

Wisconsin Ground Water Association Newsletter



Outgoing President's Message

Greetings WGWA Members!

It has been my pleasure to serve as your President over the last year, and I am thankful for the opportunity and for the dedication of the WGWA Officers, Board Members, Regional Coordinators and other volunteers that have worked tirelessly to advance the goals and the visibility of our organization this year. Though economic times have been tough, we have seen an increase in the participation in WGWA events throughout the year, particularly our very popular WGWA Lecture Series luncheons. As I turn over the helm to Jim Drought, I am excited about the momentum we have gained and the potential we have to reach a broader audience beyond our typical sphere of influence.

I am glad to be alive and practicing hydrogeology during such an exciting time. The true value of our water resources is beginning to be understood as it has never before. My 3-year old son reminds me to turn off the water while he is brushing his teeth and he knows what goes into the recycling bin (I am not taking credit for that, he gets a lot of his environmental activism from Handy Manny). That in itself speaks volumes as to how far we have come in our culture over the past few decades. As we enter a new decade, we necessarily reflect on the past. Who has not heard of the housekeeping practices at an old industrial property and thought to their self, "I can't believe people used to think that was okay," whether it be as severe as burying drums or as simple as not treating their wastewater streams? Those things didn't happen that long ago here, and they are still happening in other parts of the world. It makes me contemplate what practices we have today that we will be scratching our heads about 20 years down the line.

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The newsletter is published four times per year. If you have any suggestions or submissions, please contact us at: Wisconsin Ground Water Association, c/o Troy Thompson, W174 N7507 Joanne Drive, Menomonee Falls, WI 53051. Email: wgwainfo@wgwa.org; Web site: <http://www.wgwa.org>. The deadline for submissions to the 1st quarter of 2010 newsletter is February 15, 2010.

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As scientists we must always be looking back, to learn from the past, and looking forward to project and create our future. Our knowledge and experience are our tools for change and growth, and we share them through our newsletters, WGWA Notes, seminars, meetings, and even social events. For a forum to work we need participants. Each of you has something to add to the discussion, and we would all like to hear it. We have a lot of exciting events coming up in 2010, and are always looking for creative avenues to disseminate the wealth of knowledge we

have as a group. Come join us in the discussion and good health and good luck to all of you in 2010.

Sincerely,

Paula Richardson
WGWA Past President

Incoming President's Message

I spent part of the recent holiday in northern Wisconsin pursuing one of my passions in life – ice fishing. I was fortunate to catch enough walleyes for my family to enjoy on Christmas, and also caught a large (approximately 20 pound) muskellunge that was safely released because the season was closed. As I used my hand auger to penetrate the approximately 5 inches of ice to set each tip-up, I thought to myself that the thickness of ice, at this time on a normal year, is usually 10 to 12 inches thick and capable of supporting many vehicles. I wondered how the effects of climate change could alter a winter tradition that has been pursued by so many, like me, for both sustenance and recreation.

2010 is now upon us, and I have been asked to serve as your agent and President. Our dedicated and enthusiastic Board of Directors has been very busy of late planning events and seminars that we are confident will provide both interest and inspiration to our members. These events include:

- The WGWA Lecture Series will continue on January 19, 2010 with a luncheon seminar at the Marcus Center for the Performing Arts in downtown Milwaukee. Our keynote speaker, Mr. Rich Meeusen, President and CEO of

Badger Meter, Inc. and Co-Chair of the Milwaukee 7 Water Council, will be speaking on the topic of “Economic Opportunities in Water Technologies” and promoting the Milwaukee area as a regional water hub. I hope you will consider joining us for this event. We again anticipate a large turn-out for this seminar and encourage you to register early.

- The Annual Meeting will be held at the Marriott Milwaukee West in Waukesha on March 19, 2010. Dr. J. Val Klump, Director of the Great Lakes Water Institute, will serve as the keynote speaker over lunch at this all-day event and will address the effects of water supply, population growth, and climate change on a local, national, and global scale. Dr. Klump is internationally renowned as a water expert, and is also an exceptional speaker. I invite you to attend – or better yet - consider presenting at this event.

