



# Your Environment

WINTER 2005

*A collaborative information resource for the Muskegon County Community*

## MDEQ Education Team Develops Statewide Curriculum

By Janet Vail, Ph.D., Annis Water Resources Institute

In September 2003, Governor Granholm announced the beginning of a three-year project to develop an environmental education curriculum for Michigan middle schools. The Department of Environmental Quality (MDEQ) is using \$1 million of the Clean Michigan Initiative funds for the project. MDEQ is working with the Michigan Department of Education to develop and disseminate sound science-based supplementary environmental education materials for Michigan educators.

The five unit topics under development are: air quality, ecosystems, impact on the land, energy and resources, and water quality. The curriculum will be focused on grades four through eight. All curricula are being developed to support Michigan's curriculum framework.

The Western Upper Peninsula Center for Science, Mathematics, and Environmental Education is producing ecosystems, energy and resources, and water quality. Western Michigan University is focusing on impact on land. Janet Vail, MCECC member and professor at Grand Valley State University, is the lead writer for the air quality unit.

The curricula are currently being field tested by classroom teachers. Reviewers for the units are being recruited. After revisions, the units will go to press in late spring. A cadre of trainers for the unit will be trained next summer with teacher workshops scheduled for fall of 2005. For more information on the project, contact Janet Vail at 728-3601 or [vailj@gvsu.edu](mailto:vailj@gvsu.edu).

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Terms in body text that are underlined and printed in green are defined in the terminology section on page 5 of this issue.

### Good Web Sites Good Information

**MDEQ Environmental Education**  
[michigan.gov/deq](http://michigan.gov/deq) under health

**EPA Coal fired Power Plant Enforcement Initiative**  
[epa.gov/compliance/civil/programs/caa/coal/](http://epa.gov/compliance/civil/programs/caa/coal/)

**NOAA homepage**  
[noaa.gov/](http://noaa.gov/)

**Earth 911**  
[www.earth911.org/](http://www.earth911.org/)

**Wisconsin DNR**  
[dnr.wi.gov/org/land/parks/safety/bluegreenalgaefaq.html](http://dnr.wi.gov/org/land/parks/safety/bluegreenalgaefaq.html)

## Miracle Mile Fly Ash Site Remediation Project on Schedule

By Roger Morgenstern, B.C. Cobb Plant Public Affairs Director

Remediation of the B.C. Cobb Plant's fly ash disposal site on the Muskegon Causeway is more than 50 percent complete. Part of Consumers Energy, B.C. Cobb closed the third of six phases this fall (each of the six phases consists of about 10 acres of remediation). Placement of ash on the final phase is scheduled to end no later than Spring 2007 and site restoration is expected to be completed by Fall 2007.

Thus far, the project has moved along smoothly with only minor issues such as local geese populations eating the newly sprouted grass seed.

Consumers Energy is continuing to work with the City of Muskegon to develop the 65-acre site into a recreational complex. By the end of 2004, the City should learn if it has received a grant from



the State's Natural Resources Trust Fund to help finance development of the site for soccer fields, football, softball, walking trails, and other recreational purposes.

Attention is now focused on the plant's plans for ash disposal after Spring 2007. There are several alternatives being explored. The Plant's desire is to keep disposal costs low, therefore keeping B.C. Cobb competitive in the energy marketplace for many years to come while preserving the jobs of more than 120 people.

## Muskegon's Own! NOAA/GLERL Station at Pere Marquette Beach By Liz Vos, MCECC



Located on the North end of the City of Muskegon's Pere Marquette Park next to the Lake Michigan channel is the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory (NOAA/GLERL) Lake Michigan Field Station. The station in Muskegon is the only NOAA laboratory on the Great Lakes to focus exclusively on the health of the Great Lakes.

GLERL, founded in 1974, was originally housed in Ann Arbor, Michigan following a summit between the United States and Canada in 1972 to celebrate the International Field Year for the Great Lakes (IFYGL). The IFYGL was part of a bi-national effort to address rising concerns about the threat of widespread pollution to the health of the Great Lakes ecosystem.

In 1990, GLERL assumed ownership of the current site (a former Coast Guard station) that included three buildings and dockage for two research vessels. During 1993, the main building was renovated to include scientific laboratories, offices and storage; and in 1994 lead scientist, Gary Fahnenstiel, and his support staff were permanently relocated to the site and oversee a number of projects.

