



# Platte Lake Improvement Association

## Keeping Platte Lake Clean for 36 Years

### Annual Report 2014

We are a grassroots, non-profit association of individuals who are committed to insuring that Platte Lake is a healthy and beautiful body of water that everyone can enjoy now and in the future.

### **Why it is important that everyone who enjoys the lake becomes a member of the PLIA.**



For 36 years the Platte Lake Improvement Association (PLIA) has been protecting the water quality of Platte Lake and the value of your investment in lakefront property. Some homeowners may be unaware of the serious threats Platte Lake faced in the recent past. In the 1970s, a crisis was caused by excessive phosphorus loading into the lake. The phosphorus originating from the fish hatchery upstream on the river, virtually ruined lake water quality.

These changes resulted from greatly increased fish production required by the state's salmon program—itsself a well-meaning effort to concurrently enhance Great Lakes fishing and to control alewife over population. Too much phosphorus, present in the food used and fish waste, was discharged into the river and down into Platte Lake. Phosphorus, inherent and essential in most life forms, can be a marvelous fertilizer; particularly if up to 450,000 pounds of high phosphorus food is used annually and not with sufficient care.

So Platte Lake changed from one of Michigan's finest lakes to a lake with opaque gray-greenish water and huge seasonal algae blooms. Native plant and aquatic species declined or disappeared. And as water quality deteriorated so did property values. *(Continued)*

**A Settlement Agreement was forged in 2000 between the PLIA and the State of Michigan to set the rules for keeping Platte Lake clean. If the PLIA does not exist, who speaks for the lake?**

The Platte Lake Improvement Association, a not-for-profit 501(c)(3) organization, was formed in 1978 to respond to this crisis. Homeowners, like yourself, banded together to reverse the destruction of Platte Lake. Eight years of protracted negotiations with the MDNR ensued, eventually resulting in litigation in circuit court on behalf of the lake against the state and the MDNR. The lake won overwhelmingly! The court appointed a Master to supervise hatchery operations. After 14 years the PLIA and the MDNR negotiated a Settlement Agreement. In the agreement the court ordered a strict limit on how much phosphorus the hatchery could discharge annually, established a phosphorus standard for the lake, appointed the Settlement Implementation Coordinator, and required the DNR to fund 98% of the cost of sampling the lake until it met the hatchery requirements for five continuous years. The lake's victory came only after thousands of hours and lots of money was expended by a few determined volunteers. And that job continues. And we need your support.

Because of the efforts of the PLIA, Platte Lake is now one of the most studied lakes in America. We all stand gratefully on the shoulders of these early advocates who sacrificed so much time and money to leave us the beautiful lake which we now enjoy.

And, many businesses in Benzie County benefit from its beautiful lakes. Visitors come from all over the world to visit and to live in one of the most beautiful places in America. Historically our lakes were renowned for their clarity and water quality, and now Platte Lake can be included in this renown.

But, the job is not done yet. We need your support. Ongoing vigilance and testing will be necessary to insure compliance with the court-ordered phosphorus standard for Platte Lake. The Association is continually analyzing lake and river water quality and working with the MDNR and other organizations to insure that Platte Lake, and the value of your property, does not decline again.

### **A Message from the PLIA Board of Directors**

You are holding our first enhanced annual report, and an indication of a new direction being taken by the PLIA. Other examples are the new membership notice which you will see next year which provides giving categories and our e-mail messages providing late-breaking news. PLEASE go to our website, [platte-lake.org](http://platte-lake.org), and give us your e-mail address if you haven't already done so. We strive to be a member-friendly organization and keep you in the loop. You will see elsewhere in this report what the PLIA has done and is doing to keep your lake clean and beautiful. If you're reading this report as a non-member, we need you to become a member. One of our board members will endeavor to contact you this summer to talk about the PLIA. The cost of keeping a pure lake, if borne by all waterfront owners, will be manageable. You can do your part and protect your investment for as little as \$50 per year. Please don't make your neighbors carry you. You can join by contacting us at the PLIA, P.O. Box 272, Honor, MI 49640, or via our website ([platte-lake.org](http://platte-lake.org)). Also, we hope everyone will try to attend the Association's annual meeting every year on the first Saturday in August (typically at the Homestead Township Hall in Honor). Make your voice count! Have a great Platte Lake summer!



