

# ***The Lakesider.....Spring 2023***

***The Annual Newsletter of the Lake Mitchell Improvement Board.***

**Lake Mitchell Improvement Board**  
4830 East M-55  
Cadillac, MI 49601

Mike Solomon  
Chair  
Wexford County Drain  
Commissioner

Shari Spoelman  
Vice Chair  
City of Cadillac  
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Dave Foley  
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Selma Township  
Representative

Kathy Adams  
Wexford County  
Commission  
Representative

Ron Klimp  
Riparian Representative  
Treasurer

Email us at:  
lakemitchellboard  
@gmail.com

## **Lake Mitchell Improvement Board Meeting Dates for 2023:**

- \* **Monday, June 12**
- \* **Saturday, August 19**
- \* **Monday, October 16**

All meetings begin at 10:00 AM at the Cherry Grove Township Fire Hall on M-55. The public is encouraged to attend. **Contact Lake Mitchell Improvement Board at: lakemitchellboard@gmail.com.**

## **Lake Mitchell Property Owners Incorporated Meeting for 2023:**

**Saturday, June 17 at 10 AM at Cherry Grove Township Fire Hall on M-55.**  
**Email contact: lakemitchellpropertyowners@gmail.com**  
**Website: www.LakeMitchellIPO.com**

**If you received this newsletter, please consider saving the board the \$2 it costs to print and mail this newsletter by reading it online at [www.lakemitchell.org](http://www.lakemitchell.org). All the contents of the newsletter are available online plus photos, minutes of our meetings, and features about Lake Mitchell not found in our annual newsletter. Email us at lakemitchellboard@gmail.com and we will add your email to our list which has over 350 addresses.** Benefits of being on the email list: notifications of lake treatments and reminders of upcoming meetings. If weather events such as floods, ice storms, or heavy snows occur, which could possibly damage property, emails may be sent. These are especially appreciated by Association members who are not lakeside residents. The email list will not be sold or offered to anyone and will only be used for Lake Mitchell Improvement Board and Association business.

### Information ONLY on lakemitchell.org

- Photos of native and invasive vegetation
- Photos of Lake Mitchell activities and weather events in 2015-2023
- Years of archive photos (Your home might be a star.)
- Lake Mitchell Annual Progress Report (entire report)
- Lake Mitchell By-Laws
- Minutes of Improvement Board meetings
- Maps showing location of invasive vegetation

**Website of the Lake Mitchell Improvement Board: [www.lakemitchell.org](http://www.lakemitchell.org)**  
Scan this QR code with the QR Reader on your phone or tablet to get the Lake Mitchell website: [www.lakemitchell.org](http://www.lakemitchell.org).



## **What is the Lake Mitchell Improvement Board?**

There seems to be confusion about the difference between the Lake Mitchell Improvement Board and the Lake Mitchell Property Owners' Incorporated. This information might help you sort it out.

The Lake Mitchell Improvement Board is empowered to collect special assessments from benefiting properties for approved lake improvements. Virtually all assessment monies is spent to control invasive and nuisance native vegetation as well as monitor water quality and protect the fishery.

The Lake Mitchell Improvement Board was formed in accordance with Michigan's Inland Lake Improvement in 1993 and brings together local citizens and governments to manage the lake. Under provisions of Public Act 451 of 1994, Part 309 as amended), the lake board membership includes a riparian representative who is elected for a three-year term, appointed representatives from Selma Township, Cherry Grove Township, the city of Cadillac, a Wexford County Commissioner, and the Wexford County Drain Commissioner. Township, County Commission and City Commission representatives representatives are appointed for indefinite terms. The Drain Commissioner who is elected in a county election. Email contact: lakemitchellboard@gmail.com – Website: www.lakemitchell.org

## **What is the LMPOI?**

The Lake Mitchell Property Owners Incorporated was established in the early 1970's to promote a healthy environment for the lake. Members worked to establish the Lake Mitchell Improvement Board with a focus on lake navigation and weed control. From that time to 2018 the association continued to monitor issues concerning property owners for the lake. The LMIB moved primarily to invasive weed management.

