

WMRC 2004 Annual Report

[> Next Page](#)

WMRC Overview

The world keeps changing, and the Waste Management & Research Center keeps changing with it. WMRC is always looking for the best, most advanced way to help its customers. The Waste Management and Research Center has been providing assistance to Illinois businesses and the public since 1985. WMRC is a non-regulatory service organization affiliated with the University of Illinois and is a division of the Illinois Department of Natural Resources. WMRC has staff located in Champaign, Oak Brook, Peoria, Springfield, and Brighton.

There are ongoing fundamental shifts taking place in the way business is being conducted, both in Illinois and nationally. Institutions are realizing that the environment and economic health are not competitors but are actually a great partnership. Recognition of this relationship is the key to success in the coming decades. Through WMRC's efforts, Illinois businesses can become more efficient and competitive. Improving the economic climate while protecting natural resources makes Illinois a better place to live.



WMRC has always had educational outreach as part of its mission. The Center will continue to find new ways to educate young and old alike about how science and nature can work together.

WMRC's staff is committed to providing real world solutions to real world problems.

Contents

- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Governing Officials

State of Illinois

Rod Blagojevich, Governor

Department of Natural Resources

Joel Brunsvold, Director

Leslie Sgro, Deputy Director

Board of Natural Resources and Conservation

The BNRC is the governing body for the Illinois state scientific surveys, which includes the Waste Management and Research Center. The BNRC is an eight-member board appointed by the Governor and chaired by the Director of the Department of Natural Resources. It includes a geologist, a chemist, an animal biologist, a plant biologist, an engineer, and representatives of the President of the University of Illinois and the President of Southern Illinois University.

Chairman

Joel Brunsvold, Director

Illinois Department of Natural Resources (IDNR)

Dr. Charles (Chip) Zukoski

Office of Vice Chancellor for Research

University of Illinois

Mr. John S. Mead, Director

Coal Research Center

Southern Illinois University

Dr. Robert F. Inger

Animal Biologist

Curator Emeritus, Department of Zoology

The Field Museum

Ms. Ada C. Nielsen

Chemist

BP Amoco Chemicals

Ms. P. Kay Whitlock, P.E.

Vice President of Christopher B. Burke Engineering, LTD in Rosemont, IL

Dr. John Ebinger

Professor Emeritus

Department of Biological Sciences
Eastern Illinois University

Geologist position vacant

Damon Stotts, BNRC Liaison
Acting Director, Office of Scientific Research and Analysis
IDNR

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

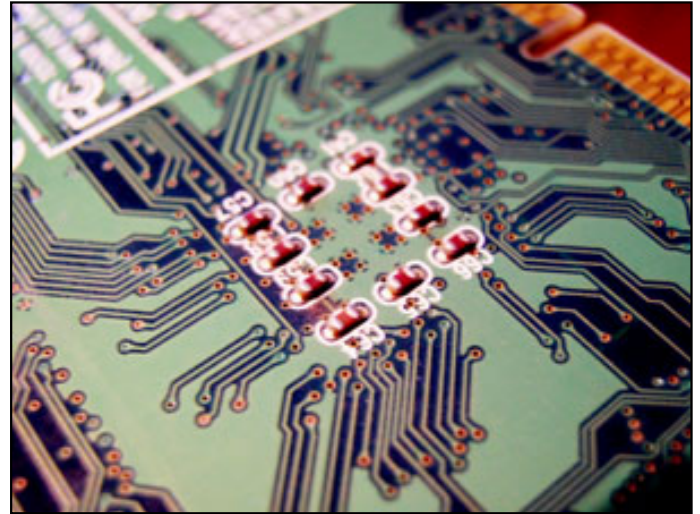
[Previous Page](#) < > [Next Page](#)

Why an electronic Annual Report?

Since WMRC is a leader in finding ways to preserve the environment and help the bottom line, we have extended that approach to our Annual Report. The Annual Report will be available electronically only. It is on the WMRC Web site and CD copies are available. This is the second year that the Annual Report has been offered only in electronic format. The idea was met with great enthusiasm last year.

In this time of declining state budgets, this will eliminate the cost of printing and mailing copies of the annual report. What is equally important is that it will help the environment by eliminating the use of paper and ink.

We hope that by making the Annual Report electronic, we will be able to increase interest in it. Having it available on the Web site will make it instantly available to people throughout the world.



Sustainable solutions...WMRC believes in these even when it comes to our Annual Report!

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Director's Message

A proud history, a hopeful future

There are plenty of pundits who say that people must choose between what is good for the environment and what is good for the economy. We at WMRC think that is nonsense. The natural resources of Illinois are what makes this state a great place to live and do business, and they will continue to be a key element in making the engines of business hum.

Settlers first came to Illinois because the fertile soils, plentiful waters, and other natural resources made it a good place in which to live and prosper. Today the natural resources of Illinois still play an important role in creating a good business climate. Preserving these natural resources is, of course, what the Illinois Department of Natural Resources (IDNR) is all about. As a division of IDNR, the work of the Waste Management and Research Center is an important part of the state's service to the citizens of Illinois.

Since Illinois is known as "The Prairie State" we can never lose sight of the importance of the environment. However, Illinois is also one of the world's great industrial powerhouses, so business must be nurtured and supported.

The best way to manage waste is to avoid creating it in the first place. This seems like a simple concept, but it is one that only the best of Illinois' companies and organizations actually implement. Each year WMRC works with companies and organizations throughout the state to develop and implement pollution prevention ideas. The savings to the environment and the economy accomplished through these pollution prevention efforts are staggering. They save companies and organizations millions of dollars in material and disposal costs, prevent tons of waste materials from being released into the environment, and save millions of gallons of water from being sent to treatment facilities.

These efforts can be and are being made by organizations of all sizes. WMRC works with companies ranging in size from a local dry cleaner to an internationally known corporate manufacturing giant. And we have worked on pollution prevention programs in service organizations from large national laboratories to rural schools.

The efforts made by these businesses and organizations are the kind that make Illinois great. The shortsighted pundits must never be allowed to discourage anyone from making a difference in the way he or she interacts with the environment.

There are always people who say something cannot be done. The staff at WMRC believes that the right things can, and must, be done to make this an even better state in which to live.

What is good for the environment is good for business as well. It's been that way since Illinois began, and WMRC is working to see that it continues that way for generations to come. Sustaining Illinois is what WMRC is all about!



Press the play button to view a message from George Vander Velde, Director of WMRC.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

