

**27TH ANNUAL
INDIANA LAKES MANAGEMENT
CONFERENCE**



**MARCH 5TH & 6TH, 2015
OAKWOOD RESORT, LAKE WAWASEE
SYRACUSE, INDIANA**

27TH ANNUAL INDIANA LAKES MANAGEMENT CONFERENCE

March 5th & 6th, 2015 ❖ Oakwood Resort, Lake Wawasee ❖ Syracuse, IN

**ORGANIZED TO “PROMOTE AND ENCOURAGE THE UNDERSTANDING
AND COMPREHENSIVE MANAGEMENT OF LAKES AND RESERVOIRS AND THEIR
WATERSHED ECOSYSTEMS.”**

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AGENDA

Wednesday, March 4, 2015 – Early Arrivals

5:00pm-7:00pm Exhibitor Set Up – Hilltop
7:00pm-10:00pm Hospitality Suite – The Pier (food will be available for purchase)

We encourage all to take advantage of this opportunity to meet and greet with attendees before the conference begins. Not to mention the chance to enjoy some great food and beverages.

Thursday, March 5, 2015

8:00am-9:00am Registration (Upper Hilltop)

**9:00am – 9:50am
Welcome and Plenary**

Welcoming Remarks; Logistics of the Conference – *Heather Buck, ILMS President*

Healthy Land, Healthy Lake: The Western Lake Erie Basin Challenge – *Cheryl Rice, Urban Conservationist, USDA – Natural Resources Conservation Service, Western Lake Erie Basin*

9:50am – 10:15am BREAK (Upper Hilltop)

**10:15am – 11:45am Session A
Track 1: Working Together
Track 2: Sewer Development**

Track 1: Working Together (Upper Hilltop)

10:15am-10:45am State Nonpoint Source and TMDL Program Updates – *Bonny Elifritz, IDEM*
10:50am-11:20am Syncing (not sinking!) with SWCDs: Collaborative Efforts Paying Off – *Darci Zolman, Andrea Baker, Kosciusko County SWCD*
11:25am-11:55am Your Role in the Indiana Conservation Alliance – *John Ulmer, INCA*

Track 2: Sewer Development (Lower Hilltop)

10:15am-10:45am An analysis of lakes and streams in the Barbee and Chapman lake chains in Kosciusko County, Ind. – *Seth Bingham, Center for Lakes & Streams, Grace College*
10:50am-11:20am The Knapp Lake Sewer Project – *Nick Stanger, CPA, CLU, FLMI Head Global Reinsurance Contracts for Swiss Re, WACF and KLACD Board Member*

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11:25am-11:55am Lakeland Regional Sewer District – *Mike Novac, IN Rural Community Assistance Program*

12:00pm – 1:00pm
LUNCH (provided for all Registered Attendees)
Upper Hilltop

1:00pm – 1:30pm
Annual Board Meeting
Upper Hilltop

1:30pm – 3:10pm **Session B**
Track 1: Research
Track 2: Local Issues

Track 1: Research (Upper Hilltop)

- 1:30pm-2:00pm Blue-green algae in northern Indiana lakes: An analysis of the microcystin algal toxin over 2010-2013 in lakes of Kosciusko County, Ind. – *Alix Underwood, Environmental Science Program, Grace College*
- 2:05pm-2:35pm Quantification of lake water level influences for Wawasee and Syracuse lakes: Lake and watershed water budgets for 2011, 2012 and 2013 – *Joellyn Moine, Center for Lakes & Streams, Grace College*
- 2:40pm-3:10pm History of scientific research in Kosciusko County, Ind. and its formative impact on the surrounding communities – *Tiler Reese, Center for Lakes & Streams, Grace College*

Track 2: Local Issues (Lower Hilltop)

- 1:30pm-2:00pm Identifying causes of high *E.coli* concentrations at public beaches on Pike and Center lakes in Kosciusko County, Ind. – *Nathan S. Bosch, Center for Lakes & Streams, Grace College*
- 2:05pm-2:35pm Understanding Effective Outreach for Water Quality in the Upper Tippecanoe Watershed of Indiana – *Rebecca Busse, Jessica Ulrich-Schad, Linda Stalker Prokopy, Purdue University*
- 2:40pm-3:10pm Flood-Inundation Maps for the North Branch Elkhart River at Cosperville and West Lakes Chain, Indiana (Waldron Lake, Jones Lake, Steinbarger Lake, and Tamarack Lake)– *Chad Menke, U.S. Geological Survey*

3:10pm – 3:30pm **BREAK (Upper Hilltop)**

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<p>3:30pm – 5:10pm Session C Track 1: Agriculture Track 2: Nuisance Flora and Fauna</p>
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Track 1: Agriculture (Upper Hilltop)

- | | |
|---------------|--|
| 3:30pm-4:00pm | Measuring Impacts: tracking nutrient and sediment reductions from Best Management Practices statewide – <i>Logan Garne, ISDA</i> |
| 4:05pm-4:35pm | Working with Farmers to Improve Soil Health and Water Quality– <i>Sam St.Clair, Watershed Conservationist, Tippecanoe Watershed Foundation</i> |
| 4:40pm-5:10pm | Cover Crops in the US – How are farmers using them and what good are they doing for water quality?– <i>Chad Watts, CTIC Project Director</i> |

