



Trends, Challenges, and Opportunities in Michigan Inland Lake Management 2016

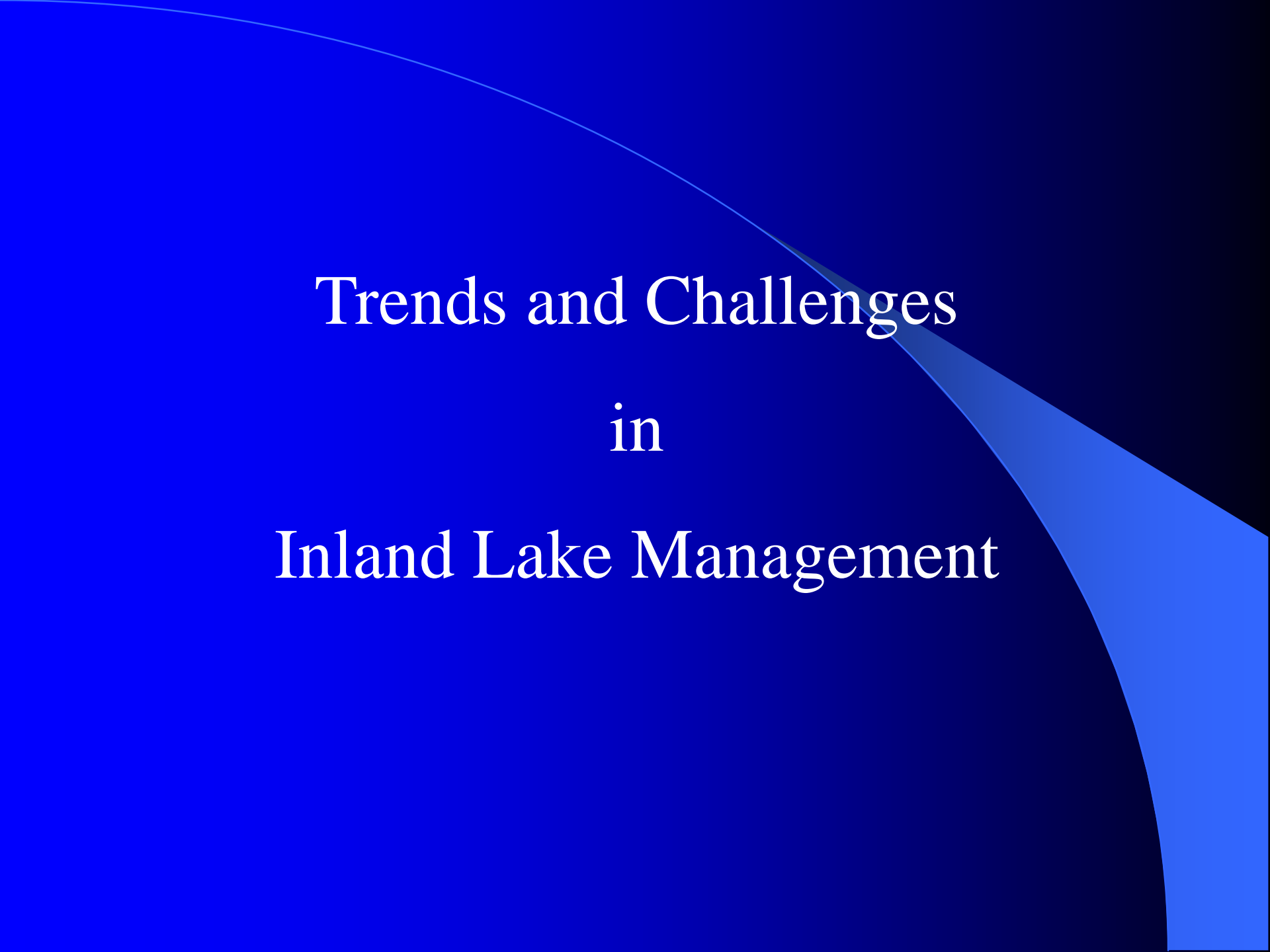
Newaygo County Office of the Drain Commissioner