## What we've done this year:

- Intensively monitored the lake and upstream watershed working with the MDNR and Dr. Canale, the Court-appointed Implementation Coordinator.
- Partnered with Platte River Hatchery personnel in monitoring hatchery phosphorus discharges.
- Completed and submitted a draft of a Platte River Watershed Management Plan which is currently awaiting final review and approval by the MDEQ and the US Environmental Protection Agency.
- Continued testing the effectiveness of alum to precipitate phosphorus in residential septic systems.
- Secured approval from the Benzie/Leelaneau Board of Health for greywater sewage demonstration systems to give homeowners a potentially cost-effective alternative to a holding-tank only system.
- Continued efforts to educate homeowners on how they can help the lake.
- Worked with the MDNR to negotiate the renewal of the hatchery's NPDES permit.



## The PLIA and the Platte River State Fish Hatchery: A study of partnership and success

The cooperative and constructive working relationship between the PLIA, the Implementation Coordinator (Dr. Ray Canale, an environmental engineer and limnologist), and MDNR personnel has been the key factor that has led to the restoration of Platte Lake. The hatchery was built in 1928 as a fish rearing station using about 63,000 pounds of low phosphorus fish food annually. In the mid-sixties the hatchery operation was significantly expanded, primarily to deal with an increasing great lakes alewife population. Up to 450,000 pounds of high phosphorus food began to be used each year. Any uneaten food and all other waste from the hatchery was discharged largely untreated into the Platte River. Phosphorus is a very powerful stimulator for algae growth.

As a result Platte Lake suddenly became a reservoir for an enormous phosphorus load, a load significantly in excess of that normally supplied by the watershed. The lake changed immediately. Tons of phosphorus from years of neglect still remain, like a sleeping giant, in the bottom sediment of the lake.

The PLIA was formed in 1978 and immediately began working to stop this dramatic decline of our lake. Over the past 36 years, the PLIA has assumed an ever more active role in the functioning of the hatchery. What used to be 4321 pounds of phosphorous discharged annually into the lake has now dropped to 60 pounds *with no adverse effect on hatchery operations*. Fish are fed low phosphorus diets and on a feeding schedule optimized to maximize fish health and growth while minimizing food usage. All wastewater now is treated with ferric chloride to decrease phosphorus content. The hatchery filters and collects all solid waste and transports it outside the Platte River watershed.

Importantly, under Dr. Canale's expert guidance, with PLIA help, hatchery personnel have developed standard operating procedures for all aspects of the hatchery operation, sample collection and analysis. The PLIA is working directly with the MDNR to plan future sampling efforts and together are developing better sampling and testing techniques. The working relationship between Dr. Canale, MDNR personnel (led by Mr. Gary Whelan), and the PLIA since the March 2000 Settlement Agreement has been exemplary and has evolved into a mutually supportive cooperative relationship producing peer-reviewed research that will benefit fish hatchery operations not just in Michigan but worldwide.

**Dr. Ray Canale, the court-appointed Settlement Implementation Coordinator is an Emeritus Professor of Environmental Engineering at the University of Michigan and a nationally recognized lake modeling expert.**

## **The Power of the 2000 Settlement Agreement**

The 2000 Settlement Agreement between the PLIA and MDNR was the culmination of sixteen years of PLIA efforts to resolve the issue of declining lake water quality. It established tight controls on the Platte River Fish Hatchery's operation. It allowed the MDNR to proceed with an upgrade of the hatchery that ultimately would dramatically reduce its environmental impact on Platte Lake and improve the quality of the lake's water.

This original agreement and subsequent amendments are significant in that they define a legally-binding management path forward that will insure the long-term health and preservation of Platte Lake and the Platte River.

The Platte Lake Improvement Association must continue to exist. As long as the PLIA continues to speak for the lake, the power of this agreement will remain.

