

The Lakesider.....Spring 2014

The Annual Newsletter of the Lake Mitchell Improvement Board.

**Lake Mitchell
Improvement Board**
4830 East M-55
Cadillac, MI 49601
info@lakemitchell.org

Mike Solomon
Chairperson
Wexford County Drain
Commissioner

Shari Spoelman
Vice Chairperson
City of Cadillac
Representative

Alan Anderson
Treasurer
Cherry Grove Township
Representative

Dave Foley
Secretary/Newsletter
editor
Selma Township
Representative

Mark Howie
Wexford County
Commission
Representative

Sperry Claypool
Representative At-Large
representing Lake
Mitchell Association

Lake Mitchell Association Officers

Tom Jacobson
President

JoAnn Engels
VP, Secretary/Treasurer

Lake Mitchell Improvement Board tentative meeting dates for 2014:

- * Wednesday, April 16 @ 10:00 AM
- * Saturday, June 28 @ 10:00 AM
- * Saturday, August 9 @ 10:00 AM
- * Wednesday, October 15 @ 10:00 AM
- * Monday, January 12 (2015) @ 10 AM

All meetings are held at the Cherry Grove township fire Hall on M-55. The public is invited to attend. All meetings begin at 10:00 AM.

Contact Lake Mitchell Improvement Board at info@lakemitchell.org.

Lake Mitchell Property Owners' Association Meeting:

- * Saturday, May 17 @ 10:00 AM

Meeting is held at the Cherry Grove Township Fire Hall on M-55.

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. (We would rather use our money to fight milfoil than print and mail newsletters). 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 info@lakemitchell.org and we will add your email to our list which has over 330 addresses. Those on our email list are notified about important Lake Mitchell information including days when the lake will be treated as well being alerted to 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 Lake Mitchell activities and weather events in 2013-2014**
- Photos of native and invasive vegetation
- Lake Mitchell Progress Report (entire report)
- Lake Mitchell By-Laws
- Minutes of Improvement Board meetings
- Maps showing location of invasive vegetation
- Detailed feature on aeration

Website of the Lake Mitchell Improvement Board: www.lakemitchell.org
Scan this QR code with the QR Reader on your smart phone to get the Lake Mitchell mobile website: **www.lakemitchell.org/mobile**.



Summary of Annual Report of Aquatic Vegetation and Water Quality of Lake Mitchell for 2013

Issued January 2014

This is a summary of the Annual Report prepared by Lake Mitchell's consultant and director of Restorative Lake Sciences, Jennifer Jermalowicz-Jones. The report, in its entirety (41 pages), can be found on the Lake Mitchell website.

The native biodiversity of Lake Mitchell is very high with 18 submersed, 4 floating leaved, and five emergent aquatic plant species for a grand total of 27 species. Dense stands of milfoil have threatened this diversity, impaired navigation and recreational activities as well as possibly affecting waterfront property values.

In previous years milfoil was treated with standard doses of systemic (root-killing) chemicals 2,4-D and triclopyr. The hybridization of milfoil produced a plant that was resistant to these doses in 2011. By testing hybrid samples to various doses and various chemicals, a more effective treatment was developed and applied successfully in 2013.

On June 10-11, 2013 a GPS grid survey of 1888 sampling points was conducted and approximately 420 total acres of hybrid milfoil was found, which represented about 16% of the lake surface area.

On June 20 the main lake was treated for milfoil. In Little Cove and the Franke Coves, in addition to being treated for hybrid milfoil, contact herbicides were used to treat nuisance pond weeds. The Torenta Canal required an algae treatment for dense *Cladophora* blooms. No harvesting was done on Lake Mitchell in 2013.

An August 1 post-treatment survey found 70 acres of new milfoil growth and 7 acres that needed re-treatment. That 7 acres was treated at no charge under an agreement with the applicator, *Professional Lake Management*, which stipulates that if a treatment fails, it will be redone for free. Surveys done in the fall determined that most beds of hybrid milfoil had been knocked down.

Forty pots of cultured *Galerucella* beetles were transplanted into areas growing Purple Loosestrife on July 12. Transplant areas included shorelines of Little Cove, Franke Coves, Big Cove, and the Torenta Canal. A survey of Purple Loosestrife in August showed moderate damage to plants. Additional beetles will be planted in 2014.

