

# Calumet Environmental Education Program

November 2004

Written by Lisa Thoss - Conservation Education Assistant

## Stewardship in Calumet

In the Chicago Region there are 200,000 acres of protected natural areas. It is found in dozens of 100 to 1000 acre units separated from each other by houses, roads, industry, railroads, cornfields, and concrete. Some fragments are larger, some are smaller, but most are small isolated islands of degraded land in need of restoration. There are some of the best remaining examples of tallgrass prairie, oak savanna, woodland and other natural communities. Fortunately some of these great natural areas still remain in parts of Calumet. Volunteers and students continue to restore and monitor the natural areas in Calumet helping to keep these natural areas healthy.

Much of the land was degraded before becoming protected and lacks native species to help the chances of restoring itself to ecological health. Non-native plants like buckthorn and garlic mustard are taking over the forest floor, while purple loosestrife is invading the wetlands pushing out the native plants leaving them no room to survive. With the lack of native plants the animals that need them for food and shelter are becoming rare. Our natural areas will not survive without human management and restoration.

Restoration volunteers and Forest Preserve District (FPD) staff clear away invading brush, plant native flowers and trees and restore habitat for animals. Volunteers are vital in resurrecting the nearly lost wild places of Cook County. The FPD's goal is to restore 80% of their land. Mighty Acorns help restore the Forest Preserve District of Cook County's Eggers Woods and Illinois Department of Natural Resource's William Powers Natural Area (Wolf Lake). These lands are fortunate

enough to have a management plan and continuing restoration efforts.

With the help of Mighty Acorns, Earth Force and UrbanWatch students in the Calumet Area some natural areas are being monitored and/or restored with student

action projects.



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Photos by John Weinstein

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"In the end we will conserve only what we love. We love only what we understand. We will understand only what we are taught."  
— Baba Dioum

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In the 2003-2004 school year, the Mighty Acorns students cut and pulled out invasive species like dogwood, buckthorn, and garlic mustard at Wolf Lake and Eggers Woods. With this stewardship work the invasive plants are now trimmed and removed so other

native plants, wildflowers and tree seedlings may be able survive. With last year's effort of 780 students in the fall, 480 in the winter and 535 in the spring the Mighty Acorns made a huge impact in the restoration of Calumet. Along with these students participating last year in Mighty Acorns an additional 920 students ranging from third grade to high school attended Calumet Stewardship Day 2004 and participated in many different stewardship projects at Eggers Woods, Wolf Lake and Powderhorn Lake. A form of biological control was put in place on the region's invasive purple loosestrife by releasing *Galerucella* beetles that were raised in local classrooms. These beetles were raised to eat only purple loosestrife leaves and flowers leaving the plant with no source of food or reproduction.

### Important Dates

Inquiry Group  
December 7 &  
December 8, 2004



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Another group of students in the Calumet Environmental Education Program are doing their part in helping the natural areas of Calumet. The Earth Force program has an array of different student action projects continuing on in the Calumet region. As part of 2003-2004 Earth Force projects students at Gallistel Academy planted flowers across from their school, while others participated in photo journaling issues in the community. At Marsh Elementary students investigated a train corridor in their community to “clean-up.” The seventh grade at Taylor Elementary participated in Adopt-a-Beach and conducted water-monitoring tests for Earth Force GREEN, while the eighth grade monitored species in the train corridor next to their school. The students at Jane Addams Elementary planned and planted a native garden in the campus park adjacent to their school.



Photo by Jim Nachel - Conservation Research Institute

*“Helping to restore a native ecological community by removing nonnative and invasive plants, collecting seeds, and planting seedlings, provides students with a rich and empowering experience that opens a pathway to a strong stewardship ethic.”*

*—Mighty Acorns website*



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This past year almost 600 students participated in UrbanWatch conducting biological inventories of the local open green spaces in Calumet. Students from nine Calumet Area High Schools studied schoolyards, Chicago Parks, industrial sites, natural areas and college campuses throughout the region.

Congratulations for a job well done to ALL of the teachers and students that participated in stewardship in the Calumet Area in 2003-2004, you really made a difference in your communities. To continue this outstanding work we have invited 83 teachers and their students to join in stewardship and monitoring work in the Calumet region. This puts our numbers in the Calumet Environmental Education Program up to 1850 students in 8 elementary schools & approximately 600 students in 10 high schools.

Everyone is doing a great job and should be proud of making a difference in their community. Mighty Acorns will continue making great progress in their stewardship of Wolf Lake, Eggers Woods and Powderhorn Prairie. This fall students are cutting dogwood, buckthorn and honeysuckle, all invasive plants, to make

space for some native plants in the spring. Mighty Acorns will be continuing their stewardship work in the winter and spring months.

There are a lot of Earth Force projects getting started this fall that will lead to great student action in Calumet. This year George Washington Elementary’s seventh grade is focusing on water in the Calumet region and has already started their project on Indian Creek at William Powers State Park (Wolf Lake). To kick-off the project three classes of students conducted a watershed inventory collecting data on the land use, biological features, and chemical elements of Indian Creek.