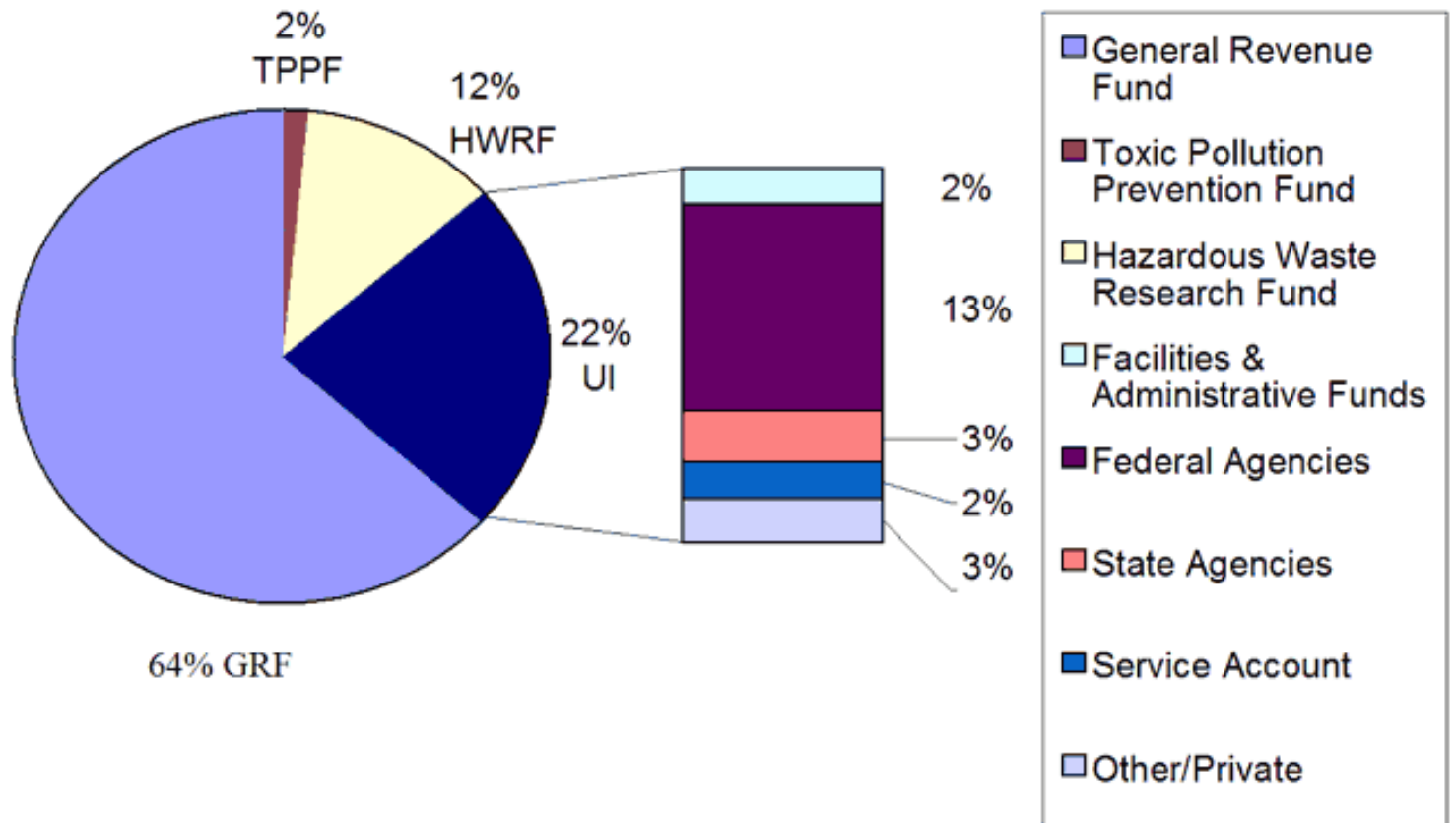
WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Where our Funding Comes From

The programs of Waste Management & Research Center are funded through a variety of sources. The largest source is General Revenue Funds from the state of Illinois. However, WMRC also receives funding from the University of Illinois, federal sources, other state sources, and private funds. The chart below shows the percentage of funding WMRC received in each category during Fiscal Year '04.

FY'04 EXPENDITURES



Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

ADOP2T

The Waste Management & Research Center (WMRC) has long understood that simply telling someone about a new technology is unlikely to result in the implementation of it. New technology and new ways of doing things can be intimidating. For new technology to be widely used, it must be tested, it must be available for review, and industry leaders must adopt it. WMRC has created a model for technology diffusion that addresses these issues.

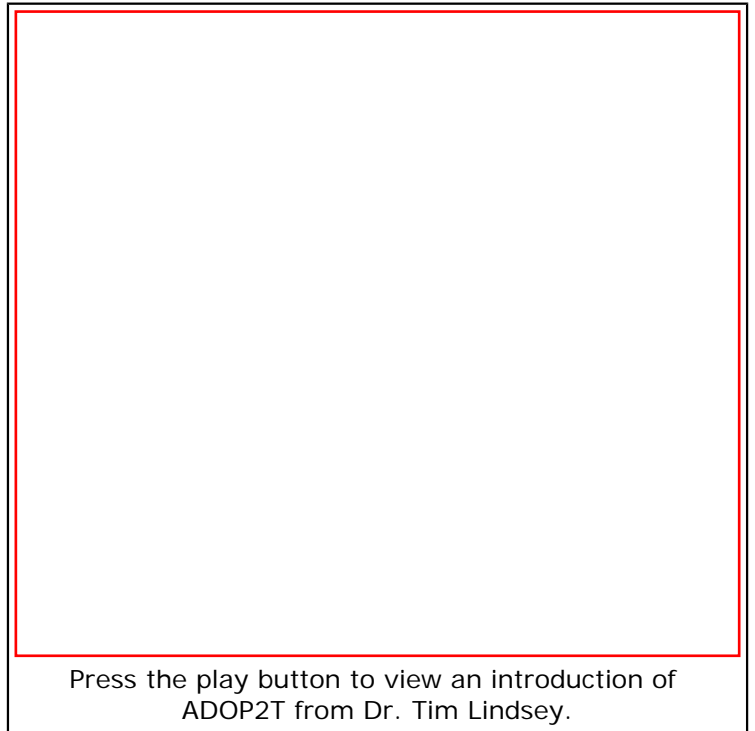
The Accelerated Diffusion of Pollution Prevention Technologies (ADOP2T) program establishes showcase demonstration sites in actual facilities in a chosen industrial sector. WMRC asks the industry to define its needs and what technologies or practices the industry would like to see explored. In exchange for participating, a facility receives WMRC assistance in setting up, testing, and evaluating a new technology. On-site demonstrations, on-site technical assistance, and testimonials from key industry leaders combine to show companies how they can have more efficient processes and a better fiscal bottom line.

Traditionally, adoption of innovation is a slow process. The greatest lag time occurs in the early testing and verification stages. ADOP2T attacks this early stage -- creating an industry-driven incubator for demonstration, testing and ultimately adoption of innovative technologies. Even a successful technology is slow to be adopted until a critical mass of industry opinion leaders has implemented it. At this stage, the technology moves from being innovative and risky to being recognized as standard and accepted.

The ADOP2T model has been successfully implemented in the metal finishing industry, and work is underway in applying the model to the printed wiring board industry. A three state ADOP2T initiative (Illinois, Kentucky, and Minnesota) has just begun to leverage efforts to diffuse innovative technologies into targeted sectors (fiber reinforced plastics, coating & painting, printed wiring board, and metal finishing).

For more information on ADOP2T, contact Dr. Tim Lindsey at tlindsey@wmrc.uiuc.edu.

Contents



- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Government Conservation Practices

The state of Illinois has on-going efforts in preventing pollution and conserving natural resources in state government operations. Jeri Knaus of the Waste Management and Research Center is a leader in promoting these sustainable practices in government. She has taken her sustainable practice experiences to another level by promoting energy efficiency and recycling to local governments, schools, and business. Over the past year she has traveled the state, giving presentations that provide knowledge and training on how to save energy in schools, businesses, offices, park districts, and churches. She has assisted in writing successful grant applications for energy efficient lighting upgrades in schools and park districts; and recycling grants in county offices. In addition to her outreach efforts, Knaus obtained a recycling grant of almost \$50,000 that will be used by four DNR parks in Southern Illinois.

Knaus this year requested from all DNR sites an inventory of used tires that have been dumped or drifted upon site from waterways. She then submitted this inventory to the Illinois Environmental Protection Agency (IEPA) for pick-up and recycling of more than 1,500 used tires. The Used Tire Management Fund pays for the project. This is not a one-time project, as IEPA has authority to pick up tires from state and federal sites as needed and as money allows. With the ongoing threat of West Nile Virus, this will allow sites to get rid of the tires that would be a breeding ground for mosquitoes.