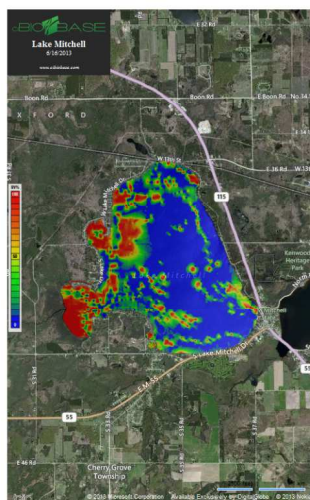
Weed beds in Big Cove that had been planted with milfoil-eating weevils several years ago continued to thrive and future stocking of weevils is not advised.

Nutrient levels continue to be in the eutrophic (nutrient rich) range for the entire lake with elevated levels entering the lake from all tributaries. Water clarity continues to improve. The majority of water quality parameters such as pH, total alkalinity, and dissolved oxygen have been consistent over the past few years.

A Lake Mitchell and Lake Cadillac "expo" was held at the Cherry Grove Township Hall on August 10.

Recommendations for 2014: Systemic (root-killing) herbicides will be used in the main lake to control hybrid milfoil. Nuisance native aquatic plants in the coves will be treated with strong contact herbicides to provide season-long control and a mechanical harvest could follow if removal of dead biomass is desired. The Torenta Canal will be treated with chelated copper to control *Cladophora* algae and contact herbicides to decrease growth of nuisance native plants. Coves and the Torenta Canal, which warm up quickly in the spring, producing early season plant growth, may be treated earlier than the main lake.

Over the past five years, milfoil has fluctuated between 400 acres in 2009 to a low of 273 acres in 2012. The aggressive hybrid milfoil infestation in Big Cove and the northwest region of the lake in 2013 accounted for the increase in acreage to 430 acres. Given the post-treatment results, much less acreage should be found in 2014; however it is difficult to predict distribution growth patterns of hybrid milfoil.



What is the Lake Mitchell Property Owners' Association? (2014)

What is the Lake Mitchell Property Owners' Association?

Everyone who owns property on Lake Mitchell or land with deeded access to the lake is a member of the Lake Mitchell Property Owners' Association. The LMPOA will meet on 10 AM on the Saturday, May 17 at the Cherry Grove Township Hall. The current officers are Tom Jacobson, president; Lois Poag, vice-president; JoAnn Engels, secretary/treasurer.

The following information was supplied by the LMPOA:

Mission Statement

The Lake Mitchell Property Owners' Association is dedicated to representing the best interests of lake property owners and the deeded access community. The Association's primary responsibilities include improving, protecting, and preserving the environmental health and use-ability of Lake Mitchell.

Our Vision

Our vision is to communicate policies and practices, to educate and inform members on all issues and actions that affect the quality and use of Lake Mitchell. We represent and protect the overall interest of LMPOA and hope to enhance their ability to maximize enjoyment for our shared resource.

The LMPOA will focus in issues important to our members which include the following:

- Boat navigation and swimming
- Safety for our members and lake visitors
- Lake quality and health
- Lake levels
- Propagation and health of fish and wildlife
- Update members on success of lake management programs like weed control and removal.
- New lake threats like zebra mussels, hybrid super weeds and algae.
- Promote residential best practices (how you can help)
- Respond to issues concerning the good of Association members.

What is the Lake Mitchell Improvement Board?

The Lake Mitchell Improvement Board was formed in accordance with Michigan's Inland Lake Improvement in 1993. Under provisions of Public Act 451 of 1994, Part 309 as amended), the lake board includes a Lake Mitchell Association at-large member 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. All board representatives are appointed for indefinite terms, except for the Drain Commissioner who is elected in a county election. If a change in representatives is desired, that should be communicated to the group the individual represents. The Lake Board is empowered to collect special assessments from benefiting properties for approved lake improvements.

Water Levels and Dam Rehabilitation

Drain Commissioner's Corner
Prepared by Mike Solomon

Dam Rehabilitation:

Mike Solomon, Wexford County Drain Commissioner, did a rehabilitation project on the Clam River Dam that controls the flow from Lakes Cadillac and Mitchell. The dam was constructed in 1968 and has not had any significant maintenance done since that time. The dam is a two gate system that is used to control the lake levels as established by the Circuit Court.