Track 2: Nuisance Flora and Fauna (Lower Hilltop)

- | | |
|---------------|--|
| 3:30pm-4:00pm | Developing an Effective Aquatic Vegetation Management Plan – <i>Nathan Long Aquatic Control®</i> |
| 4:05pm-4:35pm | Aquatic Invasive Species Outreach to Water Gardeners and Aquarium Hobbyists – <i>Greg Hitzroth, Illinois-Indiana Sea Grant and Illinois Natural History Survey</i> |
| 4:40pm-5:10pm | Mute Swan Populations and Control Efforts – <i>Carl Voglewed, USDA</i> |

<p>5:30pm – 8:30pm Evening Activities Upper Hilltop</p>

- | | |
|---------------|---|
| 5:30pm-6:30pm | Hors D'oeuvres, Drinks & Silent Auction |
| 6:30pm-8:30pm | Dinner & Awards
Pictorial History of Lakes Syracuse and Wawasee - <i>Karen Kelsheimer, Director Syracuse-Wawasee Historical Museum</i> |

<p>8:30pm – 10:00pm Hospitality Suite Upper Hilltop</p>

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Friday, March 6, 2015

7:30am-9:00am Registration (Full Breakfast)

Volunteer Breakfast with Melissa Clark & Sarah Powers, ICLP

The Indiana Clean Lakes Program will be hosting a breakfast with the volunteer lake monitors. Melissa Clark and Sarah Powers will be present to meet with the volunteer lake monitors in a casual setting to chat, discuss the program, and explore new opportunities of how we can better serve one another in the drive to collect data critical to protecting and managing Indiana's lakes. Any present or past volunteer, and anyone interested in becoming a volunteer is welcome.

Workshops

Upper Hilltop:

9:00am-10:30am Limnology 101 – *Melissa Clark, Indiana University, School of Public and Environmental Affairs*

10:40am-12:00pm Limnology 101 (continued) – *Melissa Clark, Indiana University, School of Public and Environmental Affairs*

Lower Hilltop:

9:00am-10:30am Landscaping for Water Quality – *Martha Bishop Ferguson, Riverview Nursery, Inc.*

10:40am-12:00pm Field Trip to Wawasee Area Conservancy Foundation Levinson LaBrosse Lakes and Wetlands Education Center – *Heather Harwood, Executive Director, Wawasee Area Conservancy Foundation, Inc.*

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Agenda at a Glance:

Time	Thursday, March 5, 2015	
8:00am-9:00am	Registration	
9:00am-9:50am	Welcome: Heather Buck, ILMS President Plenary: Cheryl Rice - Urban Conservationist USDA	
9:50am-10:15am	BREAK	
	Track 1: Working Together	Track 2: Sewer Development
10:15am-10:45am	State Nonpoint Source and TMDL Program Updates - <i>Bonny Elifritz, IDEM</i>	An analysis of lakes and streams in the Barbee and Chapman lake chains in Kosciusko County, Ind.– <i>Seth Bingham, Center for Lakes & Streams, Grace College</i>
10:50am-11:20am	Syncing (not sinking!) with SWCDs: Collaborative Efforts Paying Off – <i>Darci Zolman, Andrea Baker, Kosciusko County SWCD</i>	The Knapp Lake Sewer Project– <i>Nick Stanger, CPA, CLU, FLMI Head Global Reinsurance Contracts for Swiss Re, WACF and KLACD Board Member</i>
11:25am-11:55am	Your Role In The Indiana Conservation Alliance – <i>John Ulmer, INCA</i>	Lakeland Regional Sewer District– <i>Mike Novac, IN Rural Community Assistance Program</i>
12:00pm-1:00pm	LUNCH for all registered attendees	
1:00pm-1:30pm	Annual Board Meeting	
	Track 1: Research	Track 2: Local Issues
1:30pm-2:00pm	Blue-green algae in northern Indiana lakes: An analysis of the microcystin algal toxin over 2010-2013 in lakes of Kosciusko County, Ind. – <i>Alix Underwood, Center for Lakes & Streams, Grace College</i>	Identifying causes of high <i>E. coli</i> concentrations at public beaches on Pike and Center lakes in Kosciusko County, Ind. – <i>Nathan S. Bosch, Center for Lakes & Streams, Grace College</i>
2:05pm-2:35pm	Quantification of lake water level influences for Wawasee and Syracuse lakes: Lake and watershed water budgets for 2011, 2012 and 2013 – <i>Joellyn Moine, Center for Lakes & Streams, Grace College</i>	Understanding Effective Outreach for Water Quality in the Upper Tippecanoe Watershed of Indiana – <i>Rebecca Busse, Jessica Ulrich-Schad, Linda Stalker Prokopy, Purdue University</i>
2:40pm-3:10pm	History of scientific research in Kosciusko County, Ind. and its formative impact on the surrounding communities – <i>Tiler Reese, Center for Lakes & Streams, Grace College</i>	Flood-Inundation Maps for the North Branch Elkhart River at Cosperville and West Lakes Chain, Indiana – <i>Chad D. Menke, U.S. Geological Survey</i>
3:10pm-3:30pm	BREAK	

