiative Project** approved by our lake district commissioners. Thus, the quote at the beginning of this article about what poses the biggest challenge to preserving our lakes.

Your commissioners are in the process of obtaining information about programs and grants available from local agencies and private vendors to complete shore land assessments for our stakeholder property owners. This information can then help identify how to maintain and improve each property owner's shoreline for the benefit of the water quality of our lakes.

We all look forward to seeing people enjoying our lakes again this year while we continue to protect and improve this most important resource.



2019 Onterra Study Results

Onterra Lake Reports:

The entire report for each lake can be found on the Alma-Moon Lake District web site at almamoonlake.org
Lake Info/Alma Moon Data/Management Plan

The results have been organized as follows:

Water Quality

There have been no trends (positive or negative) in phosphorous or chlorophyll concentrations in either lake over the time period for which data are available.

Phosphorous and chlorophyll fall into the excellent and good categories for Wisconsin's deep seepage lakes.

Water Clarity

Secchi disk depth has declined in recent years despite no measured increase in algal abundance: this is believed to be due to an increase in dissolved oxygen matter (DOM), which stains the water a tea-like color. Higher precipitation in recent years is creating more DOM and delivering more DOM to our lakes.

Secchi disk depths still fall within the excellent category for Wisconsin's deep seepage lakes.

Watershed

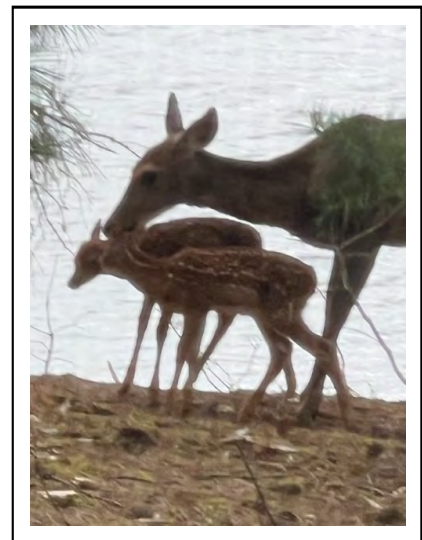
The watersheds in both these lakes remains undeveloped, primarily combined of upland forests. Maintaining this natural land cover is essential for maintaining the water quality of these lakes.

Watershed modeling indicated that the phosphorous concentrations measured in these lakes are expected and there are no significant sources of unaccounted phosphorous (e.g., septic systems) entering these lakes.

Aquatic Plants

While these lakes still support a high-quality native aquatic plant community, the overall occurrence of aquatic plants has declined by over 30% when compared to 2010.

This decline in vegetation is believed to be the result of higher water levels which have increased over 3.0 feet since 2010.



With higher water there is a decreased light availability in deeper areas of these lakes and these areas can no longer support aquatic plant growth.

This is not concerning as this is due to natural water level fluctuations.

The northern wild rice in Moon Lake was found to have decreased markedly since 2010, likely due to higher water levels. It will likely increase in occurrence when water levels decline in the future.

Green arrow-aram was located in Engle Bog. There is debate as to whether or not this plant is considered native or not. It has been in Engle Bog since at least 2006, and it does not appear to be causing problems. Recommend continued monitoring of this population to see how it behaves in the future. No other non-native species were located.

Immediate Shore Land Zone

Majority of the shore lands around these lakes contains little to no development, which provides habitat and buffering against pollutants.

Being seepage lakes with small watersheds, these lakes are more susceptible to smaller changes within the watershed.

Continued shore land development is the biggest threat to these lakes and efforts should be taken to protect natural shore lands and restore developed shore lands to protect habitat and water quality.

Shore Land Improvement Initiative

As a result of the Onterra study, contact with the fisheries manager at WDNR who manage the fishery, under the water and private and public vendors, we are being told that the Lake District is in the best position to work with property owners at the water's edge to help maintain and improve water quality and a quality fishery.

