



WATER IN THE NEWS

Lakes Appreciation Month is July 2014!

From the National Association of Lake Managers (NALMS)

You work on them, play on them, and drink from them. But, have you recently taken the time to really appreciate your local lake, pond, or reservoir?

With increasing population, development and stress on our waterbodies, Lakes Appreciation Month is a reminder that we should think about where we would be without water. All life relies on this valuable resource and we often take for granted that water will always be there and will always be usable.

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Lakes Appreciation Month is the ideal time to set aside a week, a day or even just an hour or two to celebrate your favorite lake, pond or reservoir by participation in one or more of the following activities:

- Assist with volunteer monitoring activities on your waterbody or in your watershed
- Participate in the annual Secchi Disk Dip-In. More information can be found online at <http://www.secchidipin.org>.
- Take a day off and visit a local lake or pond
- Go boating, kayaking, canoeing, sailing or rowing
- Go swimming or SCUBA diving
- Go fishing
- If you are not a lake manager, contact your local lake management agency and see if you could shadow a limnologist for a day
- If you are a lake manager, coordinate activities in your office or on a local waterbody for others to participate (bring sampling equipment, id keys and other interactive materials)
- Organize a lake clean-up event
- Organize a watershed clean-up event
- Organize a watershed storm drain stenciling program
- Have your septic system pumped if you live close to a waterbody
- Go to a local or state park beach on the shores of a lake, pond or reservoir
- Go birding or hike around a lake or pond to take pictures
- If you are an artist, draw or paint a lake scene and put it up in your home or office to remind yourself of the great time you had at the lake while you were creating this work of art
- Organize a field trip for students
- Organize a family day at a local lake or pond



You can learn more about how to enjoy Indiana lakes online at: <http://www.nalms.org/home/programs/lakes-appreciation-month/lake-appreciation-month-home.cmsx>.

Forty Years of Lake Monitoring: Are Our Lakes Getting Better or Worse?

By Greg Bright, Commonwealth Biomonitoring

The federal Clean Water Act of 1972 started in motion a very successful series of events that has resulted in much cleaner water in the United States. Part of the effort included funds to monitor chemistry, biology, and habitat of lakes and streams to see if we're making any progress. The Indiana State Board of Health (now the Indiana Department of Environmental Management) began monitoring Indiana lake quality 40 years ago and established a monitoring protocol that has been followed consistently since.

Early monitoring of Indiana lakes was conducted by the state. Later, this monitoring was continued by the Indiana University Clean Lakes Program (CLP), which resides in the School of Public and Environmental Affairs. Through the CLP, many of Indiana's public lakes get a "check-up" every three years or so. Because the same monitoring protocols have been followed through time, it is possible to compare one year to another to see if conditions are stable, improving, or declining.

How are we doing? The Indiana "trophic status index" (TSI), first developed by Harold BonHomme of the Indiana State Board of Health, uses information on nutrients, water clarity and algal density to produce a score for each lake. The maximum score with this index is 75 points. Lakes with high TSI scores have the worst water quality, with algae blooms so bad that they are completely useless for fishing, swimming, or

boating. Forty years ago, there were 28 lakes in our state that had a TSI score greater than 60. Now there are none. That's an improvement.

Most of the lakes that were seriously impaired were fed by water with poor sewage treatment. Big improvements in how wastewater is treated have benefited these "problem" lakes.

Unfortunately, there are indications that many lakes are now beginning to decline in quality again.

The TSI uses blue-green algae blooms as an indicator of declining lake health, and blue-green algae are becoming increasingly common in Indiana lakes. The reasons for this are still unknown but may be related to changes in the ratio of nitrogen and phosphorus in lakes. Blue-green algae have a competitive advantage over other algae when nitrogen levels are low because they can remove nitrogen directly from the air.

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Alternative Lawn Care Practices

~ Modified from *Lake Tides* by Doug Soldat,
UW-Extension Turfgrass Specialist,
Dept. of Soil Science, UW-Madison

Ask a lake ecologist what a shoreland homeowner should do with their yard to help protect their lake and the response will likely be “protect or restore the native buffer, don’t grow lawns on slopes that drain to the lake, and do all you can to infiltrate runoff.” This advice is sound, but looking around our lakes there appears to be a deep affinity for grass lawns among property owners, one that science will not sway. The question then becomes: What lawn care practices should homeowners use to minimize their impact on the lake? It’s an important question, since whatever is on and in those lawns (i.e. fertilizers, pesticides, herbicides, etc.) will be carried by stormwater to the lake. This article highlights some of the key steps that homeowners can take to attain a healthy lawn without placing their lake in jeopardy.