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	Track 1: Agriculture	Track 2: Nuisance Flora and Fauna
3:30pm-4:00pm	Measuring Impacts: tracking nutrient and sediment reductions from Best Management Practices statewide – <i>Logan Garner: ISDA</i>	Developing an Effective Aquatic Vegetation Management Plan – <i>Nathan Long Aquatic Control[®]</i>
4:05pm-4:35pm	Working with Farmers to Improve Soil Health and Water Quality– <i>Sam St.Clair, Watershed Conservationist, Tippecanoe Watershed Foundation</i>	Aquatic Invasive Species Outreach to Water Gardeners and Aquarium Hobbyists – <i>Greg Hitzroth, Illinois-Indiana Sea Grant and Illinois Natural History Survey</i>
4:40pm-5:10pm	Cover Crops in the US – How are farmers using them and what good are they doing for water quality?– <i>Chad Watts, CTIC Project Director</i>	Mute Swan Populations and Control Efforts – <i>Carl Voglevede, USDA</i>
5:30pm-6:30pm	Hors D'oeuvres, Drinks & Silent Auction	
6:30pm-8:30pm	Dinner & Awards Pictorial History of Lakes Syracuse and Wawasee – <i>Karen Kelsheimer, Director Syracuse-Wawasee Historical Museum</i>	
8:30pm-10:00pm	HOSPITALITY SUITE	

Time	Friday, March 6, 2015	
7:30am-9:00am	Breakfast - Registration open	
	Workshop	Workshop
9:00am-10:30am	Limnology 101 – <i>Melissa Clark, Indiana University, School of Public and Environmental Affairs</i>	Landscaping for Water Quality– <i>Martha Bishop Ferguson, Riverview Nursery</i>
	Workshop	Field Trip
10:40am-12:00pm	(continued) Limnology 101 – <i>Melissa Clark, Indiana University, School of Public and Environmental Affairs</i>	Wawasee Area Conservancy Foundation Levinson LaBrosse Lakes and Wetlands Education Center – <i>Heather Harwood, Executive Director, Wawasee Area Conservancy Foundation, Inc.</i>

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Session: Plenary

Healthy Land, Healthy Lake: The Western Lake Erie Basin Challenge

Cheryl Rice

Urban Conservationist

US Department of Agriculture

Natural Resources Conservation Service - Western Lake Erie Basin

Phone: 419.893.1966 ext. 3

Email: Cheryl.Rice@OH.USDA.GOV

Abstract: We'll take a quick tour of the issues facing Lake Erie, specifically the western Lake Erie basin. The challenges for addressing the health of the lake come in all shapes and sizes, but what do we know and what is being done to save the lake.

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Session: Working Together

State Nonpoint Source and TMDL Program Updates

Bonny Elifritz

Bonny F. Elifritz
Chief, Watershed Planning and Restoration Section
IDEM Office of Water Quality
100 N. Senate Avenue-SHADELAND
Indianapolis, IN 46204
Email: belifrit@idem.in.gov

Abstract: This presentation will cover how the Clean Water Act Section 319/NPS program and 303(d)/TMDL programs have been integrating over the past few years, new national guidance for both programs, and the associated changes IDEM is now making to both programs.

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Syncing (not sinking!) with SWCDs: Collaborative Efforts Paying Off

Darci Zolman and Andrea Baker

Kosciusko County
Soil and Water Conservation District
217 E Bell Drive
Warsaw, IN 46582
Email: darci.zolman@in.nacdnet.net

Abstract: Soil and Water Conservation Districts (SWCD) working with lake partners is a natural fit that can produce a multitude of benefits. From education and awareness, to land treatment projects, the opportunities abound. Through grants, state and federal cost share programs, local initiatives and educational outreach, Kosciusko County SWCD enjoys a good working relationship with our county's lake groups. Additionally, these collaborative efforts foster a better understanding and relationship between lake residents, government agencies, and the agricultural sector. This session will highlight some of these efforts, including EPA 319, LARE, Clean Water Indiana, watershed initiatives and educational events such as the Northern Indiana Lakes Festival and Water Drop raft program.

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Your Role In The Indiana Conservation Alliance

John Ulmer

Communications Chair, Indiana Conservation Alliance
1880 South 950 East
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Email: remlu@tds.net

Abstract: Members of the Indiana Lakes Management Society are also individual members of the Indiana Conservation Alliance by virtue of the society's membership in INCA. INCA's mission is to provide "A unified voice for advocating for public funding for land, water, and wildlife conservation."

This year the state budget for the next two years will be created. There are many competing interests for limited state funds. Your individual voices are needed during this session of the Indiana Legislature. Communicating directly with your legislator on matters important to ILMS and yourself is the only way to insure wise policy and legislation are focused on natural resources.

In addition to the Alliance's website, www.inconservation.org, INCA also maintains Facebook and Twitter accounts as well. Our goal is vigorous informed support of legislation that preserves and protects Indiana's natural resources.

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Session: Sewer Development

An analysis of lakes and streams in the Barbee and Chapman lake chains in Kosciusko County, Ind.

