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KEEPING IT CLEAN TOGETHER

2011 Groundwater Foundation Conference Looks at Making Collaborative Approaches to Groundwater Protection Work

By Cindy Kreifels, *The Groundwater Foundation*

The 2011 Groundwater Foundation National Conference was jam packed with the sharing of information about the elements and importance of working collaboratively to protect groundwater now and for future generations. Held October 4-6 in Omaha, Nebraska, the conference was three days of speakers, tours, exhibits, and networking that one participant summed up very well: “The conference was outstanding. A person could gain knowledge on current topics every minute of attendance. The thing I really liked, the presentations were very honest and straightforward. That was really refreshing.”

Several themes emerged from the conference’s presentations, activities, and discussions about collaborating for groundwater protection: the importance of two-way communication, education is a key element of collaboration, collaboration takes time and energy, public perception plays a huge role, and all of us are responsible for

the protection of groundwater and must work together to do so.

Two-way Communication

The value of communication in working collaboratively cannot be overstated. Most of us are very good at sharing our thoughts and opinions about how and why groundwater should be protected. Often, we expect that to be enough to convince others of the same. However, what became evident throughout the conference is that there is more to communication than information delivery. If we truly want individuals to “get it” we need to listen and hear their thoughts so we can understand their point of view and address their concerns.

Denice Bruce of Professional Engineering Consultants in Wichita, Kansas could not stress enough the importance of communication to the public when trying to garner support for a major project, like the Aquifer Storage and Recovery project in Wichita. The project required coordination and cooperation

between a myriad of governmental agencies and private citizens, conservation groups, landowners, and other stakeholders.

The Water Replenishment District (WRD) of Southern California has made a concerted effort to increase public awareness on the significant economic and environmental role groundwater plays in the region, said Elsa Lopez, Manager of External Affairs. WRD has made significant inroads into the large Spanish speaking population in the district by offering bilingual landscaping classes. Initially, the classes were called “Jardineros Ecologicos.” However, feedback from the pilot program indicated they would prefer to be known as “ECO Gardeners.” WRD also found that much of what they thought needed to be translated into Spanish could indeed be in English. As a result of listening to constituents, the program has grown exponentially and is now educating a much larger audience.

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Mission of The Groundwater Foundation:

To educate people and inspire action to ensure sustainable, clean groundwater for future generations.

Report Says Improvements Needed to Help Water Managers Address Impacts of Climate Change and Other Stressors

The Department of the Interior recently released a report that assesses the status of scientific information available to help understand the impacts of climate change and other stressors on U.S. freshwater resources and calls for modernization of systems to help monitor and sustain water supplies.

The report to Congress reviews the state of existing science and identifies strategies for improving systems to collect climate-related data and water monitoring information. The improvements are intended to help water managers predict, respond and adapt to the effects of climate change on the nation's freshwater supplies so that they can help ensure adequate water quantity and quality.

"Assessing and modernizing the tools that help us understand climate change is a critical step in helping decision makers and water resource managers ensure that current and future generations will have sufficient supplies of clean water," said Assistant Secretary for Water and Science Anne Castle. "Sustainable supplies of water will never cease to play a critical role in public health, as well as irrigation, recreation and other activities that sustain our local communities and power our economies."

The report, entitled *Strengthening the Scientific Understanding of Climate*

Change Impacts on Freshwater Resources of the United States, was prepared by a federal interagency panel led by Interior's U.S. Geological Survey and developed in concert with the Council on Environmental Quality, the National Oceanic and Atmospheric Administration, and the Office of Science and Technology Policy.

The report underscores the importance of maintaining, enhancing or developing adequate water measuring and monitoring systems to track water availability and quality so that water managers can make decisions about allocations of water and the infrastructure that helps it flow with the best information available.

The report also provides suggestions about ways to modernize data systems, management, modeling and water measurement tools and highlights the need to coordinate data among agencies. Programs highlighted for modernization include: the National Streamflow Information Program, the National Groundwater Monitoring Network, and implementation of the National Water-Quality Monitoring Network.

"Freshwater is under increasing stress from changes in climate, changes in land use, and a growing demand for a variety of services related to the health and well-being of society, a vibrant economy, food production, energy reliability, and national security," said Dr. Jerad Bales, Chief of Research and Programs for Water at USGS, and one of the lead authors of the report. "Effective management of the nation's water resources will require meaningful action to address many of the shortcomings that were

identified in this report on water and climate observational and modeling systems."♦

New Fracking Resource Available

Hydraulic fracturing, or "fracking," continues to be an emerging area of concern for groundwater and drinking water protection.