This year, Knaus also met with IEPA's Pollution Prevention Office to demonstrate energy efficient, color-balanced T10 fluorescent lighting and discuss using Occupancy Sensors. As a result, the IEPA retrofitted the entire Springfield office building with T10 lamps and occupancy sensor for energy savings.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

2003 Governor's Pollution Prevention Awards

Since 1987, WMRC has presented the Governor's Pollution Prevention Awards to companies and organizations in Illinois that demonstrate a commitment to environmental excellence through the practice of pollution prevention. The past year's event saw 22 companies, organizations, and agencies honored for their efforts.

The recipients reported Pollution Prevention (P2) projects with combined annual savings of \$13.4 million in material and disposal costs. The companies prevented nearly 127,500 tons of waste materials from being released into the environment and saved more than 40 million gallons of water from being sent to treatment facilities.

"Again this year, we were impressed with the variety and quality of the projects undertaken by the winning companies," said George Vander Velde, WMRC Director. "These businesses and organizations have proven that pollution prevention makes good sense for the environmental and economic health of Illinois. They have achieved their pollution prevention goals and saved millions of dollars in pollution control, waste disposal, energy, and raw material costs."

Applicants were judged in statewide competition on criteria including technological innovation, environmental significance, economic benefits, and commitment to pollution prevention. WMRC pollution prevention engineers reviewed the applications, while the Illinois Environmental Protection Agency determined company environmental compliance.

Information on the Governor's Pollution Prevention Awards program and technical assistance on pollution prevention are available from the Waste Management and Research Center, One Hazelwood Drive, Champaign, IL 61820, phone 217-333-8940, www.wmrc.uiuc.edu

2003 Governor's Pollution Prevention Award Winners

Large Industry Category

Maytag Herrin Laundry Products in Herrin
General Electric Industrial Systems in Bloomington
Nestle' Brands Company, Beverage Division in Jacksonville
Dynamic Manufacturing, Inc. in Melrose Park
ITT Bell and Gossett in Morton Grove
Mitsubishi Electric Automation, Inc. in Vernon Hills



Ondeo Nalco Company in Bedford Park

Small Industry Category

ASC Incorporated in Normal

Five Corners Cleaners in Glen Ellyn

Educational Institution Award

Spring Wood Middle School in Hanover Park

Service Organization Award

Byron Forest Preserve District in Byron

Continuous Improvement - Large Company Category

Abbott Laboratories in North Chicago

Caterpillar, Inc., Technical Services Division (TSD) in Mossville

International Truck and Engine Corporation in Melrose Park

Sherwin Williams B Minwax in Flora

Eaton Corporation in Lincoln

ITT McDonnell and Miller in Chicago

Continuous Improvement - Medium Size Company Category

Amersham Health in Arlington Heights

Gleason Cutting Tools Corporation in Loves Park

Continuous Improvement - Small Company

Noveon Inc. in Henry

Vendor/Supplier Category

Crazy Horse Concrete, Inc., in New Berlin

Service Organization Category

Argonne National Laboratory in Argonne

Innovate Illinois Award

The Innovate Illinois Award also was presented to International Truck and Engine Corporation for its "Green Diesel Technology." The award is presented to a company that has developed and implemented a new technological innovation. The Innovate Illinois Award includes a scholarship provided by external sources, which is provided to a student at an Illinois college or university.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Greening Schools

Making schools healthier and improving the learning environment are the goals of the Greening Schools project. Beginning in the fall of 2003, WMRC and the Illinois Environmental Protection Agency combined efforts to assist schools with improving their physical environmental conditions, while also providing teachers with standards-based tools to introduce the concepts of waste reduction and pollution prevention.

The Greening Schools project offers a Web site for teachers and school administrators. Fact sheets, checklists and standards-based lesson plans, book resources, curricula and activities related to waste reduction and pollution prevention are provided on the Web site. The content is continually updated and is responsive to requests and needs from the education community. Other project benefits for teachers and schools administrators include:

- Free on-site technical assistance to assess building conditions. There have been ten site visits since the start of this project.
- On-line help desk to answer questions
- Listserv with a weekly mailing of timely, valuable resources
- Teachers can submit chemistry lessons for evaluation and WMRC chemists will offer suggestions on how the lesson can be changed to incorporate safer, less toxic chemicals
- Information on environmentally preferable purchasing

Press the play button to view an introduction to the Greening Schools project from Carol Knepp.

The project also offers Safe Chemicals in Education workshops that address chemicals found in chemistry and biology labs as well as in the art rooms, industrial shops and performing arts. Teachers participating in these workshops learn about the risks associated with out-of-date and improperly stored chemicals as well as how to reduce chemical volume and how to substitute the traditional chemicals with safer materials. Schools that participate in the Safe Chemicals workshops are eligible for removal of educational waste chemicals at no cost. These workshops also introduce the principles of "green chemistry" to middle school and high school teachers, and show how they can be integrated into the classroom. Green chemistry involves the reduction or elimination of the use or generation of hazardous materials in chemical processes, which results in safer, more environmentally friendly science.

Schools are increasingly facing a variety of health-related issues. While these differ from school to school because of the varying ages of facilities and unique environmental challenges, schools typically share some of the same constraints:

- Limited funding to address environmental conditions
- Rising costs of energy and maintenance of school building
- Lack of resources and technical assistance for teachers, administrators and staff

While hazardous materials are recognized issues, energy costs and indoor air quality also present real concerns for schools. Pest control and waste reduction and their associated costs have also become health and budget topics for

school districts. WMRC's Greening Schools project is committed to assisting schools address these issues while providing the most current resources and high-quality technical assistance available at no cost. The Center will continue building a strong network of support and resources across the state working to address the needs of individual schools and teachers.

Visit the Greening Schools web site at <http://www.greeningschools.org>

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Information Sharing Projects

WMRC is a national and regional leader in developing advanced information tools for environmental applications. This leadership role has positioned WMRC to coordinate two federally funded projects that provide decision-making resources to customers across the nation.

Great Lakes Regional Pollution Prevention Roundtable (GLRPPR)

The Great Lakes Regional Pollution Prevention Roundtable (GLRPPR) provides pollution prevention information, research, and expertise. Services include specialized information searches, a quarterly newsletter, resource materials for small businesses, contacts and expert referrals, training and conferences, networking opportunities, and listservs. The Waste Management & Research Center coordinates the GLRPPR program.



Some of GLRPPR's highlights in the past year include:

- Two new topic hubs added to the Web site: [Pollution Prevention \(P2\) and Environmental Security](#), and [Technology Diffusion](#). The P2 and Environmental Security topic hub explores the synergies between the field of pollution prevention and environmental security (for example, using less hazardous materials in manufacturing reduces the risk of hazardous materials being released into the environment either accidentally or intentionally). This topic hub also provides suggestions for integrating environmental security and pollution prevention efforts. The Technology Diffusion topic hub introduces an approach to technical assistance that facilitates the adoption at manufacturing facilities of alternative technologies that reduce or eliminate waste.
- The quarterly electronic newsletter, [LINK](#), now features stories on a particular pollution prevention theme, in addition to other news and updates from throughout the Great Lakes Region. Recent themes have included pollution prevention for food service and green building.
- GLRPPR began working with the U.S. EPA Great Lakes National Program Office (GLNPO) to promote information on persistent bioaccumulative toxins (PBTs) and the Great Lakes Binational Toxics Strategy (BTS). This is done via the GLRPPR Web site and listservs. The BTS is a joint effort of the United States and Canada to work toward the virtual elimination of PBTs in the Great Lakes Basin.
- A conference was held to bring together speakers, topics, and problem solvers in a number of pollution arenas. The summer meeting took place in Erie, Pennsylvania. Check out the resources available at www.glrppr.org.