Seth Bingham, Nathan S. Bosch, Anna Burke, Logan Gilbert, Alixandra Underwood

Center for Lakes & Streams, Grace College
200 Seminary Drive
Winona Lake, IN 46590
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Abstract: The general purposes of this project were to give an overall assessment of lakes and streams of both the Barbee and Chapman lake chains as well as to establish baseline conditions for the Barbee lake chain before installation of a public sewer system. To accomplish these purposes, extensive lake and stream sampling efforts were conducted. Several important results were identified in the present study. About half of all shoreline in the Barbee and Chapman lake chains was composed of concrete seawalls. Though relatively small proportions of the lake chain shorelines were eroding, the high occurrence of concrete seawalls across the chains likely allowed eroded sediment that was present to be continually transported around the lakes during windy conditions and times of high boat traffic. Lakes generally showed higher nutrient concentrations in bottom waters compared to surface waters indicating a combination of algae uptake near the surface and internal loading of nutrients to the lake from the sediment near the bottom. Lake E. coli samples were all well below the EPA human health threshold of 235 cfu/100 mL, while stream E. coli samples were over the health threshold more than 60% of the time. The Barbee streams showed high loads of sediments, phosphorus, and nitrogen in the dominant loading streams (Grassy Creek and Putney Ditch) relative to the largest loading stream (Crooked Creek) in the Chapman chain.

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The Knapp Lake Sewer Project

Nick Stanger

CPA, CLU, FLMI Head Global Reinsurance Contracts for Swiss Re
WACF and KLACD Board Member
Email: nicholas_stanger@swissre.com

Abstract: Testing has indicated that water quality on the Knapp Lake chain of lakes has been degrading for years, due to old and saturated septic systems among the 200+ residents. For property owners on any lake, clean water is vital to health, recreation and property values. Ten years ago, the local discussion turned serious and a group of forward thinking people took action to get sewers on the lake.

It's been a long road of planning, grant writing, engineering designs, setbacks, and contract negotiations - but in 2015 the dirt will move on a \$5 million sewer project! Come and listen to Nick Stanger, a member of the boards of both the Knapp Lake Area Conservancy District (KLACD) and the Wawasee Area Conservancy Foundation (WACF) since the beginning, tell the story.

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Lakeland Regional Sewer District

Mike Novac

Sr. Rural Development Specialist
IN Rural Community Assistance Program
E-mail: mnovac@incap.org

Abstract: The presentation will address wastewater infrastructure funding issues. It will outline the steps necessary to qualify for and receive federal and state funding for water quality and health issues as they relate rural communities. The discussion will also outline the steps communities need to take to form governmental entities to oversee the technical, managerial, and financial requirements necessary for the operations and maintenance of infrastructure facilities.

The Lakeland Regional Sewer District and the Knapp Lake Conservancy District will be used as examples of the approaches each entity took to resolve environmental and health issues. The presentation will also indicate the level of progress by each entity to resolve these issues and provide a timetable of events.

The Rural Community Assistance Program will also be discussed in their role as a federally funded non-profit organization, and how they assist communities with infrastructure needs.

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Session: Research

Blue-green algae in northern Indiana lakes: An analysis of the microcystin algal toxin over 2010-2013 in lakes of Kosciusko County, Ind.

Alix Underwood, Nathan S. Bosch, Anna D. Burke, Kris Farwell, Joellyn Moine

Environmental Science Program
Grace College
Winona Lake IN 46590
Email: underwam@grace.edu

Abstract: A prominent, current human health concern related to lakes is the presence of blue-green algae toxins. Alarming results from a small 2010 pilot study including a few Kosciusko County lakes prompted the Center for Lakes & Streams at Grace College to launch a comprehensive research project to determine the extent and severity of a common blue-green algae toxin, microcystin, in local lakes. Observed microcystin concentrations over 2010-2013 indicate that microcystin does not pose a consistent health threat at the present time in Kosciusko County lakes. However, algae count results may indicate higher human health threats from other blue-green algae toxins, which were not tested for in the present study. Furthermore, our research indicates that microcystin detections are more common but currently at lower levels in Kosciusko County lakes compared to national and regional data, which demonstrates a potential for major microcystin problems in the future under the right conditions. Visual cues of blue-green algae (such as water clarity as measured by secchi disk) are helpful but not reliable, indicating that a better method of determining the safety of the water is necessary. A unique pigment to blue-green algae, phycocyanin, can be measured by a simple hand-held device in the field and this device was found to be the most promising predictor for both microcystin and algae counts. The present study warrants further research with Kosciusko County lakes in order to protect human health, including ongoing monitoring, testing of new prediction techniques, and exploration of additional toxin threats.

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Quantification of lake water level influences for Wawasee and Syracuse lakes: Lake and watershed water budgets for 2011, 2012, and 2013

Joellyn Moine, Nathan Bosch, Margaret Lee, Amy Bloemendaal, Anna Burke

Center for Lakes & Streams
Grace College
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Winona Lake, IN 46590.
Email: moinejb@grace.edu

Abstract: In 2012, northern Indiana experienced below average rainfall and above average temperatures. These factors combined to impact water levels on Wawasee and Syracuse lakes. The purpose of this revised study was to evaluate the causes of lake level changes during normal years (taken as 2011 and 2013) and a drought year (taken as 2012). In 2012, the lake levels of Wawasee and Syracuse dropped about 18 inches below normal, and levels returned to normal by early 2013. We developed water budgets for the lakes themselves as well as the watershed around the lakes to quantify influences on these levels. Study results showed that total inflow into the lakes decreased by 38% from 2011 to 2012, while total outflow decreased by only 28% over the same time. From 2012 to 2013 total inflow increased by 30% and total outflow increased by only 6%. Residential irrigation outflow directly from the lakes was about 2% of total outflow in the non-drought years and increased to 3% of total outflow in 2012. Industrial and agricultural irrigation in the surrounding watershed by comparison was only 1% of total outflow in non-drought years and 2% in drought year. Implications for this study include management consideration of human-controlled lake level influences of the dam outlet as well as residential and agricultural irrigation usage, especially during drought years. However, while humans can control these outflows, inflows of precipitation and stream inputs are uncontrollable such that lake levels can never be fully managed.