## **What YOU can do to help the lake**

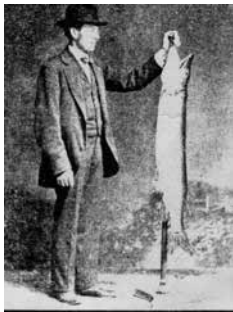
- Become a member of the PLIA and support its efforts
- Encourage your neighbors to join
- Keep grass clippings and leaves out of the lake this is especially important in the fall—do not rake your leaves into the lake; enough fall there on their own.
- Don't use fertilizers containing phosphorus
- Maintain your septic system and/or holding tanks

## **What happens in 2015?**

As of January 2015, we expect that the hatchery will have operated for five full consecutive years without any violations of the settlement agreement. At this point the DNR no longer will be required to fund 98% of the cost of lake and river sampling. But we need to continue to monitor the lake and watershed to avoid the problems we've had in the past. This means that the PLIA will need to cover 100% of the cost of this critical work. Your membership and contributions are more important than ever.

## Did you know?

- A watershed is an area of land that drains to a common point. The watershed for Platte Lake extends all the way to Long Lake near Traverse City. The total drainage area is 193 square miles.
- There are 50 other lakes within the Platte Lake watershed.
- 3.5 million gallons of water flow into Platte Lake every hour.
- The water in Platte Lake is replaced approximately every 8 months.
- There are approximately 2.2 billion gallons of water in the lake
- The Platte Lake watershed is a habitat for endangered or threatened species.
- The Platte River Hatchery is the source for all the Coho Salmon in the Great Lakes.



## History Corner:

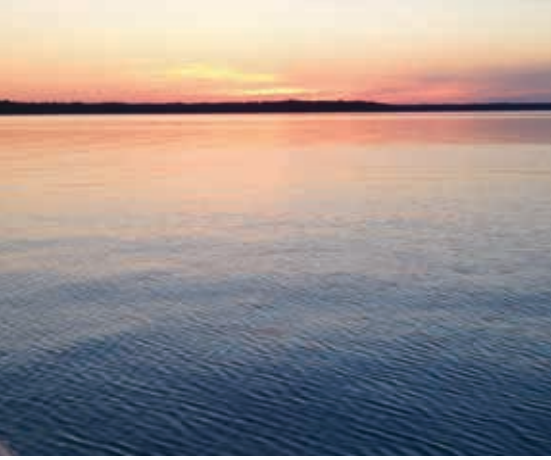
Platte Lake has been a very well-known vacation spot for longer than you might imagine. We've found references to lakeside lodges and hotels going back to the late 1800's. Most of the earliest tourists were from Ohio (word spreads back home) and came for the fishing, as well as the relaxing, but there is an account in American Sportsman Magazine in 1901 by a Mr. Brown from New York City describing his trip by train to Thompson's Resort and his daily diary for his two weeks of fishing. Thompson's, Ingleston's, and Worden's were the big fishing hotels in the early 1900's, each with their faithful return clients year after year. At this same time we had an actual town on the lake, Edgewater, built around a large sawmill on the northwest corner. You wouldn't want to be trying to fish when the huge log rafts were towed down the lake by a home-made steam tug, the Mud Hen. Edgewater went the way of all lumber towns. It lasted from 1890-1903 when the mill burned, the timber was played out, and the folks moved on to the next boom. The buildings were torn down by the farmers for the wood.

Most of the fishing resorts were built and run by local farm families on their property for extra income. Some guests inquired about having a cottage of their own, so a farmer would sell them a piece of lakefront and build them a cottage during his slack time in the winter. We have pictures of these as early as 1907. That was the beginning of what we have today.

