Indiana Water Monitoring Council
Maximizing resources through improved communication, coordination, data sharing, and collaboration

December 2015
Volume 2, Issue 6

WATER IN THE NEWS

INSIDE THIS ISSUE

Winter on the lakes

By: Dr. Nate Bosch, Director, Center for Lakes & Streams

Winter brings life on the lake to a halt for all but the hardiest residents who participate in activities such as ice boating and fishing. However, a lack of activity on the lake surface is not indicative of what is occurring beneath the ice.

As air temperatures decrease over the winter, ice begins to form on the lake's surface. In northern Indiana, ice thickness averages approximately 7 to 8 inches; however, ice can reach up to 24 to 30 inches in thickness during the coldest winters. The ice on Lake Wawasee reportedly reached a thickness of 24 inches in 2015.

Lake Wawasee was not the only lake to experience high ice accumulations. Ice cover on the Great Lakes reached as much as 88 percent in 2015 following a nearly record-setting year for ice coverage in 2014 (the record set for ice coverage was established in February 1979 at 95 percent). This comparison is encouraging because it suggests that it is possible to look to the Great Lakes as indication of local lake conditions.

The presence of ice on the lakes alters the lake environment by insulating and shading the lake as well as forming a seal that stops air to water oxygen transfer.

The water temperature stays around 39 degrees for the entire winter, except for the water very near the ice surface, which remains close to the freezing point. Ice insulates the lake from getting much colder than the temperature it was when the ice initially formed.

Winter, continued…

The ice (especially snow-covered ice) stops some of the sunlight from getting into the lake where the phytoplankton can utilize it. Colder temperatures and lower light levels decrease the activity of the phytoplankton under the ice, so they produce less oxygen.

The oxygen concentration of the lake water declines as decomposition in the lake bottom uses up oxygen. Declines in oxygen worsen if too many nutrients subsisted in the lake during previous seasons.

As ice restricts oxygen flow to the lakes, the lakes only have a limited amount of oxygen prior to exhausting their supply. This has important implications for fish as they continue to rely on oxygen in the water, despite a reduction in their activity. An exhaustion of oxygen results in fish kills.

As winter approaches, lakes are preparing for a calm and frozen season on the surface, while a busy and activity-rich season begins beneath the ice.

The hidden risks of low-head dams in Indiana

By: InWMC Board Members

Low-head dams present safety and ecological issues on many streams in Indiana and across the nation. Yet the public remains largely unaware of the safety risks associated with these structures and the impact they can have on aquatic communities and the environment.

Hundreds of individuals across the country have lost their lives at low-head dams. They are deceivingly dangerous to people kayaking or canoeing during even mild flooding conditions. Additionally, many people have drowned while fishing by falling into the churning water below the dam.

The environmental impacts of low-head dams further punctuate the need to remove them. Low-head dams can inhibit the movement of beneficial native fish species and damage the habitat for fish and invertebrates. In addition, they collect sediment behind them, which can include toxic contaminants that bind with the sediment. As a result of their impact, it is not uncommon to find stream reaches above and below these dams on the Clean Water Act Section 303(d) List of Impaired Waters in many states.

The solution to this challenge is not a simple one. It requires the concerted efforts of many public agencies, private organizations, and professionals to educate the public – especially youth – about the hazards and risks; create a comprehensive inventory of structures; develop a signage initiative to warn water enthusiasts of the hazard and ultimately, to remove the structures.

On December 17, the Indiana Water Monitoring Council will hold a one-day symposium, which is free and open to anyone, to foster greater communication around low-head dams, the problems they present and possible solutions. Registration for this event closes on December 16. If you want to be a part of this important conversation, click here to register today!

IDEM will soon publish its draft 2016 303(d) List of Impaired Waters – do you know what that means?

By: Jody Arthur, Indiana Department of Environmental Management

The Indiana Department of Environmental Management (IDEM) is now working to develop its 2016 Integrated Report (IR) and will soon publish a draft 303(d) list of Impaired Waters for public comment.