A joint project of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission, the www.FracFocus.org website serves as a web-based national registry disclosing the chemical additives used in the hydraulic fracturing process on a well-by-well basis. The information on the website covers wells drilled starting in 2011. The initiative provides energy companies involved in oil and gas exploration and production a single-source means to publicly disclose the chemical additives used in the process.

Used in the development of deep shale horizontal wells, hydraulic fracturing fluid is a mixture of water and sand with a small amount of chemical additives to enhance the production of hydrocarbons from otherwise inaccessible oil and gas reserves deep below the earth's surface. Water and sand generally comprise approximately 98 percent of hydraulic fracturing fluid volume. The fracturing fluid is pumped at high pressure underground to create small cracks, or fractures, releasing the trapped oil and gas from rock formations allowing it to flow through the wellbore to the surface where it is captured.

The website, found at www.FracFocus.org, features an interface that gives the public and regulators access to

comprehensive information about hydraulically-fractured wells nationwide. Searchable fields allow users to identify wells by location, operator, state and county, as well as a standard well identification number, known as an API number. The site also contains general information on the hydraulic fracturing process, water protection programs, descriptions of the chemicals used and their function in the process. The site also features information on private water wells, outlining steps landowners can take to learn more about operating and maintaining their water wells.

Participating energy companies voluntarily upload information about the chemical additives and the proportion used in each hydraulic fracturing job using a standard template. Over 40 energy companies are participating in the project, and several state regulators are actively encouraging energy companies to disclose information through the national chemical registry.

"For the past six months, our two organizations have been working together to build this first-of-its-kind web-based national chemical registry," said Mike Paque, executive director of the GWPC. "As more and more questions were asked about the hydraulic fracturing process the past couple of years – particularly relating to chemical additives used in the process – we recognized an obstacle to greater disclosure was the lack of a uniform and efficient way to collect, report, and ensure public access. Information about additives used in the process was widely distributed, but difficult to access."

Visit www.FracFocus.org to learn more.♦

Connecting Community

Promoting Groundwater Guardian Green Sites in Southwest Ohio

By Theresa McGeady, Miami Conservancy District, Dayton, Ohio

The Southwest Ohio area lies over the Buried Valley Aquifer, which is the source of drinking water for more than 1.5 million people and considered a Sole Source Aquifer by the U.S. EPA.

The Miami Conservancy District (MCD) located in Dayton, Ohio, has a core mission of flood protection, and was born as a direct result of the 1913 flood. Over the years MCD has been at the forefront of emerging water issues, growing as needed to meet the region's water needs.

MCD has been actively involved for many years in promoting recreation along area rivers and streams. MCD owns or maintains 35 miles of recreation trails for biking, skating, walking, jogging and enjoying, managing over 1,780 acres of green space, five flood protection dams and 11 separate levee systems. MCD's mission also includes water quality and quantity research, education

encourage managers of green spaces to evaluate their land management practices and implement changes that would benefit groundwater quality and quantity. The program works with green spaces from nature preserves to golf courses and everything in between. MCD recognized that the Green Site program could be used to

To achieve Green Site designation, managers of green spaces complete an application that includes questions about proper fertilizer and pesticide application, hazardous material storage, water use, the use of lower input plants, educating the public and staff about water, providing setbacks or no application zones around wells



and promoting recreational amenities along the river's edge.

MCD has participated in the Foundation's Groundwater Guardian program as an Affiliate since 2003. In 2007, the Foundation launched the Groundwater Guardian Green Site program as a way to

increase groundwater protection in communities over the Buried Valley Aquifer.

MCD first applied for and earned Green Site designation in 2009. Since then, MCD has worked to promote it in the region to encourage sites to become groundwater-friendly.

and bodies of water, and proper disposal of wastewater. The application does a great job of walking managers through steps they can take to become more groundwater-friendly.