Printers' National Environmental Assistance Center (PNEAC)

The Printers' National Environmental Assistance Center (PNEAC) is a partnership between industry, government, and university technical assistance providers to serve one of the world's largest industries—the printing industry. WMRC coordinates the PNEAC program that delivers current, reliable environmental compliance and pollution prevention information to printers, publishers, and packagers.

PNEAC debuted a new, comprehensive resource for flexographic printers this year. The Virtual Flexographic Printing Plant is an online resource designed to help flexographic printers determine their environmental compliance status and identify opportunities to reduce waste. This project has met with high acclaim within the printing industry. The project was designed to compliment the In-Plant Self Assessment workbook that was developed in 2003. The project was a collaborative effort of the Flexographic Technical Association and WMRC.

For the ninth consecutive year, PNEAC co-sponsored the Printing Industry Association's National Environmental Health and Safety Conference. The conference was held in Indianapolis, IN and was attended by some 250 printers and industry professionals.

On November 10, 2003, the U.S. EPA released a draft rule that addresses the management of solvent-contaminated reusable towels and disposable wipes. Because the use of towels and wipes is pervasive in the printing industry, this rule affects virtually every printer. Towels, wipes, and solvents are used for cleaning presses, ink cleanup, and a variety of other tasks. PNEAC has been helping businesses understand the proposed rule and participate in providing comments to EPA regarding it. PNEAC hosted two Webinars (Web Seminars) to brief printers and other stakeholders on the rule and solicited questions and comments about it. Information from those Webinars, as well as supplemental information about the rule, is available on the PNEAC Web site.

A variety of information and services are on the Web site at <http://www.pneac.org/>.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

ISO 14001 EMS Implementation Assistance

From the Illinois Army National Guard to Caterpillar Inc., companies large and small this year received help from WMRC to do the right thing environmentally.

ISO 14001, the International Standard on environmental management systems (EMS), challenges organizations to communicate internally and manage the environmental impacts of their organization's business. The establishment of policies and procedures that work together to help organizations achieve their environmental objectives and targets is new to most organizations (if not daunting), and the road to ISO 14001 implementation isn't easy. However, the payback continues to reward organizations with financial savings in raw materials usage, process efficiency, energy savings, and reduced waste disposal costs. Presently, ISO 14001 is the preferred way to manage costly environmental compliance issues and in some cases may even help to reduce regulatory fines through its proactive corrective action procedure.

This past year, WMRC provided ISO 14004 EMS implementation assistance to six organizations, ranging from stand-alone manufacturing facilities to statewide multi-faceted organizations. Recently, the Illinois Department of Natural Resources (IDNR) has dedicated resources to develop and sustain its own environmental management system.

As ISO 14001 implementation gains recognition, thousands of companies have successfully certified their environmental management systems to the ISO 14001 Standard. WMRC plans to continue offering the technical assistance need to make the future of EMS bright and increase organizations' participation.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Laboratory Services

The WMRC Laboratory staff seeks solutions to environmental problems posed by research scientists, businesses, and educators. During FY04, WMRC served 77 different clients from industry, state government, the public, and the Illinois university research community. The Lab issued 4,241 laboratory data reports, having analyzed 23,242 constituents in some 4,663 samples.

The laboratory services group was able to combine funds received through the Laboratory Work Group of the Illinois Terrorism Task Force (ITTF) with internal funds and replace the research grade gas chromatograph-mass spectrometer (GC/MS). The new high-resolution instrument provides WMRC with some analytical capabilities unique to the state's laboratories, consistent with ITTF needs. This instrument replaces a moderate-resolution instrument that had failed after 14 years of use.

Following is a sample of the projects that the WMRC Lab staff has undertaken:

Assisting Illinois Researchers - One function of WMRC's analytical laboratories is to assist researchers at Illinois universities with intractable analytical problems. Dr. Jenq K Huang, Western Illinois University Chemistry Department, contacted WMRC about doing some detective work on compounds he was generating in his research. His research group is seeking bacterial strains that can convert oleic acid into 7, 10-dihydroxyoctadecenoic acid (DOD), an industrially important compound. Dr. Huang requested that WMRC analyze selected samples by gas chromatography-mass spectrometry (GC/MS) to confirm the presence of DOD. He also requested that we analyze for the presence of a trihydroxyl fatty acid, a potential byproduct of the bioconversion process. WMRC's Gary Bordson analyzed the samples and, by comparing results to a reference material furnished by Dr. Huang, was able to confirm the presence of DOD in selected samples. Analysis of other samples yielded no indication of the presence of a trihydroxyl fatty acid.

Metals Speciation - The ability of the laboratory to differentiate between various forms of arsenic and selenium (speciation) has attracted interest from the coal-fired power plant industry. Several new clients in search of arsenic and selenium speciation provided a steady flow of samples to the metals analysis laboratory. The Electric Power Research Institute (EPRI) and the power plant industry are both interested in the analysis of arsenic and selenium at part-per-billion ($\mu\text{g/L}$) levels in coal ash leachates and other samples associated with the burning of coal. The speciation of arsenic is important because the forms or species present determine both the toxicity of arsenic and selenium, and their properties (mobility, treatability, bioavailability) in the environment. The WMRC laboratory supported a number of research projects conducted by these clients who are investigating better controls for arsenic and selenium-containing wastes.



Several studies that have relevance to the occurrence of arsenic in ground water, such as in the Mahomet aquifer in central Illinois, are underway at WMRC.

- Drs. Joseph Stucki and Jamie Mello (both from the University of Illinois Department of Natural Resources and Environmental Sciences) are collaborating with Dr. Jonathan Talbott and John Scott at WMRC on the determination of the mineralogical and biological factors influencing release of arsenic and arsenic species from Brazilian mine soils. In their study, microbes in the soil have been shown to play a role in the conversion of inorganic forms to organic forms of arsenic equilibrating with the soils.
- Mr. Warren Hohn is evaluating the effects of buried waste on concentrations of arsenic and arsenic species in the water table at a former pesticide production facility.
- Dr. Genowefa Keller, a private researcher, is working with WMRC analytical chemists to evaluate the adsorption and leaching of monomethylarsonate passing through Everglade soils.

University of Illinois Center Support - The University of Illinois in Urbana-Champaign is the home for the Center for Advanced Materials for Purification of Water with Systems (CAMPWS), which is supported by the National Science Foundation. A primary function of CAMPWS is to close the gap between innovations in materials and engineering processes and practical applications to water treatment. The Center has a focus on the removal of low-level organic and inorganic contaminants from drinking waters and on finding cheap and effective water treatment processes for Third World countries. The Materials Science and Engineering Department at the University is on the forefront in the development of new adsorptive materials for removing contaminants from water. WMRC's gas chromatography group has worked in collaborative association with Drs. Yue and Economy from this department to provide before and after analyses to evaluate and optimize the adsorption efficiency of these new materials. The research focus in FY04 was on the removal of low levels of atrazine (a herbicide found in farm water supplies) and methyl t-butyl ether (a gasoline additive that persists in ground water). Ultimately, these materials will be fabricated into new products for the purification of drinking waters.

Assisting DNR Site Engineering Projects - For several years, WMRC has worked with the staff at the Donnelly-DePue Wildlife Management Area. The Lab has provided analyses of many samples of soil, water, and biota in support of the efforts to define potential human and environmental risk problems at the "3 I's" portion of the management area. Because of the concerns about contamination, the site manager has engaged WMRC in the analysis of soils associated with planned engineering projects at that site. The laboratory has provided analysis for heavy metals known to be present on the site to determine if planned engineering changes are likely to exacerbate contamination problems there.

