Geneva Waters

Fall 2018 - Vol. 34, No. 4

"Wait Until Spring" Public Beach, Fontana Photo By Fred Noer

Geneva Lake Environmental Agency Quarterly Publication

Featured in this issue:

Autumn, the Season of Color; The End of an Era; Geneva Lake Level; New Invasive; Phosphorus Initiative; Big Foot Creek Watershed Study; Coast Guard Bill Directs Funds to Great Lakes; Lake Tides.

Geneva Lake Environmental Agency

Our Mission:

The Geneva Lake Environmental Agency is determined to maintain Geneva Lake's resources by protecting, preserving and enhancing a desirable lake and watershed quality.

https://www.genevalakemanagement.com/

Located on the George Williams Campus of Aurora University

Rm. 101, 103 in the Lowrey Building

Post Office Box 914, Williams Bay, Wisconsin 53191

262-245-GLEA / 262-245-4533 Fax

glea@genevaonline.com

Staff

Theodore W. Peters, Director

Aimee Townsend, Admin. Assistant

Fred Noer, Editor and Cover Photo

David Rasmussen, GLEA Attorney

Board of Directors

Patrick Kenny, *Village of Fontana on Geneva Lake*

Selena Proksa, *City of Lake Geneva*

Roy White, *Town of Linn*

LaMarr Lundberg, and Greg Trush, *Village of Williams Bay*

Jim Lovell, *Town of Walworth*

AUTUMN, THE SEASON OF COLOR

It starts as early as late August with the yellows starting to show in the leaves and ends with the dropping of the leaves. The autumn of 2018 was true to fall, the season of wind. There were the yellows of walnuts and box elders, the reds of sumac, the oranges of maples, and the browns of oaks, all adding to the colors of autumn. There are others, for sure, but these are the trees that brought us shade and the canopy of summer. It is now mid-November, and snow is on the ground and trees. If leaves hadn't already fallen, strong winds of mid-October brought down many of the leaves. Oak leaves in the neighborhood finally came down the last week of October and the first week of November, followed by a snow the second Friday of November. It is strange to see snow on the yellowing leaves of honeysuckle and buckthorn, but early snows always bring a surprise, especially if you're not quite ready. Despite some sun, little snow has melted since it fell.

September was warm, with highs for eight days in the 80s or higher. A daytime high of 90.3 was recorded September 17. By the end of the month temperatures were dropping, with the monthly low of 37.5 recorded the night of September 29. September was also very wet, with 13 days of precipitation for a total of

6.40 inches of rain. On September 2 a total of 1.99 inches fell, and 1.34 inches fell September 3. Things were wet, especially after 6.16 inches of rain in August. September brought us the fourth month of 2018 with over six inches of precipitation.

As the October sun dropped lower in the southern sky, temperatures began to cool. There were still two days of 80 degrees, October 8-9, with daytime highs of 81.7 and 83.4, respectively. The first recorded nighttime frost was October 13 with a low of 31.3. It is suspected that many places experienced a frost before that. Autumn showed us its cold starting October 11 and running through October 21 with seven straight days of daytime highs only in the upper 40s and nighttime lows in the 30s. In addition to the first recorded frost October 13, frost occurred October 18, 20, and 21. The lowest October nighttime temperature was 26 on the 20th.

October continued to be wet, with a total of 4.92 inches of rain, more than twice the 25-year October mean of 2.36 inches. October 1 and 6 had 1.60 and 1.73 inches of rain, respectively. There were 12 days of precipitation, occurring in nine of the first 10 days. It felt like winter sitting in the woods on Saturday, October 17 with temperatures in the low 30s, winds at 15-20 m.p.h., and a

mixture of snow and rain. One may ask why was I sitting in the woods? That's another story.

November made its mark on the fall. I wonder if fall refers to the leaves, temperature, or precipitation because all fall this time of the year. November had a high of 51.7 on November 4 and a low of 15.7 on November 14. There were 21 nights of frost and seven days with a daytime high below freezing. Saturday, November 10, had a daytime high of only 29. Although cold, the sun made it feel a bit warmer and allowed for some last-minute outside chores to be completed. The lowest daytime high for November was 24.7 recorded on November 27.

Excluding the first two days of the month, total precipitation for November was 2.19 inches. As of November 2, precipitation is no long recorded electronically at the Atmospheric Monitoring Site along Elgin Club Road. A recording rain gauge has been established near the old monitoring site, but amounts will vary from the old site. We are missing precipitation data from the first two days of November. A wet snow fell November 9-10 as 0.15 inch of moisture and again November 25 when we received 0.07 inch of moisture. These both were wet snow or started out as wet snow, so it is difficult to relate that moisture amount to snow depth. The November 25 snow for Lake Geneva was reported by a Milwaukee station as

11.5 inches and measured at the old monitoring station as nine inches.