In addition, participating sites receive other program benefits:

- Cost savings by reducing fertilizer, pesticide, and water use; and implementing pollution prevention practices
- Public recognition
- Green Site signage
- Monthly newsletter
- 10% discount on Foundation products
- Discounted or free access to Groundwater Foundation webinars
- Networking opportunities

To recognize good stewards of groundwater and to encourage groundwater-friendly practices in communities over the Buried Valley Aquifer, MCD provides incentives for sites to apply for Green Site designation. MCD wants as many sites as possible to be involved in the program to help improve land management practices in the area, better protect the aquifer, and people are more aware of practices that keep water resources healthy. To do this, MCD assists sites in pursuing designation and in implementing practices that protect groundwater. MCD will pay the program's administrative fee for eligible sites and will reimburse sites up to \$2,000 for additional practices to be installed.

In addition, MCD has worked to promote the program in Southwest Ohio by offering free workshops and providing assistance to site managers in completing the application. MCD has helped 15 sites, including park districts, cemeteries, townships, cities, water and sewer districts, wellfield protection areas and nature centers, apply.

Groundwater Foundation staff is also ready to help your site achieve Green Site status. The Foundation can provide assistance in completing the application, and furnishes a public relations toolkit and press release to local media.

These are the many reasons to go for Groundwater Guardian Green Site designation – so what are you waiting for?!

Learn more by visiting www.miamiconservancy.org, or www.groundwater.org.



This poem was written and shared by Cathy Lotzer of the Marshfield Area, Wisconsin Groundwater Guardian team at the 2011 Groundwater Guardian and Green Site Designation Ceremony, held as part of The Groundwater Foundation's National Conference on October 5, 2011.

*1985 was the year it all began,
The Groundwater Foundation,
A dream with a plan.*

*Susan at her kitchen table
Volunteers all around,
learning all about water in the ground.*

*The Aquifer newsletter and
Groundwater Week they would start,
also working with children
who proved to be quite smart!*

*The Water Festival was born,
and little did they know,
how that simple idea
would spread and grow.*

*Next came Groundwater Guardian,
only eight groups that first year.
Eighteen years later,
Their same message is still clear.*

*Supporting, recognizing,
and connecting us all,
join, be proactive, and volunteer
was their call.*

*They taught us to educate, motivate,
and care for the waters,
protect it for all
of our sons and our daughters.*

*So under their wing
we took to the streets,
spreading the word
to all those we'd meet.*

*Then we'd gather together
each year at this time.
We would learn, we would share,
and of course we would dine.*

*So here's the part I need to impress,
or never be asked to speak again,
I guess!*

*Inspiration can come from within
so I'm told,
but also from others
and their actions so bold.*

*At this conference it's easy to get
recharged and inspired.
Just steal ideas from others,
it's ok – it's almost required.*

*Stand up, use your voice,
share your ideas and your dreams,
take action, inspire others,
help start a new Guardian team.*

*Look around your own town
and all the places you go,
the Green Sites program is calling
don't you know?*

*Take the Guardian message
that you hear today,
and no matter how small
try to make a difference some way.*

*I'd like to end with a few more lines,
but no these aren't mine,
Dr. Seuss said it best
and boy he could rhyme!*

(Excerpted from 'The Lorax')

*You're glumping the pond where the
Humming-Fish hummed!
No more can they hum,
for their gills are all gummed.
So I'm sending them off.
Oh, their future is dreary.
They'll walk on their fins
and get woefully weary
in search of some water
that isn't so sneary.
I bear things are just as bad
up in Lake Erie.*

*I am the Lorax,
and I speak for the trees,
which you seem to be chopping
as fast as you please.*

*I am the Lorax,
and I'll yell and I'll shout
for the fine things on earth
that are on their way out!*

*And at that very moment,
we heard a loud whack!
From outside in the Fields
came a sickening smack
of an axe on a tree.
Then we heard the tree fall.
The very last Truffula Tree
of them all!*

*'But now,' says the Once-ler, '
Now that you're here,
the word of the Lorax
seems perfectly clear.
UNLESS someone like you
cares a whole awful lot,
NOTHING is going to get better.
It's not.'*

*'SO...catch!' calls the Once-ler.
He lets something fall.
It's a Truffula Seed.
It's the last one of all!
You're in charge of the last of the
Truffula Seeds.
And Truffula Trees are what
everyone needs.*

*So plant a new Truffula.
Treat it with care.
Give it clean water.
And feed it fresh air.
Grow a forest. Protect it
from axes that hack.
Then the Lorax and all of his
friends may come back.*

*So my call to action for all of you is this
- you are in charge of the last Truffula
seed!*

