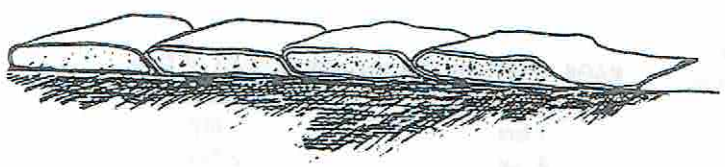
Vulnerable Flood Plain areas. RE: south shore

Additional information provided by members of the Michigan High Water Action Team.

AVAILABLE RESOURCES FOR PROPERTY OWNERS

- Michigan Department of Environment, Great Lakes, and Energy resources on high water: **Michigan.gov/EGLEHighWater.**
- EGLE resources, FAQs on inland lakes high water levels; **Michigan.gov/EGLEInlandLakes.** click on Lakes & Streams Program, then Inland Lakes High Water Levels.
- EGLE permit questions: 800-662-9278 or emailing **EGLE-Assist@Michigan.gov.**
- EGLE, U.S. Army Corps of Engineers permit portal: **Michigan.gov/MiWaters.**
- Michigan Department of Insurance and Financial Services information on flood insurance: 877-999-6442 or **Michigan.gov/DIFS.**
- National Flood Insurance Program: **Floodsmart.gov** or 877-336-2627.
- Status of public beaches: **www.EGLE.State.MI.US/Beach/.**
- Michigan Department of Health and Human Services Drinking Water Hotline: 844-934-1315.
- United States Army Corps of Engineers: **www.LRE.USACE.Army.mil/About/Great-Lakes-High-Water/.**
- National Oceanic and Atmospheric Administration: **GLERL.NO AA.gov/data/wlevels/.**



BAGS REQUIRED FOR 100 LINEAR FEET OF DIKE

Height of dike	Bags required
1 foot	800
2 feet	2,000
3 feet	3,400

EGLE – Wetlands Protection Program web site: Michigan.gov/Wetlands
EGLE – Inland Lakes and Streams Program web site: Michigan.gov/EGLEInlandLakes
For more information see the Resources Education and Outreach Series found at Michigan.gov/JointPermit

How can EGLE assist with flood alleviation projects on wetlands, inland lakes, and streams?

EGLE does not directly manage high-water level projects, and typically does not have the ability to provide funding for projects. However, EGLE does have several important roles when activities occur in wetlands, inland lakes, or streams:

- Support local and statewide emergency management and other government agencies on project planning and implementation.
- Provide technical assistance on projects, including information on water levels and trends, compliance with state environmental laws, shoreline protection techniques, and best management practices.
- Review permit applications for projects involving wetlands, inland lakes, and streams.

Are permits needed for projects in wetlands, inland lakes, or streams if it is to alleviate flooding?

Permits are required for many activities associated with wetlands, inland lakes, and streams, including:

- Fill, dredge, draining, or water level control activities affecting inland lakes, streams, and regulated wetlands.
- Projects affecting shorelines, dams, floodplains, critical dunes, and high risk erosion areas.
- Emergency permitting may be available when a project is deemed necessary to protect property or the public health, safety or welfare.

What resources are available to gather more information?

EGLE offers information on our web sites to help get you started including:

- **Joint Permit Application** - Permit application assistance.
- **MiWaters** – EGLE's online permitting and compliance database.
- **EGLE Staff Contacts** – Find local staff on the Land/Water Permitting Staff Map .
- **Consultants** - Hiring experienced consultants and contractors can help guide you, expedite the permitting process, and assure that the project will succeed.

What services does EGLE provide to help with permitting?

EGLE cannot provide design services or project management for any types of projects. However EGLE may provide technical expertise on wetlands, lakes, and streams issues. See the **Resource Program Education and Outreach** series for more information on **pre-application meetings** and other services EGLE can provide to aid in flooding and other activities taking place at the land/water interface.

For information or assistance on this publication, please contact the Water Resources Division through the EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request. EGLE will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation. Questions or concerns should be directed to the Quality of Life Human Resources, P.O. Box 30473, Lansing, MI 48909-7973. This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

The term "natural" lake refers to a lake that did not originate by the damming (or impoundment) of a stream or river. Many lakefront property owners expect water levels in natural lakes to remain constant. However, natural lakes experience fluctuations and the degree to which they respond to local and regional precipitation events generally is related to the amount of surface water runoff the lake receives from its watershed.