The project consisted of removing deteriorating concrete, replacing and moving the fencing off the wing walls, adding an additional control section to aid with low flow conditions and landscaping the area. We also sealed the concrete sections, and provided protective covers for the electrical components. The cost of the project is being split equally between Wexford County and the City of Cadillac.

In 2014 we will be replacing the seals around both gates reducing leakage and helping to maintain water levels in the lakes.

Lake Levels:

It may surprise some, but we received higher than normal precipitation in 2013. The total precipitation was 37.75 inches for 2013 compared to a 30 year average of 30.81 inches. Unfortunately it was highly variable. We received 5.4 inches of precipitation in the month of April along with a quick snowmelt. This resulted in the highest water level recorded in any April since levels have been recorded beginning in 1975. We also received 6.24 inches of precipitation in November. That means 11.64 inches or 31% of our annual precipitation occurred in those two months. At the other end of the spectrum, June, July and September were below normal months. The period of June through September totaled 10.21 inches of precipitation which resulted in a lake level of 1289.39 feet MSL on November 1st. This is 0.31 feet below summer level but 0.49 feet above the winter level.

There is always a lot of conjecture and claims about low or high water levels. I have had more statistical analysis of our water levels done by working with Jack Linn who earned a living doing statistical analysis. He developed percentile tables of each month so I could compare the records with other monthly averages throughout our period of record. I heard claims that these were the lowest levels anyone had ever seen. When you look at the data the reading on August 1, 2013 exceeded 25 % of the readings on that date, September 1, 2013 was higher than 30 % of the readings on that date and October exceeded 25% of the readings on that date. So I think though we all would have preferred high water levels in 2013 they were far from the lowest recorded.

Can I prevent my yard from flooding?

Melting snow and heavy rains may leave some lawns covered with standing water. This occurs when water is unable to seep into the ground and collects on nearest low sections of land. Property owners who wonder why their yard suddenly is prone to flooding after handling runoff well for many years will likely discover that the flooding began after they expanded paved surfaces. In neighborhoods where several property owners enlarge their impervious surfaces, water retention on land surfaces can be exacerbated. To prevent flooding, minimize impervious surfaces. Paving a driveway, building a garage or enlarging a building's footprint covers the ground with a surface that water cannot flow through, so it must flow elsewhere. Once the ground is saturated the water pools up on the surface.

Are you an aquatic gardener?

As you boat along the shore of Lake Mitchell, you'll see lush green lawns and gardens of beautiful flowers - evidence of the care given by lakeshore property owners. But could these residents also unknowingly be aquatic gardeners helping to grow masses of weed beneath the surface of Lake Mitchell? Yes, that might certainly be true.

The fertilizer that encourages plants to grow on land, leech into a lake boosting aquatic plant growth. Leaves or lawn clippings raked or dumped into the water fall to the bottom and decompose providing a rich underwater mulch for plants to take root. Just noting that the lake bottom adjacent to your property is sandy and free of weeds, doesn't mean there isn't a problem. Fertilizer and yard waste will drift along before settling to the bottom, often near the first drop off or where there is soft bottom creating ideal habitat for aquatic plant growth.

Here are some ideas that will help insure you're not inadvertently becoming an aquatic gardener.

1. Use Phosphorus-free fertilizers and fertilizers sparingly -Rain, lawn sprinkling, and snow melt all will wash fertilizers and sediments from yards into the lake unless there is a substantial greenbelt along the shoreline. The soil in the Lake Mitchell watershed generally has more than adequate amounts of phosphorus and nitrogen to grow lawns. You may purchase a soil sample kit at the Michigan State Extension in the Wexford County Lake Street Building in Cadillac. They will test your soil to determine what, if any, fertilizers are needed. If you must use fertilizers, select bags that are phosphorus-free and with slow release nitrogen. If the label on the package has a zero in the middle such as 12-0-20 then you know it contains no phosphorus. We must also monitor the use of Nitrogen, which is why we encourage decreased use of fertilizers in general. Nitrogen adds to weed growth and algal blooms.

The Michigan legislature has passed a law banning the use of phosphorus fertilizers that went into effect January 1, 2012. The degradation of lakes caused by phosphorus has attained national attention with several states regulating the use of fertilizers containing phosphorus. Cherry Grove and Selma Townships both have passed resolutions recommending that fertilizers on lakeshore properties be phosphorus-free. The City of Cadillac now uses only phosphorus-free chemicals on its lakefront property.