*Or translating into our words, you are in
charge of the only water we have!*

*Will you accept this challenge
I'm offering to you?
Will you leave here tomorrow
and in all that you do?*

*Will you work to protect it?
This is your CHOICE!*

*Will you speak for the water?
For the water has no voice!*

Education is Key

As Chris Barnett of the Marion County, Indiana Wellfield Education Corp. mentioned in his presentation on groundwater protection in an urban landscape, “The very nature of groundwater, the fact that it is out-of-sight, makes education especially important.” So how can we effectively raise public awareness? Cliff Treysens, Public Awareness Director for National Ground Water Association (NGWA) says, “The challenge is not a lack of information. The real challenge is effectively communicating information to the public.” Cliff mentioned two NGWA events that can assist communities in educating the public, National Groundwater Awareness Week and Protect Your Groundwater Day. Both events provide prepackaged messages and logos which can be customized to a community's concerns and needs.

Eugene Glock, an ag producer from Rising City, Nebraska, has found that people need to have a clear understanding of the issues, and more importantly, what the benefits are to them. In other words, how will making a particular change to protect groundwater make any difference in their life, how will it benefit them, and what are the risks if change doesn't happen?

Several speakers addressed the importance of research and data in order to better understand the resource and how things such as nitrates, pesticides, and other contaminants can impact the quality over the short and long-term. Stephen Gasteyer, a professor from Michigan State University, noted the importance of researching groundwater protection not only from the hydrological aspect, but to integrate social, economic, and ecological factors to understand what will be most effective.

Collaboration Takes Time and Energy

“Collaboration takes a lot of time and energy to make it work,

much like any other relationship,” said Megan Kolacyzk, Elkhart, Indiana Environmental Center. Rachael Herpel of the Lincoln, Nebraska Groundwater Guardian team noted that their team is able to accomplish diverse groundwater protection activities each year due to the unique talents and strengths of those on the team. It is all about working together to get things done.

The community of Seward, Nebraska recently had an oil pipeline installed through its wellhead protection area. Concerns from residents over potential small leaks that could contaminate the local water supply led the water utility to seek out additional precautions. The Seward Water Department is working together with the U.S. Geological Survey to conduct monitoring activities to detect leaks and protect groundwater.

In Dean Jacobs' dinner presentation on Wednesday evening, he shared a global perspective and reminded us that we are all on this Earth together. “There are many good people doing good things and not making the headlines,” said Jacobs. “There are the seven wonders of the world, but also in my mind the seven wonders of humanity – kindness, dignity, respect, humility, curiosity, generosity, and gratitude.” Keeping these in mind as we work collaboratively will make the journey successful.

Public Perception

David Miesbach of the Nebraska Department of Environmental Quality stressed that the public's perception of an issue or the organizations working on a particular issue can alter the true message. After all, people often have preconceived ideas about certain topics, so when the facts don't match up with what we already believe it is difficult for us to change those notions – especially if the facts are coming from an unknown or controversial organization.

John Albert of the Water



Research Foundation presented the results of a study to identify concerns and issues surrounding hydraulic fracturing of natural gas. It brought together gas industry representatives, environmentalists, and hydrogeologists to determine what is known, what still needs to be researched to better understand the practice, and how it impacts water. As with all controversial practices, questions arise as to who people can believe, how they can be sure of the facts, etc. In the end, the study determined that there is much needed research, including understanding the public's perception of and communicating hydraulic fracturing risks, a thorough study of improved methods for predicting the chemical characteristics of water used in the process, identifying water supply monitoring methods and best management practices, and identifying the subsurface risks and risk mitigation measures.

During a field trip to Seward, Nebraska there was discussion of how to get the community behind the installation of a five million dollar treatment plant. The public's initial perception of the problem, in this case high nitrates, caused some difficulty in understanding the necessity and importance of reducing nitrates in their source of drinking water. After many years of education about the need to comply with federal regulations, the plant was built, several best management practices have been implemented, and the community now better

▲ *The opening panel of the conference address important components of collaborative groundwater protection.*

▶ *Participants view various stormwater management tools used at the Douglas County Health Campus.*

understands the process necessary to keep nitrate levels below the ten parts per million maximum contaminant levels.

