Groundwater Basics

To better appreciate the importance of groundwater management and policy making, we must first understand what groundwater is and why its protection is so important.

Why Is Groundwater So Important?

Washington County residents rely on groundwater as their source for drinking water. Unfortunately, groundwater is susceptible to pollutants. Public water supplies are monitored for contaminants and groundwater is among the safest sources of public water. Water from private wells is also generally of good quality but needs to be tested by the well owner on a regular basis. There is a very real concern that the percentage of groundwater contamination may increase as toxins that have been dumped on the ground during the past several decades slowly make their way into groundwater supplies. Groundwater may also be vulnerable to microbial contamination.

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Clean Water One Step At A Time
“Nearly 97% of the world’s water is salty or otherwise undrinkable. Another 2% is locked in ice caps and glaciers. Only 1% can be used for agricultural, residential, manufacturing, community and personal needs.”

Continued from Page 1

**Groundwater: A Buried Treasure**

**Defining Groundwater**
Think of groundwater as water that fills the spaces between rocks and soil particles underground, in much the same way that water fills a sponge. Groundwater begins as precipitation and soaks into the ground. Sometimes groundwater feeds lakes, springs and other surface waters. Groundwater is part of the water cycle in which water evaporates, collects in clouds and is returned to earth through precipitation. This cycle is also called the hydrologic cycle.

**Pollutants Leach**
Pollutants that contaminate groundwater may be some of the same compounds that contaminate surface water. For example, in agricultural areas, pesticides and fertilizers may find their way into groundwater supplies. Urban areas contribute to pollution through road salt, toxic substances from old dumps and used motor fluids may seep into groundwater. It is possible for untreated waste from faulty septic tanks to reach groundwater and toxic substances may leach from underground storage tanks. Unfortunately contaminated groundwater is very difficult and expensive to clean up.

**Drinking Contaminated Groundwater**
Drinking contaminated groundwater can have serious health effects. Disease such as hepatitis and dysentery may be contracted from drinking groundwater contaminated by septic tank waste. Poisoning may occur by toxins that have leached into well water supplies. Drinking groundwater contaminated with certain chemicals over a long period of time may induce liver and kidney problems, cancer or other serious illnesses. Wildlife, too, can be harmed by contaminated groundwater. Awareness of water quality is important to protecting our health and the health of those around us.

Groundwater begins as precipitation and soaks into the ground.

**Prevention is Protection**
Solutions can be found after groundwater contamination occurs. But this is not always easy. In Washington County groundwater flows are threatened in areas where high-density residential and commercial developments have diminished groundwater recharge. Proper application of fertilizers, animal wastes and maintained private
sewage systems can prevent groundwater contamination. Because water, especially drinking water, is such a vital part of our lives, we cannot ignore the problem because it won’t go away by itself. Pollution prevention and conservation practices adapted by each of us are crucial. Everyone is part of the solution. See sidebar to the right for ideas on what you can do.

**New Methodologies**
New methods of treating waste water are being developed. Wetlands are being revived and artificial wetlands are being developed to treat sewage. These are often cleaner and less expensive than traditional treatment plants. Searches have begun for new ways to remove toxins from drinking water supplies. Through technology some treatment plants are making water usable for many purposes.

Many individuals and industries are taking steps to keep pollution from reaching groundwater supplies. Products are being made with less toxic materials. Consumers have switched to more environmentally friendly products. The passage of water pollution control measures such as the “Clean Water Act” have also been a big part of the protection of drinking water supplies.

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**TOP TEN TIPS**
for Protecting and Conserving GROUNDWATER

1. Dispose of chemicals properly.
2. Take used motor fluids to a recycling center.
3. Limit amounts of fertilizer.
4. Take short showers.
5. Shut water off while brushing teeth.
6. Run full loads of dishes and laundry.
7. Check for leaky faucets and have them fixed.
8. Water outside only when necessary.
9. Keep a pitcher of drinking water in the fridge.
10. Maintain your well and septic system.

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**Making Sure Your Well Water Is Safe**

As one of Wisconsin’s 700,000 private well owners, you probably use groundwater for doing your family’s laundry, drinking, cooking, bathing and watering your garden. It is up to you to test water from your well to be sure it is of drinkable quality. Well water can be degraded as a result of improper construction, inadequate maintenance, industrial and agricultural activities and, sometimes, it’s simply due to natural causes.

The most common contaminants found in well water are coliform bacteria and nitrate. We recommend that private wells be tested for *coliform* annually or whenever there has been a change in the taste, odor or color of your water. If you are pregnant or have infants under six months of age, you should also check for *nitrates*. Depending on your location...you may want to consider running a test for *atrazine* also. The *lead* level in your water should be tested at least once if your home was constructed before 1985, particularly if you have naturally soft water.

