The Lake Beat

Volunteer Lake Monitoring Program

Fall/Winter 2014

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A Word from Lake County's New Volunteer Coordinator, Alana Bartolai!

My name is **Alana Bartolai** and I am the new Lake County Regional Coordinator for the Volunteer Lake Monitoring Program. I am a graduate of the University of Minnesota with a Master's degree in Water Resources Science and a Bachelor's degree in Geology from Macalester College. I have spent the past couple of years doing watershed work in places such as Wyoming, California, and Minnesota but I originally grew up in Lake County, Illinois. I am excited to be back and work for the Lake County Health Department to keep our waters healthy for the people, plants, and animals that call this area home. In my free time, I like to hike, camp, travel, and hang out with my dog. I look forward to meeting all our trusty VLMP volunteers who care about our lakes and share a passion for clean water. Please feel free to contact me at 847-377-8009 or abartolai2@lakecountyil.gov.

LAKE SPRINGFIELD: A Central Illinois Lake Profile

By Michelle Nicol

Lake Springfield, a 4,200 acre reservoir, is the largest municipally owned lake in Illinois. The lake's primary purposes are to serve as the source of drinking water for the City and several nearby communities and as the source of condenser cooling water for the City's lakeshore power plant complex. The average daily water production is 22 million gallons and provides drinking water to approximately 147,750 people in and around Springfield. The lake is owned and managed by City Water Light and Power (CWLP). Lake Springfield was built in 1935 by impounding water upstream of Spaulding Dam. In general, the raw water quality of the lake is typical of many midwestern reservoirs.

Laying Rip Rap

The lake is located within the Lower Sangamon River Watershed, draining an area of 265 square miles in portions of Sangamon, Macoupin and Morgan counties. The watershed includes two main streams, Lick Creek and Sugar Creek, which feed into the lake. The major cities within the watershed include: Chatham, Loami, Auburn, Virden and southern portions of Springfield. The land use in the watershed is approximately 83 percent agriculturally oriented with the row cropping of corn and soybeans predominating. Given the agricultural nature of the watershed, the lake is very much influenced by the soils, land uses, and human activity occurring within the watershed. These influences, seasonal changes, and the dynamic nature of the lake ecosystems all contribute to the quality of water in the lake.

A 1987 Phase I Diagnostic/Feasibility Study report for Lake Springfield identified sedimentation, nutrients, and shoreline erosion as major problems for Lake Springfield and its watershed. For almost 30 years, sedimentation and nutrients have been identified as major causes of concern for Lake Springfield.