One of the station's largest projects is the *GLERL's Lake Michigan Long-Term Trends Program*. Originally housed in Ann Arbor, this program focuses on the understanding and assessment of long-term changes in the health of the Lake Michigan [ecosystem](#), especially the [lower food web](#), and is the most comprehensive long-term study of Lake Michigan in existence.

Besides the traditional monitoring of water quality and phytoplankton and zooplankton communities, the Lake Michigan program includes monitoring for ultraviolet light penetration, phytoplankton productivity, larval fish and opossum shrimp abundances, and the abundance of protozoans (microscopic organisms that include such taxa as *Cryptosporidium*, which contaminated the Milwaukee drinking water supply a few years ago, causing over 150 deaths and over 400,000 ill people). The station's studies are

particularly important because of the current threat to the Lake Michigan ecosystem by the introduction of nonindigenous or "exotic" organisms such as the zebra mussel, the quagga mussel, and the spiny water flea.

In addition to the *Long-term Trends Program*, researchers at the Lake Michigan Field Station are participating in a joint NOAA/National Science Foundation funded project to study the comparative food web structure and productivity of all five Great Lakes. Due to the recent ecological changes in the lower lakes, scientists are extremely interested in comparing past and present condition of all the Great Lakes. Information that is collected during the project will be critical for management decisions concerning the lake's fisheries and [nutrient abatement](#) programs.

Another important program run by GLERL concentrates on the effect of episodic events such as storms, on the Lake Michigan ecosystem. GLERL's *High Frequency Events Project* uses advanced technology instruments moored in the lake where they record conditions before, during, and after the passage of storms. Presently one instrument package is moored on the lake bottom and another is under construction.

Also located on the site is the NOAA/GLERL Muskegon webcam array. The array consists of four closed-circuit television cameras connected to a video server that controls the transmission of images of Lake Michigan, the lighthouse, and channel. Images from the array can be viewed on the internet at [www.glerl.noaa.gov/metdata/mkg](http://www.glerl.noaa.gov/metdata/mkg).

Most recently, GLERL's Lake Michigan Field Station scientists have planned a research program to study the influence of river outflows, such as the Grand and Muskegon Rivers, on the ecology of Lake Michigan. These rivers have two of the largest drainage basins in Michigan and are important sources of nutrients and other materials to Lake Michigan.

For more information about the Lake Michigan Field Station and research activities, please contact:

Dr. Gary L. Fahnenstiel  
NOAA/GLERL - Lake Michigan Field Station  
1431 Beach St.

Muskegon, MI 49441-1098  
[gary.fahnenstiel@noaa.gov](mailto:gary.fahnenstiel@noaa.gov)

231-759-7824 231-759-7906 (FAX)

## David Rusk Returns to Muskegon

“David Rusk is the hottest urban expert in the nation today,” the Baltimore Sun commented in reviewing *Baltimore Unbound. Cities without Suburbs*, the Congressional Quarterly wrote, has virtually become the Bible of the regionalism movement.” The Government Finance Review called Rusk’s most recent book, *Inside Game/Outside Game*, “a must-read for all practicing local government officials, elected or appointed, working in a metropolitan area.”

In celebration of Earth Day and development opportunities at hand in Muskegon, popular author and consultant David Rusk will be making an appearance at the Environmental Excellence Award evening banquet Thursday, April 21, 2005. This is Mr. Rusk’s second visit to the Muskegon area; in 1995 Rusk spoke at the request of the Muskegon Economic Growth Alliance (MEGA). His 2005 presentation will concentrate on progress in Muskegon urban area socioeconomic stability.

Rusk served as a full-time civil rights and anti-poverty worker with the Washington Urban League. He then entered the U.S. Department of Labor, serving as the Manpower Administration’s legislative and program development director. He also served as a New Mexico legislator (1975-77) and mayor of Albuquerque New Mexico (1977-81).

Rusk is now an independent consultant on urban and suburban policy. Since 1993 he has spoken and consulted in over 120 US communities. Abroad, Rusk has lectured on urban problems in England; Berlin, Stuttgart, and Frankfurt, Germany; and in Toronto and Victoria, Canada. In 1997 he served as an advisor to the government of South Africa on metropolitan governance in Johannesburg, Capetown, and Durban. During 2000 he was a visiting professor at the University of Amsterdam and Delft Technical University in the Netherlands.