When you go to the grocery store, you can find U.S. Department of Agriculture (USDA) – certified organic versions of all kinds of foods. Organic producers use methods that foster cycling of resources, promote ecological balance, and conserve biodiversity. While organic products tend to be a bit more expensive, the quality is equal to, or better than, conventionally-grown products, and consumers have come to expect and appreciate having the choice.

Unfortunately, the same choices are not yet available for your lawn. The primary obstacle to a healthy organic or alternative lawn is a healthy soil. If you ask an organic farmer or gardener the secret to growing organic food, s/he’ll tell you it’s all about the soil. But our lawn soils were heavily disturbed when our homes were constructed. Chances are the original 12 inches of topsoil was stripped and sold and the basement clay was spread around the property and compacted. Then, two inches of topsoil was spread around and a cheap species of turf was planted. It’s no wonder many people constantly struggle with weeds, insects, and drought.

The turfgrass research program at the University of Wisconsin (UW)-Madison has been investigating ways to maintain healthy grass with fewer inputs for decades. In fact, they’ve earned a national reputation for leading the way in environmental turfgrass research. Drawing on that

wealth of knowledge, two new publications are available at the UW-Extension Learning Store: [Do-It-Yourself Alternative Lawn Care \(A3964\)](#) and [Organic and Reduced-Risk Lawn Care \(A3958\)](#). The former is intended for homeowners and the latter for lawn care professionals. It should come as no surprise to learn that focusing on soil health is the first key to success for alternative lawn care.

The best defense against weeds, insects and diseases is a healthy plant; and healthy plants need a good soil. For new areas, we recommend planting into at least six inches of good topsoil for roots to thrive. If the roots can only explore the top few inches, turf density suffers, weeds encroach, and the lawn goes dormant at the first sign of drought. If you are dealing with an already established lawn on a poor soil, you can core aerate each fall and add compost in the spring and fall each year to slowly build up the root zone.

Another important consideration is grass type. Some grasses are better suited for low-maintenance situations than others. For example, fine and tall fescue do very well with little fertilizer and water. They both are acceptable under shade. However, fine fescue will not tolerate much traffic, or wet, compacted soils. Tall fescue will not tolerate ice cover. Talk with a turfgrass specialist to determine which grass species and cultivars are right for your specific situation. After you have a good soil and the right grass, mowing it properly will ensure its continued success.

Mowing is a stressful event for grass, so make sure the mower blades are sharp to minimize injury to the grass blades and try not to mow more than one third of the grass blade off at any one time. Finally, the grass clippings should be mulched back to the lawn to provide nutrients. Returning grass clippings to the soil is usually equivalent to one or two fertilizer applications. Speaking of nutrients, fertilizing the lawn can be important to maintain good density.

A dense lawn will slow the flow of water across the surface and encourage infiltration into the soil. Also, dense lawns leave few opportunities for weed seeds to find the soil and germinate. Many alternative and organic fertilizers are produced as byproducts of the agricultural industry.

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One drawback is these products often contain phosphorus, which is usually not required for established lawns – and a good way to increase algae growth in your lake. Organic or alternative pest control relies on hand-pulling of weeds or the use of products with limited efficacy like corn gluten meal for pre-emergent weed control or products containing chelated iron that control (but may not eliminate) many broadleaf weeds.

The optimum time to apply corn gluten meal is when soil temperatures reach 55°F. If you don't have a soil thermometer, it's about the time Forsythia are blooming

or when the leaves emerge on the invasive and ubiquitous honeysuckle.

Finally, irrigation may be important during extreme dry spells. While most grasses can survive all but the most extreme droughts by going dormant, weeds can proliferate while the grass is temporarily brown. By keeping the grass green and growing, weed invasion will be minimized. Keep in mind that the deeper and healthier the soil, the longer your turf will stay green during the year.