Sailboat Boat Ramp

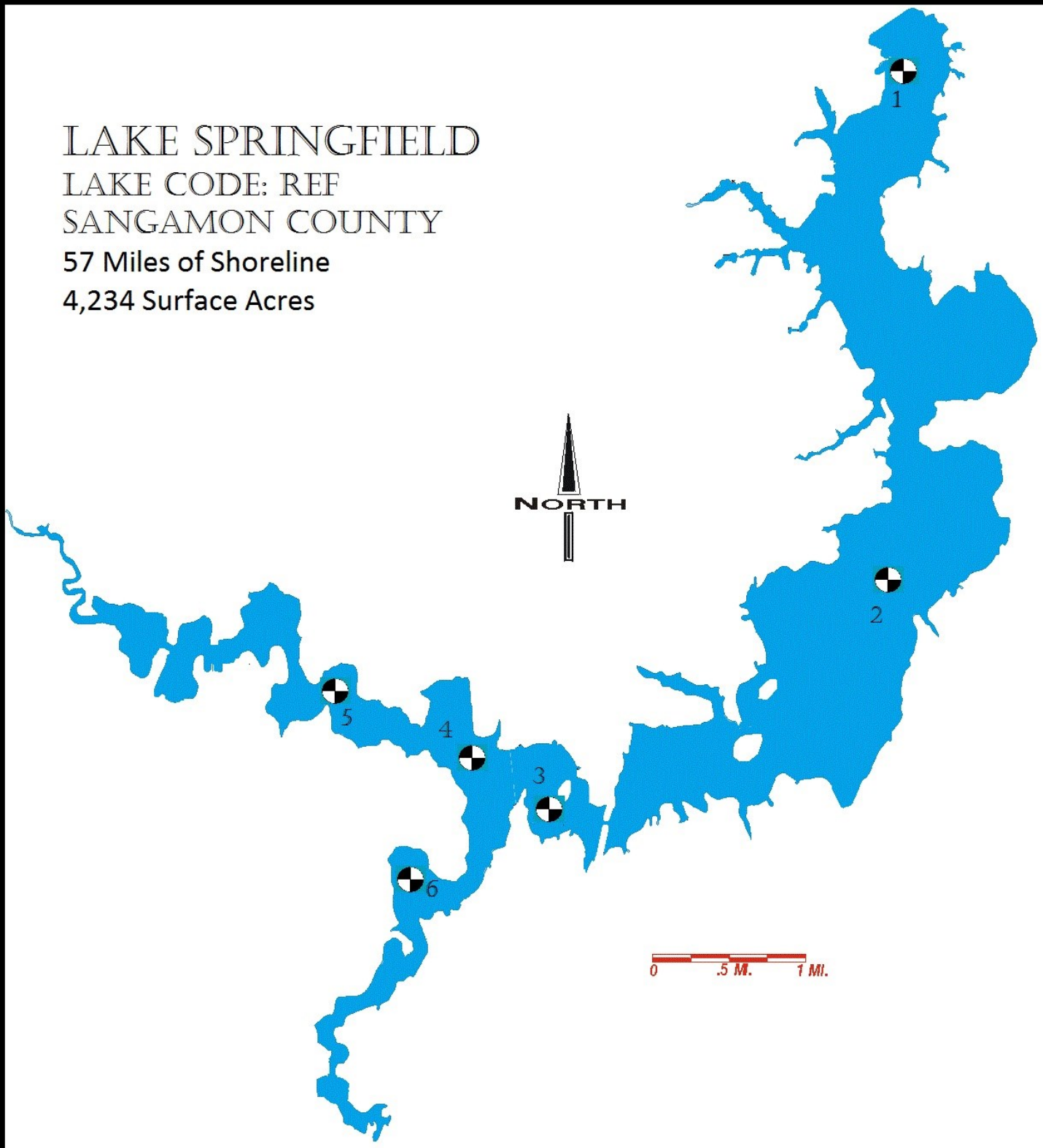
LAKE SPRINGFIELD

LAKE CODE: REF

SANGAMON COUNTY

57 Miles of Shoreline

4,234 Surface Acres



As a result of the 1987 Phase I Diagnostic/Feasibility Study Report, a three-phase lake restoration program was initiated by CWLP to overcome the identified problems. The program, known as the Lake Springfield Maintenance Plan, included: a soil conservation grant program in the watershed (watershed treatments), hydraulic dredging (sediment removal), and shoreline stabilization. Funding sources included bond proceeds, revenues from increased water rates, cost-sharing contribution from the City's electric utility and a grant from the U.S Environmental Protection Agency. The Phase I dredging project was initiated in June 1987 and was completed in August 1988. A Phase II dredging project was initiated in May 1989 and was completed in July 1990. The total volume of dredged sediment during both phases was 3,222,835 cubic yards.

Implementation of soil conservation programs in the watershed began in 1983. Grants from CWLP averaged over $25,000 per year and were used to purchase no-till farm machinery, fund cost-share implementation of best management practices (BMP), and seed highly erodible land into grasses. Practices included grass waterways, terraces, dry dams, sediment control basins, stream bank stabilization, and ponds. From 1987 to 1991, approximately 60,000 tons of soil had been prevented from entering Lake Springfield due to these cost-shared soil conservation efforts. From 1990-1997, $1.5 million in cost-share was provided to producers for implementing best management practices on farms in the Lick Creek portion of the Lake Springfield watershed. CWLP continues to provide $25,000 a year to the Sangamon County Soil & Water Conservation District to provide assistance for watershed projects.

Results from Illinois EPA's 1999 Ambient Lake Monitoring Program indicated that untreated raw water had detections above the drinking water standard, set at 3 parts per billion, for Atrazine. As a result of these detection levels, CWLP uses powdered activated carbon (PAC) to bring the source water quality within the drinking water standard. Ultimately, a focus on implementing two-pass atrazine application programs, reducing rates for any single application, incorporation of alternative chemicals, incorporation of buffer strips, and no-till methods of farming have all helped achieve compliance for the City and reduced the need to spend large sums of money on PAC to remove atrazine from the raw water.