For more information on getting your well water tested, contact the Washington County Health Department @ 335-4462 or the Land Conservation Department @ 335-4804. Test kits and informational packets are available in both areas.
County Adopts New Ordinance

New rules regulating the restoration of abandoned gravel pits, quarries and other nonmetallic mining operations have recently been adopted by the Washington County Board.

The county ordinance complies with new state regulations and goes into effect on August 12. Gravel and sand operations must apply for a reclamation permit and submit plans describing how the land would be used after excavation has concluded. Plans must be consistent with local municipal land-use guidelines and zoning codes.

According to Troy Kuphal, Director of Land Conservation, “many municipalities in the County already have reclamation requirements in place. The County ordinance will only apply to those communities that do not have their own nonmetallic mining reclamation regulations.”

Dave Johnson, owner of West Bend Sand & Stone Inc., told the Board that the new regulations provided “a very level playing field statewide” for the industry. “I don’t see any complications from this ordinance.”

Protect The Streams & Wetlands On Your Property

Are you one of the lucky landowners who has property along wetlands or streams? If so, you probably want to protect it.

Taking these sensitive acres out of farm production by installing buffer strips and grassed waterways will help and now there are monetary incentives to do it. The Conservation Reserve Enhancement Program (CREP) may be just what you need to get started.

CREP is founded upon the federal Conservation Reserve Program (CRP), yet differs from the CRP by offering enhanced financial incentives for participants. Farmers and landowners agree to enroll parcels of land in the program for 15 years and establish prescribed conservation practices. In return, landowners receive financial compensation and assistance in establishing the conservation practices.

Call the Land Conservation Department at 262-335-4800 for information about CREP.
Fourth Annual Champions of the Environment Program

This past school year the Land Conservation Department hosted the fourth annual Champions of the Environment Program with over 1,200 students from 26 public and private schools throughout the county participating.

With a 2001 theme of "We're All Connected" the Program incorporated six categories of competition. The competition areas included environmental awareness poster, essay, spokesperson, photography, computer art and project.

Champions of the Environment encourages Washington County students, 4-H members and scouts in grades K-12 to actively create their own understanding of the world. The Program is the culmination of a school years' worth of hands-on environmental activities.

Libby Hron was selected as the Grand Champion for 2001 and her design (shown above) was printed on t-shirts.
Champions: We're

Thank you to West Bend Mutual Insurance Company for supporting the Champions of the Environment Program.

Poster, Justin Weindorf, St. Lucas School

A River Runs Through It
Connecting People and Land Uses to One Another

Photography, Kaitlin Henningsen, McLane-Elementary

Project, Good Li
What's In the Water? Original Skit with Music

Zach Schmidt, Joseph Kreitzers, Brad Schminke, Jordyn Kreitzer, Cassie Bergin, Asha Krueger, Breanne Milinski, Katie Duncan, Mandy Luft, Advisor: Fred Luft

Announcing the 2002 Theme
The 2001 Champions of the Environment Program culminated on May 30 with a reception at the University of Wisconsin-Washington County.

Winners were awarded with certificates, Olympic-styled medals, savings bonds and t-shirts.

Special congratulations to Erin McCarthy for bringing home a First Place at the state level. Kudos also goes to Libby Hron and Brendon Thomas for their Third Place finishes. Good work!!!

Plans are already being made for the 2002 Champions Competition which boasts a theme of: “Rivers: Ribbons of Life.” Teachers and youth leaders are now developing strategies on how to incorporate the theme into their 2001-2002 curriculum. For information on how you can get involved call Education Coordinator, Sue Millin @ 262-335-4800.
Water Pollution From A Fish’s Eyes

By Michelle Miller: Grade 7, Slinger Middle School

A study by the Centers for Disease Control and Prevention shows that about 900,000 people get sick a year in the United States because of organisms in their drinking water. Water pollution is the contamination of streams, lakes, underground water, bays, or oceans by substances harmful to living things (from little fish like me to people.) Plants and animals, such as myself, can’t live in water that isn’t clean. Some entire species have died out due to pollution it be that we’re all connected.