Public perception is a common struggle, which was made evident by presentations by Karen O'Connor of Olsson Associates on the approach to find a solution for the town of Edgar, Nebraska's nitrate contamination, and Lorraine Lafreniere and Robert Sedivy of Argonne National Laboratories' report on the phytoremediation process at Murdock, Nebraska. Public perception often centers around who to blame for the problem, but presenters discussed how their efforts remained focused in finding innovative solutions.

All Are Responsible

When implementing a collaborative groundwater protection approach, it is important that we recognize that because we all need groundwater for survival, we are all responsible for making sure that it is protected now and for the future.

The Lincoln, Nebraska Mayor's Water Conservation Task Force is a diverse group of community representatives formed in 1988 to assist in getting the community to reduce its

water consumption. Since then, the Task Force has implemented several public education initiatives, an increasing block rate structure, a water management plan, reviewed its infrastructure, and supported irrigation audits and the use of rain sensors. The Task Force continues to look for new and innovative ways to conserve water and is now looking further ahead, realizing that conservation, climate, and customer attitudes will affect future water needs.

River Watershed. This approach has successfully protected cities in the watershed from flooding, provided world-class fishing and many water and recreation trails, presented a number of economic opportunities, and most importantly, it has protected their aquifer and drinking water.

Protecting our groundwater was the common goal of all who attended the 2011 Groundwater Foundation National Conference. Those in attendance have returned



During a field tour, Kent Holm with Douglas County Environmental Services showcased the low impact development work at the Douglas County Health Center Campus in Omaha, Nebraska. From bioswales and rain gardens to rain water collection systems and green roofs, the campus recognizes its role in helping the community at large make strides towards better management of its stormwater. Likewise, Tom Henning with Assurity Life described his company's dedication to being a good steward by building a LEED certified building and working towards implementing appropriate turf management techniques to earn Green Site designation and protect water supplies.

The Miami Conservancy District in southwest Ohio works towards groundwater protection through a holistic approach in the Great Miami

home with new knowledge, new tools, and a renewed dedication to protect the water that nourishes us all – groundwater. Thanks to all who were part of the collaboration!

The 2011 Groundwater Foundation Conference was made possible by Conference Co-Sponsor Nebraska Department of Environmental Quality; Conference Partner Valmont Industries; Supporting Sponsors Lower Platte South Natural Resources District, Olsson Associates, Senninger Irrigation, and Water Research Foundation; and additional supporters Central Nebraska Public Power and Irrigation District, Gothenburg Water Utilization Learning Center, Marshfield Utilities, Prairie Fire, Rain Bird, Rembolt-Ludtke LLP, and T-L Irrigation.

Visit www.groundwater.org to learn more about the conference. ♦

Kremer Groundwater Achievement Award Presented

Nebraska's Lee Orton Honored

Lee Orton has been selected to receive The Groundwater Foundation's 2011 Maurice Kremer Groundwater Achievement Award. The Kremer Award was established in 1985 to recognize Nebraskans who have made a substantive contribution to the conservation and protection of Nebraska's groundwater. Orton was presented with the Kremer Award at a luncheon at the Foundation's National Conference on October 5, 2011 in Omaha, Nebraska.

Selection Committee member Bob Kuzelka said, "Lee has, for more than 40 years, promoted stability, consistency and professionalism not only in Nebraska's government water agencies but even more importantly in public organizations such as the Nebraska Association of Resources Districts, Nebraska Well Drillers Association, Nebraska Irrigation Association and Nebraska Water Resources Association."

Groundwater Foundation President Jane Griffin described the selection of Lee Orton as the 2011 Kremer honoree as "highly deserving. Lee has dedicated himself to protecting and conserving groundwater throughout his distinguished career, what has moved him above and beyond is his passion for his work on behalf of the resource."

Orton has been actively involved in water issues in the State of Nebraska since 1969. Beginning his career as legal counsel for the Nebraska Soil and Water Conservation Commission which later became the Natural

Resources Commission, Lee was actively involved with the law portions of the framework study of the Nebraska Water Plan and with several special recommendations of the plan. His work involved many aspects of Nebraska Water Law Study and extensive activity with the implementation of Nebraska's Natural Resources Districts.

Lee served as the first executive director of the Nebraska Association of Resources Districts for 10 years before entering private practice which he devoted to water resources matters, representing business and agribusiness on all nature of water resources problems.