Many areas of Lake Springfield shoreline are in need of rip rap protection. From 1986 through 2007, the Illinois Department of Corrections crews have cleared and stabilized over six miles of shoreline, including the islands. Through 2012, CWLP crews have completed close to seven miles of shoreline stabilization, primarily in areas with easy access, such as the lake parks and the channel dam.

The City of Springfield was awarded a Priority Lake and Watershed Improvement Project grant from the Illinois Environmental Protection Agency IEPA) in 2013 to help reduce sediment run-off and nutrient loading into Lake Springfield. Riprap was installed on 2,756 feet of highly-visible, highly-eroded Lake Springfield shoreline. The installation of riprap took place in the area at the confluence of Lick and Sugar Creeks. While the Lick and Sugar Creek basins comprise only 13% of the lake water storage capacity, this area traps over 50% of the incoming sediment. This project reduced phosphorus loading by 453 pounds per year, nitrogen by 904 pounds per year and sediment load reduction by 453 tons per year.

In 2012, as in years past, tap water produced by CWLP met all USEPA and State of Illinois drinking water health standards. The purification process is monitored 24 hours each day and reported no violations of a contaminant level or of any other water quality standards.

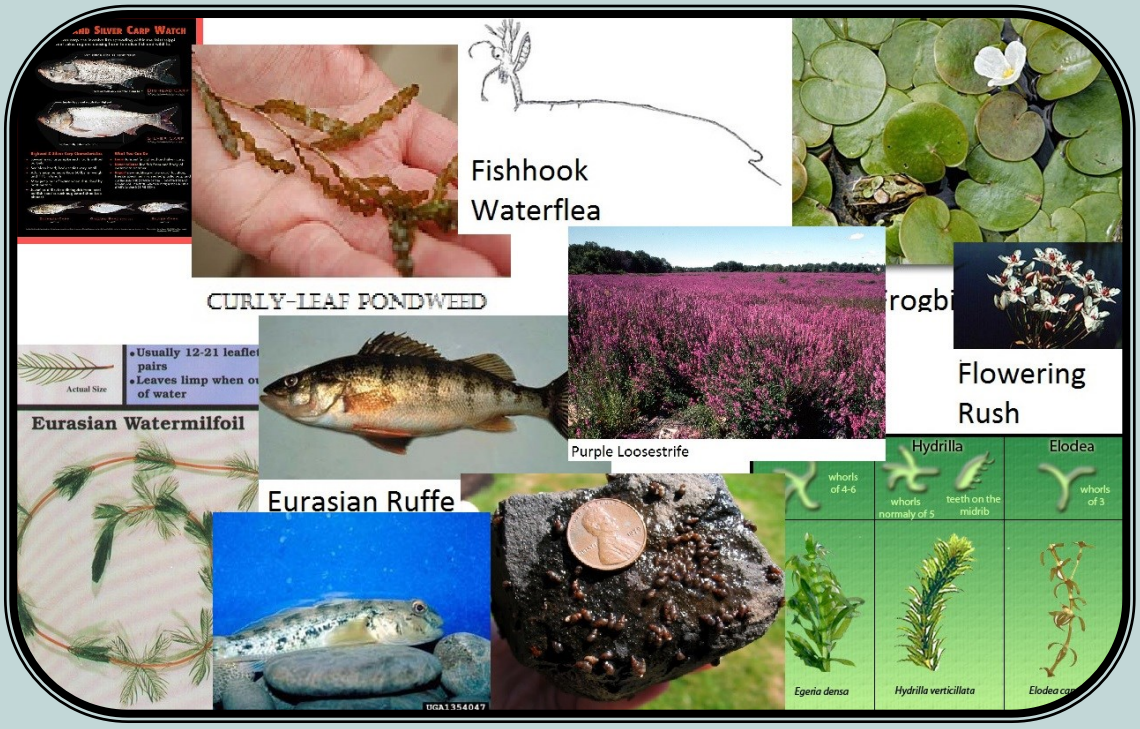
Lake Springfield
Photo by Lin Vautrain
Illinois DNR

Stop the Spread!

Follow this checklist against aquatic exotics:

If you are a water recreationist, boater, angler, water skier, sailor, or canoeist, there are some important things you can do to help prevent the spread of aquatic exotic species.