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History of scientific research in Kosciusko County, Ind. and its formative impact on the surrounding communities

Tiler Reese, Nathan S. Bosch, Mark M. Norris

History Department
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Abstract: Science has social ramifications and often is the catalyst for the shifting of perspectives and worldviews. Scientific research has proven beneficial in the twenty-first century. The medical field has seen vast innovation in the way diseases are diagnosed, prevented, and cured as a result of science. Science has undoubtedly made a profound impact in its respective disciplines, but it has also sparked interest in the minds of those studying other disciplines. Scientific research has grave historical significance, especially in the ways it has impacted society's functions, infrastructure, and overall culture. In the Winona Lake community, the department of sanitation owes its infrastructure to the findings made by Dr. Thurman Rice nine years prior to a typhoid outbreak that afflicted the town's social and religious atmosphere. The scientific research conducted on Lake Wawasee and its fish population affected the surrounding residential area of the lake in a substantial way. Finally, the population of invasive zebra mussels in Lake Tippecanoe opened up new areas of study for aspiring researchers. The Center for Lakes & Streams at Grace College, as well as other scientific endeavors, are products of extensive scientific history. This history of research also plays a significant role in the foundation and formation of many great American communities throughout the nation.

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March 5th & 6th, 2015 ❖ Oakwood Resort, Lake Wawasee ❖ Syracuse, IN

Session: Local Issues

Identifying causes of high *E. coli* concentrations at public beaches on Pike and Center lakes in Kosciusko County, Ind.

Nathan S. Bosch, Anna D. Burke, Miles Barber

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Abstract: Over 1996-2010, the public swimming beaches at Pike and Center lakes were shown to have unsafe *E. coli* levels in 41% and 32% of samples collected, respectively. The current study is a follow-up investigation to discover the cause of these elevated *E. coli* levels and provide recommendations to lower them. The study revealed that precipitation events led to higher *E. coli* levels, indicating *E. coli* was washing in from outside of the lakes. Locational sampling results showed higher *E. coli* levels on the left side of piers and in vertex areas. Elevated levels on the left side of piers is even more of a health concern because at each beach that is where most people swim. Elevated levels in the vertex areas indicates stagnant water trapped there acts as a collecting area for *E. coli*. Sampling also showed higher *E. coli* levels at Center Lake as samples were over the acceptable limit 51% of time. South and west winds resulted in higher *E. coli* in vertex sites, once again indicating stagnant water in these areas. Bird counts showed higher gull counts at Center over study and molecular source tracking confirmed gulls as likely cause of high *E. coli* levels at Center. The resulting recommendations include improving stormwater quality drastically or diverting drain to another location at Center Lake; creating flow-through capacity for piers at both lakes; exploring gull population control measures at Center Lake; and exploring alternative beach raking methods to remove waterfowl waste at both lakes.

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Understanding Effective Outreach for Water Quality in the Upper Tippecanoe Watershed of Indiana

Rebecca Busse, Jessica Ulrich-Schad, Linda Stalker Prokopy

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Abstract: Effective outreach is essential for the conservation of aquatic resources. In order to create effective outreach, we must understand the public's perception of water quality, and the perceived barriers to implementing environmental solutions. In 2010, Purdue University sent out 2 surveys. One survey went to urban residents and 1 went to rural residents of the Upper Tippecanoe Watershed, Indiana. The surveys asked citizens questions about themselves, their property, their perception of water quality, and their usage of conservation practices. In 2014, Purdue sent 2 more surveys, similar to the ones sent in 2010, except these surveys asked questions regarding attendance and perception of specific outreach that had been conducted by the Wabash River Enhancement Corporation, the Tippecanoe Watershed Foundation, and associated parties. A comparison of the pre- and post-survey results will help determine which outreach methods have been the most effective in communicating solutions to improve water quality, and to overcome perceived barriers to implementing those solutions. Survey results will also be used to examine whether respondents changed their conservation practices as a result of outreach.

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Flood-Inundation Maps for the North Branch Elkhart River at Cosperville and West Lakes Chain, Indiana (Waldron Lake, Jones Lake, Steinbarger Lake, and Tamarack Lake)

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Abstract: Digital flood-inundation maps for a reach of the North Branch Elkhart River at Cosperville and West Lakes Chain, Indiana (Ind.), were created by the U.S. Geological Survey (USGS) in cooperation with the U.S. Army Corps of Engineers, Detroit District. The inundation maps, which can be accessed through the USGS Flood Inundation Mapping Science website at http://water.usgs.gov/osw/flood_inundation/, depict estimates of the areal extent and depth of flooding corresponding to selected water levels in the river (stages) at USGS streamgage 04100222 on the North Branch Elkhart River at Cosperville, Ind. The inundation maps, current stage from the USGS streamgage, and forecasted stream stages at the gage from the National Weather Service Advanced Hydrologic Prediction Service, are available online to emergency management personnel and lake area residents. This information is critical for flood response activities such as evacuations and road closures, and for post-flood recovery efforts. This presentation will include a demonstration of the flood inundation website for the West Lakes Chain communities.