In 2018 a new board was formed for the Lake Mitchell Property Owners Association and was incorporated as a 501c 4. This is the same organization but we realized that to be effective and accomplish our goals we needed to become a dues paying organization. We converted to a member only organization. All members must own or have deeded access on Lake Mitchell and dues are \$50 yearly. We communicate with our members through surveys, petitions, Facebook, and our website and hope everyone will join. Please attend our July 9th meeting as well.

While the Lake Mitchell Improvement Board focuses primarily on weed control we have a much broader agenda to include lake water quality, lake levels, dam management, sewer, the health of fish and wildlife, and all questions related to property owners on the lake. Even though we are a dues paying organization, the issues we address usually benefit all property owners. Over half of the property owners actively support our initiatives.

2022 was a busy year for us with ongoing sewer issues, petitions, membership drives, etc. Lake levels were improved last year with more rain, less evaporation, and good dam management. Former LLMPOI member Dave Kuyers has been appointed to the Lake Mitchell Sewer Authority Board.

Email contact: lakemitchellpropertyowners@gmail.com – Website: www.LakeMitchellIPO.com

## **Roadside pickup takes care of weeds**

The Lake Mitchell Improvement Board will again provide roadside pickup of weeds. The first pickup will occur on May 1 and then first and third weeks of May and then weekly from Memorial Day through Labor Day with additional pickups the second and fourth weeks of September. Aquatic weeds need to be removed from the lakeshore by property owners and put on the roadside. Do not leave sticks, brush, yard waste or sand.. Only aquatic vegetation will be picked up.

## **Free compost available**

The weeds picked up along the shore of Lake Mitchell are deposited and composted at Ron Klimp's residence on the south side of Lake Mitchell. (7288 S. 33 ½ Mile Road). You can pick up the compost at no cost, or for a small fee, Ron will load your truck or trailer. The weeds that were once a nuisance in the lake can now be helping enrich your lawn or garden. Contact Ron at 616-295-8686.

## **LMIB Budget Report**

Jan. 1, - Dec. 31, 2023

Beginning balance \$ 203,999  
Income Assessments, etc. – \$68,160  
Expenses Weed treatment – 68,688  
Weed pickup & processing – 10,360  
Legal, bookkeeping, etc. – 2,121  
Total Expense : \$81,169  
Ending balance:\$190,990

## Lake Mitchell aquatic vegetation and water quality report for 2023

Each year Jennifer Jermalowicz-Jones, CEO of Restorative Lake Science (RLS), prepares an annual report of their work on Lake Mitchell. The full report is found at [www.lakemitchell.org](http://www.lakemitchell.org). This is a summary of that report.

The overall condition of Lake Mitchell in 2022 was excellent with favorable water clarity, reduced total phosphorus concentrations and reduced Eurasian watermilfoil (EWM) except for a late-season germination which was promptly treated.

In 2022, RLS utilized the new systemic herbicide ProcettaCOR@ with diquat. The EWM in Big Cove sustained reduced growth in 2021-2022 after rigorous 2020 ProcettaCOR@ treatment.

Protection of the 26 native aquatic plant species is paramount for the health of the lake fishery and these plants should not be managed unless they are a nuisance to lakefront property owners and create navigational and recreational hazards. Examples are lily pads, nuisance pond weeds or chladophora in the coves or Torenta Canal.

In 2022 approximately 105 acres of EWM were treated throughout the entire lake. RLS recommends alternating use of different systemic herbicides to reduce the probability of herbicide developing a hybrid that resists treatment. The treatment of Purple Loosestrife with triclopyr occurred in 2022 due to a lack of Loosestrife-eating beetles.

### Lake Mitchell water quality

Lake Mitchell would be considered eutrophic since it does contain ample phosphorus, nitrogen, and aquatic vegetation growth but also has good water clarity and moderate algal growth.