THE END OF AN ERA

Outside view of WI99

After 36 years of operating some type of atmospheric monitoring, including per-event acid-rain deposition, 24/7 ozone, suspended particulates, mercury deposition and the supporting meteorological data, WI99 is shutting down. Having been responsible for the operation and maintenance of the site since it was established in 1982, the GLEA will no longer have available data on atmospheric deposition and air quality relative to Geneva Lake available to use in GLEA lake studies. The site was first established as an acid-deposition site under the Wisconsin Acid Deposition program. The GLEA was interested in getting involved in atmospheric monitoring because on an annual basis the atmosphere is the second largest source of water to Geneva Lake. The site had evolved to include atmospheric monitoring for numerous studies and programs. The most significant and longest program was the National Atmospheric Deposition Program (NADP) (http://nadp.slh.wisc.edu/). Under the NAPD program, site WI99 was involved in several networks, including the

National Acid Deposition Network, National Trends Network, and the Mercury Deposition Network. Because WI99 met specific siting criteria, numerous studies were co-located at the site. The site was also great for showing students the details of atmospheric monitoring. The change in the site location is the result of different goals in air monitoring at both the state and federal levels and changes at the site itself. After 36 years of visiting the site, often several times a week, what was referred to as the" man cave" will be missed.

A mercury wet deposition sampler at WI99

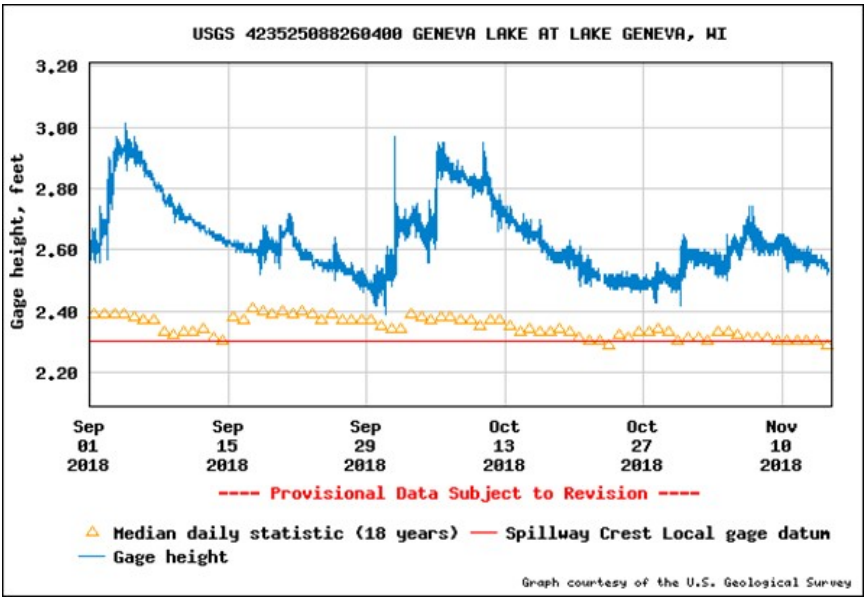
Inside the trailer at WI99

GENEVA LAKE LEVEL

With all the rain this year, lake level has been high. Perhaps the most important criterion for how much water is released from the spillway and the outlet gates is the water level in the culvert under Center Street. When lake level and the culvert level become high, additional

water can be released from the millrace gates. However, care must be given that the release of water from Geneva Lake does not cause downstream flooding.

Several intense rains resulted in variable lake levels, as attempts were made to maintain a safe and consistent lake level. Lake-level peaks during early September and early October were the results of heavy rains occurring several days in a row. The lake has been managed such that it is has been higher than the 18-year average and above the spillway. The year has been wet, with 48.4 inches of precipitation as of the end of October. With Geneva Lake receiving over a third of its annual water contribution from the atmosphere, a wet year such as 2018 can make managing lake level a challenge.



NEW INVASIVE

Geneva Lake has stood the test of invasive species for many years. Because the lake is healthy, these invasives have not caused significant water-quality issues. The lake has changed somewhat, but it remains a high-quality lake. Yet a new invasive species has been found that once again threatens the lake.