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Session: Agriculture

Measuring Impacts: tracing nutrient and sediment

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Abstract: States reporting watershed improvement to the US EPA's 319 program use the EPA's Region 5 Nutrient and Sediment Reduction model to show impact. The Indiana Conservation Partnership (ICP) has adopted the use of this model for its own efforts, estimating the impact on water quality of over 18,000 practices to date. This adoption, which extends across Indiana among local, state and federal partners, is an essential tool of the ICP in gauging success, setting goals and managing conservation resources on Indiana's landscape.

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Working with Farmers to Improve Soil Health and Water Quality

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Abstract: For many years the objective of the Tippecanoe Watershed Foundation (TWF) has been to improve the quality of water and other natural resources in the Upper Tippecanoe River Watershed. Knowing that 75% of the land in our watershed is in farms, the TWF Board of Directors decided to expand our efforts to reach out to farmers with technical and financial assistance to implement water quality protection practices. In January 2013, TWF contracted with two experienced soil and water conservationists who are contacting key farmers in the watershed and working with them to reduce soil erosion and improve soil health on their farms.

Central to our efforts is our Soil Health Initiative which is a package or system of conservation practices that includes Continuous No-Till planting, Continuous Cover Crops, Conservation Buffer Practices and Advanced Nutrient and Pest Control practices. We believe that this conservation system is the best way to improve Soil Health (the capacity of soil to function) therefore improving water quality in our lakes and streams. We think that our approach is a win – win situation for our farmers who are improving their soil (their factory) and our lake residents who will receive less storm runoff, sediment, nutrients, and pesticides in inlet streams.

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Cover Crops in the US - How are farmers using them and what good are they doing for water quality?

Chad Watts

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Abstract: This presentation will highlight results of the 2013-2014 cover crop survey that was conducted by the Conservation Technology Information Center (CTIC) and the North Central Sustainable Agriculture Research and Education (SARE) program. This survey helped assess farmers' attitudes surrounding the use of cover crops. This survey polled over 2,900 farmers across the United States and includes information from those farmers who are cover crop users and those who are not cover crop users. This is the second in a series of surveys that are intended to help educate conservation practitioners, farmers and government agencies on how cover crops are being used in US agriculture. Information on species used, challenges keeping farmers from using cover crops and benefits they receive by using them, as well as how cover crops fit into the various farming operations will be highlighted. Also, this survey provided us with information on educational opportunities and how effective various opportunities were at helping farmers learn about cover crops, and gives us some insight into the different ways that farmers get information and assistance that helps them use cover crops.

This presentation will also include a portion on some work done in the Great Lakes to help farmers adopt cover crops on their own farms by providing technical, social and educational assistance, including lessons learned from producers. This portion will also look at the benefits to farms and overall water quality by using cover crops on the farms by relating nutrient and sediment savings realized by planting cover crops.

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Session: Nuisance Flora and Fauna

Developing an Effective Aquatic Vegetation Management Plan

Nathan Long

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Abstract: What is the best way to manage nuisance vegetation? Herbicides, harvesters, grass carp, drawdown, prevention, and many others are all viable options. The difference between success and failure rests on a sound integrated aquatic vegetation management plan (AVMP). Such a plan can guide lake use, save time and money, identify problems, and reduce unwanted environmental changes as well as neighbor to neighbor conflict. Without a plan, management objectives remain undefined, leaving no way to gauge progress. Treatments can become haphazard in multi-use waters. Plant communities might be removed or damaged that did not need management or control, wasting time and money and harming the ecosystem. Failures can occur in the eyes of the public because objectives seem to keep changing from year to year. This presentation will focus on taking the proper steps to develop and implement an effective AVMP and give real world examples of the importance of having a quality plan in place prior to initiating aquatic plant control.

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Aquatic Invasive Species Outreach to Water Gardeners and Aquarium Hobbyists

Greg Hitzroth, Pat Charlebois

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Abstract: 42 of 182 of species introduced to the Great Lakes arrived via the organisms in trade (OIT) pathway (e.g. water gardens and aquariums). Researchers at the University of Norte Dame and University at Loyola Chicago have been developing transparent, easy-to-use, science-based risk assessment tools. Risk assessments are key to preventing new invasions from the organisms in trade pathway because they give managers the information necessary to regulate high-risk species without affecting trade in benign species. From these risk assessments, outreach tools have been developed for plants used in water gardens and for mollusks in aquariums. Outreach to the retail and consumer segments of the pathway will support the regulatory work of the managers by 1) providing context for the overall issue, 2) identifying species determined by the risk assessment tool to pose a high risk for invasion, 3) encouraging consumers to use non-invasive alternatives and 4) enabling commercial entities to access information on state and federal regulations. This outreach includes an OIT website, a database of U.S. state and federal regulations and printed materials. These outreach tools will be highlighted and future outreach plans discussed.