Inland Lake Improvement Boards Meeting

Tuesday, February 23rd, 2016 @ 6:00 PM

Brief History of Michigan Lake & Stream Associations

- Founded in the summer of 1961 by Dr. Cliff Humphrys, MSU Professor of Resource Development, passionate about lakefront property owner association engagement in lake management
- **Michigan Riparian Magazine** established in 1965 in order to promote ideas and information regarding lake management and stewardship among statewide lake association members
- Strong organizational identity as “protector of riparian rights” due to amicus legal briefs filed with Court of Appeals and Supreme Court in key riparian property rights and other lakefront legal issues
- Long term administrator of citizen volunteer based lake water quality monitoring (Cooperative Lakes Monitoring Program)
- Michigan Clean Boats, Clean Waters Program administrator
- Lake and Stream Leaders Institute co-administrator with MSU Extension
- Annual conference focused on lake and stream stewardship
- Currently 250 lake association and 400 individual members

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Trends and Challenges in Inland Lake Management

Proliferation of Aquatic Invasive Species

- Increasing difficulty in finding a single lake in Michigan not hosting one or more exotic aquatic invasive species.
- Majority of Michigan's lakes possess oligo-mesotrophic or mesotrophic conditions and water chemistry profiles that closely align with the physiological requirements of many exotic aquatic plants and animals – good light conditions (water clarity), substrates, nutrient availability, calcium carbonate (hard water) as well as relatively shallow lake basins capable of supporting their introduction, establishment, and propagation.
- Eurasian water milfoil, Starry stonewort, Zebra mussels, *Cabomba caroliniana*... is *Hydrilla* our next big challenge???



Inadequate State of Michigan Funding for Inland Lake AIS Management Crisis

- 1,800 to 2,000 DEQ ANC permits granted annually for AIS management. Substantially more AIS colonized inland lakes not currently managed, including many located on publicly owned lands.
- \$25M annually associated with aquatic herbicide based AIS control efforts on Michigan inland lakes, amount does not include funding of other methods – mechanical harvesting, diver assisted suction harvesting...
- Funded primarily by PA 185, PA 188, or Part 309 Inland Lake Improvement Board levied Special Assessment Districts within inland lake communities
- No State of Michigan legislative funding allocation for AIS management on inland lakes, and no sustainable AIS control funding mechanism.
- Complete reliance on funding by lakefront property owners is a matter of fairness, equity and sustainability - issues whose relevance is amplified by the fact that most AIS enter our lake's via public boat access sites.
- New DNR/DEQ Michigan Invasive Species Grant Program focused on both terrestrial and aquatic invasive species. Funding for research, prevention, and creating Cooperative Invasive Species Management Areas (CISMA). Annual grant funding allocation of \$3.6M annually, 2016 funding of 19 projects.

DNR Plan to Increase Public Boating Access to Michigan Inland Lakes by 20% by 2025

- Driven primarily by DNR concern about decline in fishing participation
- Access site land acquisition program on inland lakes
- Targeted inland lakes identified
- MI State Waterways Commission responsible for approval, land acquisition, and funding
- Aggressive tactics and no regard for lake community concerns
- Conveniently ignoring enhanced aquatic invasive species pathway and AIS control funding issue



Michigan State Waterways Commission Special Meeting

-Eagle Lake Land Acquisition-

July 12, 2013

Mission Statement:

The Michigan State Waterways Commission works to provide safe public access to the Great Lakes and inland waters of the State of Michigan. Working with partners, the Commission oversees the use of dedicated funds provided by boaters for the acquisition, construction and operation of the infrastructure needed to support boating.

The poster features two circular logos. On the left is the Michigan Department of Natural Resources (DNR) logo, which includes a silhouette of a moose and the text 'DEPARTMENT OF NATURAL RESOURCES', 'DNR', and 'MICHIGAN'. On the right is the Michigan State Waterways Commission logo, which includes a compass rose and the text 'MICHIGAN STATE WATERWAYS COMMISSION'.