For example, a drainage lake that receives the majority of its water from a stream or river would be expected to respond more rapidly to precipitation events than a seepage lake in which the primary water source is groundwater (springs). Drought conditions, resulting in reduced stream flows, usually affect drainage lake levels more quickly than seepage or groundwater drainage lakes.

Many natural lakes (and even large wetlands) have been equipped with legally established level control structures for the purpose of seasonally manipulating water levels. For example, a level control structure may be operated to maintain a higher water level in the summer to accommodate recreational boating and a lower level in the winter to reduce ice damage to shoreline properties. During drought conditions, wetlands and waterways downstream of a level control structure may be affected by the inability of water to naturally flow through the system.

Climate change models for the Great Lakes region predict longer periods of high temperatures, shorter periods of ice cover, increased evaporation and lower water levels. However, more extreme precipitation events may result in localized flooding - particularly in drainage lakes.

For more information on Michigan's water resources and inland lakes, please refer to "An Introduction to Michigan's Water Resources."

Figure 1 courtesy of University of Wisconsin Extension.

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When lake managers decide to lower water levels in a lake or other detention system, they take into consideration the many effects that may occur from this practice. One of the most motivating factor is to use this chemical free method to control Eurasian watermilfoil. Drying out this plant from lake lowering exposure is an effective organic approach to managing this aquatic invasive plant.

For more information about the Clean Boats, Clean Waters program and aquatic invasive species contact Beth Clawson, MSU (Michigan State University) Extension Educator. To learn more about invasive organisms and invasive aquatic plants contact Michigan State University Extension Natural Resources educators who are working across Michigan to provide aquatic invasive species educational programming and assistance. You can contact an educator through MSU (Michigan State University) Extension's "Find an Expert" search tool using the keywords "Natural Resources Water Quality."

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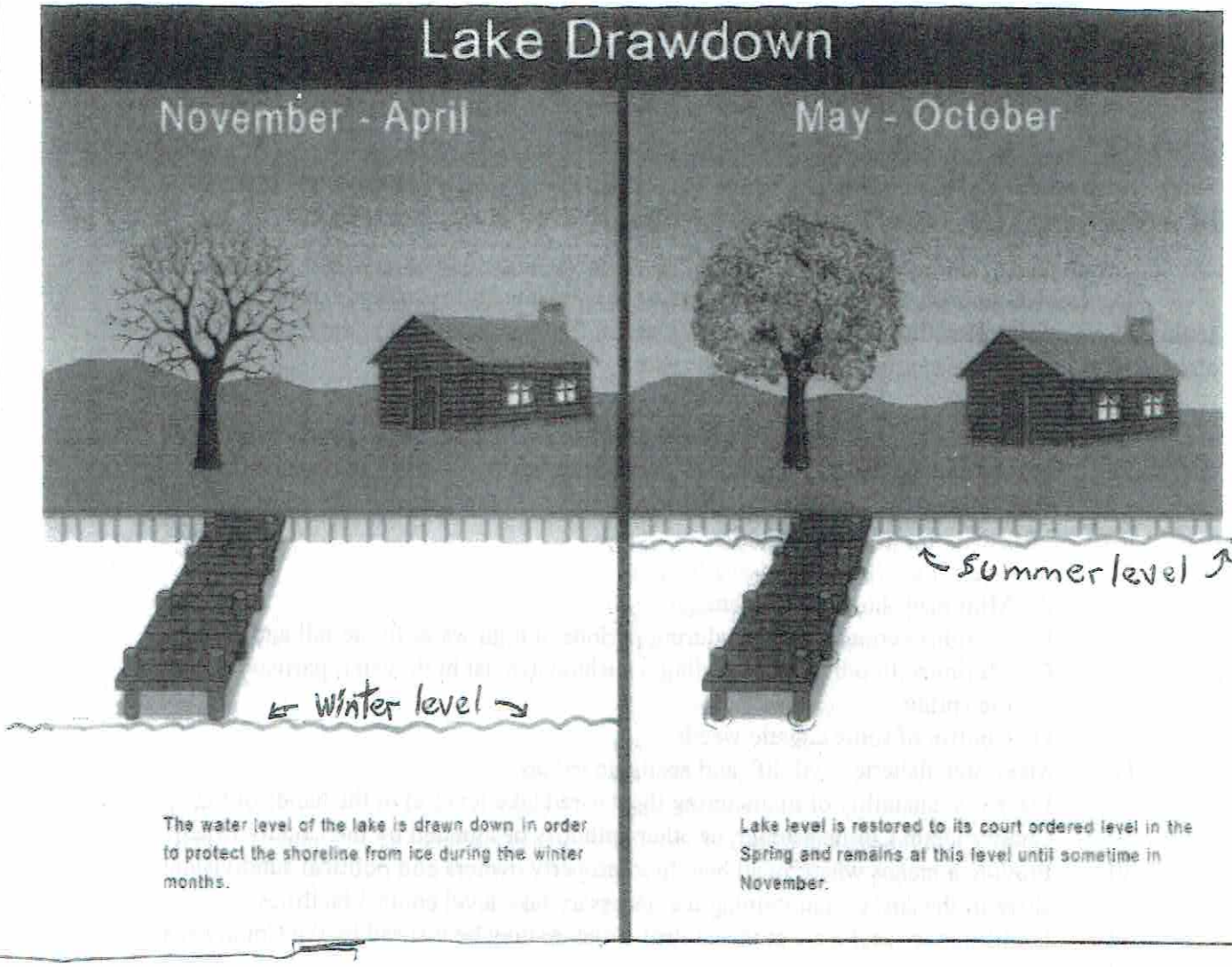