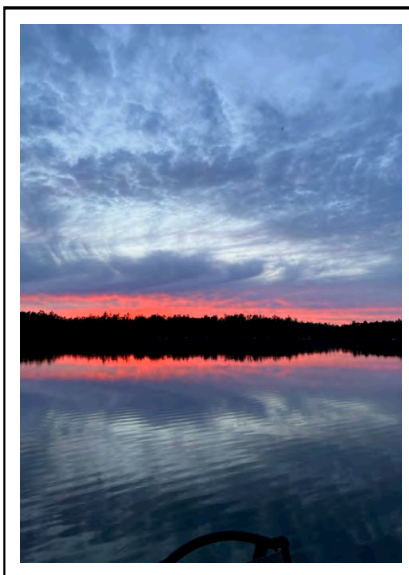
Personalized Shore Land Improvement Assessments will allow every property owner to examine the current impact their property has in regard to water quality and critical habitat of our seepage lakes watershed. Through a professionally administered shore land assessment, owners will be given the opportunity to identify positive and/or negative impact their property currently is having on the watershed.

The areas assessed include the following:

- A. Shore land (riparian) buffer zone
- B. Ongoing erosion and runoff impact
- C. Human modifications of shore land area and littoral zone (from shore to lake depth where there is presence of sunlight at the sediment level)
- D. Aquatic plant presence

Shore land alterations can potentially have a dramatic impact on the increase of runoff volume of phosphorous and sediment input, thus impacting ecologically sensitive lake shore areas. The goal of our lake district commissioners in implementing the Shore land Improvement Initiative is to educate and encourage the private lakefront owners in the district to implement the best practices in sensitive shore land areas. Protecting and preserving the pristine integrity of our seepage lake system and the fishery of our lakes is the paramount objective.

Alma-Moon Shore Land Restoration & GIS Mapping Planning Projects



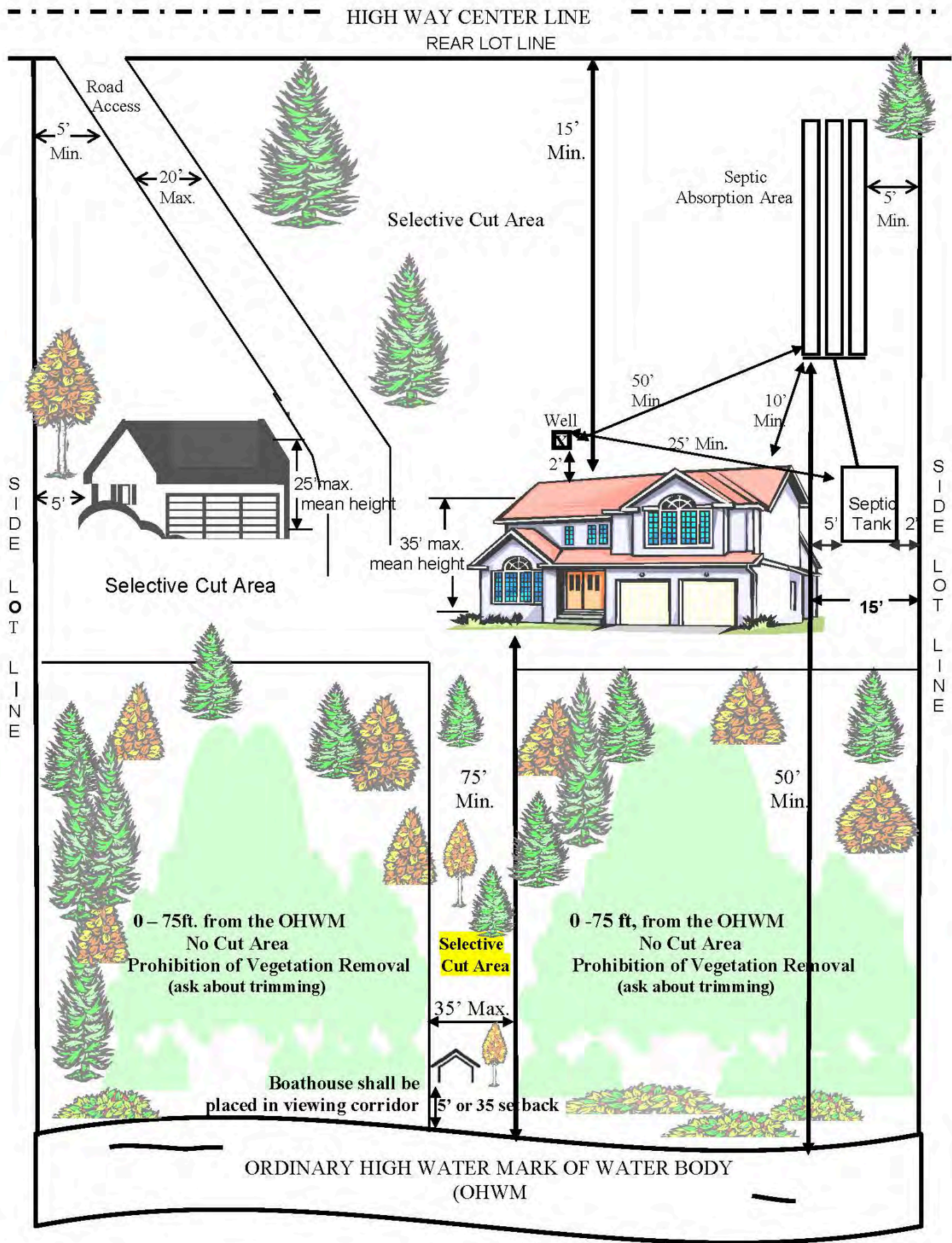
Nova Ecological Services (NES) will use lakes Surveys and GIS (Geographic Information System mapping) to prioritize shore land management and restoration on our lakes. The GIS mapping is needed to guide lake protection activities to identify **1)** the most critical lake habitat for protection and **2)** degraded areas of lake shore land in need of restoration and rehabilitation.