DNR Plan to Increase Public Boating Access to Michigan Inland Lakes by 20% by 2025

Newaygo County Targeted Lakes

- Hess (High Priority)
- Croton Dam (High Priority)
- Fremont (High Priority)
- Petit
- Hardt (High Priority)
- Ryerson
- Brookings (Woodland)



Tremendous Potential for Michigan Local Government Contribution to Lake Management

- 1,800 local units of government including 1,240 township governments
- Pro-active efforts by local governments to preserve the quality of life in their communities are part of the rich history of home rule in Michigan.
- Building permits, zoning authority, wetland and natural feature ordinances, enforcement of the sanitary code, soil erosion control, aquatic invasive species ordinances, and most Special Assessment Districts fall under the authority of local governments in Michigan.
- Michigan townships, villages, cities and counties have broad authority to regulate land uses as authorized by the Michigan Planning Enabling Act (MCL 125.38) and Michigan Zoning Enabling Act (MCL 125.31).
- Local governments may deploy various tools in their land use regulations to protect inland lakes from the affects of shoreline and watershed development.
- Natural Features Setback requirements can be incorporated as part of the local zoning ordinance and can include a defined set of natural features.

Attributes of Pro-active Local Government and Community Engagement in Lake Management

- Majority of local governments and communities pro-actively engaged in lake management are located in northwest Lower Michigan on “inland lake icons”
- Pre-dominance of high quality inland lakes and high lakefront property values; local inland lakes are recognized as a “defining” community resource
- Strong leadership and positive influence of pro-active lake associations
- Local government officials educated in planning and zoning and knowledgeable about their respective critical role in lake management
- Frequent community based inland lake focused educational opportunities – local workshops, seminars, public meetings and lake focused media
- Effective collaborative partnerships involving public and private inland lake stakeholders – property owners, local government, lake improvement boards, drain commissioner, lake associations, private business, watershed and resource protection organizations, local fishing and hunting groups

Barriers to Pro-Active Local Government Engagement in Lake Management in Michigan

- Lack of local government official training and knowledge:
 - Only 38% of those serving have completed any formal training such as MSU Citizen Planner Course (Michigan Townships Association)
 - Limited knowledge of land-use planning, zoning, or natural resource protection authority under current Michigan law
 - No requirement under current Michigan law to acquire formal training; training required in many other states in order to run for local office.
- Local official belief that inland lakes are under sole jurisdiction of DNR/DEQ
- Lack of local resources to effectively implement regulations – fiscal and administrative
- Inland lake located in multiple local unit of government jurisdictions
- Fear of “takings” based litigation – advice of cautious, often ill-informed township attorneys
- Strong individual property rights mentality in Michigan
- Fear of property owner voter “revolt” at next local election cycle
- Absence of pro-active lake association leadership and engagement

“Living Larger at the Michigan Lakefront”

- Pronounced trend of constructing increasingly larger homes at the lakefront
- Associated destruction of natural nearshore habitat to make room for larger homes, driveways, and out buildings
- Increased impervious surface areas and potential for storm water runoff
- Larger, elaborate docks, boats, and boat hoists at the waters edge
- Typically requires zoning board of appeals application; usually approved by townships seeking enhanced property tax valuations



“Lakefront Home For Sale or Rent”

- 15% - 20% of lakefront homes “for sale” at any given time in Michigan
- Trend away from full-time residences to weekend “get away” second homes
- “Weekend warriors” far less likely to get involved in lake association and/or lake stewardship activities
- Weekends and holidays only residents
- Often rent on weekly basis in summer to “party hardy” focused tenants
- Little knowledge, awareness, or concern about lake ecology, or lake management issues