Sadly, there are many forms of water pollution and many ways for it to reach the water. One pollutant is petroleum, which gets into the water because of accidental spills. Petroleum is poisonous to me and other animals and if we digest it, or even get it on us, we could die. Next, pesticides and herbicides can enter the water because runoff takes it from farmland to streams. Since you drink this water, more than 14 million Americans are drinking harmful pesticides. Also, the pesticides can get inside me or another fish, then an animal will eat me and it will be in the animal, and so on Lip the food chain. Furthermore, heavy metals such as copper, lead, and mercury can get in the water. It works its way up the food chain the same way pesticides do. When in the human body it can cause diarrhea and liver and kidney damage. To add to that, infectious organisms have affects on you and us fish. One is called Cryptosporidium, which sickened more than 400,000 people in Milwaukee and killed more than 100 people in 1993. People who ingest polluted water can become ill, and if they drink enough, can get cancer or bear children with birth defects. So, as you can see, the pollutants in the water, caused by humans, affect us animals, but also go right back to you people because we’re all connected.

Now, if you care about your health, or the environment, there are steps that can help solve these problems. Thankfully, the Clean Water Act was started in 1972. Its goal was to end all pollution discharges into surface waters, yet it has gone beyond that. Industries are finding ways to produce less wastes, fewer farmers are using pesticides, and sewage plants are yielding water. As a result, in 1990 a survey showed that three quarters of rivers and streams had become clean enough for swimming and fishing. Yet, your actions alone can affect the future of water. For example, the lake is not your personal garbage can, how Would you like it if you had trash floating around your home? You may not think you can make a difference, because saving one single fish like me may not mean much to you, but to me, the smallest help can mean life or death.

Well, the choice is yours. My home is being polluted. The smallest efforts on your part could save me or another animal. Remember, you wouldn’t be just saving a fish or two, because these pollutants work their way tip the food chain right back to you, which just goes to show, We’re All Connected!

FOR SALE

2001 CHAMPION T-Shirts
$12.00 EACH

“SURVIVING: It’s A Joint Effort”

Designed By West Bend East Student
LIBBY HRON

Available @ LCD
Other 2001 Champions of the Environment Include:

**POSTER GRADES K-2**
1. Maggie Haskins—Amy Belle
2. Natalie Henning—Amy Belle
HM Chris Hayes—Home School/4-H Badger Boosters

**POSTER GRADES 3-5**
1. Lindsay Wenzlaff—Holy Angels/4-H Good Luck
2. Lauren Dolata—McLane Elementary
HM Conor McCarthy—McLane Elementary

**POSTER GRADES 6-8**
1. Erin Ostrander—Hartford Central Middle School
2. Josiah Hensler—Home School/4-H Badger Boosters

**POSTER GRADES 9-12**
1. Sarah Gibowski—West Bend East
2. Clair Ebben—West Bend East
HM Desi Wiedmeyer—West Bend East

**PHOTOGRAPHY GRADES 3-5**
1. Chris Probst—McLane Elementary
2. Hanna Gundrum—McLane Elementary

**COMPUTER ART GRADES 3-5**
2. Alexandra Nelson—McLane Elementary

**COMPUTER ART GRADES 9-12**
1. Becky Wiedmeyer—Hartford Union HS
2. Jonathan Powell—Hartford Union HS
HM Amber Weyer—Hartford Union HS
HM Gus Peters—Hartford Union HS

**ESSAY GRADES 9-12**
1. Joe Kirsch—Slinger High School/4-H St. Lawrence
2. Adam Hanek—West Bend East
3. Amy Michaels—West Bend East

**SPOKESPERSON GRADES 3-5**
1. Emily Goetz—McLane Elementary
2. Patrick Egan—McLane Elementary

**SPOKESPERSON GRADES 9-12**
1. Joe Ahlers—West Bend East

**PROJECT**
2. Irish Settlers 4-H Club—“Storm Drain Connection”
   Rachel Bergen, Mandi Christopherson, Kyle Perrin, Sarah Johnson, Amanda Perrin, Kevin Schultz, Brandon Rohde, Kelly Jones, Krista Schultz
3. Ashley Murray—West Bend East
   Book: The Human Connection to Nature

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**Environmental Teacher Of the Year Goes to Kettle Moraine Lutheran’s Tom Mellon**

Kettle Moraine Lutheran High School biology teacher Tom Mellon loves the outdoors so much he made it his classroom. Right now he and his students are busy installing a wetland wastewater treatment facility on school property. Tom’s environmental work won him the 2001 Teacher of the Year award from the Washington County Land Conservation Department.

Sue Millin, the department’s education coordinator, said the choice was easy. “He’s got some really progressive things going on,” she said, citing the environmental classroom and the wastewater treatment program at KML High School. The outdoor classroom project began in 1994 with 13 acres and grew to 25 by 1997. It has a wetlands area, wooded areas and ponds.

“This is more exciting for the students than sitting in a classroom... to see nature first hand,” Mellon said. “They get to observe the relationship between living things and the environment. The real benefit of the outdoor experience is getting the kids involved.”