The lake water is to be drawn down in the fall to help deter any ice damage during the winter, and then raised again in the early spring, depending on the amount of snow melt and rain events.

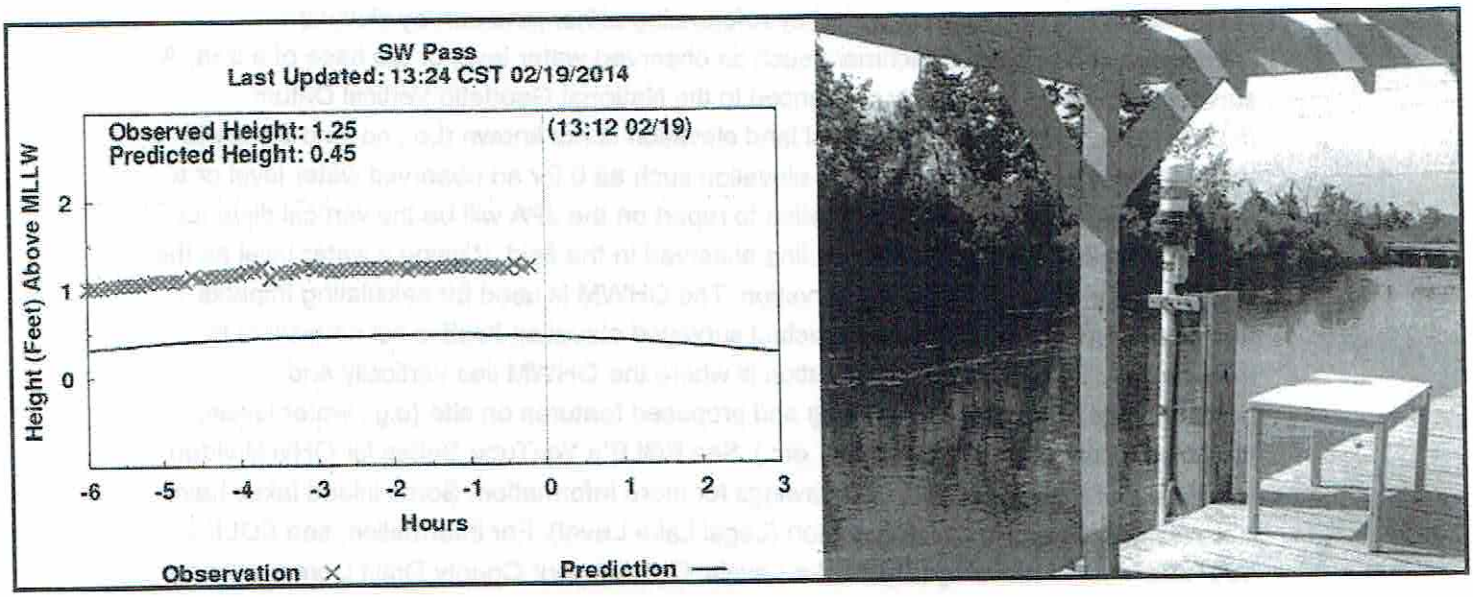
Lake level gauges are fixed and working properly. Winter level to commence on or about November 1 of each year and is restored to its legal level commencing on or about April 15, or ice-out, whichever shall first occur, in each year. Formula: current gage reading + Datum = Legal Mean Sea Level

