

Geneva Waters

Winter 2018 - Vol. 34, No. 1



“These Seats Are Taken”

Photo By Fred Noer

Geneva Lake Environmental Agency Quarterly Publication

Featured in this issue:

Winter 2018, Geneva Lake Level, G.L.E.A. Intern Position,
Phosphorus 101, “The Times, They are Changin’”, Preparing for a
Changing World, Do You Like Smoked Salmon?, Lesser Celadine,
Dredging Oversight, Climate Change, Budget Spending for Disaster
Aid, 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.

www.genevaonline.com/~glea/

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WINTER 2018

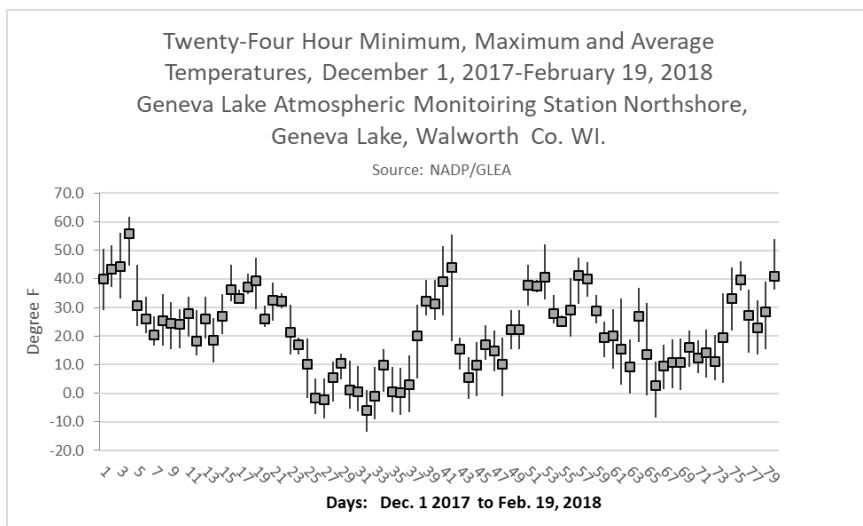
As we enter early March, signs of spring are beginning to show. Snow is melting, fox are mating, birds have added a new song to their chorus, temperatures are in the 40s, and falling moisture is rain or sleet. Yet the winter cold is still with us. The rain garden turned to a vernal pond and then to an ice rink.

December started warm, with December 4 recording a high of 61 degrees. A very cold end of December and early January reminded us what Wisconsin winters can be like. The average December temperature was 24.2, with a high of 61.6 and a low of -8.8. There were 16 days in which the highest temperature of the day did not get above freezing and two nights of subzero temperatures.

January started with a polar blast, yet within 10 days it was back in the 50s. The average temperature on New Year's Day was -6.1, with a high of 1.2 and a low of -13.4. January's average temperature was 21.2, with a high of 55.4 and a low of -13.4. There were 18 days in which the highest temperature of the day did not get

above freezing and seven days during which the lowest nighttime temperature was below zero.

As of February 19, the highest temperature of February was 54 and the lowest was -8.6. So far, February's average temperature is 19.2. There have been 10 days in which the daytime high did not get above freezing and two nights when the low was below zero.



December was very dry, with only 0.38 inch of precipitation compared to a 30-year average of 1.89 inches. Although there were 10 days of precipitation in December, the highest single-day amount was 0.09 inch on December 24, just in time for a white Christ-