Increasing Sales of Wake Boats

- Sales increases driven by popularity of wake boarding
- Wake boats specifically designed to create large high energy wakes
- Large, high volume, operator controlled ballast systems
- High energy wakes associated with shoreline erosion and lakefront property damage
- Re-suspension of bottom particulate and severely diminished water clarity
- Re-circulation of bio-available phosphorus from sediments
- Potential damage to littoral aquatic plant communities
- Potential destruction of fish spawning beds



Increasing Popularity of Large Scale Sand Bar Parties

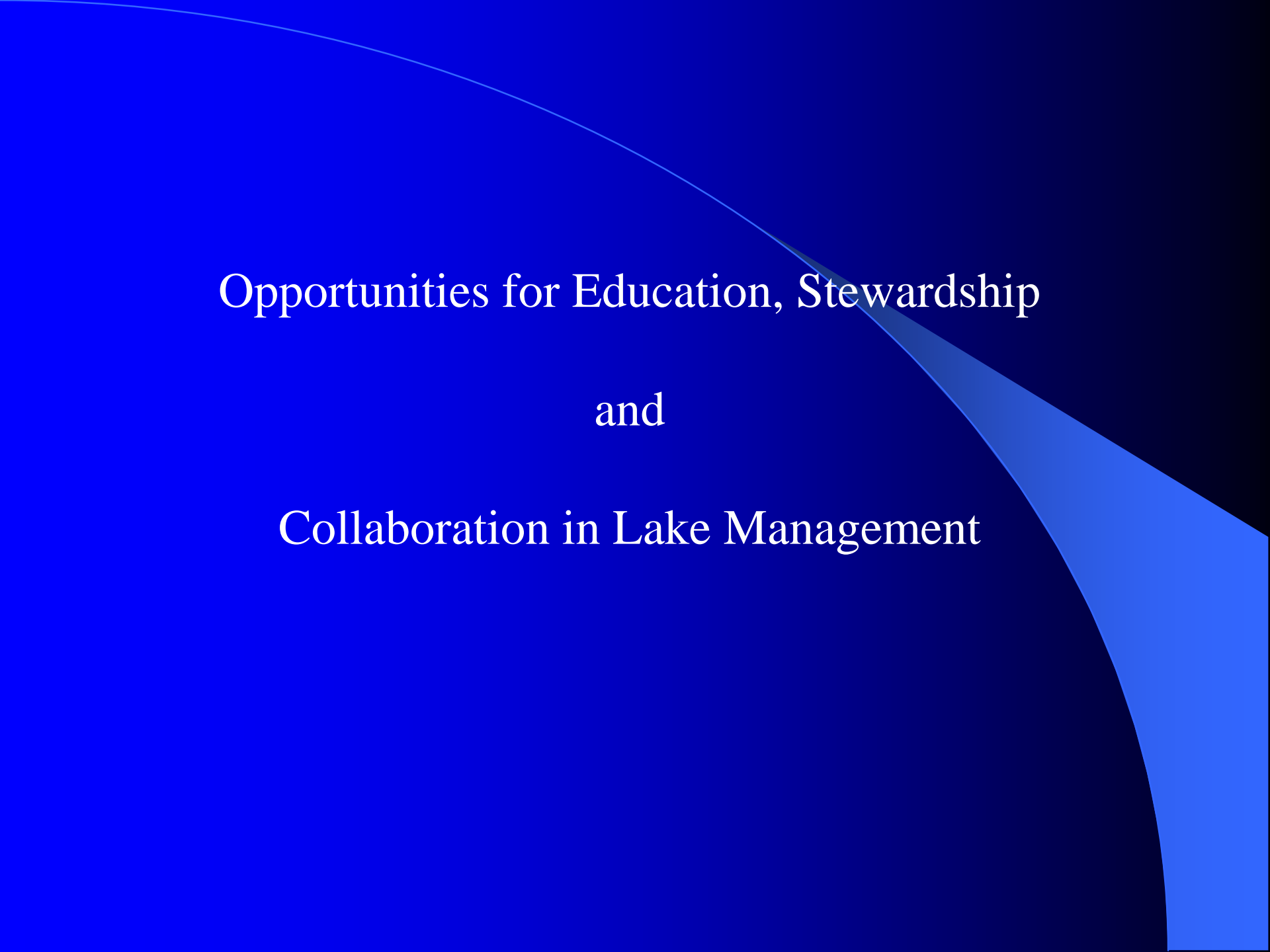
- Trend toward large scale sand bar parties
- Issues related to public safety and sanitation
- Lakefront property rights violations related to loss of tranquility, trespass, litter and parking on private property
- Mass public alcohol intoxication
- Nudity and lewd behavior
- Local ordinances difficult to enforce
- Insufficient local law enforcement resources available to police events
- Local businesses enjoy the surge in summer time customer traffic
- Regional Chamber of Commerce and media “unofficial” support of events
- Cooperative partnership efforts underway to police and regulate future events