Earlier season measurements of water clarity ranged from 10-13 feet with an overall mean of 9.5 feet for the season. By August the clarity was 7.0 feet. The improved clarity allows for more aquatic plant growth. In 2009 the average clarity was 4 ½ feet.

Phosphorus is the primary nutrient necessary for abundant algal and aquatic plant growth. In 2009 phosphorus rate was 0.058 mg/L. In 2022 it had improved to 0.020 mg/L.

Lakes with high alkalinity are able to tolerate larger acid inputs with less change in water column pH. Many Michigan lakes contain high concentrations of CaCO<sub>3</sub> and are categorized as having “hard” water. The alkalinity of Lake Mitchell is quite low and is indicative of a “soft” water aquatic ecosystem.

Most Michigan lakes have pH values that range from 6.5 to 9.5. Lake Mitchell is considered “neutral” on the pH scale. The pH of Lake Mitchell in 2022 was similar to previous years with a mean of 8.1.

Chlorophyll-a is a measure of the amount of green plant pigment present in the water, often in the form of planktonic algae. High chlorophyll-a concentrations are indicative of nutrient enriched lakes, whereas chlorophyll-a concentrations less than 2.2 are found in nutrient poor or oligotrophic lakes. The mean 4.0 in Lake Mitchell was elevated for an inland Michigan lake but lower than in recent years.

### Status of native aquatic vegetation in Lake Mitchell

The August 10 survey determined there were 26 native aquatic species. These include 17 submersed, 4 floating, and 5 emergent species. This indicates high biodiversity in Lake Mitchell and is likely a significant reason for the great fishery. The overall % of cover of the lake by native plants is low relative to the size of the lake and thus plants should be protected and not treated unless they become a nuisance in shallow coves or the Torenta Canal.

### Status of Invasive Aquatic plants in Lake Mitchell

The amount of EWM present in Lake Mitchell varies each year and is dependent upon climatic conditions, especially runoff-associated nutrients. The main lake survey on June 7 found 13.3 acres of milfoil through the entire lake. On June 14 those acres and an additional 20.2 acres of new growth were treated ProcettaCOR@ and diquat. Additionally an Aquastrike@ and flumioxazin spot treatment was needed in Little Cove due to excessive growth of nuisance vegetation. A brief harvest in Torenta Canal was held to reduce algae. An additional survey on August 10 determined a significant late season growth of approximately 72 acres of EWM which were treated on August 17. In addition, the coves were treated for nuisance native aquatic growth that was a navigational hazard.

### Management recommendations for 2023

In 2023 RLS is recommending treatment of large offshore areas with a combination of the systemic herbicide ProcettaCOR@ along with the contact herbicide diquat. Diquat and/or flumioxazin will continue to be used in the cove areas for nuisance natives. An additional triclopyr treatment may be needed in Franke North, Little Cove, and Big Cove for the treatment of Purple Loosestrife this season. RLS is aware that mid to late season seedbank germination can occur and that is prepared to address those with lake surveys and mapping. The canal will be assessed for the need for a possible harvest and scheduled, if necessary, although those harvests have lasted for a few years at a time.

## Michigan DNR Master Angler Program

Anglers that catch fish that meet minimum lengths qualify as Master Angler fish. If you catch one of these, measure it from tip to mouth to tail and send that photo to [michigan.gov/Master Angler](http://michigan.gov/Master_Angler). Check that site for further information on the program. Anglers that catch fish certified as Master Angler will receive a patch.