Genesee County Records, also subject to a certain Genesee County Circuit Court Order fixing the mean water level of 869 feet (above sea level) and the high water level of 870 feet (above sea level) for Lake Ponemah, Tupper Lake and Squaw Lake and recorded in Liber 1509, Page 443, Genesee County Records.

An official website of the United States government. Here's how you know we're official.

What is a datum?

Datums are the basis for all **geodetic survey** work.



Near coastal areas, mean sea level (and other tidal datums) is determined by analyzing observations from a tide gauge. This image shows a tide gauge at the St. Charles Parish Water Level Monitoring System in Louisiana.

A geodetic datum is an abstract coordinate system with a reference surface (such as sea level) that serves to provide known locations to begin surveys and create maps. In this way, datums act similar to starting points when you give someone directions. For instance, when you want to tell someone how to get to your house, you give them a starting point that they know, like a crossroads or a building address.

Geodesists and surveyors use datums to create starting or reference points for floodplain maps, property boundaries, construction surveys, levee design, or other work requiring accurate coordinates that are consistent with one another.

1. What is A Drain Special Assessment?

County drainage districts are separate public corporations with their own financial records. Each drainage district is supported by a Drain Special Assessment that covers the cost of maintaining the drainage system. County drains are not maintained by Genesee general fund taxes.

2. What is a Drainage District?

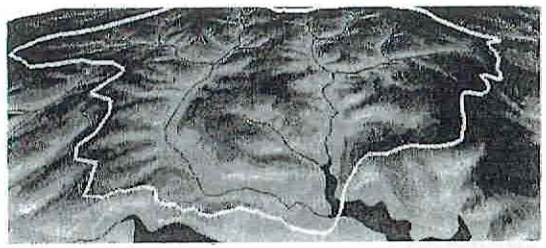
A drainage district is a legally established area of land that drains to a common outlet. Drainage district boundaries are determined by natural topography of the land and rarely correspond to political boundaries such as townships or counties. Common words for drainage district include watershed and drainage basin.

3. Where Is The Storm Drain For Which I Am Being Assessed?

The Genesee County Drain Office has maps that can show the location of your property and the county drains within the drainage district. These documents will be available on the day of Review. Even if your property does not touch the county drain, storm water flows toward this county drain as an outlet regardless of the land's elevation.

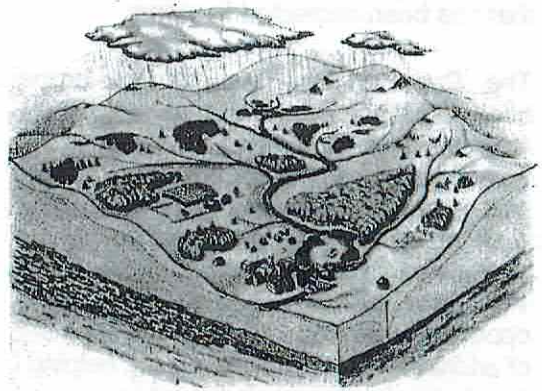
4. Why Did I Receive More Than One Special Assessment Notice?

Each notice informs you of a Drain Special Assessment for a different drainage district. Your property can be in multiple drainage districts because stormwater moves from smaller watersheds through larger watersheds, ultimately discharging to the Great lakes. For example, if your property were located in a small watershed that is "nested" inside a larger watershed, you would receive an assessment for each district, should they both be assessed in the same year.