In Michigan, Rusk is currently working with MI\*Voice, a coalition of faith-based groups from SE Michigan, Saginaw, Kalamazoo, and Battle Creek, focusing on County-wide planning issues. MI\*Voice has a strong relationship with Governor Granholm and is currently negotiating with administration officials over a strategy for implementing a wide array of the reforms proposed by the Land Use Leadership Council. For more information on David Rusk visit [www.gamaliel.org/davidrusk/index.htm](http://www.gamaliel.org/davidrusk/index.htm).



## ENVIRONMENTAL EXCELLENCE AWARD COMMITTEE SEEKS NOMINATIONS

Since 1992, the Muskegon Area Environmental Excellence Awards (MAEEA) has recognized individuals, organizations, educators, businesses, and groups for significant contributions and longstanding commitment to a better environment. Through this process, the MAEEA also encourages environmental progress in Muskegon County.

In 2004, the MAEEA joined with the Muskegon County Environmental Coordinating Council in a formal partnership with the intention of making the annual banquet an even larger and greater event.

Last year’s recipients included Krepps Farm in Moorland Township who continued a strong commitment to conservation, ADAC Plastics who implemented a process change in their basecoat color system, and Bunker students who performed hands on environmental work at the former Grand Trunk Railroad site. The banquet was capped off with the lifetime achievement award given to Allen J. Bell, who according to his wife Marjorie, has been interested in the environment “forever.”

Nominations for this year’s award must be

submitted by February 14, 2004.

The nomination form is located on page 4 of this newsletter; and winners will be announced at the banquet, with guest speaker David Rusk, in April 2004.

Please submit nominations now and plan on attending the banquet in April. Forms are also available on the Muskegon County Environmental Coordinating Council website at [www.mcecc.org](http://www.mcecc.org), under “Excellence Awards” and can also be obtained by calling Amy Haack, MAEEA Project Chairperson, at 722-7878 ext. 19.

MUSKEGON AREA  
ENVIRONMENTAL  
EXCELLENCE  
AWARDS





# Nomination Form

## General Criteria for Award Nominations:

1. The overall environmental contribution of a recipient should be significant.
2. The results of the recipient's efforts should be clear and demonstrable.
3. Individual nominees within an organization will be judged on the merit of other projects rather than on their organization's record.
4. Awards may be given for evident progress in cases where a long-term project is underway.
5. Award recipients must reside or work in Muskegon County or be nominated for a project that benefits Muskegon County.

Award nominations are accepted annually. The deadline for the nominations is February 14, 2005. The awards will be presented at the annual banquet in April. Nominations submitted after February 14, 2005 will be considered for 2006. For further eligibility information, please call Amy Haack at (231) 722-7878 ext. 19.

## About the Nominee

Name of Person or Organization Being Nominated	
Their Phone Number	
Their Street Address	
City, State, and Zip Code	
Considering the Above Criteria, What Did the Nominee Do To Improve the Environment or Environmental Awareness in Muskegon County	
Approximate Start Date of Project	
Approximate End Date of Project	

## About You

Your Name	
Your Phone Number	
Your Street Address	
Your City, State, and Zip Code	
Please list anyone else that we should contact about this nomination by providing their name and phone number	

Please feel free to attach any related materials (newspaper articles, documents, brochures, etc.).

Submit nominations by  
mail or fax to:

Amy Haack, MAEEA Committee Chairperson  
c/o West Michigan Shoreline Regional Development Commission  
P.O. Box 387, 316 Morris Avenue, Suite 340, Muskegon, MI 49443-0387  
Fax: (231) 722-9362

Nominations may also be submitted through an electronic nomination form available at [www.mcecc.org](http://www.mcecc.org) under Environmental Awards.

## Blue Green Algae Basics

Source: British Columbia Health Files, & Environment ACT

Blue-green algae are not true algae. They are photosynthetic bacteria that grow in fresh water lakes, ponds and wetlands. The scientific name of Blue-green algae is *Cyanobacteria*.

The first recognized species were blue-green in color, which is how the algae got their name. Actually, species identified since range in color from olive-green to red.

Cyanobacteria are perhaps the most primitive things living on earth. Likely, they were responsible for changing the earth's atmosphere to one rich in oxygen that could support other plants and animals 3 billion years ago.

Blue-green algae in small numbers are a natural part of the water system. When there are large numbers of blue-green algae in the water, they can impact on water quality by causing bad smells and forming thick scums. In the worst case they can generate toxins which are poisonous to people, pets and other animals. Rotting algae will use up oxygen in the water and with severe blooms fish may die as a result.