Today Lee is principle of the Orton Law Office and remains actively involved with natural resources and environmental issues. Lee also serves as the executive director of the Nebraska Well Drillers Association, the Nebraska State Irrigation Association, and the Nebraska Onsite Waste Water Association and works with the Bureau of Reclamation, irrigation and public power districts and other environmental programs and issues.

The Kremer Award winner is chosen by a selection committee appointed by The Groundwater Foundation Board of Directors. Selection committee members include Don Kraus, Central Nebraska Public Power and Irrigation District; Jim Goeke, University of Nebraska Conservation and Survey Division; Bob Kuzelka, University of Nebraska School of Natural Resources; and Jane Griffin, The Groundwater Foundation. ♦



▲ Jim Goeke (left) presents the the 2011 Kremer Groundwater Achievement Award to his friend and long-time colleague, Lee Orton.

PAST KREMER RECIPIENTS

1986, Vincent Dreeszen; 1987, Maurice Kremer; 1988, Eugene Reed; 1989, Val Kuska; 1990, Warren Fairchild; 1991, Ralph Marlette; 1992, Ted Filipi; 1993, Robert B. Crosby; 1994, Virginia Smith; 1995, Fred Salmon and Family; 1996, Frank A. Smith; 1997, Robert B. Daugherty; 1998, Les Sheffield; 1999, Richard Harnsberger; 2000, Wayne Madsen; 2001, Jim Goeke; 2002, Eugene Haarberg; 2003, Chris Beutler; 2004, Darrell Watts; 2005, Roger Patterson; 2006, Senator Ed Schrock; 2007, Jim Cook, 2008, Ann Bleed; 2009, Vance Anderson; 2010, Michael Jess.





Groundwater: To Be or Not to Be?

How Education and Local Action Can Make a Difference

By Cindy Kreifels, *The Groundwater Foundation*

Over the past few months, groundwater and more specifically Nebraska's major source of groundwater, the Ogallala Aquifer, has been making the news on a regular basis. It has been especially gratifying to see the number of people who are concerned about groundwater because of potential threats to its well-being such as nitrates, the Keystone XL pipeline, Missouri River flooding and a host of other potential contaminants. So, how can we turn the concern into positive action to protect groundwater?

In Nebraska, groundwater protection is extremely important as groundwater supplies over 85 percent of our drinking water. That's a pretty good reason right there. But we also rely upon groundwater for irrigating crops (agriculture being Nebraska's number one industry), for recreation (many water bodies in

Nebraska are groundwater fed) and for bathing, cleaning our homes and cars and preparing our food. Groundwater is a resource that we all depend on everyday for our life and livelihood. Therefore, each of us is responsible for caring for groundwater. So just how can you do that?

First, you need to educate yourself about the resource and the potential threats to it. Second, you need to engage others in caring about groundwater. And finally, you must act on groundwater's behalf by making smart choices in your daily life.

Educate Yourself

There are many opportunities to learn more about groundwater. Whether you are three or 93, The Groundwater Foundation has opportunities for you to learn about groundwater. Youth education is a central tenet of The Groundwater Foundation's

work. By educating children, we are able to instill valuable groundwater protection behaviors from the beginning rather than asking them to change behaviors later in life. The Groundwater Foundation began educating children in 1989 when it began the first children's groundwater festival, a one-day event to allow children to experience and learn about groundwater in a very fun and hands-on environment. From this beginning The Groundwater Foundation has implemented youth groundwater education in many venues from day care centers, to the classroom, to church groups, to day camps. Youth who have attended our events have made comments such as "Learning about groundwater is totally freaking awesome" and "The concepts I learned at an early age stayed with me and translated into a drive to deepen my knowledge in that area. That is exactly why programs like this are so important because they plant the seeds. Seeds that one day may grow into something great."

Adults, too, have a wide array of opportunities to learn about groundwater. Visit The Groundwater Foundation website at www.groundwater.org to learn about groundwater and how you can individually or through working with others protect it for future generations.

Engage Others

This step is an important one. Why? Because while what each one of us can do is important, it is when we work together for the greater good that we truly make a difference. So how do we engage others?

The first step is to educate them—share what you have learned and help them understand what they can do to protect groundwater. Once people understand how simple changes can help to protect groundwater, they are more likely to want to continue to explore other actions

that are beneficial to groundwater.