The surveys also identify shore land properties with excellent shore land management practices resulting in high quality shore land habitat for fish, wildlife and run-off protection. The goal of this project is to develop a **Summary Map** which allows for overlays of native plant communities, critical fish and wildlife habitat, shore land condition and high human use areas to guide in the protection and restoration effort.

Optimal lake management should focus shore land rehabilitation in degraded areas that are in near proximity to areas of critical habitat and public use features. This is accomplished by identifying candidate properties for restoration, and potentially identifying demonstration sites for shore land

restoration activities. The intent of these products is to identify areas for protection and restoration and to encourage voluntary shore land conservation and restoration.

VILAS COUNTY SETBACKS, HEIGHT LIMITATIONS, AND NO CUT REQUIREMENTS



Boating Regulation Changes on Alma, Moon & Engle Bog Lakes

When the Town of St. Germain updated all it's local ordinances so they would be enforceable in Court over the last two years, it resulted in the following changes for our lakes:

- The sign at the boat landing was updated by installing the new ordinance numbers to the sign as legally required.
- Signs were posted at the beginning of the channel into Engle Bog Lake designating it as **ELECTRIC TROLLING MOTORS ONLY** for navigation in the bog lake.

A special thanks goes to Clyde Owens from Alma Lake for his assistance in installing the boat landing sign modification and Mike Walden from Moon Lake for installing the Engle Bog Lake signs.



Clyde Owens

Alma Lake
Boat Landing

The Carrying Capacity Of Our Lakes

Wisconsin Lakes Executive Director, Mike Engelson, has attempted to illustrate the carrying capacity of lakes. Carrying capacity is defined as, "The number of watercraft that can simultaneously operate on a lake without: compromising user safety, causing significant displacement or dissatisfaction, or causing environmental harm to the resource."

Different types of boats, as well as different recreation can have a bearing on that capacity. An activity such as fishing, for instance, was estimated to require approximately 10 acres of water, where tubing, water skiing, or personal watercraft would require closer to 30 acres.

Lowell Klessig, author of a paper back in the 1990's, "Load Limits For Lakes" said there should be some legislative restraint to the public trust doctrine which says The water of Wisconsin, "shall be common highways and forever free, as well as to the inhabitants of the state as to the citizens of the United States, without any tax, imposed or duty therefor."

It was argued that the free public resources are inevitably trampled by too many users. He said the goals of lake management should deal with four primary goals:

1. Aesthetic opportunity
2. Recreational opportunity
3. Environmental security
4. Economic opportunity

When looking at enforcement, of carrying capacity, Engelson suggested, the best and easiest would be self-regulation. It would be people understanding their impacts and working to lessen them while still enjoying their time on the water in the way they would like.