Gradual Loss of Native Aquatic Plant Communities

- Exotic aquatic invasive plant dominance; gradual loss of native aquatic plant propagules
- Little knowledge or appreciation of the important role of native aquatic plants in sustaining healthy inland lakes
- Frequent lakefront property owner disdain for all of those “damned lake weeds”
- Self-treatment of “weeds” by lakefront property owners using illegal aquatic herbicides
- Loss of native aquatic plant dominated shorelines due to residential development
- Irresponsible “lake management” practices



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Opportunities for Education, Stewardship and Collaboration in Lake Management

Introduction to Lakes

- **Introduction to Lakes** is a six-week on-line course for citizens and professionals interested in learning about inland lakes.
- Michigan State University Extension
- Six on-line units with closed captioned video lectures, interactive activities, discussion forums, quizzes, and live chat
- Subjects:
 - ❖ lake ecology
 - ❖ lakes and their watersheds
 - ❖ shorelines
 - ❖ Michigan water law
 - ❖ aquatic plant management
 - ❖ citizen involvement in lake stewardship
- Next scheduled session: Fall 2016



http://msue.anr.msu.edu/program/info/introduction_to_lakes_online

Lake and Stream Leaders Institute

- Concerned citizens, decision makers, resource managers, and waterfront property owners can learn to be more effective stewards of Michigan's waterways by enrolling in the Institute.
- Participants take part in classroom and field-based sessions designed to help them better understand local water resource management planning and program implementation.
- Participants complete an independent applied project, based on what they learn during the Institute sessions.
- Graduates become part of the Institute's Alumni Program which offers networking, educational, and service opportunities, including Alumni Symposia
- Conducted by MSU Extension, MSU Fisheries & Wildlife & ML&SA every two years



MiCorps Cooperative Lakes Monitoring Program

- MiCorps' Cooperative Lakes Monitoring Program (CLMP) provides technical assistance, training, and logistical support to volunteer lake water quality monitors in Michigan to ensure that they are collecting reliable, high-quality data.
- The citizen volunteer-based program has been an important component of Michigan's inland lakes monitoring program for over 40 years. Second oldest volunteer monitoring program for lakes in the country.
- The purpose of the program is to help volunteers monitor indicators of water quality in their lake and document changes in quality over time.



MiCorps Cooperative Lakes Monitoring Program

- MiCorps funded thru 2017 / 2018
- Uncertain DEQ funding beyond 2018
- 230 participating inland lakes statewide
- 400 volunteer water quality monitors
- Annual conference training event
- Webinar-based training
- ❖ Secchi disk (water transparency)
- ❖ Spring / Summer total phosphorus
- ❖ Chlorophyll-a
- ❖ Dissolved oxygen & temperature
- ❖ Exotic Aquatic Plant Watch
- ❖ Aquatic plant identification & mapping
- ❖ “Score the shoreline”

<https://micorps.net/lake-monitoring/>



A CLMP volunteer
sampling for total phosphorus

MiCorps Cooperative Lakes Monitoring Program

Newaygo County Participating Lakes Over the Years

Bills	2013	Kimball	2013
Brooks	2006	Nichols	1981
Crystal	2007	Petit	1991
Diamond	2007	Pickerel	2013
Emerald	2015	Robinson	2009
Englewright	1991	Sylvan	2015
Fremont	2013	Webinguaw	2012
Hess	2010	Woodland	1994