A few simple steps we can incorporate into our lives include:

- Reduce household chemical use and dispose of remaining chemicals at a hazardous waste collection.
- Limit the amount of fertilizer used on plants.
- Take short showers.
- Shut water off while brushing teeth and shaving.
- Run full loads of dishes and laundry.
- Check for leaky faucets and have them fixed.
- Water plants only when necessary.
- Keep a pitcher of drinking water in the refrigerator.
- Get involved in water education.

Do you see the value of groundwater to you? To your children? To your grandchildren? Do you want to see groundwater protected for today and for future generations? Anytime people have come together around a cause, it is because a group of like-minded individuals decided to make a difference by working together to cause a change. It is time to collaborate and take action to protect groundwater. Because if we want clean, plentiful groundwater for future generations, each of us needs to act now.

Act Locally

Once you understand groundwater's importance and what you can do to protect it for the future, and you have engaged others, the most important step is to take action. Who should act? All of us—every person, every business and the community as a whole need to take action to protect groundwater. Each action is just as important as the next and collectively can have a huge positive impact on groundwater.

[Groundwater](#), continued on page 8 ►

So where do we start? Look around your community and think about all of the ways in which we use water each and every day. At the same time, look at the practices in your community that could potentially harm groundwater. When and how often do lawns, parks, golf courses and the like get watered? When water runs off of a parking lot, where does it go and what is being carried along with the water? How much fertilizer and pesticide is being used to keep our communities beautiful?

So what can businesses, educational campuses, parks, golf courses do to pitch in to protect groundwater? The Groundwater Foundation has developed a program to assist these types of sites in developing and implementing groundwater-friendly turf management practices called Groundwater Guardian Green Sites. Just by making simple changes to land-use practices such as better management of fertilizers and pesticides, minimizing water use and controlling runoff, these sites can reduce water use and potential contamination from reaching water bodies. As one site manager said after participating in the Groundwater Guardian Green Sites program, "The Green Site application made me think about all the ways that what we do impacts water. I hadn't really thought about our operation that way before." Many times, people just need to see the bigger picture to help them understand the value of groundwater and how simple changes can make a big difference.

Working together as a community to protect groundwater is imperative. Community-wide awareness of the importance of groundwater is a first step to comprehensive groundwater protection. Citizens need to be aware of why groundwater is important in order to make personal changes to protect it and to support groundwater protection

ordinances, regulations, etc. Community leaders should also consider implementing programs that encourage citizen involvement in conservation and pollution prevention actions. One important step a community can and should take is to develop and implement a wellhead protection plan to ensure contaminants are kept out of the local source of drinking water. So who takes the lead in a community to work toward groundwater protection?

You can take the lead and start working together with others in your community who understand groundwater's importance. The Groundwater Foundation has a program that provides a framework for local groundwater action called Groundwater Guardian. Groundwater Guardian helps communities organize a team to work on groundwater issues locally and determine what issues to address and what actions to take, and the program recognizes the community for taking proactive approaches to groundwater protection.

Now what exactly can a community do to protect groundwater? The approaches communities can take to protect groundwater are as varied as the issues they face. For example, Beatrice is concerned about nitrates in its drinking water. The city's well fields are located outside of city limits, and as such, Beatrice needs to engage not only its city residents but also the area farmers. Education initiatives have been aimed at both urban and rural residents on topics such as lawn care, fertilizer and chemical use, evapotranspiration gauges and cost-sharing programs, and have been used as a way to engage Beatrice's citizens as well as protecting its groundwater.

A sand and gravel aquifer that is very porous and that allows water to recharge it quickly is a challenge for Grand Island. This rapid recharge often results in contaminants quickly reaching

groundwater supplies. Over the years, Grand Island has dealt with contamination from industrial solvents, nitrates and other substances. Grand Island has worked toward educating its citizens about groundwater protection through a wide array of bill flyers, workshops and events.

across the nation has engaged their citizens in groundwater protection through the Groundwater Guardian program. And, as each community works locally to protect groundwater, we can begin to see the cumulative impact nationally, and hopefully someday, globally.



One such successful event is their annual household hazardous waste clean-up day where they have safely removed several tons of potential contaminants from the environment.

Sidney has been challenged over the years with drought conditions and high nitrate levels. While again, public awareness and education are key to their work to engage citizens, the community in partnership with local agencies has implemented a cash rebate program to motivate citizens to act by replacing traditional irrigated lawns with drought-resistant plants and grasses. In addition, the community reminds their citizens that storm sewers are not a place to dump unwanted items such as motor oil or grass clippings by stenciling the storm drains with a message that indicates these items will end up in the groundwater.