Supporting Geochemistry Analysis - Nitrate isotope analysis is conducted by Hue-Hwa (Ellen) Hwang at the Isotope Geochemistry Section of the Illinois State Geological Survey for both research and service functions. This analysis requires information on concentrations of total organic carbon (TOC) in the samples being measured. Nitrate must be extracted from water samples before its nitrogen and oxygen isotopic ratios can be determined. TOC interferes with the efficiency of nitrate extraction, so it must be removed from water samples before nitrate can be extracted. WMRC provides Ms. Hwang with TOC concentration measurements to help her determine what treatment to apply to her samples to facilitate complete TOC removal.

The WMRC Lab staff also has been very active in projects concerning the restoration of the Lake Calumet area in Chicago. For more information on that project, go to the Lake Calumet section of this report.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Lake Calumet

The bringing of sediment from the Illinois River to the Lake Calumet area to restore the soil was the most visible work in the area this year, but much more was taking place. The Lake Calumet area in Chicago is a site of former landfills and abandoned industrial facilities. WMRC is sponsoring research in the area, providing technical assistance to businesses, and partnering with the City of Chicago Department of Environment on a number of projects.

WMRC is funding a black-crowned night heron research project in Chicago's Calumet region. In addition, the laboratory is providing all of the chemical analyses of the fish, heron embryo, and heron regurgitate samples collected in the study area. The fish samples represent nine different species of fish, collected from six different locations where the herons are known to feed. The embryo samples are from three different locations - the Calumet black-crowned night heron colony, a colony in Virginia, and a colony in Minnesota. The regurgitate samples were collected from young herons still in the nests at the Calumet colony. Organic analysis of nearly 200 samples was completed during the year for contaminants. Calumet area fish samples showed elevated levels of polychlorinated biphenyls (PCBs) depending on the location in which they were collected. Other samples had high levels of chlorinated pesticides. Heron embryos in the Calumet region showed substantially higher levels of the PCBs and pesticides than did embryos collected in other regions of the country.

Metals analysis on samples from this project is nearing completion but evaluation of the data remains to be completed. This project is a collaborative effort between WMRC, the Department of Natural Resources, and the City of Chicago Department of Environment.

The work in the Lake Calumet area also involves the establishment of an Ecotoxicological Roundtable. WMRC personnel have been involved with the City of Chicago in planning and participating in these workshops.

The Ford Motor Company is building a "supplier park" in the Lake Calumet area. WMRC is working with Ford suppliers to design and implement the most environmentally friendly technologies and practices into the new facilities. WMRC is also working with the suppliers to examine waste savings opportunities.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Library & Clearinghouse

The Library and Clearinghouse at WMRC specializes in the science of waste management, which makes it a resource that is unique in the nation. The Library's print collection includes industry case studies and information on pollution practices, sustainable development, and household hazardous waste. The Library's holdings include thousands of books, articles, maps, reports, and periodicals. In FY 2004, the Library also began collecting environmental education materials to support WMRC's increasing efforts in this area.

The Library's staff continues to add holdings to OCLC, a national shared bibliographic database, making the collection available for loan to libraries throughout the country. The Library's periodical holdings have been in OCLC since the 1990's.

In FY 2004, the WMRC Library joined twenty libraries from the Lincoln Trail Libraries System in a Questionpoint cooperative profile. The "MyLibrarian" virtual reference service went online in August 2003. It is available through the WMRC Library's Web site or at <http://www.mylibrarian.info/>.

Last year, the WMRC Library staff responded to nearly 500 information requests from clients. In addition, library staff added 392 books and videos, seven serials, and 770 articles to the library's collection. The Library staff also continued to add records for Web sites and online documents to the library's catalog.

The Clearinghouse consists of reports from research projects funded by the Center, pollution prevention fact sheets and brochures, and other environmental information from around the world. The Clearinghouse distributed 1,749 publications last year on topics ranging from household hazardous waste to mercury and pollution prevention in schools. WMRC continues to make its research and technical reports available electronically. During FY 2004, 12,635 WMRC reports and fact sheets were viewed on the Web site. In FY 2005, the Center plans to move to electronic-only distribution of its research reports.



Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Mud to Parks

Years of planning, research, and effort paid off in 2004 as the "Mud to Parks" project was officially launched.

The Illinois River provides commerce, recreation, and environmental habitat for a major portion of the state of Illinois. However, the river has been filling with sediment for the past century to the point that few areas outside the main channel are more than two feet deep. The result is a significant decrease in recreational use and fish and wildlife populations.

The Waste Management and Research Center (WMRC) has been one of the leading agencies in the effort to revive this river. WMRC's John Marlin has been spearheading a plan to remove mud that has been clogging the Illinois River and take it to places where it can help revitalize brownfields. Illinois Lt. Governor Pat Quinn and Congressman Ray LaHood are both strong advocates of this plan and helped secure funding for it to move ahead.

In April, the first barges were filled with this sediment and sent on their way to Chicago. Through the "Mud to Parks" project, 105,000 tons of sediment is being dredged from Peoria Lake—a wide stretch of the Illinois River at Peoria. It is loaded into 70 barges and shipped 163 miles up the Illinois River to a former steel mill site in Chicago, now a slag-covered site devoid of life. Upon arrival, it's unloaded and spread atop the slag, covering 17 acres to a depth of 2-3 feet. Grasses and flowers have been planted and the rich, fertile sediment is turning into a green park on the shore of Lake Michigan. Plans call for new housing to appear nearby and a new lakefront community will be created.

Two barge-loads of this dredge material also were placed on an old field at Banner Marsh Fish and Wildlife Area near Peoria. This is a pilot project to determine the feasibility of obtaining topsoil for projects that restore aquatic habitat to backwaters. The Banner Marsh was once strip-mined and much of the site has very poor topsoil.

The "Mud to Parks" project has generated a great deal of publicity. Articles about it appeared in newspapers throughout Illinois, including the Chicago Tribune and Sun-Times. It also was featured in the New York Times. Articles about the project written by John Marlin have appeared in several international dredging magazines.

The project involves a number of divisions of the Illinois



Department of Natural Resources, the University of Illinois, the U.S. Army Corps of Engineers, and a variety of federal, state, and local organizations. Several private companies also have been active in the project.



Restoring the greatness of the Illinois River will provide recreational and economic opportunities for Illinois citizens and help make the state more attractive to potential employers and their workers.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Research Funding

WMRC supports research into waste management issues that impact the State of Illinois' environment and economy. These research projects improve our understanding of waste problems and leads to more effective technologies and policies to address these problems. The research projects focus on pollution prevention technologies, ecological risk, contaminated sediment, remediation of contaminated DNR lands, and assessing the sources and risks of persistent organic pollutants in Illinois. WMRC is committed to funding high quality scientific research that encourages efficiency and economic viability in industry and has a positive impact on the State's environmental problems.

The following research projects were completed in fiscal year 2004:

Adsorbing Contaminants from Water - James Economy, University of Illinois at Urbana-Champaign, optimized the design of specialty filters to remove trace levels of partially water-soluble organic solvents that are discharged by the organic chemical, petrochemical, and metal finishing industries. The carbon fiber assemblies were developed and tailored to absorb volatile organic contaminants, thus improving upon the current industry standard of activated carbon granules while remaining cost competitive. The research also evaluated the filter materials for their regeneration and reuse potential.

Oil and Brine Spills to Intermittent Streams - Richard Halbrook, Southern Illinois University at Carbondale, evaluated the potential damage of natural resources caused by oil and/or brine spills into intermittent streams in southern Illinois. Dr. Halbrook's research group quantified sediment toxicity for polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and chloride concentrations. The researchers concluded that there is little evidence to demonstrate that the spilled oil and/or brine resulted in increased levels of stream contamination. However, the problem could be masked by periods of rapid water movement, causing the material to be washed downstream away from the spill incident sites.