Promoting the understanding, study, and science of groundwater, and to providing opportunities for both professional and personal development for students and groundwater professionals alike represent the mission of WGWA. You may have read the article entitled “*Protecting Health and Resources*” which appeared in the December 28, 2009 issue of the **Milwaukee Journal Sentinel**. The article cited a study produced by the Wisconsin Department of Workforce Development that approximately 400 new water-related positions will become available in Wisconsin through the year 2016. We will continue to promote the mission of WGWA by providing programs and service offerings to fulfill the professional needs of our members and to encourage others to pursue water-related careers.

Thank you for your interest and support of WGWA. We are always looking for new and creative ideas to grow and service our membership and welcome your thoughts and feedback.

Respectfully,

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Groundwater proposals to heat up Legislation to further regulate irrigation, pumping pushed

*By Lee Bergquist of the Journal Sentinel Posted:
Nov. 30, 2009*

Plainfield — Brian A. Wolf boasted about the shimmering water and the trophy bass he used to catch from Long Lake in central Wisconsin.

But since 2005, the lake has undergone a remarkable transformation: It's essentially gone.

"It's as if someone pulled the plug in a bathtub," said Wolf, a property owner on the lake. "This lake is dead."

Wolf and his neighbors blame irrigation on nearby fields as part of the reason for the disappearance of their lake.

Today, its 50 acres is filled with prairie grasses and small pools of water. Long Lake is a seepage lake that has relied on free-flowing water below the ground and precipitation to keep it sustained.

Other lakes in the area also are suffering, and to the north, portions of the Little Plover River in Portage County periodically have run dry since 2005.

These and other water-challenged areas have become emblems in a simmering debate over Wisconsin's growing thirst for groundwater.

The controversy is sure to bubble over next year when lawmakers debate legislation that could clamp new controls on a resource that provides 70% of the state's drinking water.

"It's a delicate balance, and it's really going to be a challenge," said state Rep. Louis Molepske Jr. (D-Stevens Point).

Molepske represents the tensions inherent in the issue. He water-skied on Long Lake in his youth and bemoans its loss today. He also represents the heart of Wisconsin's potato and vegetable industry, which depends heavily on groundwater for irrigating crops.

Wisconsin is the No. 3 potato producer in the United States. It ranks first in snap-bean processing and third in processed sweet corn, green peas, carrots

and potatoes, according to the state agriculture department.

To be sure, most regions of Wisconsin are flush with water. But policy-makers are worried about growing demand for this vast resource.

Statewide, the use of groundwater has jumped 63% from 1979 to 2000, according to data compiled this year by the U.S. Geological Survey.

In one of the most troubled areas, burgeoning Waukesha County has been fingered for heavy losses to its deep sandstone wells, exposing drinking water to radium and salt. The City of Waukesha must find new sources to comply with federal drinking water standards for radium by 2018.

Waukesha could switch to Lake Michigan water, under terms of the Great Lakes compact, if it gets the necessary approvals.

Parts of the Fox Valley and Dane County also are experiencing losses to their aquifers.

And then there is ground zero here in the central sands - a loosely defined region covering portions of six counties.

Needs of crops

Irrigation has grown from virtually nothing in 1950 to 200,000 acres today, according to George J. Kraft, director of watershed science and education at the University of Wisconsin-Stevens Point.

The options, he said, are to do nothing and let more streams go dry, ban groundwater pumping, which isn't feasible, or limit pumping and irrigation.

The last time Wisconsin passed groundwater legislation was 2004. The legislation was driven in part by frustration over what some saw as government's limited role over a proposal by Perrier Group of America to bottle groundwater in Adams County. Plans were dropped in 2002.

The 2004 law requires the Department of Natural Resources to review the environmental effects of a

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high-capacity well if it lies within 1,200 feet of high-quality waters such as a pristine lake or a trout stream.

The law also mandates a DNR review if a new applicant would eliminate 95% or more of a well's capacity - a bottler, for example.