5. Is This The Only Way I Would Receive Multiple Drain Assessments In One Year?

No. Water may flow off your property in more than one direction of different drains and drainage districts and all of those drains may be assessed in one year.



6. How Are Assessments Determined?

The law requires that assessments be based on benefit derived as determined by the Drain Commissioner. All properties within the drainage district are assessed based on size of the parcel and the land use that is assigned by the municipality. Distances from the drain or the location of the property within the drainage district are not factors. Drainage is considered as an interdependent system with the entire system benefiting from maintenance of the common outlet.

7. Do All Property Owners Pay Drain Assessments?

All property owners within a drainage district receive an assessment, unless specifically exempted by law. In addition, the Municipality, Genesee County, and the Michigan Department of Transportation (as appropriate) also receive an assessment for a portion of the maintenance costs. The Drain Code does not exempt most non-profit or religious properties from assessment.

8. I Recently Purchased my Property, Why Am I Being Billed For Work Done Prior To My Ownership?

Although the work for which you are being assessed may have been completed prior to your purchase of the land, the Drain Code requires that assessments be levied to the property, and assessed to the current owner of record. In most cases, the work performed will benefit the property for years to come.

9. What If I Cannot Attend The Day Of Review?

If you are unable to attend the Day of Review, and have questions regarding your assessment or the assessment process, please call the Genesee County Drain Office; 810-732-1590. It is possible to make an appoint at times other than the Day Of Review, although the appeal period begins after the date of the Day of Review.

10. What Happens If I Disagree With the Proposed Assessment For My Property?

Appeal of Drain Special Assessments may be made to the Genesee County Probate Court within 10 days after the Day of Review.

P-S-T Drain Assess #0647

Court-Ordered Lake Levels

Modifying an Existing Court Ordered Legal Lake Level(s)

LEGAL ISSUES

As more than one lake level expert has indicated, trying to hit a specific lake level numerical target is not unlike "turning around or stopping an aircraft carrier." Most lake level devices (whether it be a dam or augmentation well) require a significant "lead time" to affect lake levels. And, it is not uncommon for a lake level action taken on one day to "overshoot the target" months later. While many earlier lake level orders set a specific numerical target for lake levels, more modern lake level orders tend to set ranges of lake levels for different seasons (quite often, one range of lake levels for the summer season and the other for the winter season). Allowing lake level orders to be modified by the county circuit court involved often helps minimize negative impacts due to either an inadequate or overly-rigid initial lake level order or changing conditions on the lake involved.

Published: Friday, June 19, 2009 6:17 AM EDT

Michigan has more than 36,000 miles of streams, and more than 11,000 lakes and ponds, according to the Michigan Department of Natural Resources (DNR). In the tri-county area, there are more than 40 lakes.

Crane and Loon lakes drain into Squaw Lake. Squaw, Ponemah and Tupper lakes drain into the Shiawassee River and flow through the Linden millpond and dam. The dam in downtown Linden is monitored to keep lake levels within the approved levels. The Genesee County Drain Commission is responsible for monitoring the dam and making adjustments.

Jim Gerth, surface water director for the Genesee County Drain Commission said that the dam in Linden is the only adjustable one with which the drain commission is involved. He said the drain commission monitors the level at the millpond with electronic controls. They had an analog system in the '80s, and a few years ago installed a digital system.

The Linden dam is checked hourly, and adjustments, if necessary, are made every three hours. The system can be monitored from the drain commission offices and from a laptop computer of the assigned on-call worker.

With Ponemah, Squaw, Tupper lakes and the Linden millpond, Gerth said it could take five to seven days for lake levels to peak from a widespread watershed rainfall. It could take up to two weeks for the level to recede. These three lakes are monitored to maintain a range of 868 to could take up to two weeks for the level to recede. These three lakes are monitored to maintain a range of 868 to 870 feet above sea level, said Gerth.

These services of the drain commission are funded by special assessment districts, which were petitioned and approved by local taxpayers. This option is available to other lakefront property owners also as long as more than one-half of the property owners pursue it.

Temperatures and wind speed greatly affect lake levels, said Gerth. A lake could lose up to 2 to 3 inches of rain from evaporation on a hot day that is accompanied by low humidity and high winds. In most cases, this water would be replaced with inflows and springs. He said that oftentimes residents complain of this problem in August when the higher lake levels are desired.