2. Create a shoreline greenbelt - A greenbelt is a band of natural vegetation, such as wildflowers, grasses, perennials, and trees growing along a lake shoreline. These buffer strips stabilize shoreline to help prevent erosion and filter pollutants and sediments. Greenbelts slow surface runoff before it enters the water, allowing sediments, excess nutrients, and other pollutants to settle out. Uncontrolled sedimentation will alter the habitat of crayfish, mayfly larvae, and fish as well as increase phosphorous loads in the lake. Leaving a strip of natural vegetation between your lawn and the water's edge is one of the best things you can do to maintain our lake's water quality. A bushy greenbelt along your shoreline is the best way to discourage Canada geese from invading your property.

3. Do not feed the waterfowl – It will only encourage them to reside on your lawn and leave their nutrient rich weed-growing defecation there and in the water.

4. Eliminate loosestrife or phragmites. While these plants may be attractive, they are invasive and harm native wetland vegetation. These plants should be uprooted and removed. The seeds will travel on the wind and water to new locations. Photos of these plants are on our website.

5. Keep leaves or yard waste out of the lake. Don't rake leaves or yard waste into the lake. Leaves or grass once they decompose will provide fertile areas to grow aquatic plants. Burning yard waste near the lakeshore is not a good solution either. Ashes contain phosphorous and nutrients that can easily make their way into the lake resulting in excess weed and algae growth.

2013 Calendar Year Financial Report
by Alan Anderson

Quick Facts about Lake Mitchell Assessments

- There are approximately 594 front lot, 191 back lot, and 12 commercial lot owners assessed annually to make up the most significant part of the LMIB budget.
- The anticipated fiscal year 2013/2014 revenue (from assessments, grants, and bank interest) is \$215,400.
- In calendar year 2013, \$180,468.50 was spent on chemical treatment for weeds in lake Mitchell.
- Historically, approximately 80% of annual dollars received are spent on chemical treatment.

2013 Calendar Year Financial Record

2013 Income	Jan.1-June 30	July 1-Dec. 31	Total
Interest	178.49	174.18	352.67
US Forest Service Grant	2,150.00		2,150.00
Assessment Income	9,310.36	193,415.16	202,725.52
Total	11,638.85	193,589.34	205,228.19

2013 Expenditures	
Roadside Weed Pickup	7,500.00
Lakeshore Environmental Administration	16,000.00
Chemical Treatment	180,468.50
Purple Loosestrife Beetles	2,100.00
GVSU Weed Analysis	0.00
Bass Tournament Monitor and fish return	0.00
Insurance/Bond	635.00
Service (audit, inspection, permit fees)	2,310.00
Print (mailings, newsletter, website, supplies)	2,360.98
Misc. (Conference registration fee)	
Total	211,374.48

Fund Balance Jan.1, 2013	229,204.82
2013 Revenue	205,228.19
Total	434,433.01
2013 Expenditures	211,374.48
Fund Balance Dec.31, 2013	223,058.53

Roadside Pickup for 2014

The Lake Mitchell Improvement Board will again provide roadside pickup of weeds. Weed hauling begins May 19 and continues through September 12. Aquatic weeds need to be removed from the lakeshore by the property owners and put on the edge of the road. **Do not leave sticks, brush, yard waste or sand by the roadside. Only aquatic vegetation will be picked up.**

There is no hotline to call; the weed hauler will pick up weeds according to this schedule:

Monday – From the canal north to the roller rink.

Tuesday – From the roller rink along West Lake Mitchell Drive checking all lakefront roads ending with the Camp Torenta loop.

Wednesday – From the canal south and west including all roads with lake front property to the end of Sunrise Point Road.

Thursday and Friday– Days for collecting weeds not picked up during the week.

Weed compost and mulch available

The weeds picked up along the shore of Lake Mitchell are deposited and spread out to dry at Ron Klimp's farm on the south side of Lake Mitchell (7288 S. 33 1/2 Mile Road). Contact Ron at 616-295-8686. You can pick up the weeds at no cost or for a small fee Ron will load them for you. The weeds that were once a nuisance in the lake can now be helping you enrich your garden. The black peat from the Franke Cove dredging project is also available.