But Kraft said the law doesn't go far enough because it doesn't protect nine out every 10 water bodies that aren't pristine.

"We have to come up with a management scheme where we can strike a balance for healthy lakes and a fair amount of pumping," said Kraft, a member of the Groundwater Coordinating Council, which advises the state on groundwater issues.

Todd Ambs, administrator of the DNR's water division, said he would like to see local governments in problem areas play a more active role in curbing water use.

Currently, there are only two: Waukesha and Brown counties. Waukesha's water woes are likely to fall under authority of the Great Lakes compact, where water would have to be returned to Lake Michigan.

New regulations are expected to be stricter, all parties agree. Environmentalists including Kraft are pushing for more controls over pumping and better mechanisms to monitor groundwater levels.

Agricultural and business groups oppose most restrictions for now.

Duane W. Maatz, executive director of the Wisconsin Potato & Vegetable Growers Association Inc., said farmers have become more efficient in their use of water.

"We could turn off the water and it would have an effect on the economy, but we may find that it doesn't affect the lakes," Maatz said.

Two key lawmakers - Sen. Mark Miller (D-Monona) and Rep. Spencer Black (D-Madison) - said these elements are likely to be included:

- More emphasis will be placed on water conservation. "In areas where water is at a premium, we will have to use water more wisely," said Black, cautioning that he is not calling for an outright restriction on water use.
- Local units of government will be required to do more water-resource planning.
- Legislation will be tailored to different areas of the state, depending on the groundwater supplies.

Black and Miller say they'll release documents in a few weeks to flesh out what could be in the legislation.

Too late for Long Lake?

It may not come fast enough for those affected by vanishing lakes and streams. Today, Long Lake is a field of dreams.

Property owners have not only lost a lake, they've also lost value in their property. Assessments on the land portion of lake residents' property tax bills dropped about 60% in 2007, according to records supplied by homeowners.

But is it groundwater pumping or the weather?

Seepage lakes in the region are subject to wild swings in water levels, according to Doug Polzin, president and owner of North Central Irrigation Inc. of Plainfield.

"This is historically nothing new," said Polzin, noting that records show Long Lake dried up in the 1880s, the 1930s and now.

But local residents said the effects of 13 irrigation wells, operating within 1½ miles of the lake, can't be ignored.