In August, starry stonewort (*Nitellopsis obtusa*) was found in a lagoon on the southeast shore. The plant is unique in that it is a big alga that looks like a standard aquatic weed. After conducting plant surveys this fall at all the access sites to Geneva Lake and in the lagoon, starry stonewort's presence was confirmed at only two locations, both in the lagoon. The challenge is to attack the plant before it has an opportunity to move into the lake.

Two options exist to control it. An aggressive chemical treatment during the growing season next spring is the least expensive – but the least likely to eradicate it. Studies on other lakes have found that chemical treatment and mechanical harvesting will eliminate the vegetative part of the plant, but the reproductive part of the plant, the bulbils, remains in the sediment and generates new plants, even during the same growing season.

The second approach to hydrologically dredge the site offers a better opportunity to eradicate the plant but is very expensive. This process sucks up the sediment, the plant, and hopefully all the bulbils. The spoils are dewatered, and the solids are spread on the land. What makes this process very expensive is how and where the spoils and dewatering take place. If they must be hauled away, the cost goes up very fast.

Discussions are taking place with the Trinke Homeowners Association and will be critical in deciding which option is chosen. It is anticipated that a decision will be made by the new year. Then the challenge will be how to fund it.

PHOSPHORUS INITIATIVE

Recent changes in the Geneva Lake water quality have raised concern about what to do. The Geneva Lake Conservancy, the Geneva Lake Association, and the Geneva Lake Environmental Agency have developed and will implement a Phosphorus Initiative, which focuses on reducing phosphorus loading to Geneva Lake.

Presently, Geneva Lake meets its water quality standards, including in lake phosphorus concentration of 15 microgram/milliliter of lake water. However, recent spring tests results have indicated an upward trend of in

lake phosphorus concentrations.

Major components of the initiative include:

- Meet with the Geneva Lake communities to discuss the phosphorus problems and how the communities can assist in reducing phosphorus loading to Geneva Lake through their ordinances.

- Encourage homeowners to test their lawn soils before applying fertilizer or committing to fertilizer application.

- A workshop with homeowners associations to inform their members of measures to reduce phosphorus runoff from their properties.

- Testing two streams for bacteria and to identify the source of the bacteria.

- A study of the Big Foot Creek watershed to identify management practices that can reduce phosphorus loading from the Big Foot Creek watershed.

- Provide assistance to property owners in applying for State Healthy Lakes grants.

- Work with golf courses to receive Audubon certification.

- Assist the agriculture community in implementing best management practices.

Stay tuned for the progress of the initiative. Information and progress will also be available in the partners' newsletters.

BIG FOOT CREEK WATERSHED STUDY

As mentioned earlier in this newsletter, a watershed study will be conducted next year on the Big Foot Creek watershed located on the eastern end of Geneva Lake. With 1,358 acres in the watershed, it is the largest subwatershed. The study will document existing water quality in Big Foot Creek. Historical data have indicated the water quality to be degraded, with high phosphorus and low oxygen in a reddish discharge.

GLEA has applied for a grant from the State of Wisconsin Department of Natural Resources to assist in phase 1 of the project. The Environmental Education Foundation has also committed to financial assistance, earmarking a grant to be used to offer high school students an opportunity to have hands-on experience. GLEA is hoping to

train Badger High School students in field sampling, lab technique for their assistance in collecting and processing samples, doing lab testing, data analysis, and assistance in preparing a report.

The collection and analysis of samples at several locations in the watershed will help to understand what is driving the water-quality degradation of the creek. Once this is better understood, recommended management practices can be identified (phase 2) and implemented (phase 3).

An exciting part of this study is the possibility of working with the Badger Students in data collection and analysis. GLEA is working with Badger to work out a way for students to collected field samples, conduct basic water tests, analyze the data, and make recommendations. GLEA will train the students to prepare them for this hands-on learning experience.

COAST GUARD BILL DIRECTS FUNDS TO GREAT LAKES (Source: Circle of Blue, social@circleofblue.org, Dec. 10, 2018)

Rules recently were reauthorized to protect the Great Lakes from non-native species. The water protection provisions address ballast water, which is what ships use for balance. Because ballast water moves with the ship,

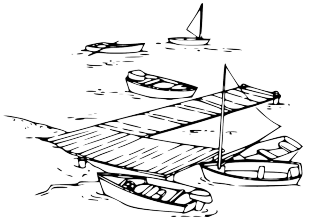
unwanted species can hitch a ride. The bill authorizes $50 million a year for the next five years to monitor for non-native species in the Great Lakes. The bill also authorizes a research center for responding to oil spills in the Great Lakes. In addition to research, the center will train local emergency responders on oil spill recovery techniques and strategies.