Michigan Clean Boats, Clean Waters Program



MICHIGAN NEEDS HEROES
TO PROTECT AGAINST AQUATIC INVASIVE SPECIES



Clean Drain Dry



Volunteers play a crucial role in protecting Michigan's water resources by educating boaters about invasive species found on their recreational watercraft by showing boaters how to inspect their boats, trailers and gear for invasive species, then demonstrate the removal process.



www.micbcw.org

Michigan Natural Shoreline Partnership

- 2007 National Lakes Assessment identified 40% of Michigan inland lakes as poor and another 20% as only fair for quality of nearshore habitat.
- High impact development activities such as clearing natural habitat for expansive lawns and large buildings, removing aquatic plants, and installation of shoreline structures, such as seawalls, are having a negative impact on Michigan inland lakes.
- Created in 2008, the Michigan Natural Shoreline Partnership (MNSP) is attempting to reverse the trend through promotion and implementation of lake-friendly landscaping and shore erosion control methods.
- Public/private collaboration based program with intensive DEQ Water Resources Division engagement, and financial support from ML&SA.



www.mishorelinepartnership.org

Michigan Natural Shoreline Partnership

Local Government Involvement Initiative

- Initiative of Partnership policy committee
- Strong DEQ Water Resources Division engagement
- Conducted six local government workshops throughout Michigan in past 18 months
- Publishing “Protecting Michigan’s Inland Lakes: A Guidebook for Local Governments”, available in spring 2016
- ML&SA funding of workshops and guidebook publication



www.mishorelinepartnership.org

Michigan Natural Shoreline Partnership



- Michigan Shoreland Stewards Program will begin in April 2016
- Provide recognition for shore land property owners for using best management practices to protect their lake.
- Encourage property owners to use natural shore land landscaping techniques.
- Provide educational resources to help property owners in managing their property for a healthy lake.

www.mishorelandstewards.org

Michigan Inland Lakes Partnership

“Promoting collaboration to advance stewardship of Michigan's inland lakes.”

- Created in 2008 by consortium of 22 organizations
- The purpose of the Michigan Inland Lakes Partnership (Partnership) is to engage public and private organizations in a collaborative effort to ensure the quality, sustainability, and ecological diversity of lakes, while considering society's needs.
- Promote communication and cooperation between partners, communities and citizens interested in the management of Michigan's inland lakes, educating leaders, and strengthening stewardship efforts.
- Strong DEQ Water Resources Division engagement
- ML&SA founding member and pro-active partner



<http://michiganlakes.msue.msu.edu/about>

Michigan Inland Lakes Partnership

2016 Michigan Inland Lakes Convention



Science
Leadership

A Formula for Successful
Lake Protection and
Management

April 28-30th, 2016



Thursday, Friday & Saturday

April 28th - 30th, 2016

Boyne Mountain Resort

Boyne Falls, Michigan



The Convention is expected to draw more than 400 people and dozens of exhibitors. Included in the three-day event will be keynote addresses from distinguished speakers, workshops, field trips, concurrent sessions on a wide range of topics, receptions, door prizes, and plenty of networking opportunities.

<http://michiganlakes.msue.msu.edu/convention>



MICHIGAN STATE
UNIVERSITY
EXTENSION

Collaboration and Sustainability



Sustainable, high order collaborative partnerships are needed between lake associations, local units of government, inland lake improvement boards, drain commissioners, state agencies, and other public and private stakeholders if Michigan's inland lakes are to be wisely managed so that future generations of people may enjoy the current level of economic, social and cultural benefits.



On behalf of Michigan Lake & Stream
Associations, thank you for your attention
and for your hard work on behalf of preserving
Michigan's profound treasure of high quality
inland lakes for the future!