New and Improved Loon Platform Installed in Engle Bog Lake

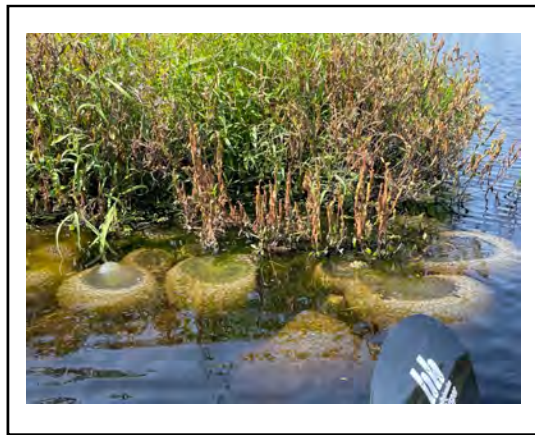
Thanks to Ken and Terri Beier (your lake District's designated Loon Ranger) a new loon platform was installed in Engle Bog Lake this fall complete with eagle guards to protect the nest and fire hose slides for the chicks to get on and off the nest easily (see photo below).

The old loon platform had deteriorated and was difficult to relocate as a bryozoan had attached to the bottom of the platform (see photo below).

Important reminder: Stay at Least 200 ft. away from Loons nesting or swimming in our lakes.

Motorized boats are the ones most likely to kill or injure loons. While an adult loon can dive to avoid being hit by a rapidly approaching boat, loon chicks are more buoyant and are less able to escape.

Help Give Loons Their Space Especially on Busy Holiday Weekends!



The 42nd Alma-Moon Lake District Annual Meeting Will be Held on Saturday, August 20, 2022, at Moon Beach Camp

Our speaker this year is Mike Meyer of Nova Ecological Services (NES) who worked as a research scientist with WDNR for 25 years and a number of his projects focused on lake shore land conservation and restoration in northern Wisconsin.

Mike will describe the NES program that will use lake surveys and GIS (Geographic Information System) mapping to prioritize shore land management and restoration efforts on our lakes.

What is needed to guide lake protection activities is a GIS mapping project for our lakes which identifies **1) Most critical lake habitat for protection and 2) degraded areas of the lake shore land in need of restoration and rehabilitation.**

11:45 am: Registration and social time

12:30 pm: Lunch

(A fabulous Moon Beach salad bar and an entrée served at your table for only \$10.00 per person.)

1:00 pm: Program: Mike Meyer of Nova Ecological Services (NES)

2:00 pm: Lake District Annual Meeting Convenes

Mark your calendars for the meeting and a chance to meet lake property owners!

Town of St. Germain Lakes Boat Patrol

The Town Lakes committee is a standing committee of the St. Germain Town Board and meets regularly to assist lake organizations in the town to manage and improve the conditions of their lakes. The committee has been particularly helpful to our lake district by coordinating with other lake organizations in the town to provide **Town of St. Germain room tax funding and obtain 75% WDNR grants to fund the Comprehensive Water Quality Studies by Onterra LLC.**

In each of the Onterra studies, stakeholder surveys were sent to all property owners around the lakes to complete. The results showed some expected, but remarkable changes. As with other lakes in the town, boat traffic, larger motors and boats, water skiing and tubing have increased dramatically. **Also, speeds and unsafe water traffic complaints have increased from 2010 to 2021.**

As a result of the Onterra studies and to maintain eligibility for WDNR grants by completing management plan objectives in the Onterra studies, the Town Lakes Committee has been meeting with representatives from zoning, fisheries, and other lake improvement entities.