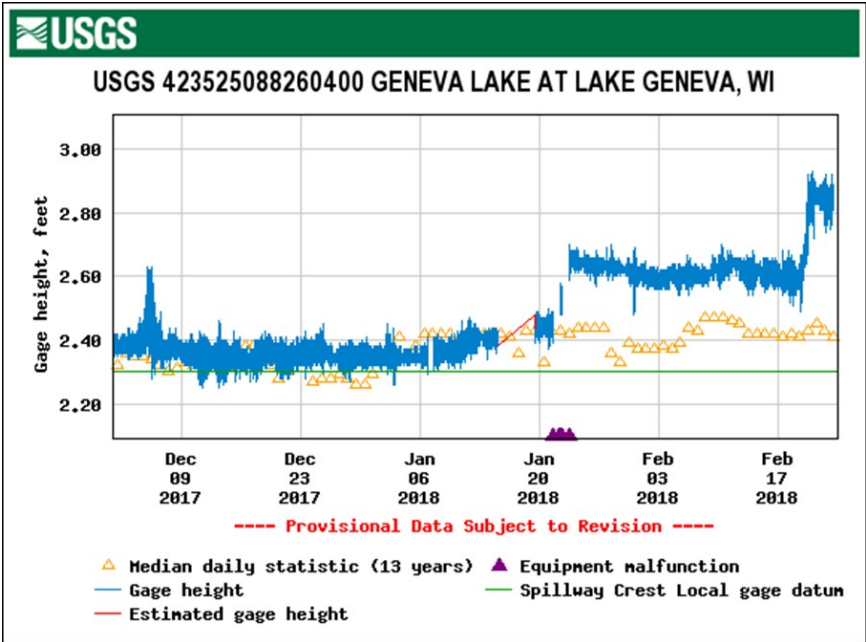
mas. January had a total of 2.14 inches fall over 13 days, with a single day high of 1.42 inches falling on January 21. The first 11 days of February saw the “snow train” arrive with snow every day. As of February 19, there had been 12 days of precipitation for a total of 1.73 inches. The maximum single-day amount for February was 0.32 inch on February 11.

Total precipitation for 2017 was 39.49 inches, compared to a 30-year average of 35.12 inches. Seven months exceeded the 30-year average, led by July that had 9.34 inches, compared to a 30-year average of 3.49 inches. Of the 9.34 inches that fell during July, 5.30 inches fell on July 10-12. Four of the five last months of 2017 had below normal precipitation.

GENEVA LAKE LEVEL

The level of Geneva Lake has generally been above the spillway crest most of the winter. Although ice cover makes it a bit difficult to get accurate readings, the lake level has been pretty close to the 13-year daily mean for most of December and early January. With the cold weather, the lake-level gauge had difficulty,

and the level was not accurately recorded for about two weeks. When the gauge came back on line, the level had risen to well above the mean. With the ground frozen, rains during the week of February 19 resulted in high runoff that brought the level up over four inches (6.84 million gallons) in less than 20 hours.



GENEVA LAKE ENVIRONMENTAL AGENCY'S SUMMER INTERN POSITION

The agency is looking to fill a paid summer intern position for 2018. Applicants should be familiar with aquatic biology, water resource management, and limnology. The intern will be involved in major projects such as beach monitoring for recreational use, coordinating and being involved in a private well testing program, assisting in a littoral habitat study, and assessing the impacts of chemical treatment of aquatic plants in a lagoon. The position is full time between mid-May and the end of August. Interested candidates should send a resume, references, and a list of completed coursework no later than March 23 to the GLEA at glea@genevaonline.com.

PHOSPHORUS 101

The agency recently completed an information paper on phosphorus and its role in lakes, specifically Geneva Lake. The paper looks at the impact of phosphorus and its sources and how the lake stacks up against the State of Wisconsin phosphorus standard for the lake. Below is a summary of the report.

Phosphorus is found extensively in nature but not necessarily in large quantities. Phosphorus is essential for life and found in living and dead cells. It is relatively active and can be found in many different forms. Apatite is the common rock mineral in which phosphorus is found. Phosphorus is usually discussed as total phosphorus, but there are many forms of phosphorus: dissolved reactive (inorganic), filtered, unfiltered, and organic. Inorganic phosphorus is the ionic form and is often dissolved and attached to other ions or soil particles. Organic phosphorus is the form of phosphorus that has been incorporated in biomass.

Phosphorus in lakes is a major concern for lake managers. Research has found a strong relationship between total phosphorus and lake eutrophication (fertilization). Geneva Lake presently meets the phosphorus water quality standard of 0.015 mg/l as established by the State of Wisconsin Department of Natural Resources for its defined water-use objective. If spring phosphorus concentration continues to show an upward trend, the concentration could exceed that standard in the next 20-25 years.

Phosphorus concentration in the lake is directly related to the phosphorus loading to the lake. Studies on the sources of phosphorus loading to Geneva Lake based upon land-use loading rates identify agriculture and dense urban land use as significant potential sources for increased phosphorus loading. The Button's Bay Creek has an unusually high concentration of total phosphorus, resulting in a disproportionately high phosphorus loading from this tributary.