Kudos to Tom for helping his students develop an appreciation for the environment and encouraging other teachers to do the same.
High School Students Share Their Thoughts On Environmental Issues

High School biology students from West Bend East and West share their thoughts on environmental issues in Washington County. After a year's worth of study they discuss stewardship and what they personally can do to improve ecological problems in our area.

Citizens MUST Be Stewards...

Each and everyone of us effects our environment, both positively & negatively.

-Ashley Murray

It is important for all citizens to be stewards; so the earth doesn't become polluted and unable to support life.

-Libby Hron

By taking care of the planet we are preserving it for future generations and protecting all the species out there.

-Karla Klienzowski

Being a good steward is a life long deal. You cannot expect to clean up a river one weekend and be done.

-Matt Dorrance

We have the knowledge and capability to save our habitats. Therefore, we are obligated to do so. If someone slacks off in this department, they are being selfish and harming much more than themselves.

-Kerry Aberman

Protection Begins With Us...

The number of people driving in Washington County is a huge problem. People drive to places that could easily be walked to. Think about riding your bike or carpooling next time.

-Johnny Godinez

In West Bend there is a lot of garbage and waste in the waterways. Under one part of the Milwaukee River I saw a tire, a street sign and other trash. We can help by picking up trash and by teaching others about the dangers of trashing our rivers, streams and lakes.

-Katie Stewart

Some farmers let their cattle graze in and around streams. The animal waste gets washed into the water. We could help by offering to help farmers build fences to keep the cattle away from the water.

-Josh Westphal

I work at a local grocery store and every day I use well over a hundred plastic bags to pack groceries. Almost everyone entering the store asks for plastic, which in turn, gets put into the landfill. I could suggest to the store owner that they start selling reusable bags and promote paper over plastic.

-Andy Leinss

Habitat fragmentation is also a problem. New roads and buildings cause barriers between the forest areas that were once one. This limits biodiversity and splits up species. We can slow this by petitioning city officials so that they may limit the amount of construction taking place.

-Jim Fowler

Continued on next page
No-Till Farming

Set mowing heights up to about 3 inches to develop deeper roots and crowd out weeds.

Annual Tree Sale Going Strong

Local residents and wildlife will soon enjoy the 75,000 trees and 74 lbs of prairie seed added to our Washington County landscape through the 2001 Land Conservation Department’s annual tree program.

We would like to thank the Planning and Parks Department and the Natural Resources Conservation Service for their assistance. “The huge task of filling all 651 orders would have been impossible without their help” stated Stephanie Egner, program coordinator.

Order forms for 2002 will automatically be sent to everyone who placed an order this year. For those of you that have not previously participated in our program and would like to receive a brochure just give us a call. Brochures will be sent in early December. Order forms are also available on the web at www.co.washington.wi.us/led.

“The Program is going strong. We plan to offer high quality stock, great selection and low prices next year,” explains Egner.

We would like to thank all those who participated in the tree program. Your time invested in planting these trees will help to better our environment for future generations.

Teens Speak Out

A recent problem is the introduction of Zebra Mussels into Big Cedar Lake. Hopefully they won’t spread rapidly. As stewards we should make sure to clean off our boats and trailers before entering these waterways.

- Kevin Kowalchik

Littering is a big problem with a simple solution. Don’t do it! Also, we can clean up litter around parks and roadsides.

- Kelsey Bergesud

Large chain stores like Walmart and Menards are building huge parking lots. These lots create runoff and pour a ton of water into the sewers. We can encourage these corporations to develop better parking and drainage systems.

- Rick Schnorembeg

Some factories dump things into the river. These things might not be harmful chemicals, but they might be things such as hot water. This raises the temp of the river and makes it harder for organisms to survive in it.

- Amanda Briesewitz

2001 River Clean Up A Success!
Over 3,500 lbs of trash was removed from the river in downtown West Bend and adjacent Quads and Silver Creeks. For information on how you can get involved call Education Coordinator, Sue Millin @ 262-335-4807.
Where in the County?

Where is this site located? Write your answer on a 3x5 card along with your name, address & phone number.

Mail to: Where in the County? Washington County Land Conservation Department, 333 E. Washington St, Suite 3200, West Bend, WI 53095.

Win: One correct entry will be drawn to win a bluebird house!!

Kudos to Kathy Schwai of West Bend for her correct identification of this quaint farmstead located on the corners of Mayfield, Pleasant Hill and Hwy 175. Kathy is the lucky winner of a beautiful butterfly house.

WASHING TON COUNTY
Land Conservation Department
333 E. Washington St., Suite 3200
West Bend, WI 53095
Phone: 262.335.4800  Fax: 262.335.4171

Clean Water One Step At A Time
WATERWAYS

e-Mail: landcon@co.washington.wi.us