Section 305(b) of the federal Clean Water Act (CWA) requires that states prepare and send a report to the U.S. Environmental Protection Agency every two years that describes the water quality conditions of their (each state's) surface waters – streams and rivers, lakes and reservoirs.

IDEM reports this information within the context of designated beneficial uses and the degree to which our surface water are supporting them. Designated beneficial uses are the ways in which our shared water resources benefit us, either directly or indirectly – the reasons for which we as a society value them. Examples of uses are swimming, fishing and use as a drinking water source.

All Indiana waters are designated for recreational use and expected to support healthy aquatic fish and macroinvertebrate communities. Waters that serve as a public water supply source are designated for drinking water use.

IDEM also reports on whether or not Indiana waters are "fishable," by looking at the levels of mercury or PCBs found in the fish collected from the waterbody. If these contaminants are found in concentrations that exceed Indiana's human health criteria, the water body is considered less fishable because people may not be able to safely eat all the fish they catch from it.

In order to determine whether a given waterbody is supporting its designated beneficial uses, IDEM conducts extensive water monitoring throughout the state. IDEM uses data from the current year's monitoring efforts and all existing and readily available data and information from previous years for its water quality assessments.

IDEM conducts its water quality assessments on an ongoing basis and compiles all the information it has to date into the IR every two years to meet the CWA Section 305(b) requirement to report on the conditions of all Indiana waters.

The IR is also developed, in part, to meet the requirements of another section of federal regulations: Section 303(d) of the Clean Water Act. This section requires states to make a list of those waters that are not supporting one or more of their designated beneficial uses. Waters that do not meet designated beneficial uses are considered to be impaired and must be placed on the Indiana's 303(d) List of Impaired Waters.

Often times, this is the only part of the IR that the public hears about. Referred to simply as the 303(d) list, it identifies where many of Indiana's water quality problems exist and the nature of those impairments.

But, there's more to the story. The 303(d) list is part of IDEM's Consolidated List – a much larger list included in the IR that provides far more comprehensive information than the 303(d) list does. The Consolidated List includes all the assessment information IDEM has to date regarding the extent to which individual waters are meeting their designated uses.

Both lists provide important information for water resources managers. While the 303(d) list helps to prioritize impaired waters for restoration, the Consolidated List indicates where water quality conditions are good and possibly in need of greater protections. And, it also illustrates where we are in need of additional water monitoring data and information for assessment.

This is where the public can play an important role: IDEM will soon publish its 2016 draft 303(d) list for a 90-day public comment period.

IDEM, continued…
During this time, IDEM invites the public to provide any existing data and information it may have for use in further developing the 303(d) list. The public can also use this opportunity to weigh in on IDEM's assessment processes and how the agency makes its decisions about whether or not to place a waterbody on the 303(d) list.

Save the date!

Sunrise eagle watch at Mississinewa Lake January 9th and 16th, 2016

Greet the morning with bald eagles at Mississinewa Lake's annual Sunrise Eagle Watch, January 9 and 16.

During winter, bald eagles from Canada and the Upper Midwest visit Indiana in vast numbers in search of open water. Participants will watch the birds take their first morning flights over the Mississinewa River from a known roosting spot.

Participants should meet at 6:30 a.m. at Mississinewa Lake's Miami State Recreation Area boat launch parking lot to caravan to the eagle roost. Participants should dress for the weather, and those who have binoculars and spotting scopes should bring them.

New this year, the caravan will return to the Mississinewa office at 9:30 a.m. for breakfast. Donations will be accepted, and several of the Salamonie Raptor Center's birds of prey will be there.

Expect limited walking on a paved road. Those who need the available handicapped parking should request it at registration. Register by calling Upper Wabash Interpretive Services at (260) 468-2127.

Upper Wabash Interpretive Services (dnr.IN.gov/uwis) is at 3691 S. New Holland Road, Andrews, 46702.