### Master Angler minimum lengths for Lake Mitchell species:

Largemouth Bass	22"
Smallmouth Bass	21"
Rock Bass	11.5"
Bluegill	10"
Bullhead (all species)	14"
Bowfin	27"
Black Crappie	14"
Northern Pike	40"
Yellow Perch	14"
Pumpkinseed sunfish	9"
Walleye	29"
Warmouth sunfish	9"

As this issue went to press the 2021 Master Angler rankings had not been posted. Based on data from 2020, I noted 3 entries from Lake Cadillac and 10 from Lake Mitchell. While our lakes are best known for their walleye, pike, bass, bluegill and crappie fishing, those four species had no entries. If you're looking to take trophy-sized fish, look to bullheads and pumpkinseed (commonly referred to as sunfish).

#### Lake Mitchell entries

<u>2021</u>	<u>Date</u>	<u>Species</u>	<u>Size</u>	<u>Method</u>
JOSEPH STEWART	05/25/2021	Bluegill	10	Live Bait
MARK TONELLO	05/16/2021	Pumpkinseed	9.2	Live Bait
HUDSON HATCHEW	07/25/2021	Pumpkinseed	9.5	Live Bait

#### 2022

GERALD EICHHORN	01/29/2022	Bluegill	10	Ice Fishing
JAKOB HUMPHREY	06/30/2022	Bowfin	30.1	Artificial Lure
WYATT WYSOCKI	05/30/2022	Bullhead	14.2	Live Bait
ZACHARY ROBBINS	05/15/2022	Bullhead	14.5	Live Bait
JACK PAYNE	05/20/2022	Crappie	14.2	Artificial Lure
GERALD SMITH	11/05/2022	Crappie	14.2	Artificial Lure
JEFFREY EICHHORN	01/29/2022	Crappie	16	Ice Fishing
ANN GRAVES	05/29/2022	Pumpkinseed	9.2	Live Bait
JEFFREY EICHHORN	01/29/2022	Pumpkinseed	9.8	Ice Fishing
DAVE FOLEY	07/07/2022	Rock Bass	11.6	Artificial Lure

#### Lake Cadillac entries – 2022

JEFFREY BASSETT	07/16/2022	Bluegill	10	Artificial Lure
FLOYD LONG	05/13/2022	Bullhead	14	Live Bait
DALTON GAY	06/12/2022	Bullhead	14.2	Live Bait
IAN KNAPP	07/09/2022	Bullhead	14.5	Live Bait
JACKIE MILLER	05/13/2022	Bullhead	14.9	Live Bait
JOE MOLNAR	06/08/2022	Bullhead	15.1	Artificial Lure
JEFFREY BASSETT	07/16/2022	Pumpkinseed	9.4	Artificial Lure
DAN AKSAMIT	06/14/2022	Pumpkinseed	9.5	Artificial Lure
GREG IRWIN	07/03/2022	Pumpkinseed	9.5	Live Bait
ROBERT BEEBE	07/04/2022	Pumpkinseed	9.5	Artificial Lure
BRYAN BALDWIN	08/03/2022	Pumpkinseed	10	Live Bait
KENNETH TODD	08/26/2022	Rock Bass	11.8	Artificial Lure

### Walleye to be planted in Lakes Mitchell and Cadillac

After two years with no walleye being planted in Lake Mitchell and Lake Cadillac due to the pandemic in 2020 and the failure of walleye rearing ponds in 2021, according to Mark Tonello DNR Fisheries Biologist, walleye fingerlings were planted, 117,000 in Lake Mitchell in 2022. Tonello hopes to have another walleye planting in Lake Mitchell this summer.

The walleye fishery in the last four years has improved largely due to regular plantings at a rate of 50/acre (130,000) every other year. A full complement of walleye was stocked in 2012. Stocking continued in 2014 (200,000), 2016 (143,150), 2018 (133,854), and 2019 (50,881).

## How climate change might effect Lake Mitchell and local streams

written by Dave Foley

According to meteorological data -the average daily temperature in our locale has risen 2 to 3 degrees since 1900. In the Cadillac area you can expect about 4-6 days where the temperature will reach 90 degrees. Thirty years ago this might happen just once or twice times in a summer. These warming trends will likely effect lakes in our area.