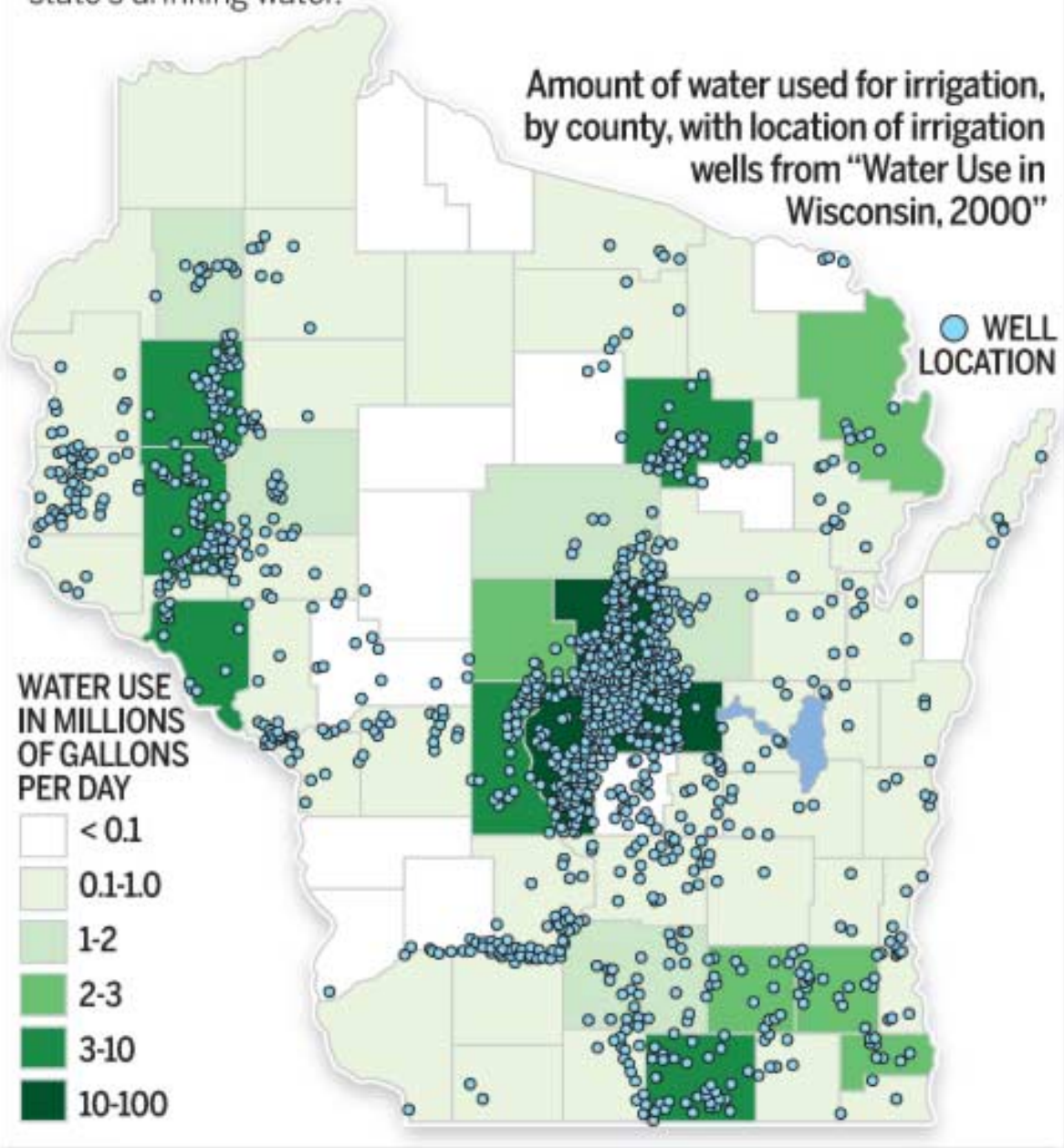
Kraft has studied long-term climate data and compared it with groundwater levels. It's been dry in recent summers, but well above long-term precipitation levels. Irrigation has to be a factor, he said.

"Compared to the past, there hasn't been a big honking drought here," he said.

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Battle over groundwater

A simmering debate over Wisconsin's growing thirst for groundwater is sure to bubble over next year when lawmakers debate legislation that could clamp new controls on a resource that provides 70% of the state's drinking water.



Source: United States Geological Survey

Journal Sentinel

WGWA Luncheon Lecture Seminar Recap

The Wisconsin Ground Water Association (WGWA) Lecture Series continued with a luncheon meeting on November 12, 2009 at the Reinhart Conference Center in Pewaukee, Wisconsin. The lecture topic included the **Wisconsin Closure Protocol Study** which was released by the Wisconsin Department of Natural Resources (WDNR) in 2009 and included a critical review of 123 petroleum sites closed by the WDNR in 1999 and 2000 where natural attenuation was used as a sole or partial remedy. The Study also included the results of supplemental investigation activities on an additional 10 sites. One of the major recommendations of the Study included a re-evaluation of the use of natural attenuation-only as a remedial alternative at sites contaminated with petroleum hydrocarbons.

Water Council Co-Chair to Speak at WGWA Lecture Series Luncheon

WGWA is very excited to announce that Rich Meeusen, Co-Chair M7 Water Council, will be the key note speaker at the upcoming January 19th Lecture Series Luncheon to be held at Downtown Milwaukee's Marcus Center's Bradley Pavilion. The title of his presentation will be *"Economic Opportunities in Water Technologies."*

In 2005 the Milwaukee 7 was formed to create a cooperative economic development group for the southeastern Wisconsin seven county region. From that group the Milwaukee 7 – Water Council was formed. With the region's unique presence of many global leaders in water technology and freshwater research; a focus was made by the Water Council to develop this economic opportunity and pull all water related resources together. Because of this broad range water focus; in 2009 WGWA joined as a member of the Milwaukee 7 Water Council. The excitement around the Water

Council has grown quickly in the past couple of years and now has membership from professionals and businesses from several parts of the regions water technology infrastructure; including water testing, filtration/desalination, drinking water, wastewater, pumps and valves, water treatment, water recreation, measuring equipment, and professional services to name a few.