Recent news releases

EPA Marks Major Progress in St. Louis River Area of Concern on Lake Superior. See entire article here:
http://yosemite.epa.gov/opa/admpress.nsf/0/F141262097A3937E85257F03006F5C9F

$1.3 Million Awarded for Community-Based Projects To Improve Health and Ecosystem of Long Island Sound. See entire article at:
http://yosemite.epa.gov/opa/admpress.nsf/0/2BA003AEAD8DBA2085257EFB0066397C

EPA and Partners Launch Challenge to Recycle Nutrients from Livestock Waste. See entire article here:
http://yosemite.epa.gov/opa/admpress.nsf/0/8E585117F76D38A685257EFB004B390A

EPA Region 5 to Audit State of Michigan's Drinking Water Program. See entire article at:
http://yosemite.epa.gov/opa/admpress.nsf/0/9E26559C4478E1CB85257EF900617183

Indiana Recognized at Trails Conference. See entire article at:
http://www.in.gov/activecalendar_dnr/EventList.aspx?view=EventDetails&eventidn=8456&information_id=17521&type=&syndicate=syndicate

IDNR will improve fish habitat in new program with aid from partners

By: Sandy Clark-Kolaks, Indiana Department of Natural Resources

A new Indiana Department of Natural Resources (IDNR) partnership will build fish habitat in reservoirs where natural structure is lacking.

The Reservoir Aquatic Habitat Enhancement Program (RAHEP) will start in the winter of 2016 with improvements at Sullivan Lake, a 451-acre reservoir in Sullivan.

Partners include Jones and Sons Concrete, Bass Unlimited, Sullivan County Parks and Sullivan County Jail.

Inmates from the Sullivan County Jail will cut lumber for fish cribs. These structures are made from green poplar and look like a small log cabin, creating refuge for fish. Inmates will work with Sullivan County Parks and Lake staffers during winter to prepare materials and assist with building.

Other structures will include brush piles, Georgia Cubes (a PVC cube with corrugated pipe wound inside) and black bass nesting platforms. Jones and Sons Concrete in Bloomfield has donated 200 cinder blocks. Bass Unlimited, a non-profit angling group based in Terre Haute, has pledged materials and volunteers to help with structure construction.

“Because Bass Unlimited is funded by anglers and conservationists, it is a natural fit to partner with IDNR and assist in this type of project,” Bass Unlimited president Wil Newlin said.

Newlin believes the new program will enhance aquatic biodiversity and therefore improve recreational fishing experiences, which is part of Bass Unlimited’s mission.

Sullivan Lake was chosen as the program’s first lake because it holds little aquatic vegetation and has been awarded a grant for shoreline stabilization project through the Indiana Lakes and Rivers Enhancement Program (LARE), which is administered through IDNR.

“There are a lot of positive things going on at Sullivan Lake, and these improvements will make fishing better,” said Sandy Clark-Kolaks, IDNR southern fisheries research biologist. “We hope to put more than 100 structures into Sullivan Lake in 2016, and it will take many hands to build them all.”

Most of Indiana’s reservoirs were built in the 1950s and 1960s. Over the years, the trees, logs and roots that provided cover for fish have degraded and decomposed.

Anglers and the public can help during a work day in spring 2016. A date is yet to be determined. Volunteers will likely help assemble structures from ready materials.

Indiana NRCS announces $3.4 million available to help protect and restore sensitive lands

By: Natural Resources Conservation Service

State Conservationist Jane Hardisty announced that Indiana's U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) is making available over $3.4 million to help landowners protect and restore key farmlands, grasslands and wetlands across Indiana. The funding is provided through the Agricultural Conservation Easement Program (ACEP), created by the 2014 Farm Bill to protect critical water resources and wildlife habitat, and encourage private owners to maintain land for farming. Eligible entities must submit applications for the current funding pool on or before January 15, 2016.