The Influence of Asian Carp on Indiana's Waterways

Summary by: Lori Lovell

Since introduced to the southern United States in the 1970s, Asian carp have quickly spread across the nation, now exploiting waterways from the Gulf Coast to Lake Michigan. As native species of the Great Lakes become threatened by these adaptable, aggressive carp species, the U.S. Congress approved the completion of an invasion prevention study by the U.S. Army Corps of Engineers. The study reports multi-billion dollar solutions that require up to 25 years to complete and the support of the federal government.

Downstream of the Great Lakes, the federal government is not likely to provide assistance in the protection of Indiana waterways. Fortunately, Indiana waterways such as the Wabash River are not particularly conducive to the spread of Asian carp. Steady, strong flows and a lack of dams limit the carp's ability to spawn and reproduce at the same levels as in waterways such as the Mississippi River. An Indiana Department of Natural Resources official recently reported to the Journal and Courier that while Asian carp play an active role in the Wabash, their threat to native species is more limited than in previously invaded waterways.

However, the threat is extant, and officials are pursuing solutions to growing carp populations in the region. One option being experimented with in Illinois includes the commercial harvesting of carp. An Illinois Department of Natural Resources aquatic nuisance species manager suggests that fishing can make a dent in the population of Asian carp species, which compose 60% of the Illinois River's biomass.

Another option includes stocking native fish species that can feed on the carp, such as longnose gars. A final, more extreme option involves the use of natural toxins isolated as lethal to only carp species.

While Indiana's native fish populations may be at lower risk than others in the Midwest, solutions are being sought out to combat this problem.

One solution to the problem is to create a tasty Asian carp cuisine! Find recipes here: http://www.in.gov/dnr/fishwild/files/fw-Asian_Carp_Cuisine_.pdf

There's still time to participate in this year's Secchi Dip-In!

This is an invitation to participate in the 21st annual **Secchi Dip-In** – a three-week event that runs from June 28 to July 20, 2014. The Dip-In continues to demonstrate that volunteers can be an invaluable part of the effort to monitor status and change on a continental, if not global, scale.

Change? What change?

Relatively rapid change in our water resources can be effected by urbanization, changes in agricultural practices, population shifts from one part of the country to another, aging of septic and sewer systems, new regulations, deleted or ignored regulations, and shifts in energy production. Climate change will change geological, chemical, and biological processes in predictable and often unpredictable. The thing about these changes is that they take place so slowly so as to be unnoticed by the average person. That is why citizen monitoring programs of butterflies, frogs, loons, bird migrations and ice duration are so important.

The concept of the Dip-In is simple:

The **Dip-In** monitors water transparency. Transparency is sensitive to changes in nutrient inflows caused by changes in land use and to changes in the temperature structure of the lake. Transparency and turbidity can be measured by a variety of instruments in most every aquatic habitat. We also welcome measurements of temperature.

Individuals can get involved in one or more of the following ways:

- Individuals take a Secchi measurement on one day during the weeks surrounding Canada Day and July Fourth.

- Individuals monitor lakes, reservoirs, estuaries, rivers, or streams, but they must already have the equipment and training. Most are members of a volunteer or professional monitoring program.
- We encourage local monitoring programs to use the Dip-In event to highlight local efforts.

When five or more years of data have been gathered on a site, it is used to determine trends. Over 2,000 waterbodies are now tracked for trends in transparency.

Your contribution is needed:

Please consider participating this year. Probably never in recent history have our environmental efforts been more under greater attack by budget cuts and special interests. The Dip-In won't solve our environmental crisis, but its data has and will continue to be a chance for volunteers to contribute to any large scale consideration of status and trends of water quality in North America. You can make a difference, both for your local efforts and for the world.

A common question:

I am often asked why we don't solicit the data from the individual programs rather than from the volunteers. There are a number of reasons including the lack of staff to solicit data from over 400 programs each year and the subsequent checking of data and putting it into the Dip-In database format. Several databases generate data in that manner, but the data are soon obsolete unless the solicitation is continued year after year. The Dip-In is a living database which keeps growing as long as volunteers continue to contribute data.

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Connect with the Secchi Dip-In on Facebook:

Have you “liked” the Secchi Dip-In site on Facebook? There you can post photos of volunteers, Secchi disks, turbidity tubes and even data graphs on the site. You are welcome to post additional photos as well as announcements of your own program’s activities. We would be happy to provide links to your program.

For more information, please contact:

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We're on the Web!

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