This change has had an effect on the ice season on Lake Mitchell. Forty years ago Lake Mitchell would typically become iced over during the last days of November. In the last eight years the average freeze date is December 10. During the 1970s the average day that the ice left Lake Mitchell was April 13<sup>th</sup>. Over the last ten years, the ice is typically gone by April 3<sup>rd</sup>.

As the water temperature rises, you can expect milfoil and native plant species will become more prevalent. Algal growth that produces the green scum, that saturates the lake, will appear more frequently. Some of them, such as blue green algae, may be toxic, killing water organisms, including crayfish and insect larvae.

An abundance of aquatic plants may effect fish reproduction. When vegetation dies, it drops to the lake bottom covering gravel and sand areas where smallmouth bass, perch, and walleye spawn. While DNR plantings of walleye have made up for a reduction in spawning for that species, there has been a noticeable decrease in the natural reproduction of perch and smallmouth bass. Over the last twenty years, the warmer water and increased plant growth has provided inviting habitat for species like crappie, largemouth bass, bullheads and panfish.

During the summer, walleye and pike are more difficult to catch because these species feed less when the water temperature moves above 70 degrees. Fishing for these species in warmer water, which has never been easy during the hot months, will become even more challenging.

Although climate change will effect when lakes freeze, Mitchell, being a shallow lake and located at a slightly higher elevation than much of the state, often is one of the first lakes in Michigan to have safe ice. During the early weeks of winter, fishermen from downstate, as well as Indiana, Ohio, and Illinois descend on our lakes for some early season angling.

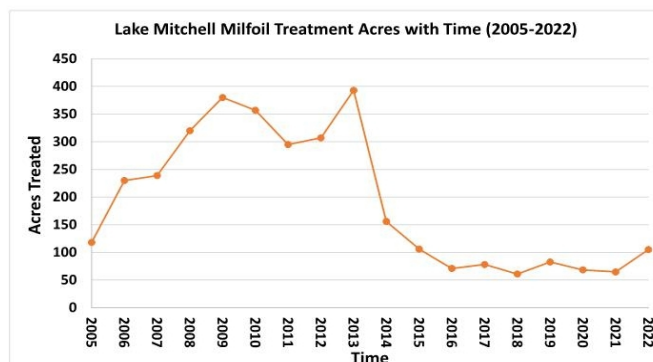
A warming climate may have even a greater effect on cold water species such as trout as they are less able to cope with rising stream temperatures. Most effected are likely to be trout living in rivers below impoundments. These waters become warmer as the flow from impoundments and lakes may raise downstream temperatures to a dangerous level. In the Manistee River below dams such as Hodenpyl and Tippy, trout may find it difficult to survive if the climate warms. One stream that is especially vulnerable is the Clam River, a designated "blue ribbon trout stream" that gets much of its flow from Lakes Mitchell and Cadillac.

In recent years there have been more monsoon-like rains where 2 to 8 inches of precipitation may fall in a short period of time. The heavy runoff resulting from these storms washes topsoil and chemicals used on agricultural land and lawns into streams and lakes. In rivers and creeks these flood waters wash away fish habitat and increase level of silt in the water. Property owners with waterfront land should refrain from using fertilizers and consider creating a greenbelt, which reduces runoff into lakes and streams by letting vegetation grow along the shoreline.

On the whole Lake Mitchell hasn't been significantly effected by the warming trend of our weather. The changes are subtle. You may not see a difference from year to year. But when you hear the old-timers recalling their "back in the day" tales of buckets of perch, and show off pictures of them holding great strings of smallies, walleye, and pike, you realize something has happened and a changing climate may be playing a role in the ecology of Lake Mitchell.