Chelated Copper versus Copper Sulfate

For years, every June an airplane would appear flying low over Lakes Mitchell and Cadillac dropping tons of blue copper sulfate crystals into the lake. The chemical would sink down, and kill the snails that carried the organism that would later cause swimmer's itch. The copper sulfate did kill the snails, but it also began to accumulate on the lake bottom as a heavy metal precipitate. Once a buildup occurs, the lake bottom may become sterile which will kill off invertebrates such as insect larvae, crayfish and beneficial bacteria. The practice of using copper sulfate was stopped in the 1990s, however, it has been speculated that the use of copper sulfate may have caused the decline of May fly hatch and diminished the population of crayfish in the lakes.

The heavy buildup of algae in the Camp Torenta Canal and in some areas of the coves has become a concern. To deal with this problem chelated copper will be used this year. With chelated copper algaecides, the copper is released into the water at a slower rate and does not accumulate in the lake sediments. Herbicide manufacturers developed chelated algaecides for long term control and to lessen the potential bio accumulation of available copper.

Underwater hazards, what can be done about them

Every year a few watercraft are damaged by submerged rocks in Lake Mitchell. Concerned property owners have raised this concern at Improvement Board meetings. In the late 1980s the LMIB was able to take advantage of an EPA Clean Water Grant and to break up some troublesome boulders and relocate others to deeper parts of the lake. Those funds are no longer available. Following a precedent set by the City of Cadillac of not marking the hazards because of potential liability problems, the LMIB will not mark hazards. In some instances private parties have taken upon themselves to place buoys to mark rocks in Lake Mitchell.

Michigan boating laws you might not know pertaining to Lake Mitchell

The *Handbook of Michigan Boating Laws and Responsibilities* is fifty pages long – more than most of us want to read. Since boaters are responsible for complying with all laws, I asked Holly Pennoni, our local DNR conservation officer, which regulations were most problematic to boaters. Only a few of the regulations have been highlighted here. The entire handbook can be viewed at <http://www.boat-ed.com/michigan/handbook/book.html>. The following points should be reviewed as this boating season gets underway:

Regulations for PWCs (personal watercraft) :

- It is illegal to operate a PWC during the period that begins at sunset and ends at 8:00 a.m.
- PWC's must operate at "slow, no wake" if crossing within 150 of another vessel unless the other vessel is also a PWC.
- You may not operate a PWC in waters less than two feet deep unless traveling at a "slow, no wake" speed.
- It is illegal to harass wildlife or disturb aquatic vegetation with your PWC.
- You may not operate a PWC within 200 feet of a Great Lakes shoreline unless traveling at "slow, no wake" speed perpendicular to the shoreline.
- **Those less than 14 years of age may not legally operate a personal watercraft (PWC). This only recently became law and many are not aware of it.**
- **Those 14 and 15 years of age** must have a *boating safety certificate* and adult supervision by a parent, legal guardian, or person at least 21 years of age. They may operate it alone, if operating the PWC within 100 feet from parents, legal guardians or approved 21+ year old.
- Those at least 16 years old and born after 12/31/78 may operate a PWC only if they have a *boating safety certificate*.

PFD and light requirements:

- All boats must be equipped with personal floatation devices (PFDS) for each person on board. For vessels less than 16 feet long or a canoe or kayak persons may choose from a wearable USCG approved PFD or a throwable PFD. Officer Pennoni noted that PFDs must be in good and serviceable condition and readily available to watercraft occupants.
- Children under six years old **MUST** wear a Type 1 or Type 11 PFD when riding on the open deck of a vessel.
- Vessels over 16 feet must also have a Type IV (throwable) in addition to a wearable PFD for each person on aboard - and appropriately sized.
- Under 26 ft. long power-driven vessels, when underway, must have red and green sidelights visible from a mile away and an all-round white light, higher than the side lights, which is visible for two miles. Unpowered vessels that are paddled, rowed, or poled must have on hand at least one lantern or flashlight.
- Navigation lights are required when underway between sunset and sunrise and during periods of reduced visibility.

Regulations for towing skiers and other devices:

- Every vessel towing water skiers, surfboarders, or similar devices must have, in addition to the driver, a person on board to observe those being towed.
- It is illegal to tow persons one hour after sunset or one hour before sunrise.
- Persons being towed must stay at least 100 feet from a shoreline if less than three feet deep, as well as any anchored or moored vessel, a dock or raft, and marked swimming areas.