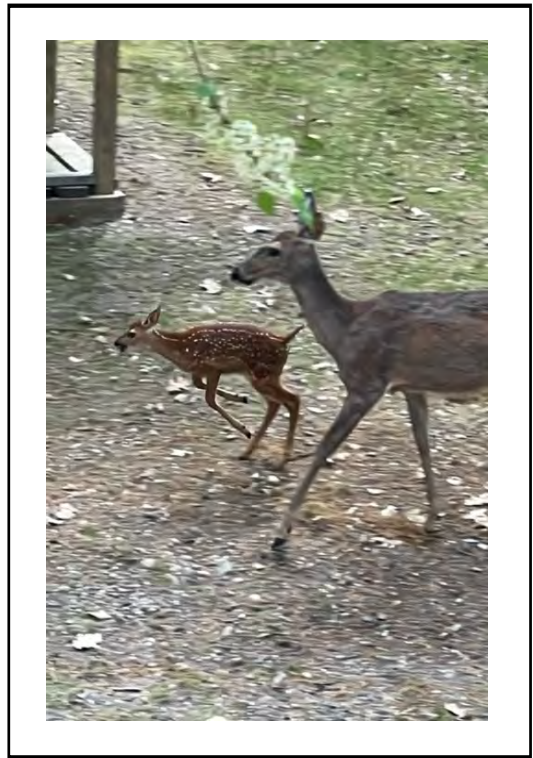
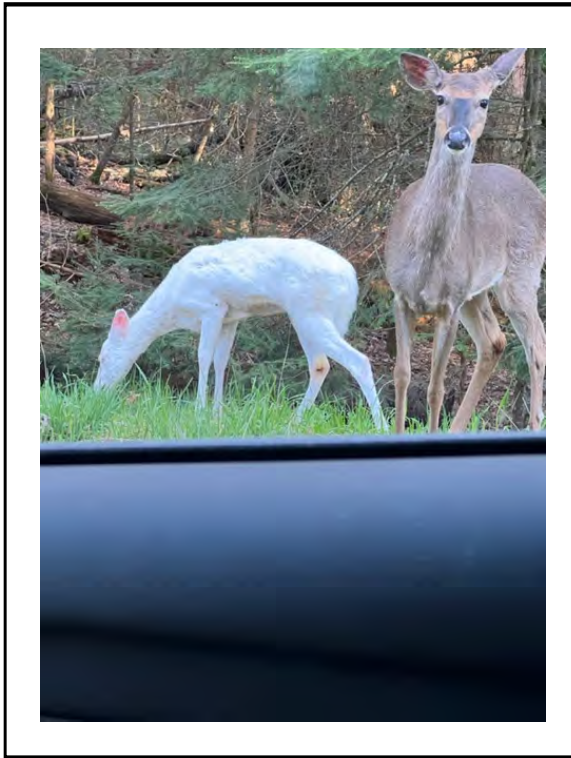
When the Town Lakes Committee met with warden supervisor, Chris Bartelt to fulfill Management Goal 7: WORK WITH LOCAL GOVERNMENTAL AGENCIES TO INCREASE ENFORCEMENT OF EXISTING, STATE, COUNTY AND TOWN BOATING FISHING AND SHORELAND DEVELOPMENT/ DISTURBANCE LAWS ON THE TOWN OF ST. GERMAIN LAKES, the committee had been informed by the Vilas County Sheriff that the department only has a boat patrol to patrol the Eagle River chain and we would get no enforcement from them. The WDNR informed the committee that they are understaffed in Wardens and would provide no enforcement.

Warden Bartelt did inform the Committee that the WDNR has a grant program to fund a boat patrol program if the Town was able to organize the service. It would be shared by the town lake organizations and prorated so each of the lake organizations receive some boat patrol services and the program would be **limited** to the busy months of **June, July and August.**

Our lake district would only have available to us 4 hours per week provided the weather was good on the enforcement half day. The boat patrol is to be used to educate lake users about violations and provide written violations only to observed or reported repeat violators for unsafe water craft practices.

Manitowish Waters has had a boat patrol for 10 years and they indicate they would never give it up. The Eagle River Chain Association also reports that the boat patrol has contributed to more enjoyment of the lakes by everyone. The irresponsible use of watercraft was also contributing to shore land erosion and habitat degradation that effects water quality and fish spawning areas.

The St. Germain Town Lakes Committee will continue to pursue initiating the service on all town lakes. At our 2021 annual meeting, the motion to participate in the program passed with one abstention.



A Look Back at Alma-Moon Lake District History

- March/1970 - A letter was sent out by Dick Hunt to all property owners of the lakes proposing that a Lake Association be established.
- July/1973 - Several important issues were voted on and approved: A petition for skiing hours on Moon Lake, a petition which stopped a second boat landing on Alma Lake, and dye-testing of septic systems.
- July/1974 - A petition for skiing hours on Moon Lake was accepted by the Town Board at their May 6th meeting.
- August/1975 - Our first picnic was held at Moon Beach Camp and was a huge success.
- July/1978 - Our first meeting on the proposed lake management district was held.
- October/1979 - The petition, with over 80% of the property owners signatures to form a lake district was presented to James Sanborn, Vilas County Clerk.
- January 15, 1980 - The Vilas County Board approved the creation of the Alma-Moon Lake District.