Phosphorus loss, primarily by the White River, has been suggested to be around 10 percent of the annual loading. Thus, 90 percent of the phosphorus annual loading to Geneva Lake stays in the lake for at least 13.9 years, the lake's retention time.

Projected land-use changes show a decrease in agriculture, forest, and open areas, with an increase in urban land uses. Rural phosphorus loading management should involve sound rural land-use practices, reduced soil loss and sediment transport, and proper animal-waste management through development and implementation of good farm conservation plans.

In urban areas, phosphorus reduction should be focused in developing areas. The projected land-use changes must come with no additional phosphorus loading to the lake system. Increased development in urban areas must incorporate on-site best-management practices (BMP) with guaranteed maintenance and effectiveness both during construction as well as post development. Design criteria for the BMP must be engineered and site-specific.

The Southeastern Wisconsin Regional Planning Commission's Recommended Management Plan for Geneva Lake includes two plan elements that address the phosphorus loading – land use and pollution abatement. If implemented, the plan projects that by 2020 phosphorus loading could be reduced by 12 percent or approximately 659.1 pounds per year compared to the 2000 calculated phosphorus loading. This would primarily be from agricultural land being replaced with urban areas having good storm-water management. Other models also show the need to seriously implement and maintain the best storm-water management practices. State assistance, such as the DNR Healthy Lakes grant pro-

gram, may be available to help fund site-specific implementation of storm-water management practices.

“THE TIMES, THEY ARE A-CHANGIN’”

Some interesting things, not all good, are happening to the Great Lakes. Due to zebra and quagga mussels,

Lake Michigan’s water is as clear if not clearer than that of Lake Superior. The Great Lakes were approximately two degrees Centigrade warmer in 2016 than in



1996-2015. According to a report on the Circle of Blues web page (<http://www.circleofblue.org/2017/water-quality/record-heat-2016-broke-lake-temperature-records/>), “There has been a decade-long warming that is most pronounced in the Northern Hemisphere” Lake Superior is still the coldest of the Great Lakes, but it is warming at a faster rate than several of the other lakes. The fisheries are making a significant shift, with decreases in several game species, due to the ripple effect of mussels through the food chain and temperature changes. Water levels in the Great Lakes are expected to rise for the fifth consecutive year, accord-

ing to forecasts by the U.S. Army Corps of Engineers. The lakes hit record-low levels in 2013, prompting a \$21 million emergency dredging program for 58 harbors in Michigan.

PREPARING FOR A CHANGING WORLD

A two-day scientific conference titled “Wetland Resilience in A Changing World” was recently held at Grand Geneva Resort & Spa. Several technical sessions presented recent research on climate change. The data show temperatures in Wisconsin have been increasing over the last 40 years. Projection of past data trends and the use of many climate models show that the increase will continue. This will most significantly manifest itself as warmer nights and warmer winters. Warmer winters mean more winter rains, especially in early and late winter, similar to the rains of February 19-20. With the ground being frozen at this time of the year the potential for flooding is significant. There is a consensus among climate scientists that weather will get more extreme, especially with more intense short-duration precipitation events. Lake managers need to realize many of the runoff and lake-pollution loading models used in the past may not accurately

represent what is presently or will be happening in the watershed.

DO YOU LIKE SMOKED SALMON?

After several years in preparation and a long court fight, the National Marine Fisheries Service recently issued a long-awaited opinion on three organophosphate pesticides – chlorpyrifos, diazinon, and malathion. Pesticide manufacturers pushed for a two-year delay in the release of the report.

Released on December 29, 2017, the in-depth report warned about the impacts of chlorpyrifos contained in runoff entering surface waters as a threat to salmon, sturgeon, orca, and other endangered species in the Pacific Northwest. The report also made recommendations on the use and application of these pesticides. Glen Spain, northwest regional director of the Pacific Coast Federation of Fishermen's Associations, stated that the salmon industry is a \$1 billion dollar industry that is in serious trouble due to declining population of salmon from dams and pesticides.

This is about more than just fish. Scientific studies have found these pesticides can hinder brain development in children at very low levels of exposure. Dow stated that it operates “with full respect for human health and the environment.”