Lake Tides

– GLEA received a $1,800 grant from the Lake Geneva Garden Club to conduct a study on the impacts of chemical treatment beyond the area of treatment. The findings of the study indicated the chemical used in treatment and the byproducts of the treatment did not move far beyond the treatment area. Thank you, Lake Geneva Garden Club, for making this study possible.

– The annual summer Geneva Lake boat count showed an increase in the number of boats docked, moored, and stored for in-out services increased 732 boats from 2017 for a total of 5,260 boats. Timing of the counts may account for a significant amount of the increase. New in

this year's count was an inventory of the number of piers. All piers were counted the same. The total number of piers counted was 1,066 or one pier for every 106 feet of shoreline.



– The Geneva Lake Association awarded GLEA a $5,000 grant to help support our summer staff position. Thanks, GLA.

– With the help of Valerie Jackson, who worked for the GLEA during the summer of 2018, the GLEA has a new website, https://www.genevalakemanagement.com/.

– All the Geneva Lake communities have expressed their support for our lake-management efforts by funding us to our requested amount of $20,000. Once again, we thank you for your commitment to protecting Geneva Lake and for your support in our efforts to do so.

– The U.S. Supreme Court is asking the Trump Administration for comments on whether the Clean Water Act applies to pollutants that reach surface water via groundwater. With Geneva Lake receiving 36 percent of its annual water from groundwater, groundwater is an important water source that should be protected.

– Forecasted U.S. coal consumption for 2018 is as low as it was in 1979. Despite the Trump Administration's efforts to revitalize the coal industry, it appears the demand just isn't there.

– An expected announcement on December 11 by the Trump Administration will severely restrict the number of wetlands and waterways covered by the Clean Water Act. The proposed new definition of "waters of the U.S." will erase federal protections from streams that flow only following rainfall as well as wetlands not physically connected to larger waterways. (Source: Ariel Wittenberg, E&E News reporter, Greenwire: December 6, 2018)

GLEA's Geneva Waters Newsletter 'Green Option'

If you would like to change your subscription to this newsletter from a printed paper copy to an Adobe file sent to your email (and enjoy some beautiful color photos too), let us know! Adobe is a free program for your computer if you don't have it already. Just send an email to **glea.office1@gmail.com or gleaadmin@genevaonline.com** with your name and request to receive emailed newsletters. You can also give us a call at (262) 245-4532 with this information.

And if you find you miss the printed copies, just let us know and we can change your subscription.

Feel free to share your Geneva

Waters with others.

Please recycle your newsletters

when you are done enjoying them!

This publication printed on recycled paper

Geneva Lake Environmental Agency

Contribution Form

YES, I want to help Geneva Lake Environmental Agency in their efforts to protect and preserve Geneva Lake for generations to come. Enclosed is my tax deductible contribution for 2018.

Name _____

Address _____

_____

Email _____

Phone Number _____

___ Want to save paper? Check here if you prefer to receive **email** rather than printed newsletters.

If you are interested in receiving a copy of any of the following publications, circle the title below.

- Sediments & Lake History
- Geneva Lake Use Report
- Geneva Lake's Aquatic Plants
- Geneva Lake's Water Quality
- Geneva Lake's Budget
- Geneva Lake & Boating
- Geneva Lake Management Plan
- Groundwater & Geneva Lake
- Geneva Lake Book
- Groundwater Flow Model for Geneva Lake
- Groundwater Data Compilation for Geneva Area
- Groundwater Pumping Near Geneva Lake
- Swimmer's Itch

Mail this form with your contribution to:

GLEA Contributions
PO BOX 914
Williams Bay, WI 53191

USE OF PHOSPHORUS FERTILIZERS IN THE GENEVA LAKE SHORELINE AREAS IS REGULATED.

Phosphorus is the most problematic pollutant in the lake. Most lawns in our area don't need phosphorus. When lawn fertilizers run off into the Geneva Basin, they feed the **unsightly, smelly and potentially toxic** algal bloom and promote the growth of weeds in the lake.

Save Geneva Lake

Geneva Lake Environmental Agency

Village of Fontana Town of Linn City of Lake Geneva

Town of Walworth Village of Williams Bay

P.O. Box 914, Williams Bay, Wisconsin 53191

Address Service Requested

PRESORTED
STANDARD MAIL
US. POSTAGE PAID
GLEA
FONTANA, WI
PERMIT NO. 17

Preserving Geneva Lake for generations to come.