Algae Bloom in Moon Lake

This is the first year an algae bloom was sent and recorded on Moon Lake starting in mid-August. Our Lake District Commissioners immediately contacted the research scientists from Onterra who reported the following:

"While we cannot say with 100% certainty what led to the algal bloom in Moon Lake, as you suggest, we believe it was most likely due to nutrients being flushed from Engle Bog and the surrounding wetland. Paul Garrison, former WDNR research scientist, has said they have seen this occur on some lakes in the past. While wetlands typically act as phosphorus sinks, when overwhelmed with water following larger precipitation events or flooding, they can release accumulated phosphorus. With higher nutrients in the water, warm and calm conditions following the flushing of Engle Bog may have been ideal for the production of algae.

We believe that the internal loading of phosphorus from anoxic bottom sediments was not likely the source of nutrients for this bloom as Moon Lake's morphometry (depth relative to surface area) should allow the lake to maintain stratification until later in the fall. Any phosphorus released from bottom sediments should remain in bottom waters until fall turnover, likely sometime in October. However, if you have any temperature and/or dissolved oxygen profile data from this year to share, we can take a closer look at that.

We also believe that these algal blooms are to be a rare occurrence on Moon Lake given its lower productivity. However, algae blooms are expected to become more frequent as water temperatures continue to get warmer and precipitation increases. So, while this may be a rare event for Moon Lake at present, these blooms may increase in frequency in the future."

Don't Be The One Who Spreads An Invasive To Alma - Moon Lakes

If you trailer your boat to other lakes or have guests who bring their boats to our lakes from elsewhere, make certain they are clean and do not contain any aquatic invasive species (AIS). To have a better idea where AIS is thriving today, Kurt Krueger of the Vilas County News has provided a list of 30 Vilas County lakes that are known to contain Eurasian Water milfoil, one of the most aggressive and most harmful exotics: Anvil, Arrowhead, Big, Boot, Big Sand, Brandy, Clearwater, Forest, Kentuck, Lac Vieux Desert, Long, Lost, North and South Twin, Middle Gresham, Upper Gresham, Upper Buckatabon, Little St. Germain, Silver, Smoky and 10 lakes on the Eagle River Chain—Cranberry, Catfish, Voyageur, Eagle, Scattering Rice, Otter, Lynx, Duck, Yellow Birch, and Watersmeet.

There's limited milfoil on the Three Lakes Chain in Virgin Lake and in the long lake Thoroughfare toward the Dam.

Anyone fishing Metonga Lake in Crandon, which harbors invasive zebra mussels would be entirely irresponsible if they went to any other lake without cleaning and disinfecting their equipment. Zebra mussels are harder to detect and to wash off than vegetation. Ditto for spiny water flea that is in Star, Stormy, Trout, Plum and Butternut lakes, an invasive that threatens the entire food chain by potentially destroying a key link in the plankton stage of fish food and growth.

The most recent WDNR study shows almost 90% of anglers and boaters who reported moving their boats to different water bodies actually checked their trailers, propellers, anchors, ropes, live wells and bait buckets for weeds, but it only takes one careless angler or boater to pick up an invasive species and transport it to another lake. Let's maintain our alertness to keep our lakes exotic-free!

WDNR Resumes Stocking Our Lakes After 2020 COVID Pause

Our lakes are stocked with 6,500 walleye fingerlings in the spring of the odd years and 10 to 11 inch musky - 14 in Alma and 32 in Moon lake in the fall of the even years. No stocking on lakes took place in the fall of 2020 due to Covid concerns.

We received our spring stocking of walleye in mid-June this year. It is estimated that it takes the fingerlings 4 to 5 years to grow to a legal 15 inch size in our oligotrophic seepage lakes due to the lack of fertility which ages and deteriorates lakes.

So, if you catch a legal 15 inch walleye, it was most likely stocked in 2017 due to our lakes aquatic environment. Thus, a catch and release "let em go to let em-grow" policy has long been encouraged to allow growth to spawning age to increase the population.

Anglers are also voluntarily encouraged to adopt a pan-fish limit on our lakes of 10-10-5 as is legally required by WDNR on some of our area lakes to protect the crappie, bluegill and other pan-fish population.