In this administration’s ongoing effort to reduce regulations, Scott Pruitt, EPA administrator, reversed an Obama-era effort to ban the use of chlorpyrifos on fruits and vegetables in March 2017. Dow wrote a \$1 million check to help underwrite Trump’s inauguration.

Let’s see what the administration will do about the report and its findings. Let’s hope the message of Rachel Carson’s “Silent Spring” is not forgotten.



LESSER CELANDINE (*Ficaria verna*)



Last year we discussed a new terrestrial invasive called lesser celandine that has been spotted along streams and

wetlands around Geneva Lake. As spring approaches, it is time to again discuss controlling this invasive, as soon it will be entering its growing season.

This invasive is most pronounced in early spring when this species is one of the first things to green up and flower. It can spread by several means and gets so thick it can crowd out other plants, including garlic mustard. In order to limit the spread of this highly invasive plant, everyone's help is needed. If you find it on your property, please contact the GLEA 262-245-4532 or Invasive.Species@wi.gov.

Early spring is the best time to do manual or herbicide control work by treating with herbicides before the celandine blooms. In small areas digging it up can work, but care must be taken to

remove all bulbils and tubers. Bag all plant material, remove from site, and use landfill disposal or incinerator. Do not compost.

An inventory of the plant's locations in the Geneva Lake area was conducted last spring. If the plant was identified on your property, you should soon be getting a notice from a consortium of groups with information and control measures. It is a prohibited species, meaning it is illegal to possess, transport, transfer, or otherwise introduce these plants. Landowners are responsible for controlling this plant. For more information, contact the GLEA or visit <http://dnr.wi.gov/topic/Invasives/fact/LesserCelandine.html>.

DREDGING OVERSIGHT ON MAN-MADE IMPOUNDMENTS PROPOSED TO BE DONE AWAY WITH

Legislation that would allow up to 50 cubic yards of dredge per year for navigational purposes on man-made impoundments without a permit or oversight is being rushed through the State of Wisconsin Legislature. The Senate held hearing on SB789 on February 15, and the Assembly held hearing on February 19, with

an expected Assembly committee vote on AB935 on February 21. Similar legislation was proposed last year but didn't get too far. Lakefront property owners occasionally need to dredge lakefront property for navigation. Navigable man-made impoundments are public waters that are held in trust for the people by the state government. Granting such authority to private homeowners without review is not the solution. Dredgers would be required to follow best-management practices established by the DNR, yet no one would be watching to make sure this happens. In a recent Action Alert released by Wisconsin Lakes, the leading Wisconsin lakes coalition, it stated its objection is based upon concern of “ . . . poorly planned or executed dredging can spread invasive species, algae-inducing phosphorus, or dangerous contaminants buried in the sediment.”

CLIMATE CHANGE – A NATIONAL SECURITY THREAT

In a recent letter to President Trump, 106 Representatives, 10 percent Republicans, “express their concern regarding (his) recent National Security



Strategy, which fails to recognize climate change as a threat to the United States.” Secretary of Defense Mattis has stated that “. . . the effects of changing climate . . . will impact our security situation.” On December 12, 2017, the President signed into law the Fiscal Year 2018 National Defense Authorization Act, which stated that climate change is “a direct threat to the national security of the United States.” The letter further states that such action “represents a significant step backwards on this issue and discredits those who deal in scientific fact.”



BUDGETED SPENDING FOR DISASTER AID



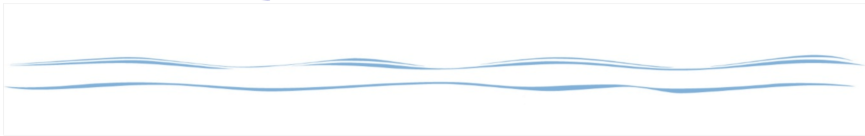
The new U.S. federal budget extension unlocks new spending for disaster aid:

- \$2.3 billion to the U.S. Department of Agriculture to pay for crop losses from hurricanes and wildfires.
- \$165 million to the Rural Utilities Services for grants to rebuild water and sewer systems damaged by the three big hurricanes last year.

- \$15 billion to the U.S. Army Corps of Engineers for repairing storm damage.

Almost \$17.5 billion in disaster relief. I wonder what impact a better national land-use policy and an acknowledgement and sincere efforts to address climate change would have on these numbers? Just a thought.