- Don't transport water, animals, or plants from one lake or river to another.
- Never dump live fish from one body of water to another.
- Remove plants and animals from your boat, trailer, and accessory equipment (anchors, centerboards, trailer hitch, wheels, rollers, cables, and axles) before leaving the water access area.
- Drain live-wells, bilge water, and transom wells before leaving the water access area.
- Empty bait buckets on land, not in the water. Never dip your bait buckets in one lake if it has water in it from another.
- Wash boats, tackle, downriggers, and trailers with hot water as soon as possible. Flush water through motor's cooling system and any other parts that may have been exposed to lake or river water. If possible, let everything dry for three days (hot water and drying will kill zebra mussel larvae).
- Learn what these organisms look like. Don't purchase exotic species as bait or for ornamental plantings. If you suspect a new infestation of an exotic plant or animal, report it to Illinois EPA's Lake Unit (217/782-3362), Illinois DNR's Division of Natural Heritage (217/785-8774), Illinois DNR's Natural History Survey at the Havana Field Station (309/543-6000) or the Lake Michigan Biological Station (847/872-6877).
- Consult with the Illinois EPA's Lakes Unit or your local Illinois DNR district fishery biologist for guidance before you try to control or eradicate an exotic "pest." Remember, exotic species thrive on disturbance. Do-it-yourself control treatments often make matters worse and can harm native species!



VLMP IN 2015

The 2015 Volunteer Season will comprise Tier 1 and 2 levels only. Get your registration in now, before all of the Tier 2 positions are gone. You can email your coordinator for a registration form or go to the VLMP Home Page and follow the link for, "Who should volunteer?" and fill out the online registration form.

Please get your registrations in by **April 13th**, so training and supplies can be organized before we roll out in May to begin the sampling season.

	Tier 1	Tier 2
Lake Size	Any	Any
Purpose	Education & Water Quality Assessments	Expanded Education & Water Quality Assessments & Baseline Water Quality Indicators
Monitoring Expectations	Twice/Month May through October	Tier 1 – 2/Mo (May-Oct) & Water Quality Sampling (WQS) – Once/Month @ Site 1, 4 months/season May through August
Parameters	Secchi Transparency, Aquatic Plant Coverage, Apparent Color, Water Level, Weather Conditions, Rainfall last 48 hours, Aquatic Invasive Species tracking, and additional observations and management noted.	All Tier 1 Parameters & WQS Analytes: Alkalinity, Ammonia, Chloride, Nitrate/Nitrite, Total Nitrogen, Total Phosphorus, Total Suspended Solids, Volatile Suspended Solids; & Dissolved Oxygen readings on selected lakes.
Available Positions	200 Lakes	75 Lakes
Volunteer Attributes	No Experience Needed, Access to boat with anchor, personal floatation equipment & (if possible) internet access.	Previous year of consistent Tier 1 (9 or more Tier 1 event participation)
Training	Personal training at individual's lake.	Personal or centralized training

If you see or suspect a Harmful Algal Bloom (HAB), contact EPA.HAB@illinois.gov and your regional VLMP coordinator

Remember
If you find Hydrilla or any new exotic species in your lake, contact your regional VLMP coordinator.

Regional Coordinators:

VLMP Statewide Contacts

Greg Ratliff, IEPA, Springfield, 217-782-3362 & greg.ratliff@illinois.gov

Northern Coordinator

Holly Hudson, CMAP, Chicago, 312-454-0400 & hhudson@cmap.illinois.gov

Lake County Coordinator

Alana Bartolai, LCHD, Libertyville, 847-377-8009 & ABartolai2@lakecountyil.gov

Southern Coordinator

Tyler Carpenter, GERPDC, Marion, 618-997-9351 & tylercarpenter@greateregypt.org

www.epa.state.il.us/water/conservation/vlmp

Illinois Lake Management Association

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The Illinois Lake Management Association (ILMA) is a great resource for lake managers, lake owners and lake homeowner associations, just to name a few. ILMA's mission is to promote understanding and comprehensive management of lake and watershed ecosystems. Check out the web site at www.ilma-lakes.org to see what they can offer you or your homeowner association.

If you are in the Springfield area on April 7th, ILMA is sponsoring a Point of Discussion "POD" educational session from the Illinois-Indiana Sea Grant called, Don't "P" On Your Lawn and other lawn care tips for green lawns, not green lakes, by Adrienne Gulley. Pods are free to the public and run 20 to 30 minutes. This one will be located at the Lake Point Grill, 1386 Toronto Road, Springfield, starting at 6 pm. Food and drinks are on your own, but the educational experience is priceless!

~Greg Ratliff