Cyanobacteria form in shallow, warm, slow-moving or still water. They are made up of *cells*, which can house poisons called *cyanobacterial toxins*. A mass of cyanobacteria in a body of water is called a bloom. When this mass rises to the surface of the water, it is known as *surface scum* or a *surface water bloom*; however, even if you can't see a cyanobacterial bloom floating on the surface of the water, that doesn't mean one isn't present in the water - the bloom could be suspended at various depths in the water where you can't see it.

The depth at which cyanobacterial blooms float depends on a number of factors. The most important of these are light, phosphorus and nitrogen, which cyanobacteria need in order to survive. As the availability of these elements can change quickly with the time of day and the weather, most cyanobacteria have evolved to be able to control their buoyancy. By being able to sink and rise at will, they are able to move

to where nutrient and light levels are at their highest. In order to activate the mechanism that allows them to move, cyanobacteria need light. At night, when there is no light, cells are unable to adjust their buoyancy and often float to the surface, forming a surface scum. This scum literally appears overnight and lingers until the wind and waves scatter the cells throughout the water.

Researchers generally agree that between 30 and 50 per cent of cyanobacterial blooms are harmless because they contain only non-toxic species of freshwater cyanobacteria; however, blooms containing even one species of toxic cyanobacteria are potentially dangerous. Unfortunately, there is no obvious way to tell if a particular bloom is toxic and samples have to be analyzed in a laboratory before a body of water would be declared unsafe.

One group of toxins produced and released by cyanobacteria are called *microcystins*. Microcystins are the most common of the cyanobacterial toxins found in water, as well as being the ones most often responsible for poisoning animals and humans who come into contact with toxic blooms.

Microcystins are extremely stable in water because of their chemical structure, which means they can survive in both warm and cold water and can tolerate radical changes in water chemistry, including pH. So far, scientists have found about 50 different kinds of microcystins. Microcystin-LR, appears to be one of the microcystins most commonly found in water supplies around the world. For this reason, most research in this area has focused on this particular toxin.

Since cyanobacterial bloom formation seems to be linked to nutrient-rich water bodies (for example, water that contains a lot of phosphates from detergents and phosphate fertilizers), the problem is not likely to go away in the near future.



### Terminology

[fly ash](#)

[ecosystem](#)

[lower food web](#)

[nutrient](#)

[abatement](#)

## Leadership Muskegon Meets the E-waste Challenge

Are you concerned about the dangers that this "e-waste" presents to our environment? Leadership Muskegon and its project sponsors answered the call in a one-day computer clean-up project held December 29th in the Great Lakes Downs parking lot.

At a minimal charge to customers, Leadership Muskegon graduates collected 250 pieces or 5900 pounds of outdated computer equipment in only six hours.

Otherwise destined for landfills, e-waste is a worldwide growing concern. In 1998, 20 million computers became obsolete and as few as 6% were recycled. The National Safety Council estimates in five years, Americans will replace a staggering 500 million defunct computers and monitors. While much of the outdated equipment is occupying dark corners in closets and basements, thousands end up in local landfills. By preventing electronic equipment from entering a landfill, resources can be conserved, and human and wildlife health can be protected.

The computer monitor alone contains 4-7 pounds of lead. Lead has been linked to learning disabilities and behavioral problems in children, and at very high levels, seizures, coma and even death. Other metals include mercury, cadmium, and chromium.

In the United States, computers contain brominated flame-retardants, used to prevent fires in circuit boards. Some countries prohibit the flame-retardants, which are suspected of blocking hormones and impairing some biological processes. Once these toxins are released into the environment they can find their way into groundwater becoming a potential hazard to drinking water.

One organization, Goodwill of Muskegon, reports collecting an average 25 computer parts each week. Unfortunately, most are unusable and end up in the Muskegon County Landfill, putting Muskegon County residents at risk.

### For information on the Leadership Muskegon or Leadership West Michigan program contact:

Sue Wierengo, (231) 755-4334 s.wierengo@verizon.net or  
Sally Birkam, (231) 777-0328 BirkamS@muskegoncc.edu



If you would like to submit information on an issue, an environmental organization, or have questions pertaining to an article, please contact:

Jill Montgomery  
Muskegon County Health Department  
at [montgomeryji@co.muskegon.mi.us](mailto:montgomeryji@co.muskegon.mi.us) (231)  
724-1293  
or  
Liz Vos  
Project Director, MCECC  
at [liz@mcecc.org](mailto:liz@mcecc.org) (231) 557-2915

**M u s k e g o n C o u n t y**  
**Environmental Coordinating Council**

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