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Mute Swan Populations and Control Efforts

Carl Voglewede

USDA

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Abstract:

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Indiana Lakes Management Society Annual Business Meeting – Upper Hilltop

Agenda:

- a. Roll call. (conducted at the door)
- b. Reading of minutes of last preceding membership meeting.
- c. Report of president.
- d. Report of secretary.
- e. Report of treasurer.
- f. Transaction of other business as mentioned in the notice.
- g. Election of Officers.
- h. Election of Directors.
- i. Adjournment

ILMS Board Elections 2015

Election Slate

President:

Sara Peel: Sara Peel, CLM currently serves as the Secretary on the NALMS Board of Directors. Sara is the director of watershed projects for the Wabash River Enhancement Corporation, a nonprofit focused on improving ecological, economic, and social conditions within the Wabash River basin. Sara received her B.S. in Biology and Chemistry from Alma College and her M.S. in Environmental Science from Indiana University School of Public and Environmental Affairs. Sara has over 16 years of water quality and watershed management experience. She currently serves as the Past President for the Indiana Lakes Management Society having served on the board since 2004, is a board member on the Indiana Water Monitoring Council, and on the Purdue University School of Agriculture Dean's Advisory Council.

Vice President:

Elizabeth Tompkins: Elizabeth Tompkins is the Natural Resources Coordinator with the City of Bloomington Parks and Recreation Department. She began her current position in June 2009, but has worked for the department since 2005. Elizabeth holds a Bachelor of Science degree in Outdoor Recreation and Resource Management from Indiana University. She has been a member of ILMS since 2010 and has been on the ILMS board since 2012. As Natural Resources Coordinator, Elizabeth organizes environmental education programs and manages the 109-acre Griffy Lake and its seasonal boathouse operations. She continues the department's history of participation in the Clean Lakes Program each summer by gathering data at Griffy Lake and is passionate about maintaining the lake as a thriving recreational and natural resource. She is excited to continue to contribute to ILMS and feels she brings the perspective of municipal government and small, public lake management to the board.

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Board Members:

Diana Castell: I have volunteered with Wawasee Area Conservancy Foundation for eight years and chaired the Ecology/Education Committee for seven years. Started an educational outreach program to help lake residents and the local community to understand how their actions affect our watershed. The first Saturday in June, July and August we have a program named Lake Talk and Eats. Topics range from local fish to grandkids and grandparents catching water critters and learning how water quality effects insects. Our committee is full of positive, committed people, which make our programs possible. We continue to look for new ways to education our residents in order to protect our lakes. Next summer we will start a Cool Wake program to keep skiers and wake boarder in the deep part of the lakes.

Steve Lee: Steve has managed the Northern Indiana office of Aquatic Control Inc. in Valparaiso since 2007. He oversees the day to day operations as well as doing field work in pond and lake management, aeration sales and service, consulting and fish surveys. Steve joined Aquatic Control in 2001, working at the Seymour, Indiana office through 2006. Prior to starting a career in aquatics, he spent nearly 20 years in the radio broadcasting industry as a program director and morning show host at stations in Michigan, Indiana, and Ohio. Steve grew up in Michigan, graduating from Grand Ledge High School in 1979. He then attended Kalamazoo Valley Community College, and graduated from Specs Howard School of Broadcasting Arts in Southfield, Michigan in 1981. Steve currently lives in Knox, where he raises rabbits, chickens and bees in his spare time.

Sarah Powers: Sarah Powers is the Lab Manager and Volunteer Coordinator for the Indiana Clean Lakes Program. She has been working with the Indiana Clean Lakes Program since 2008. She is an Adjunct Lecturer at Indiana University in the School of Public and Environmental Affairs where she teaches Introduction to Environmental Science and Techniques in Environmental Science. Sarah graduated from Indiana University's School of Public and Environmental Affairs in 2011 where she received a MS in Environmental Science. Sarah has assisted in several watershed diagnostic studies including multiple Lake and River Enhancement Projects. She has taught several workshops throughout the state to teach Lake Enthusiast about aquatic plants and train volunteers for the CLP Aquatic Invasive Monitoring Program. During the summer of 2012 she was a crew leader for the

National Lakes Assessment, which was sponsored by the U.S. Environmental Protection Agency and coordinated by the Indiana Department of Environmental Management.

She has been a member of the Indiana Lake Management Society since 2009 and has been serving on the board of directors since October of 2012 and as the Marketing Chair since 2013. Sarah is interested in lake management particularly the impacts of climate change on the aquatic ecosystem, aquatic plant benefits and impacts on lake ecosystems, and increasing participation in volunteer lake monitoring efforts throughout the state of Indiana.