Recycling Metal-finishing Wastewaters - Munir Cheryan, University of Illinois at Urbana-Champaign, investigated the potential of ultrafiltration and reverse osmosis membrane filtration to reduce water consumption in metal finishing industries by recycling electroplating waste streams. Preliminary experiments showed little benefit of ultrafiltration as a pretreatment for electroplating wastes. However, reverse osmosis can be successfully applied to the treatment of these wastes. The researchers documented a reduction of 66-75% in the volume of wastewater generated and the simultaneous production of good quality water that could be re-used in the plant. The results of this project are expected to have broad applicability to electroplating facilities in Illinois willing to use membranes for recycling process wastewaters.

Genetically Modifying Plants to Uptake Toxic Heavy Metals - Schuyler Korban, University of Illinois at Urbana-Champaign, developed transgenic Indian Mustard plants that show promise for phytoremediation, with an increased tolerance to and/or accumulation of heavy metals from soil. Measuring root length of 10-day old seedlings, the transgenic plants showed significantly longer roots when grown on agar supplemented with 100uM CdCl₂; however, no difference of root growth was observed at higher Cd concentrations. Further development could make such plants available for use in phytoremediation schemes on metal-contaminated lands.



Antibiotics in Animal Agriculture - Gerald Sims and Richard Larson, University of Illinois at Urbana-Champaign, examined the key factors that govern the persistence and transport of antibiotics associated with animal production in the environment. Antibiotics are commonly used in livestock and animal confinement systems for prevention and treatment of disease as well as for growth promotion. The medical use of antibiotics by humans has been linked to

the development of antibiotic resistance in bacteria. The widespread use of agricultural antibiotics has intensified concerns about the development of antibiotic resistance.

Ecotoxicology of Organic Compounds in Water - Michael Lydy, Southern Illinois University, is working to better define the narcotic effects of environmental contaminants, such as PAH compounds, on aquatic invertebrates. His research group attempted to assess the overall contribution of parent compound metabolites to toxicity and to define any additive toxicological responses. Their focus was on internal body burden of contaminant as a measurement endpoint related to toxicity. The data generated will aid in assessing the ecological risks by identifying modes of action and promoting body burden measurements, independent of contaminant bioavailability considerations. This will lead to improved risk assessment where prediction is based on internal dose. Results from this project will help close knowledge gaps in understanding relationships between environmental exposures and ecotoxicity.

These reports are currently under review or in edit and will be available from the Clearinghouse on the WMRC Web site; a bound copy of each report will be retained in the WMRC library.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

Technical Assistance

Each year billions of pounds of waste are generated in the United States. It makes good business sense to improve the processes and practices that contribute to wastefulness. WMRC can provide environmentally responsible cost containment and quality improvement ideas, and assist with implementation.

WMRC technical assistance engineers possess a unique mix of experience and training that enables them to investigate and solve a variety of business problems. Our experts can help businesses and organizations reduce all types of solid waste as well as toxic releases into the air or water. Benefits to WMRC's customers include:

Cost Containment

- Reduce waste monitoring, treatment and disposal costs
- Reduce manufacturing costs and raw material usage
- Reduce regulatory compliance costs
- Reduce insurance costs and potential liability associated with industrial wastes

Quality Improvement

- Enhance corporate image for customers and the public
- Improve employee morale by reducing exposure to hazardous chemicals
- Promote a healthier, safer workplace
- Improve product quality and purity

WMRC engineers work as change agents to help customers identify and implement practices that improve efficiency.

Services typically begin with a free assessment to develop strategies and set priorities for addressing issues. WMRC staff assists companies to develop and implement processes that are more environmentally friendly and less wasteful.

Services offered by the technical assistance experts at WMRC include:

- Pollution Prevention - WMRC staff work closely with customers to help them identify opportunities to improve efficiency by reducing raw material utilization and waste
- Energy efficiency
- Water purification and conservation methods
- Environmental Management Systems
- Testing of alternative technologies

No matter the size of the project, WMRC can provide a sustainable solution!

City of Chicago Industrial Rebuild Program, Chemical Initiative



Commonwealth Edison, the University of Illinois at Chicago, and WMRC are working with the City of Chicago's Department of Environment Energy Management Group to perform comprehensive audits at chemical facilities. The team members have provided facility audits to 19 Chicago Chemical Manufacturers to identify energy efficiency, process, and waste minimization improvement opportunities. The team's recommendations provide technical solutions to reduce energy, manufacturing, and waste disposal costs.

City of Chicago Industrial Rebuild Program, Confectionary Initiative

The latest in the rebuild programs involve working with the numerous candy companies located in Chicago. Team engineers have completed in-depth assessments on nine of these confectionary businesses and are currently working on technical reports to the companies.

Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

WMRC continues its partnership with MWRDGC in many different venues. Two of these in the last year included participation in a workshop for industries that have silver as a discharge component, and participation in MWRD internal workshops focusing on pollution prevention.

Strategic Goals Program (SGP)

The Strategic Goals Program is designed to help metal finishing companies achieve environmental and economic goals. Various groups - including metal finishers and federal, state and local agencies - work with one another to share resources and best practices to make good environmental decisions without sacrificing the company's bottom-line. WMRC has continued to play an integral role to the SGP's in the Rockford and Addison areas this past year.

Department of Military Affairs

WMRC has been working with the Illinois Department of Military Affairs (DMA) performing Environmental Baseline Studies on facilities that have maintenance facilities. WMRC also has been involved with the design and construction of automatic weapons cleaning equipment for the military. And WMRC has developed a Pest Management program for DMA. WMRC also is involved in a project to establish an Environmental Management System (EMS) for all DMA facilities.

Green Chemistry

Green Chemistry is the utilization of principles that reduce or eliminate the use or generation of hazardous substances in the design, manufacture, and application of chemical products. WMRC staff has experience helping companies and schools develop and implement processes that are more environmentally friendly and less wasteful. Dr. William Nelson of WMRC recently edited a new book exploring how environmentally friendly chemistry can be applied to agriculture. "Agricultural Applications in Green Chemistry" is published by the American Chemical Society (ACS) and distributed by Oxford University Press. The book is written primarily for researchers and educators in chemical and agricultural sciences. Requests for the book can be made at university and local bookstores.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

WMRC Receives Award

The Department of Defense (DoD) recently presented the Illinois Waste Management and Research Center (WMRC) with an award of appreciation. The award recognizes the pollution prevention and waste reduction efforts of WMRC through its participation with the Illinois/DoD Environmental Partnership.

WMRC, a division of the Illinois Department of Natural Resources, assists Illinois industries, businesses, and citizens to prevent the formation of, reduce, and manage waste. The DoD specifically cited WMRC for its development of a weapons and parts cleaning system that uses water-based cleaning systems, replacing the traditional hydrocarbon-based cleaning systems. This reduced and eliminated generations of hazardous wastes. WMRC also conducted pollution prevention opportunity assessments at DoD facilities, including one that reduced mercury use at the Great Lakes Naval Training Center's medical and dental facilities.

DoD also recognized WMRC for the ongoing research services it provides to the Illinois/DoD Environmental Partnership and similar partnerships in Indiana, Michigan, Ohio, and Wisconsin. WMRC also operates the DoD's environmental issue listserv (an e-mail discussion group).

"WMRC has had a long relationship with the Illinois Department of Military Affairs and with the US Army working on a number of projects," said WMRC Director George Vander Velde. "One unique element of this partnership is that it has developed proactive programs that have been good for the military and for the environment."

The Illinois Environmental Protection Agency, the Illinois Waste Management and Research Center, the Environmental Protection Agency Region 5, and the Department of Defense founded the Illinois/DoD Environmental Partnership in 1997. It is designed to implement pollution prevention measures, conserve resources, foster community well being, and enhance mission readiness at DoD facilities in the state.