Walleye fishing in Lake Mitchell and Lake Cadillac

Now that the walleye fishing in Lakes Mitchell and Cadillac seems to be on the rebound, with some help from Jim Anderson, the manager of Schafer Sports in Cadillac West, here's some tips that might improve your fishing.

Spring and early summer

Walleyes spawn in the first weeks after ice out and can readily be caught in May and into June. Although they will hit on sunny days, best catches usually come when it's overcast, at dusk or at night. When it's windy fishing is often better. Jim Anderson recommends a shiner minnow and lead-head jig combination as a good choice for early season fishing. Live bait fishermen may want to drift fish, troll or fish a minnow under bobbers. Live bait can be effectively trolled, drifted, or fished under bobbers. Whatever method used, Anderson points out that it is important to move the bait slowly and keep it near bottom. Many fish are taken in May by anglers wading out on the Lake Mitchell side of the Canal and casting live bait or minnow type lures like the Rapala Husky Jerk. Other spots popular with boot-clad anglers are out on Camp Torenta's Point, and along the shoreline near the Rotary Pavilion in Lake Cadillac. In addition walleye will often be found on the inside of a weed line. As the water warms, the fish will readily take night crawlers and leeches. Those that troll or drift often put the crawlers on harnesses adorned with colorful beads and spinners. Others use jigs with a plastic worm, a minnow, or piece of nightcrawler

Mid-summer

Anglers seeking walleye look for overcast days with a chop on the water or they fish during the evening into the night. During daylight hours anglers drop hooked leeches or crawlers into holes in weed beds or along the edges of heavy plant growth. Drifting leeches on lead head jigs can also be effective. It can be hard to make good catches in the summer.

Fall

The first cold snap after Labor Day often signals an upturn for fishing and all species may go on a feeding spree. Fishermen need to move around until they locate fish and then concentrate on those areas. Walleye often bite furiously just as day fades into night. This is a feast or famine time for gamefish. The fishing may be extraordinary one day and then dead the next. Imitation minnow lures are effective but using jig-minnow combinations on the edges of weedlines can be effective. Evenings you'll see anglers wading out on both ends of the Canal and, if you can avoid the weeds, try fishing off the causeway.

Winter

Invariably the best walleye action comes with first ice. Minnows fished near bottom under tipups and jigging minnow type lures as well as *Swedish Pimple* lures work best. Your catch may improve if you tip lures with a minnow head and use scented spray like *Baitmate Max*. Be careful on first ice as the lake will have variable ice thicknesses.

Walleyes are back and more are on the way

DNR Fisheries Biologist Mark Tonello revealed that this summer 1-2" fingerling size walleyes will be planted in our lakes. Lake Mitchell will receive about 130,000 and Lake Cadillac 60,000 which works out to about 50 fish per acre. Tonello noted that raising walleye is like farming in that the final product depends on many variables so it's possible that the number of fingerlings desired might not be available.

Walleye fingerlings are raised by Mason County Walleye Association in ponds. The MCWA is a non-profit group that raises walleye cooperatively with the DNR at their own expense. Any support that Lake Mitchell riparians might want to offer would be appreciated. Their website is www.masoncowalleyeassn.org.

NOTICE 2014

PLM Lake & Land Management Corp.
PO Box 132, Caledonia, MI 49316
616-891-1294(o) 616-891-0371(f)
www.plmcorp.net



IN 2014, SELECT AREAS OF LAKE MITCHELL WILL BE TREATED PERIODICALLY THROUGHOUT THE SUMMER BEGINNING IN APPROXIMATELY LATE MAY 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:

Check all that apply	Chemical product/active ingredient	Chemical trade name	Do Not Use this water for swimming and 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
x	2,4-D ester granular	Navigate	1 day	INDEF or until approved assay indicates a concentration of 100ppb or less for ornamentals; No restriction for established turf	INDEF or until approved assay indicates a concentration of 100ppb or less	INDEF or until approved assay indicates a concentration of 70ppb or less
x	2,4-D amine granular	Sculpin G	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; assay indicates levels under 100ppb at the water intake	See product label
x	Triclopyr liquid	Renovate 3	1 day	120 days or until approved assay indicates 1ppb or less; No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less	See product label
x	Triclopyr granular	Renovate OTF/LZR	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less	See product label
x	Triclopyr/ 2,4-D amine	Renovate Max G Renovate LZR MAX	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less triclopyr and 100 ppb or less 2,4-D	See product label
x	Diquat dibromide	Reward, Littora, Solera, Tribune Knockout,	1 day	3 days	5 days	1 day
x	Endothall	Aquathol K, Hydrothol 191	1 day	N/A	14 days	14 days
x	Flumioxazin	Clipper	1 day	3 days	5 days	N/A
x	Chelated Copper	Nautique, Komeen, Komeen Crystal Harpoon, Harpoon Granular	1 day	N/A	N/A	N/A
x	Hydrogen peroxide	Green Clean PRO	1 day	N/A	N/A	N/A
x	Imazapyr	Habitat	1 day	120 days or until approved assay indicates 1ppb or less for ornamentals or turf	120 days or until approved assay indicates 1ppb or less	N/A
x	Glyphosate	Aqua Pro	1 day	N/A	N/A	N/A
x	PLM Blue, Cygnet Select: water dye (tracer), Copper Sulfate Alonglife: copper sulfate, Citrine Plus-Ultra, Captain-XTR, Algimycin, Earthtec, SeClear, Formula F-30, K-Tea: chelated copper, Cygnet Plus, PolyAn: Adjuvant, Pak 27, Green Clean L: oxidizer, M.D. pellets: gram negative, naturally occurring bacteria					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 INDEF= Indefinite

*Site-Specific recommendations to limit ornamental irrigation with 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 Michigan Department of Agriculture. 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: Karson Arnold, Tyler Beatty, Tyler Bengry, Jason Broekstra, Darren Chase, Dennis Chase, Jaimee Conroy, Jeff Fischer, Bre Grabill, Dusty Grabill, Steve Hanson, Mitch Hiler, Jake Hunt, Nate Karsten, Jake Kizer, Blake Mallory, James Scherer, Skyler Sipple, Lucas Slagel, Jordan Swift, Jeff Tolan, Mike Tower, Andy Tomaszewski.

Permit Information: Department of Environmental Quality Water Bureau, PO Box 30273, Lansing, MI 48909-7773. DEQ-LWM-ANC@michigan.gov

Map of Lake Mitchell Treatment Area Hybrid milfoil beds found in Lake Mitchell in 2013



Reviewing February 2013 - April 2014 on Lake Mitchell

2013

February and March – more snow and cold than recent years.
 April 6-10 - Rainy days floods yards bringing lake level way up.
 April 24 – Ice goes out of Lake Mitchell on latest date since 1975.
 April 25 – Fresh snowfall covers ground.
 May 12 – Dusting of snow ends unusually cold wet spring.
 June 20 – Chemical treatment of 420 acres of milfoil.
 July 12 -- Purple Loosestrife beetle stocking in coves.
 July 14-19 Record heat – six days in 90s including peaks of 96, 96, & 97.
 July 18 – Chemical treatment of coves and canal.
 August - Unusually hot – many days in 80s.
 August 10 – Lake Mitchell expo at Cherry Grove Township Hall.
 August 14 – Second herbicide treatment and re-treatment.
 October 7-13 – Peak week for fall color in Cadillac area.
 November 27 – Lake Mitchell freezes.
 Oct., Nov. Dec. - Colder than normal months.

2014

January 6-9 - Coldest since 1994. Polar Vortex brings high winds, single digit temps. Pipes freeze and sometimes break.
 January 25 – 10 ½ inches of snow falls.
 January 27-28 – Polar Vortex returns more pipes burst.
 January average temperature is 13.
 February 20-21 – Barometer drops to 28.9. Wind gusts approach 50 mph.
 February 28 – Cadillac snow totals 152 inches. Normal winter is 125 inches.
 March 9 – Lake Michigan is 93% frozen breaking 35 year old record.

Camp Torenta is looking for canoes and sailboats

Camp Torenta is looking to upgrade their fleet. If you have a canoe, kayak, or sailboat in good condition that you would like to donate, the camp would be glad to have it. If interested call Dave Foley 231-775-8819 or send email to info@lakemitchell.org.

Lake Mitchell Improvement Board
203 Peninsula Drive
Cadillac, MI 49601