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Matt Rayl: Matt Rayl is the owner of American Pond and Lake Management where he helps private landowners and municipalities on fishery, nuisance and non-nuisance vegetation, and nutrient abatement. He also manages a small fish hatchery designed for lake and pond stocking. He has also recently started consulting for lake product and aquaculture companies. Matt has a BS in biology and a minor in chemistry from Earlham College. He also has a year of post grad work in fisheries from Purdue University. Matt's prior experience was being the lake manager at Aquatic Eco-Systems where he was able to travel to over a hundred aquatic vegetation, lake management, aquaculture, and water based conferences. He also has been involved with the boards and /or committees of Central Florida Lake Management Society, Florida Lake Management Society, and North American Lake Management Society. He was also responsible of hiring and teaching technicians who help pond owners, lake owners, and municipalities from multiple countries and multiple languages. He has personally been involved in inventing and improving products in the lake industry such as aeration, deicing, nutrient binding and sediment inactivation such as the Mobile Alum Injection Device (MAID). Matt's strengths are consulting, people skills, and passion for the lake and pond industry.

Jarrold Richeson: Jarrod is from a small town; Princeton, Indiana in the southernmost part of the state. He is a 2002 graduate of Princeton Community high school and a 2006 graduate of Indiana State University with a BS in Criminology and an AS in Conservation Law Enforcement from a smaller university that he transferred from. He continued his education at Purdue University, and received a BS in Fisheries and Aquatic Sciences. He began my employment with Aquatic Control in June of 2012, and is approaching my 3 year Anniversary with the company. In my personal time Jarrod enjoy fishing, kayaking, music, and outdoor activities.

Joe Schmees: Joe is employed by the Indiana Department of Environmental Management (IDEM) as the watershed specialist and Section 319 grant project manager for northeast Indiana. He has worked for IDEM since 2007, originally sampling rivers and streams for biology, bacteria, algae, and chemistry. Joe graduated from Wittenberg University in Springfield, Ohio, with dual bachelor degrees in biology and chemistry. Joe currently lives in Fishers with his wife Lauren and their dog Grace, and loves to read, run, hike, and fish. Joe also likes to spend time in his kayak on the White River and nearby Geist Reservoir, and translates his love for the outdoors and water resources into his professional life. He is currently the President-elect for the Indiana Water Resources Association (IWRA), and looks forward to continued involvement in ILMS.

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Session: 2 Part Worksop

Limnology 101

Melissa Clark

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Abstract: Limnology, the study of inland waters, is a pretty broad topic and would normally cover at a semester long course, at a minimum. In this workshop, Melissa will provide an introduction to this subject allowing you to gain an understanding of the fundamentals of limnology. In addition to exploring the basics and interpreting lake data, you'll be able to view the lake food chain. With assistance or on your own, identify plankton, macroinvertebrates, fish, and macrophytes.

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Session: Workshop

Landscaping for Water Quality

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Abstract: Homeowners on the lakes of Indiana can improve water quality while enhancing their property and supporting our native ecosystems. Use of native plants in landscaping, specifically in rain gardens and vegetative seawalls, are proven best management practices to improve water quality.

A beautifully landscaped yard makes outdoor living even more pleasurable and enhances property values. A native plant garden can be designed in any style (formal, natural, cottage, or contemporary) to match your architecture and lifestyle. Select native plants suitable for the landscape, those with attractive blooms and/or foliage and with good growth habits. An added bonus is that native plants are lower maintenance than exotic (non-native) plants.

If you enjoy watching butterflies, birds, dragonflies, and our native bees, then you need to provide the habitat to support them. The primary cause of reduced numbers of monarchs and bees is loss of habitat, but these are only the most obvious examples. Including local genotype native plants in your landscape and garden provides the wildlife with the habitat they require.

Storm water run-off picks up pollutants as it rolls over pavement and lawns before it enters our lakes and other waterways. A rain garden captures the storm water run-off in a shallow depression planted with natives suited to occasional inundation. The polluted storm water infiltrates into the ground, which is an excellent water filter.

A vegetative seawall will also help run-off infiltrate into the ground instead of polluting the lake. Plant native species with fibrous roots selected for wet soils by the shoreline to reduce erosion. While shoreline plantings mimic nature, the vegetative growth does not have to appear wild. Plants can be selected to enhance lake views, not detract or obstruct views.

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Session: Field Trip

Wawasee Area Conservancy Foundation Levinson LaBrosse Lakes and Wetlands Education Center

Heather Harwood

Executive Director

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Abstract: A car tour to the Wawasee Area Conservancy Foundation Levinson LaBrosse Lakes and Wetlands Education Center - a short drive (<5 minutes) from the ILMS Conference location at the Oakwood Conference Center at Hilltop to the 40+ acre WACF Education Center. The tour will include a brief overview of WACF and it's mission, the Education Center building, the WACF Ruddell Pavilion and trails (weather permitting). The WACF LLLWEC has frontage on Wawasee and we will visit that shoreline and review the invasive plant removal project completed there along with Trails 1 and 2. These projects were completed thru the US Fish and Wildlife Service, IDNR, and the Kosciusko County Community Foundation. This project has been a 2-phase invasive removal project including Honeysuckle, Buckthorn and Multiflora Rose. We will also review the Mitigated Wetland Area, Wetland Res toration area and the future Amphitheater.

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THANK YOU!

We look forward to seeing you next year!

Please mark your calendars for next year's conference at
Swan Lake Resort
Plymouth, Indiana

28th Annual
Indiana Lakes Management Conference

Friday, March 11 – Saturday, March 12, 2016



Indiana Lakes Management Society
207 S. Wayne Street, Suite B
Angola, IN 46703-9315

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