Vander Velde and Mike Springman, a WMRC technical assistance specialist and co-chairman of the Illinois/DoD Environmental Partnership, received the award on behalf of WMRC. It was presented by DoD Regional Environmental Coordinator James Hartman and Army Regional Environmental Coordinator Tony Nesky. The environmental coordinators are key liaisons with state and local governments on DoD environmental matters. They facilitate partnerships and promote the long-term environmental and mission sustainability of DoD installations.



The Department of Defense recently presented a special recognition to WMRC. From left, Mike Springman and George Vander Velde of WMRC accept the award from DoD Coordinators Jim Hartman and Tony Nesky.

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page](#) < > [Next Page](#)

WMRC Staff Milestones

Life passages can be both happy and sad at the same time. In the past year, two WMRC employees retired. While their fellow workers were happy that they could enjoy retirement, we were saddened to see them leave.

WMRC Librarian Prill Smiley retired after many years of service to the state of Illinois. Prill was a part-time librarian at WMRC and part-time librarian at the College of Veterinary Medicine at the University of Illinois. She worked nine years at WMRC, and 30 years for the University of Illinois.



Cliff Jahp retired after working nine years for the agency. He was a Technical Assistance Specialist for WMRC and worked out of the Oakbrook office. Cliff is enjoying retirement by spending time at his summer cabin on the lake in Wisconsin and visiting family and friends.



Degrees obtained

Two WMRC employees finished course work and received degrees in the past year:

- Riyaz Shipchandler was awarded a MS degree in Environmental Engineering from UI-Chicago
- Cynthia Melchi received an AAS degree in General Studies from Parkland College

WMRC staff members also have had a number of publications and poster presentations during the year.

Publications:

1. Nelson, W.M. "Green Chemistry and the Path to Sustainable Agriculture" In "Agricultural Applications in Green Chemistry", in Agricultural Applications in Green Chemistry, ACS Symposium Series 887, Oxford University Press, 2004. Ch 2.
2. Nelson, W.M.; Tkachenko, V.; Delawder, T. and Marsh, D. "Enzymatic microbial degradation: in-process bioremediation of organic waste-containing aqueous solvents" in Agricultural Applications in Green Chemistry, ACS Symposium Series 887, Oxford University Press, 2004, Ch 10.
3. Nelson, W. M., editor, Agricultural Applications in Green Chemistry, ACS Symposium Series 887, Oxford University Press, 2004. ISBN 0-8412-3828-6.
4. V. M. Boddu, K. Abburi, J. L. Talbott, and E.D. Smith, "Removal of hexavalent Chromium from Wastewater Using a New Composite Chitosan Biosorbent," Env. Sci. & Tech., 2003, vol. 37, p.4449-56.
5. C. Liu, Y. Huang, N. Naismith, J. Economy and J. Talbott, "Novel Polymeric Chelating Fibers for Selective Removal of Mercury and Cesium from Water," Env. Sci. & Tech., 2003, vol 37, p.4261-68.
6. R.G. Darmody, J.C. Marlin, J. Talbott, R.A. Green, E.F. Brewer, and C. Stohr, "Dredged Illinois River Sediments: Plant Growth and Metal Uptake," J. Env. Quality, 2004, vol 33, p.458-464.
7. Bordson, G. listed as a contributor on a section on Tremetone in the following book: Clinical Veterinary Toxicology by Konnie H. Plumlee, published by Mosby, St. Louis, MO., copyright 2004
8. John P. Voyles, Zhongren Yue, James Economy and Gary Bordson. "Removal of Chlorinated Solvents from Water Using Tailored Activated Carbon on Fiberglass" submitted to Water Research 2004
9. Barnes, Laura L. (2003). "Locating Legal, Regulatory, and Policy Information." ERMD News The Newsletter of the Environment and Resource Management Division, Special Libraries Association Spring 2003, 7-8.
10. Barnes, Laura L. (2003) "Pollution Prevention and Environmental Security." ERMD News: The Newsletter of the Environment and Resource Management Division, Special Libraries Association Fall 2003, 7.
11. Chow, T., M. Wilcoxin, M. Piwoni and N. Adrian. 2004. Trace Level Analysis of Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) and its Biodegradation Intermediates in Liquid Media by Solid Phase Extraction and HPLC

Analysis. *Journal of Chromatographic Science*. (in Press).

Presentations and posters

1. J.W. Scott, J. Talbott, M. Piwoni, and B. Quach, "Robust and Reliable Arsenic Speciation Methods by Liquid Chromatography-Inductively Coupled Plasma-Mass Spectrometry (LC-ICP-MS) for a Variety of Sample Matrices," #13200-1300, Pittcon 2004, Chicago, IL, March 9th, 2004.
2. J. Talbott, A. Deguzman, C. Liu, "On-Line Characterization of Materials", WaterCAMPWS Symposium, Champaign, IL, Jan. 2004.
3. J. Talbott, J. Scott, B. Quach, M. Piwoni, T. Holm, W. Kelly and S. Wilson, "A Robust HPLC(IC)-ICPMS Method for 'Routine' Speciation of Arsenic in Drinking and Ground Waters", Int. Ion Chromatography Symposium, San Diego, CA, Sept. 21, 2003.
4. J. Talbott, J. Scott, B. Quach, T. Holm, S. Wilson, M. Piwoni, "A Robust HPLC(IC)-ICPMS Method for "Routine" Speciation Analysis of Ground Waters for Arsenic", #559, 30th FACSS Conference, Ft. Lauderdale, FL, Oct. 22, 2003.
5. T. R. Holm, W. R. Kelly, S. D. Wilson, G. S. Roadcap, J. L. Talbott and J. W. Scott "Speciation and Distribution of Arsenic in the Mahomet Aquifer, Illinois." Oral presentation, Symposium on Advances in Arsenic Research, American Chemical Society, 226th National Meeting, New York, NY, September 8, 2003.
6. T. R. Holm, S. D. Wilson, W. R. Kelly and J. L. Talbott "Chemical Factors Affecting Arsenic Removal at Water Treatment Plants." Poster. Symposium on Advances in Arsenic Research, American Chemical Society, 226th National Meeting, New York, NY, September 9, 2003.
7. PCB Congener Profiles in Forage Fish Collected in the Calumet Region of South Chicago, Luann Wiedenmann, Gary Bordson, Illinois Waste Management and Research Center, and Jeff Levensgood, Illinois Natural History Survey, presented at the 2004 PCB Workshop, Champaign, IL
8. Organic Contaminant Levels in Forage Fish Collected in the Calumet Region of South Chicago, Jeff Levensgood, Illinois Natural History Survey, Gary Bordson and Luann Wiedenmann, Illinois Waste Management and Research Center, presented at the 2004 Chicago Joint Conference on the Environment, University of Illinois at Chicago, Chicago, IL.
9. Curry, B. Brandon, E.C. Grimm, D. M. Nelson, J. Slate, S. Greenberg, and J.W. Scott. 2004. Contrasting hydrological response to Holocene climate at Nelson Lake and Crystal Lake, northeastern Illinois. American Quaternary Association, Program and Abstracts of the 18th Biennial Meeting, Lawrence, Kansas, June 26-28, 2004, Kansas Geological Survey, pp. 110-112.
10. Nelson, W. M. "New Surfactants II: Practical Results and Applications", CleanTech 2004, Chicago, IL, February 2004.
11. Nelson, W. M. "Catalytic Oxidation of CW Agents Using H₂O₂ in Ionic Liquids" 2003 Joint Service Scientific Conference on Chemical and Biological Defense Research.
12. Nelson, W. M. "New Dimensions for Surfactants and Cleaning", CleanTech 2003, Chicago, IL, March 2003.
13. "Direct Analysis of Cyanide and the Effect of Dilution in Electroplating Bath Samples by Ion Chromatography with Amperometry," Poster Presentation. Teresa Chow and Monte Wilcoxon, International Ion Chromatography Symposium, San Diego, CA, September 21-24, 2003
14. Debra Jacobson, GLRPPR display at the National Environmental Summit in Baltimore, Maryland on April 19-22, 2004.
15. Debra Jacobson, PNEAC display at the Printers National Environmental Health & Safety Conference in Indianapolis, Indiana on March 14-16, 2004.
16. Barnes, Laura L. "Environmental Storytime" series (Dr. Howard Elementary School, Champaign, IL, weekly January-May 2004)
17. Barnes, Laura L. and Emily Weingartz. "State Environmental Librarian's Roundtable". Presented at the Special Libraries Association Great Lakes Regional Conference (Grand Rapids, MI, September 18, 2003).
18. Barnes, Laura L. "The View From a State Agency Library." presented to Professor Linda Smith's Science Reference Class, University of Illinois Graduate School of Library and Information Science (Urbana, IL, March 8, 2004)

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

WMRC 2004 Annual Report

[Previous Page <](#)

WMRC Staff

It's our people that make WMRC special!