Each of these communities along with hundreds of others

Let's Get Started

Groundwater is vital to human life on this planet. If we are to survive, we must protect this resource. The first step is education. Begin by visiting The Groundwater Foundation's website, www.groundwater.org, to learn more about the organization and its many programs to help you understand groundwater's benefits and needs.

And, finally, thank you to all of the people, businesses and communities who have already taken steps to help the foundation fulfill its vision of a world with sustainable, clean groundwater where everyone understands how it impacts their life and acts responsibly and responsively on its behalf.

This article was previously published in the September 2011 issue of Prairie Fire. Visit www.prairiefirenewspaper.com.



Groundwater Guardians and Green Sites Recognized

The 2011 Groundwater Foundation National Conference featured a special recognition of groundwater stewardship – the Groundwater Guardian and Green Site Designation Celebration. As part of their participation in each program, Groundwater Guardians work tirelessly in their communities to protect groundwater and

Groundwater Guardian and Green Site activities set to music. Representatives from each Groundwater Guardian team



▲ Foundation President Jane Griffin presents Groundwater Guardian and Green Site plaques as part of the Designation Ceremony.

and Green Site in attendance shared experiences from the past year, such as their most innovative or challenging activity or practice, the biggest groundwater issue they faced, and their favorite parts of the Groundwater Guardian and Green Site programs. The ceremony concluded with a wonderful original poem written for the occasion and shared by Cathy Lotzer of the Marshfield Area, Wisconsin Groundwater Guardian team (see page 4).

A reception and dinner followed the ceremony, where attendees participated in a raffle for several prizes, including a canoe trip down the scenic Niobrara River, a Michael Forsberg photography gift set, a handcrafted piece of art from BKelley Metalworks, an original framed photograph from James Beaumont, and items from The Groundwater Foundation.

Speaker Dean Jacobs capped off the evening with a stirring presentation about his travels around the world, and the ways water is important as part of the global ecosystem, humanity, and spirituality. ♦

Recharge the Aquifer

The Groundwater Foundation is in the midst of its 2011 membership drive, and needs your help! The Groundwater Foundation exists because of you – your support enables our work to be done. It also exists for you – you, your children, your grandchildren – all of us need clean, ample supplies of groundwater to sustain life and livelihood.

You can help “recharge” the aquifer, simply by becoming a member or renewing your membership. Your support will help in The Groundwater Foundation’s efforts to educate more people and inspire more action to ensure clean, sustainable groundwater for future generations.

Last year, membership funds helped The Groundwater Foundation:

- Educate over 3,350 children about groundwater and help them to understand how they even at a very young age can do their part to protect it.
- Share a groundwater awareness message with over one million people through radio and TV PSAs and movie trailers. View them on our website at www.groundwater.org.
- Support over 300 communities and businesses working to protect groundwater locally.
- Reach over 600,000 with groundwater messages through our newsletters, website, blog, Facebook, and Twitter.

Groundwater is important, and we all must do our part to protect it. Act today by becoming a member or renewing your membership and contributing to our recharge

drive. It’s simple – visit www.groundwater.org and click the “Become a Member” button or call 1-800-858-4844. ♦

Have You Hugged Your Aquifer Today?

At the 2011 Groundwater Foundation National Conference, Foundation staff modeled t-shirts asking “Have you hugged your aquifer today?”

The Foundation is gauging interest from our constituents on these fun shirts, and may make them available for purchase. Prices for the navy blue shirts would likely be approximately \$15 to \$25 each.



The shirts were designed to make people think about groundwater in a different way, and wearing them could be a fun way to identify your Groundwater Guardian team or educate visitors at an educational event, or thank your volunteers.

To share your thoughts, send an email with your name, phone number, if you prefer long or short-sleeved shirts, and how many shirts you would be interested in ordering to info@groundwater.org, or go to www.groundwater.org for a link to a short survey about the shirts. ♦

educate residents about its importance, and Green Sites implement groundwater and environmentally-friendly practices on their sites.

The celebration started with the Designation Ceremony, which included opening remarks by Bob Kuzelka of the University of Nebraska-Lincoln. Kuzelka, who was instrumental in developing the program when it was launched in 1994, and remarked how impressive it is to see communities still engaged after 18 years. A slide show featured photographs of



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