## We all come to enjoy the lake

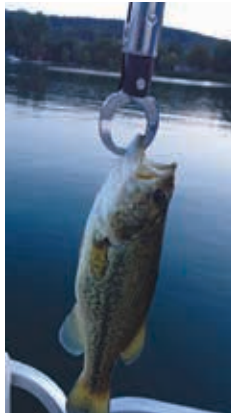
As this is written on July 7th, summer is finally shaping up and water temperatures are getting pleasant. Those of us here all year thought it would never come. July 4th weekend brought a lot of water activity and it was great to see. The picture at left shows folks enjoying the west end sandbar on a not-so-nice Saturday, but Friday it was packed with boats, kids, dogs, water volleyball, etc. Not exactly the Torch Lake famous (infamous?) sandbar yet, but we're gaining, and in a more family-friendly manner. Lots of paddleboarders out this year, these things are really catching on. Seems like less water skiers and more sailboats, but that may change as the dog days of August come along. *(Continued)*





We've had a lot of loons cruising and it sure is nice to hear the calls in the quiet evening. The nest on Little Platte finally fledged a chick this year, hopefully a sign of a continuing strong presence. Lots of eagles too. There is a long-term nest in the Deadstream swamp and they produce chicks every year.

On the fishing front, things are in good shape. The Cherry Capital Bass Club has had two catch and release tournaments so far with some big smallmouths caught. If you see a bunch of bass boats on the lake some Sunday, go over to the DNR boat launch about 3:00 PM for the weigh-in. It's quite the party. Our walleye summer fishery is just getting going as the fish gather more predictably in the evenings along the drop offs in July. Try a crawler or leech harness trolled as slowly as you can go. The walleyes are there and are good size. MDNR planted another 60,000 last summer and the prescription calls for that to be repeated every 3rd year. The fishing last winter was fantastic if you could get through or over the snow cover and drill through the 30+ inches of ice. We had small shanty cities on the lake, which hadn't been seen in many years. Not for everyone but those winter walleyes certainly are delicious. See picture above of Grandson Casey with one of his catches. The big perch are there too, but you really have to search. Perch fishing is not as productive as last spring (a great year for perch).

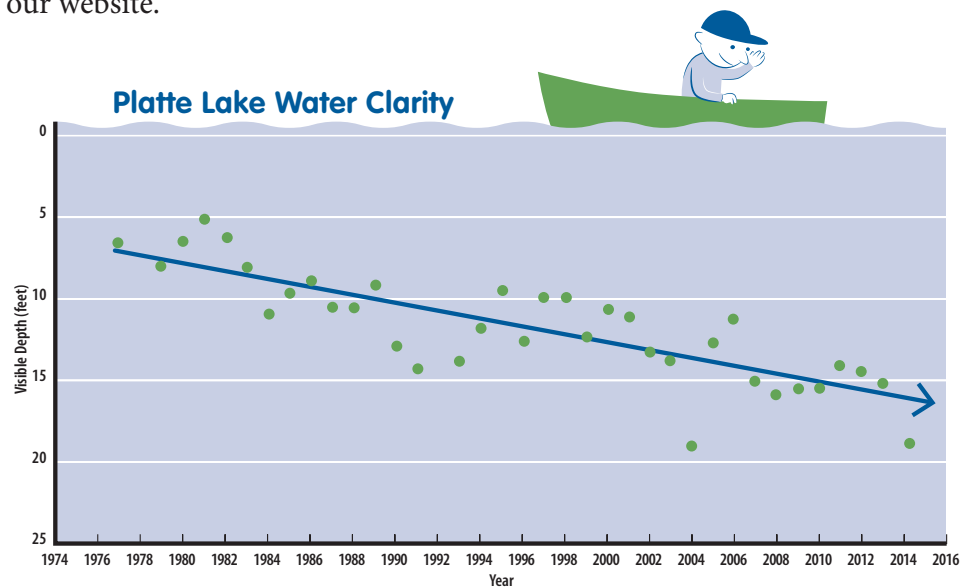


Lots of summer left, get out there on your beautiful lake and enjoy!

— Jerry Heiman

## So how clear is Platte Lake?

Measuring and tracking the clarity of the lake is more scientific than going to the end of your dock and saying “pretty darn clear”. We take measurements using a Secchi disk. As the chart shows, we've been tracking this data in Platte Lake for nearly 40 years. It helps us quantify and monitor what is happening in the lake. Much of this historical data is available on our website.



This chart shows how the clarity of the water has improved over the last 40 years. You can see almost three times as deeply into the lake as you could 40 years ago!