This means that instead of keeping 25 pan-fish of each species, you keep a limit of 10 of one species, 10 of another species and 5 of a third species.

Let your visitors and guests know we are trying to preserve the healthy fishery our lakes can support for everyone's enjoyment.



Clyde Owens - June 2021 Walleye Stocking



Clyde Owens - June 2021 Walleye Stocking

Water Level Fluctuation On Our Lakes

Our lake levels appear to have peaked in the fall of 2019 and we are about 13 inches below that level now. According to naturalist and author, John Bates, the impact on shorelines has been dramatic on our lakes and lake after lake in our area. The shoreline trees were dying or had died from the stress of being under water for several consecutive years or from the stress weakening the trees enough that insects and diseases were able to get the upper hand. Shoreline shrubs like leatherleaf, sweet gale, and tag alder were all inundated and emergent aquatic plants like pickerelweed and bullrushes appear to be less abundant. High water levels also increased the amount of nutrient runoff and the result was less water clarity and the lake of deep water weeds.

Limnologists tell us that in our area, we're typically on a 13-year cycle of high water to low water. Our current high water period began in 2013 and the high water level appears to be slightly decreasing now on our seepage lakes. We continue to be in need of less intense rain events and deluges where runoff into our lakes happens more rapidly than during gentle rains.

Town of St. Germain and Area Information

Town of St. Germain website has been updated and you can now be placed on an email list for the town to send notices. You can get on the list by emailing townofstgermain@gmail.org.

St. Germain Recycling and Garbage Disposal Hours:

Summer: Memorial Day thru Labor Day open:

Wed/Sat 8:00 am - 2:00 pm

Winter: Wednesday after Labor Day thru Sunday prior to Memorial Day open:

Wed 8:00 am - 12:00 pm

Sat 8:00 am - 2:00 pm

Town of St. Germain Web Site: <http://www.townofstgermain.org>

Vilas County Web Site: www.co.vilas.wi.us/

Bo-Boen Snowmobile Club Web Site: www.boboensnowmobile.com

St. Germain ATV Club Web Site: www.saintgermainatvclub.com/

St. Germain Events Web Site: <http://stgermainwi.chambermaster.com/events>

Save the date: Upcoming 2022 Socials and Meeting

Social Dates

Alma - Moon Breakfast Club at 3C's restaurant, 228 WI-70, St Germain, occurs year round on the second Saturday of the month at 9am. No RSVP required.

Meeting Date

Annual Meeting on Saturday, August 20, 2022.

11:45 am – Registration, 12:30 pm – Lunch,

1:00 pm – Program, 2:00 pm – Annual Meeting

District Commissioners

Tony Waisbrot (term of 2024) – Chairman, twaisbrot@frontier.com

Marilyn Workinger (term of 2023) – Secretary, marilyn.workinger@gmail.com

Dave Zielinski (term of 2022) – Treasurer, davezee1@frontier.com

Sue Zauner (term of 2022) – Commissioner, seam4@yahoo.com

Len Larsen (term of 2024) – Commissioner, moonlars@frontier.com

Tom Christensen – Town of St. Germain Rep., tom.christensen@stg.town

Ronald Kressin – Vilas County Representative, rokres@vilascountywi.gov

For more information about our lakes and the Alma - Moon Lake District visit our web site at <http://www.almamoonlake.org/>

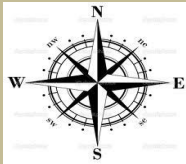
Mission Statement

The mission of the Lake District is the preservation of Alma/Moon lakes natural beauty and quiet environment for the future generations. The focus will be to maintain the highest water quality and protect the natural shoreline through proactive participation in the protection of aquatic contamination and watershed erosion while supporting both fish and wildlife habitat. Communication of the activities to all Lake District members and the solicitation of their involvement and cooperation will be primary in the conducting of this mission. All Lake District sponsored activities will always be performed under the direction of current federal, state, and local regulations.



Front L to R, Marilyn Workinger, Tony Waisbrot, Len Larsen Back L to R, Dave Zielinski, Sue Zauner, Ron Kressin, Tom Christensen not pictured

Alma Lake – Moon Lake Protection and
Rehabilitation District
P.O. Box 145
St. Germain, WI 54558



The NORTH STAR

Alma Lake – Moon Lake Protection and Rehabilitation
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