"I cannot overemphasize the benefits of restoring, enhancing and protecting these working agricultura lands and critical wetlands," said Hardisty. "NRCS is committed to preserving working agricultural lands to help protect the long-term viability of farming across Indiana as well as to restoring and protecting wetlands that provide important wildlife habitat and improve our water quality."

ACEP's Agricultural Land Easements (ALE) not only protect the long-term viability of the nation's food supply by preventing conversion of productive working lands to non-agricultural uses, they also support environmental quality, wildlife habitat, historic preservation and protection of open spaces. State and local governments, non-governmental organizations and Native American tribes that have farmland or grassland protection programs are eligible to partner with NRCS to protect farmland through easements.

Wetland reserve easements (WRE) allow landowners to successfully restore, enhance and protect habitat for wildlife on their lands, reduce damage from flooding, recharge groundwater and provide outdoor recreational and educational opportunities. Eligible landowners can choose to enroll in a permanent or 30-year easement. Tribal landowners also have the option of enrolling in 30-year contracts.

In Indiana, over 1,600 acres have been enrolled in the WRE (formerly the WRP or Wetland Reserve Program) in the last two years alone. Once restored, these acres will join over 70,000 acres of additional protected floodplain and wetland easements in the state to protect water quality resources and provide for wildlife. Many of these easements lie in critical migratory areas for waterfowl and other birds such as the Wabash River, Goose Pond, Kankakee Marsh, and Muscatatuck River Corridor.

Over the last two years, NRCS has invested more than $600 million across the country in ACEP funding to help landowners engage in voluntary conservation to provide long-term protection of an estimated 250,000 acres of farmland, grassland, and wetlands through more than 750 new easements.

ACEP applications may be submitted at any time to NRCS; however, applications for the current funding round must be submitted on or before January 15, 2016.

To learn about ACEP and other technical and financial assistance available through Indiana NRCS conservation programs, visit www.nrcs.usda.gov/GetStarted or contact your District Conservationist http://www.nrcs.usda.gov/wps/portal/nrcs/main/in/contact/local/.

For more information about easements in Indiana, visit: www.nrcs.usda.gov/wps/portal/nrcs/main/in/programs/easements/

Indiana Water Monitoring Council
100 North Senate Ave Indianapolis, IN 46204

Phone:
317-308-3179

Fax:
317-308-3219

E-Mail:
info@InWMC.org

Like us on Facebook!

https://www.facebook.com/inwmc

We're on the Web!

Visit us at:

www.inwmc.org

Become a member!

The Indiana Water Monitoring Council (InWMC) invites you to become a member today!

The InWMC addresses the full range of water resources, physical, chemical, and biological, including ground and surface waters.

Visit our website to learn more or click here to join today!

InWMC serves as a broad-based collaborative body to help achieve effective and efficient collection, interpretation, and dissemination of basic data and processed information for use in addressing issues of Indiana waters.

Join the InWMC today at:
http://www.inwmc.org/page-303780

Winter stoneflies

By: Greg Bright, InWMC Board Member

When monitoring water quality, many of us recognize that benthic macroinvertebrates tell an important story. They are present in the water under all kinds of conditions and throughout a period of weeks, months, or even years. By careful study of their community structure, we can tell how healthy a particular waterbody might be.

One of the groups we look for is an aquatic insect called a stonefly. Most of these insects require very good water quality. So we often get excited when we find them and disappointed when they're absent. Few of us realize, though, that stoneflies are one of the most temperature-dependent animals in lakes and streams. Like trout, most stoneflies thrive best in cool water. Many stoneflies wait until the water cools in autumn before they hatch from eggs and begin to grow as aquatic nymphs. In fact, there is a particular group called "winter stoneflies" (like the one in the photograph below) that emerge from water, mate, and lay eggs only in the winter and mate on snow packs. This explains why stoneflies may be difficult to find when we sample only in warm summer months.

Watch out for these cool water lovers on your next winter hike.