### Lake Mitchell Milfoil Treatment 2005-2022

<u>Year</u>	<u>Treatment Acres</u>
2005	118
2006	230
2007	239
2008	320
2009	380
2010	357
2011	295
2012	307
2013	393
2014	156
2015	106
2016	71
2017	78
2018	61
2019	82.6
2020	68.4
2021	64.6
2022	105





# NOTICE 2023

PLM Lake and Land Management Corp  
 PO Box 424, Ewart, MI 49631  
 (800) 382-4434(o) (231) 372-5900(f)  
 www.plmcorp.net



**IN 2023, SELECT AREAS OF LAKE MITCHELL WILL BE TREATED PERIODICALLY THROUGHOUT THE SUMMER BEGINNING IN APPROXIMATELY EARLY JUNE FOR THE CONTROL OF WEEDS AND/OR ALGAE.** Below is a list of herbicides that may be applied to the lake and associated use restrictions. On day of treatment, signs will be posted along the shoreline within 100 feet of treatment areas that indicate what products were used and specific water use restrictions that apply:

Chemical product/active ingredient	Chemical trade name	Do Not Use this water for swimming or bathing until	Do Not Use this water for ornamentals or turf irrigation until	Do Not Use this water for domestic purposes or agriculture irrigation until	Do Not Use this water for livestock watering or similar purposes until
Endothall	Aquathol K, Hydrothol 191,	1 Day(s)	N/A	14 Day(s)	14 Day(s)
Flumioxazin	Clipper, Propeller Schooner,	1 Day(s)	3 Day(s)	5 Day(s)	N/A
Imazapyr	Habitat	1 Day(s)	120 Day(s)	120 Day(s)	N/A
2,4-D ester	Navigate 2,4-D	1 Day(s)	INDEFINITE or until approved assay indicates a concentration of 100ppb or less for ornamentals; No restriction for established turf	INDEFINITE or until approved assay indicates a concentration of 100ppb or less	N/A
Triclopyr liquid	Navitrol, Renovate 3	1 Day(s)	120 Day(s) or until approved assay indicates 1ppb or less; No restriction for established turf/grasses	120 Day(s) or until assay indicates 1ppb or less. N/A on domestic	N/A
Triclopyr granular	Navitrol DPF, Renovate OTF	1 Day(s)	Site-specific recommendation* No restriction for established turf/grasses	120 Day(s) or until assay indicates 1ppb or less. N/A on domestic	N/A
2,4-D amine	Sculpin G	1 Day(s)	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; assay indicates levels under 100ppb at the water intake	N/A
Diquat Dibromide	Tribune	1 Day(s)	3 Day(s)	5 Day(s)	1 Day(s)
Florpyrauxifen-Benzyl	ProcellaCOR	1 Day(s)	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; assay indicates no detect at the water intake	N/A

PLM Blue.: water dye (tracer), Cygnet Plus, PolyAn: Adjuvant, M.D. pellets: gram negative, naturally occurring bacteria, Phosphorus mitigation products: Eutrosorb, Phoslock;

**No Restrictions** on swimming, bathing, irrigation, domestic purposes or livestock watering.

**For a complete listing of all product labels, please see our website.**

**N/A= Not Applicable**

**\*Site-Specific recommendations to limit ornamental irrigation with ProcellaCOR, Renovate & Sculpin granular treated water will typically last 2-14 days. Contact PLM for further information.**

The chemicals used for Aquatic Nuisance Control are registered by the U.S. Environmental Protection Agency and the Department of Environment, Great Lakes and Energy. The potential for damage to fish and other non-target organisms is minimal provided that the product is used as directed on the product label and the permit. To minimize the possible effects on health and the environment, the treated water is restricted for the above purposes.

**PLM Lake & Land Management Corp. Certified Applicators:** Salvatore Adams, Jason Broekstra, Adam Cichon, Jaimee Desjardins, William Ducham, Jeff Fischer, Christopher Garner, BreAnne Grabill, Dustin Grabill, Steve Hanson, Kyle Heath, Jake Hunt, Jacob Irons, Blake Mallory, Michael Pichla, Eric Reed, Colton Risner, Cameron Robinson, James Scherer, Alison Schermerhorn, Casey Shoaff, Lucas Slagel, Keith terHorst, Jeff Tolan, Andy Tomaszewski, Dennis Vangessel, Andrew Weinberg

**Method of Application:** Chemical application will be made via boat, backpack, and/or land vehicle applying liquid surface products by surface spray and/or injection. Granular product application will be surface broadcast.