**Maris Ziemelis, a PLIA board member who as a volunteer goes out on the lake each week May to September to take a Secchi reading.**

The Secchi disk, created in 1865 by Pietro Angelo Secchi SJ, is a circular disk used to measure water transparency in oceans and lakes. The disk is mounted on a pole or line, and lowered slowly down in the water. The depth at which the pattern on the disk is no longer visible is taken as a measure of the transparency of the water. This measure is known as the Secchi depth and is directly related to water turbidity. (for more, see [http://en.wikipedia.org/wiki/Secchi\\_disk](http://en.wikipedia.org/wiki/Secchi_disk))

## Testing the Waters: Lake Sampling is an Ongoing Process

Keeping an eye on Platte Lake is a never-ending job. The lake will always be vulnerable to whatever flows into it from the upper Platte River, or what swims into it from Lake Michigan. The lake and watershed are sampled every two weeks, weather and ice conditions permitting. Where the water is deepest, off Birch Point and at the 90 foot hole in the northwest basin of the lake, water is triplicate sampled at 8 different depths. These samples are analyzed at the lab at the hatchery (in parallel with analysis of hatchery water quality) for phosphorus content and other relevant parameters and the results provided to the PLIA along with the results from sampling the Platte River and key tributaries.

Analyzing the water is not free. Because of the settlement agreement, since 2000 98% of the cost for this sampling and analysis has been paid by the MDNR; 2% by the PLIA. That is about to change. Because the hatchery has been in compliance with its mandated phosphorus discharge limit for the past five years, the DNR will no longer be required to fund lake sampling beginning in 2015. (All other provisions of the settlement agreement, however, will remain in effect.)

But the risk to Platte Lake from increased nutrient loads from other sources in the watershed will not disappear in 2015. The PLIA must continue sampling the lake, river and major river tributaries and will have to assume 100% of the cost. We've seen this change coming and have been developing strategies for continuing the sampling and keeping Platte Lake clean.

Our first step was to find ways to reduce the cost of the sampling process, without compromising our ability to safeguard the lake. Platte Lake has been sampled and monitored for many years and PLIA has court-ordered sampling data that goes back to 1990. This data have been analyzed by experts in environmental sampling design at Virginia Tech University. They have made recommendations to the PLIA on what would be an optimal sampling methodology for Platte Lake and the Platte River. The PLIA is hopeful that it will be able to maintain the same level of surveillance of the lake at a reduced cost by modifying the current sampling methodology.

Obtaining grant money to support our efforts is also an option. As a precursor to applying for grants, The PLIA began working in 2011 with the MDNR, Michigan Department of Environmental Quality (MDEQ), Benzie Conservation District, National Park Service and the Benzie-Lee-lanau Health Department to create a Platte River Watershed Management Plan. This plan will be the foundation for any grant money applications. This 418 page document is a comprehensive analysis of the Platte Lake watershed and of Platte Lake. A copy of the plan is available on our website, [www.platte-lake.org](http://www.platte-lake.org), under the "latest info" tab.

**The Lake can't speak for itself. The PLIA speaks on behalf of Platte Lake, a living body of water.**

**One Pound of  
Phosphorus can create  
500 Pounds of Algae.**

Importantly, engaging the people who have the most at stake, the homeowners and businesses who benefit from a clean and beautiful lake is a key strategy for preserving the lake. Many people who live on the lake, are unaware of the past struggles and the continuing threats that face our lake. Virtually any contamination upstream in the Platte River will end up in Platte Lake. If the hatchery falls out of compliance it will be up to the PLIA to discover it. As the population increases and development occurs within the watershed, history shows that the lake can change quickly. No one else is monitoring the lake. The lake cannot speak for itself. The PLIA must do this.

The 2014 Summer membership drive is focused on expanding public awareness and PLIA membership. PLIA members will be asking their neighbors to join and support the work that The PLIA is doing. The future safety of Platte Lake depends on all of us.



**Platte Lake  
Improvement Association**

**Keeping Platte Lake Clean for 36 Years**

[platte-lake.org](http://platte-lake.org)

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