Lake Tides



– Last year was either the second or third hottest in 138 years of records, according to federal science agencies. NOAA ranked last year's average temperature third, while NASA placed it second. The difference is based on the methods each agency uses. The five hottest years have occurred since 2010.



– Moderate drought is spreading across the United States, according to the country's weekly drought monitor. Currently, 38.4 percent of the continental U.S. is experiencing drought, with the southern and western parts of the country facing the worst conditions. For more information, visit <https://www.drought.gov/drought/>.



Drought.gov
U.S. Drought Portal

– The local Environmental Education Foundation (<https://eefscholars.org/>) is preparing to offer a new scholarship to area students attending Gateway Technical College (GTC) in pursuit of an associate degree in one of four environmental science careers offered through GTC. Up to \$1,000 will be available for a single scholarship or \$500 for two scholarships.

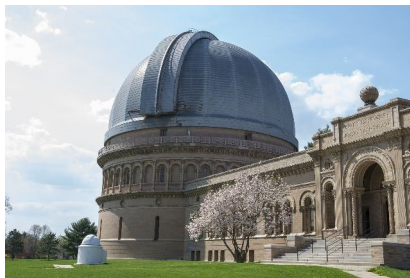
– Household water use decreased in the United States in 2015. For homes on public water utilities, use dropped to 83 gallons a day, a seven-percent decrease. For households that supply their own water, usually via wells, the average daily use per person was 77 gallons, a five-percent decrease.

– Is it arrogant to claim to know the ideal temperature for planet earth in 2100? Is it presumptuous to say what temperatures would be desirable 80 years from now? If your answer to these two questions is yes, then you agree with Environmental Protection Agency administrator Scott Pruitt.



– In January 2017, as a part of the Town of Linn’s master plan update process, a survey was conducted of township residents. The findings once again showed that the respondents favored controlled, low-density growth and the preservation of open area and natural resource protection. Complete findings of the survey can be seen at <http://media.virbcdn.com/files/e1/554598902378e5d6-TABULATEDCommunitySurvey.pdf>.

– Yerkes Observatory will be hosting a Starlight Event at the observatory over Memorial Day Weekend. For more information about this event and other activities at Yerkes, visit <http://astro.uchicago.edu/yerkes/>.



– The Village of Williams Bay has developed a conceptual plan for Theatre Road pedestrian improvements because of concern about increases in both vehicular and pedestrian traffic from the

new high and middle schools. To view the December 2017 draft of the plan, visit <http://www.williamsbay.org/images/notices/Theatre%20Road%20Pedestrian%20Improvements.pdf>.

– The Environmental Education Foundation is accepting applications for its many scholarships and grants. For more information on what is available and deadlines, visit <https://eefscholars.org/>.

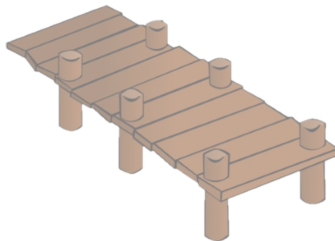
– Fontana has a “Landmark Tree” program that designates special trees within the community. They can be designated because of their “natural beauty, majestic stature, historical significance, location, memorial designation, or other qualities deemed appropriate.” This includes three “Champion Trees” designated by the Wisconsin DNR. For more information and a list of such trees, visit <http://villageoffontana.com/news.html>.



– The Town of Linn is reviewing a proposed development of a “Button’s Bay Lodge” on the east end of the lake, just south of the State Park. Access and use will be private. The project is being proposed by the same developer as the 330-plus unit Symphony Bay development project located almost two miles to the east. More on this to come.

– The City of Lake Geneva will have a new mayor come the spring elections.

– At the City of Lake Geneva’s February 9 Special Piers, Harbors & Lakefront Committee meeting, firms interested in providing architectural and engineering design and project management services for the Riviera Improvement Project were heard.



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Save Geneva Lake

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.

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



Geneva Lake Environmental Agency

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Town of Wakarusa Village of Williams Bay

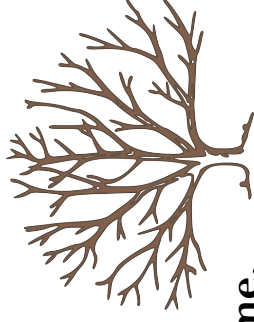
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