Summary

Groundwater recharge, water quality, preventing stream channel erosion, and flood control are concerns of watershed planners and stakeholders. The rain events that produce these concerns overlap, Figure 1. In general, runoff from small storms and the early part of larger storms are the focus of water quality BMPs.[+] Channel protection measures focus on larger, but still fairly common, storm flows. Flood control is generally associated with infrequent events.

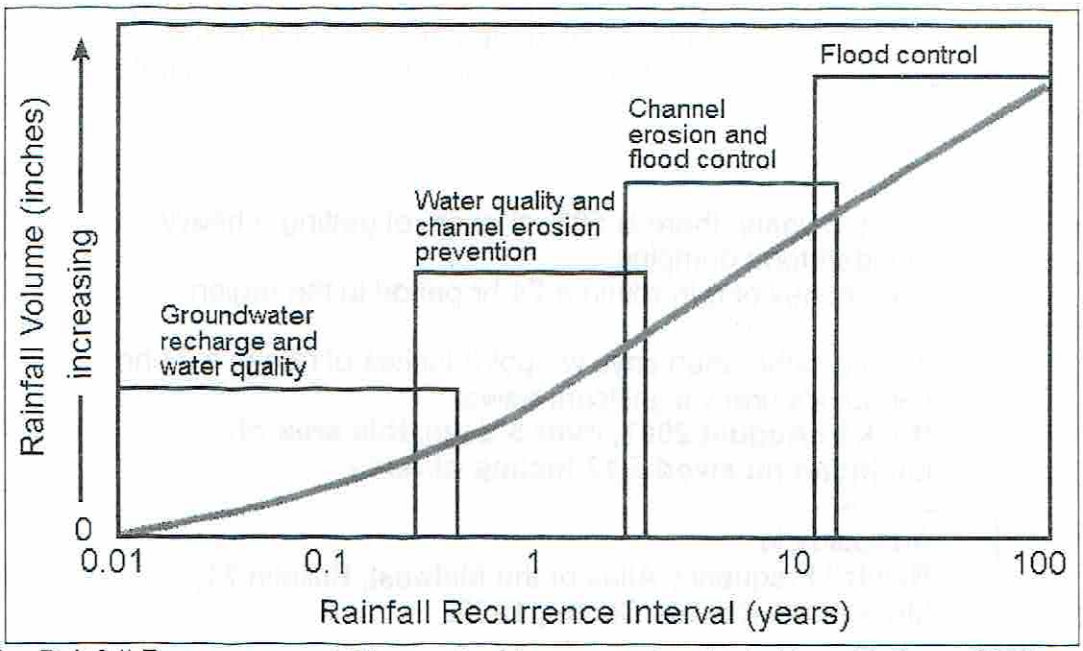


Figure 1 – Rainfall Recurrence and Stormwater Management, adapted from Sullivan, 2002

[+] In-stream Best Management Practices (BMPs), or upland BMPs.

Info. GoTo
mi.water.usgs.gov/

2:02

155 **Legal Lake level**

From: "Jones, Tom" - Dam Operator
To: "howd401@charter.net"
Cc:
Sent: Wednesday January 11 2023 4:36:07PM
Subject: RE: Legal Lake level

Attached you will find the Circuit Court Ruling Setting the Legal Lake Level for Ponemah, Tupper and Squaw Lake. These lakes outlet through the Mill Pond and have their Lake Levels controlled by the Dam on the Mill Pond. I have reviewed all the documents I can find in the office and have found no documents providing a legal lake level for the Mill Pond itself. The standard practice for this office to maintain the legal lake levels in the upper lakes that have been set is to Lower the Mill Pond to a Winter elevation of 867.8 after November 15 and to start to raise the Mill Pond to a Summer elevation after the Spring Rains and Thaw to an elevation of 868.8 prior to the Memorial Day weekend. We also maintain a minimum flow out of the dam to maintain the flow in the Shiawassee River.

Thomas E Jones Jr. P.E.

Senior Civil Engineer

Genesee County Drain Commissioner's Office

Surface Water Management Division

tjones@geneseecountymi.gov

810-732-1590