## **Drain Commissioner's Corner**

By Mike Solomon, Wexford County Drain Commissioner

### **Current status of Lake Levels**

Many of you have heard of or seen the Court Order 585 (1967) by Judge William Peterson. It basically states the following:

1. That the annual maximum level is set at 1290.0 feet
2. That a minimum winter level is established at 1288.9 feet
3. That a summer minimum level is established at 1289.7 feet

Along with the basic court order Judge Peterson gave much additional information about lake levels. Most of this information came from two studies done by the Michigan Department of Conservation in 1955 and 1967. These were the basis for the determination of the legal lake levels.

I think the most important part of the Opinion of the Court is the fact that the Judge ordered the summer level of the lakes to commence at 1289.7 feet (see above) instead of the Department of Conservation's recommendation of 1289.4 feet. This 0.3 feet (3.6 inches) makes an incredible difference in summer boating use and would be even more critical for late season fishing.

Drain Commissioners have recorded lake levels on Lake Cadillac and Mitchell on a monthly basis since 1975. These data show the lake levels are usually within the levels cited in the Opinion of the Court, though an all time new high was reached on June 18, 2008 with a level 1291.5 feet. This was the result of 11.83 inches of rainfall for the month.

Lake levels are a reflection of the combination of precipitation, evaporation and dam operation. We have had 5 of the last 6 years with above normal precipitation. Warmer summer temperatures and high winds result in more evaporation. Looking at the recent data it appears it is more difficult to reduce lake levels both in the summer and to try to obtain the winter water level. This could be a result of several factors. With the conversion of small summer homes to large homes with patios and large driveways and garages has resulted in much more impervious surface. This increases rapid runoff that often times drains directly into the lake. We have over 4,000 acres of surface water and a large watershed (28,593 for Lake Mitchell alone) that all outlet down a 25 foot channel of the Clam River. Additionally there are over 2 million gallons per day in groundwater cleanup being discharged to the Clam River that were not present at the time of the Court Order. There are also obstructions in the river that may impede flow.

It is an interesting challenge to operate the lakes within the Court Ordered levels and to receive input from lake users and riparian owners that have their own thoughts on lake levels.

I have had the lake level data from the last 48 years summarized and statistically analyzed. Using these spreadsheets it is easier to make sound decisions based on scientific records to keep the lakes within the Court Ordered levels that have been established.

I appreciate the help that Jack Linn has provided with assembling and analyzing lake level data and providing a sounding board and recommendations to help with lake level decisions.

### **Wake boats may create problems in Lake Mitchell**

The arrival of wake boats in recent years has raised concerns about the effects of these watercraft on the ecology of shallow bodies of water like Lake Mitchell. These boats are built with tanks in the back of the boat that take on thousands of gallons of water causing the boat to ride bow-up stern-down. This enables to boat to create 2 to 3 foot wakes that individuals can surf without a tow rope.

When in motion, the propeller wash points downward at such an angle from these boats that it can disturb the lake bottom stirring up phosphorus and nitrates which can result in algal blooms, uproot aquatic plants and destroy fish spawning sites. The sediments stirred up by wake boats greatly decreases water clarity. The prop wash will stir up bottom matter 15 feet down. The waves generated by these boats may cause shore erosion, damage or swamp boats tied to docks, and destroy waterfowl nesting sites.

After doing a study of wake boats, the Michigan DNR has recommended that wake boats run at least 500 feet from shore and not operate in water less than 15 feet deep.

**LAKE MITCHELL IMPROVEMENT BOARD  
203 PENINSULA DR.  
CADILLAC, MI 49601**