WMRC staff as of 10-27-04

Administrative Services

George Vander Velde, Director
Gary Miller, Assistant Director
John Marlin, Senior Scientist
Kate Day, Manager, HR & Finance
Judy Day
Jeri Knaus
Tenna Knox
Cindy Melchi
Margaret Morrison
Cheryl Van Ness

Research & Laboratory Services Program

Marv Piwoni, Manager
Gary Bordson
Teresa Chow
Julie Hafermann
Yakov Lazovsky
Chris Rohl
John Scott
Jonathan Talbott
Luann Wiedenmann
Monte Wilcoxon

Technical Assistance Program

Tim Lindsey, Manager
Ray Ronda, Satellite Office Manager
Ken Barnes
Malcolm Boyle
Jerry Brown
Georgene Frego
Bill Nelson
Dan Marsch
Joe Pickowitz
Kishore Rajagopalan
Todd Rusk
Riyaz Shipchandler
Mike Springman
Mike Thinnes

Data Management

Randy Wahlfeldt, Systems Administrator
Ed Delso

Information Services Program

Bob Iverson, Manager
Laura Barnes
Wayne Duke
Debra Jacobson
Carol Knepp
George Krumins
Tyler Rubach
Joy Scrogum

Contents

- [WMRC Overview](#)
- [Governing Officials](#)
- [Why an electronic annual report?](#)
- [Director's Message](#)
- [Where our Funding Comes From](#)
- [ADOP2T](#)
- [Government Conservation Practices](#)
- [2003 Governor's P2 Awards](#)
- [Greening Schools](#)
- [Information Sharing Projects](#)
- [ISO 14001 EMS Implementation Assistance](#)
- [Laboratory Services](#)
- [Lake Calumet](#)
- [Library & Clearinghouse](#)
- [Mud to Parks](#)
- [Research Funding](#)
- [Technical Assistance](#)
- [WMRC Awarded](#)
- [WMRC Staff Milestones](#)
- [WMRC Staff](#)



Waste Management and Research
Center



Illinois Department of Natural
Resources

One Hazelwood Dr.
Champaign, IL 61820
T: (217) 333-8940
F: (217) 333-8944

Research Funding



Information Services



Technical Assistance



Laboratory Services



Making Illinois a better place to live ...



The Waste Management and Research Center (WMRC), a division of the Illinois Department of Natural Resources, assists Illinois industries, businesses, and citizens to reduce and manage waste. WMRC services include:

- [Laboratory Services](#)
- [Information Services](#)
- [Research Funding](#)
- [Technical Assistance](#)



Through WMRC's efforts, Illinois Businesses can become more efficient and competitive. Improving the economic climate while protecting natural resources makes Illinois a better place to live.

NEWS

- 1.2.08 [EPA Widens Window on Regulatory Process](#)
- 1.2.08 [Eyes: Windows to the World](#)
- 1.2.08 [Low Dose Arsenic Is an Endocrine Disruptor](#)

[More News...](#)

SPECIAL PROJECTS

- [ADOP2T](#)
- [Biodiesel](#)
- [Chicago P2 Alliance](#)
- [Green Development and Construction Program](#)
- [Greening Schools Project](#)
- [IL DoD Environmental Partnership](#)
- [Illinois Governor's Pollution Prevention Awards](#)
- [Illinois River Project](#)
- [WMRC Seminar Series on Sustainability](#)

SITE HIGHLIGHTS

WMRC announces the 2007 Illinois Governor's Pollution Prevention Award Winners.

WMRC's 2007 Annual Report is now available!

© 2008 WMRC
Disclaimer / Copyright

webmaster@wmrc.uiuc.edu

T: 217.333.8940
F: 217.333.8944

One Hazelwood Dr.
Champaign, IL 61820



Illinois Department
of Natural Resources

DNR Links

IDNR Home
Agency Offices
Disabled Outdoors
Get Involved
Grant Info
Kids & Education
Mandatory Safety Programs
Lodges / Leasing
More Links
Outdoor Recreation
Parks & Recreation
Publications
Research/Surveys
State Museums
Endangered Species
State Links
News
Illinois Facts
Living
Health & Wellness
Working
Visiting
Learning
Business
Public Safety
Technology
Government
Help
Home

Search

DNR

Illinois

[\[IL Search Tips\]](#)**Welcome****Welcome to the Illinois Department of Natural Resources Website**

Our mission is to manage, protect and sustain Illinois' natural and cultural resources; provide resource-compatible recreational opportunities and to promote natural resource-related issues for the public's safety and education.

By exploring our website, you will learn about how you can enjoy the natural wonders of our state, [purchase a fishing or hunting license](#), tour our [state parks](#) or link to exhibits at the [state museum](#). Enjoy all that outdoor Illinois has to offer!

What's New

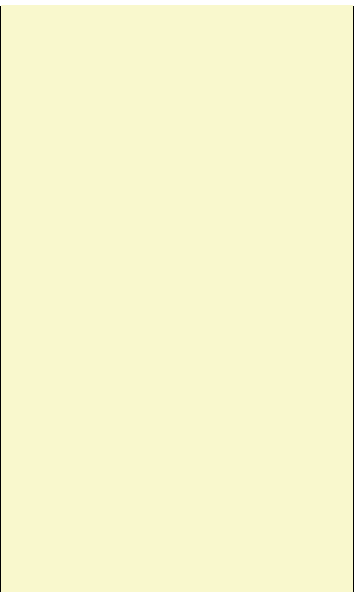
- 12/07/07 Conservation Stewardship Program (SB17) Information and Application available [here](#)
- 11/27/07 Deer Hunters - Check the Chronic Wasting Disease Test Results for your deer [here](#)
- 1/01/07 - Deer Hunters: New Regulations & Hours: read our [Press Release](#) or check out the updated [Administrative Rule here](#)
- 11/01/07 - [IL Sportsmen Against Hunger](#)
- [Commercial License Holders](#)
- [Hunters: Check in your Turkey or Deer - Harvest Pin Information and Harvest Check Station & Reporting](#)

Facts & Information

- [Press Releases](#)
- [Administrative Rules](#)
- [Announcements & Events ~ Calendar](#)
- [Forestry - Land Assistance Program](#)
- [Flood Map Modernization Program](#)
- [IL Wildlife Action Plan](#)
- [Chronic Wasting Disease & Info](#)
- [Strategic Plan for IDNR](#)
- [Director's Corner](#)

January 2, 2008

DNR Features**State Features**



Copyright © 2007 Department of Natural Resources

[Privacy](#) [Kids Privacy](#) [Web Accessibility](#) [FAQs](#) [Contact](#)