UrbanWatch is continuing to monitor new natural areas and some area high schools have already conducted their fall Biodiversity Urban Surveys. Using the UrbanWatch curriculum these students are determining the overall diversity index of sites around Calumet to compare the quality of habitats and the diversity of the taxa found at the sites.

With all of the hard work continuing in the Calumet Region the natural areas in Calumet will continue to become healthier, preserving some of the greatest habitats in the Chicago Region. ■

**Resources for this article include:**

Illinois Parks & Recreation, November/December 1994.

<http://www.lib.niu.edu/ipo/ip941154.html>

“Natural Wonders”- Chicago Wilderness

<http://www.chicagowilderness.org/wildch/wonders/index.cfm>

“An Atlas of Biodiversity.” Chicago Wilderness, Chicago, 2003.

**Interactive websites:**

Build-a-prairie

<http://www.bellmuseum.org/mnideals/prairie/build/>

Panoramic circle in the prairie in different seasons

[http://www.bellmuseum.org/mnideals/prairie/prairie\\_qtvr.html#](http://www.bellmuseum.org/mnideals/prairie/prairie_qtvr.html#)



*Photo by McHenry County Conservation District*



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## Calumet's Extreme Life

The World's most extreme bugs can be found in the waters of slag dumps that filled the wetlands of the Lake Calumet region. With waters reaching a pH of 12.8, pH=0 the most acidic and pH=14 the most alkaline or basic, this water is far beyond any other known alkaline environment, the highest known being a pH of 11. These alkaline waters are caused by steel slag reacting with water and air creating lime (calcium hydroxide), which then drives up the pH. An Illinois groundwater scientist, George Roadcap from the Illinois State Water Survey, found the microbial communities thriving in water that is comparable to floor strippers and close to bleach at a pH of 13. These microbes are considered extremophiles meaning that they can thrive in super hostile environments including locations with high temperatures, acidity, radiation and heavy metal contamination. Some microbes found are related to Clostridium and Bacillus species that can also be found in remote locations like Greenland, South Africa and the alkaline waters of Mono Lake, California. Other bacteria found are hydrogen oxidizing bacteria that exploit the hydrogen given off from the corrosion of metallic iron slag in the water. It is still unknown how the unusual bacteria got into the slag dumps. Two possibilities are that local bacteria adapted to the extreme environment over the last century or the bacteria somehow got imported. Its effect on the groundwater contamination problem within slag dumps is still unknown. This example shows that the most extreme environment for life isn't at the bottom of the ocean or inside a volcano but it's in Calumet.

To read more about this:

"Extreme Bugs Found in Slag Dump"- BBCNews

<http://news.bbc.co.uk/1/hi/sci/tech/3250199.stm>

"World's Most Alkaline Life Forms Found Near Chicago"- Geological Society of America

<http://www.geosociety.org/news/pr/03-38.htm>

## Resources Included!

- < ***The Educators' Guide to the Field Museum, Spring 2004 Special Issue:*** More on the Year of Biodiversity and Conservation programs! Also, if you missed the last IL Biodiversity Basics Teacher Curriculum Training there is another coming up at the Field Museum, information is on the back page with the other Exciting Professional Development Opportunities. The three day workshop will be held on April 28 & 29 from 4:30-7:30PM and May 1 from 9:00AM-3:00PM. Register for teacher workshops by calling 312-665-7500.
- < ***Family Adventures in Biodiversity and Conservation:*** A map of realted exhibits within the Field Museum to learn about the incredible diversity of life on Earth and the importance of conserving our environment. This map and information guide is great for field trips and personal trips for the family. Another note is the information on the back to learn more about biodiversity and for more visit, [www.fieldmuseum.org/biodiversity](http://www.fieldmuseum.org/biodiversity)
- < ***Calumet Stewardship Initiative Events Calendar, January through April 2004:*** A listing of environment related events within the Calumet Area for you and your students!

## Upcoming Teacher Workshops and Opportunities for Students

- < ***Aquatic Invasive Species Awareness- Through Youth Stewardship Projects:*** (Flyer enclosed)
- < ***DNR Entice- Field Trip Grants:*** You can still receive funding for your natural resources-related field trips with students. Applications are due February 15, 2004. For additional information or an application form, contact the DNR Division of Education, One Natural Resources Way, Springfield, IL, 62702, [teachkids@dnrmail.state.il.us](mailto:teachkids@dnrmail.state.il.us) or (217) 524-4126.
- < ***Small Project Program of the Wildlife Preservation Fund:*** Proposals may address many types of projects including management, site inventories or education. Individual proposals are eligible for up to \$1,000 with grants effective July 1, 2004- June 30, 2005. To receive a packet with instructions and an application form, call (217) 785-8774 or email [SpecialFunds@dnrmail.state.il.us](mailto:SpecialFunds@dnrmail.state.il.us). Applications are accepted through April 1, 2004.
- < ***The Gloria Barron Prize for Young Heroes:*** Honoring outstanding youngleaders who have made a significant positive difference to people and our planet. Nominees, students ages 8 to 18, must have been the prime mover of a service activity, and demonstrated positive spirit and high moral purpose in accomplishing their goals. Winners each receive \$2,000 to be applied to their higher education or totheir service project. Nomination packets must be received by April 30, 2004. For more information go to, [www.barronprize.com](http://www.barronprize.com)



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