The cluster of regional water related technology and it's economic opportunity was first recognized by two Milwaukee water company executives. After a regional Water Summit in July of 2007 that convened researchers, business leaders, engineers, environmentalist and community representatives; Co-Chairs Rich Meeusen, Chairman/President/CEO of Badger Meter, and Paul Jones, Chairman/CEO of A.O. Smith, lead the formation of the Milwaukee 7 Water Council. On January 19th in the Bradley Pavilion at the Marcus Center, Rich Meeusen will give a Key Note presentation on the Water Council, how it has grown, and future economic opportunity that exist through the Water Council.

Water Council Mission

"To align the regional freshwater research community and water-related industries to further establish the Milwaukee Region as a world hub for water-related research and economic development, giving the region a leading role in water issues that will continue to dominate economic and political considerations worldwide."

An invitation to this exciting event can be viewed on the next page or online at:

<http://www.wgwa.org/events.html> A lunch buffet will be serviced at Noon and Mr. Meeusen will speak at 12:30 PM. Registration can be sent to Becky Caudill via email: rcaudill@naturalrt.com or phone: 262-523-9000.

2009 WGWA Fall Field Trip – A Glacial and Bedrock Tour of Southeast Wisconsin

What could be better than boarding a bus full of your colleagues on a crisp fall morning for a scenic drive out to one of southeast Wisconsin's scenic wonders and geologic enigmas? On September 19th, 2009 an eager group of WGWA members, students and other interested persons were treated to a lively discussion about the wonders of drumlins. Drumlins abound in southeastern Wisconsin, and yet they remain shrouded in mystery. Dr. Tom Hooyer from the University of Wisconsin-Milwaukee and Nick Vreeland, a graduate student from Iowa State University, presented their research on the fabric of drumlins, and the possible implications on our understanding of their formation. It was a wonderful way to start the day, and well worth the trip into Dodge County.



Our next stop was the Payne & Dolan quarry south of HWY JJ in Waukesha, where we were able to drive the bus down to the bottom of the quarry and see the Waukesha Fault up close. Our tour guide, Mr. Clint Weninger, explained the history and challenges of non-metallic mining at this location and quarries nearby, and the concrete and asphalt recycling practices currently in place. Then we took a leisurely walk at the base of the quarry (at times standing on the Maquoketa Shale) and enjoyed the quarry, and the ospreys circling above, from a rare vantage point.

The lunch stop at beautiful Fox River Park in Waukesha included a special appearance by Advanced Waste Services (who supplied the lunch, as well!) and their shiny new Vacsimizer truck. Chris Duba was happy to explain the unique characteristics of the truck that allow it to carry more waste than similar vehicles. They even revved up the vacuum and it was surprisingly quiet!

Our tour of the Waukesha Wastewater Treatment Plant included a discussion of technologies old and new by the plant's Process Control Supervisor, Randy Thater, as well as a fascinating presentation on the new school of chemical threats, personal care products and pharmaceuticals, by Dr. Joe Piatt of Carroll University.

The final stop of the day had us looking back at the past at Paradise Springs in the Southern Unit of the Kettle Moraine State Forest. Our guide was the very knowledgeable Mr. Ronald Kurowski, who explained the history of the spring, which was once owned by Louis J. Petit the "Salt King", and later his grandson, August J. Pabst. Petit built the fieldstone springhouse over the spring in the early 1930s, and also had a horse-racing track, wading pool and tennis and shuffle board courts on site. Spring water was bottled here from the late 1800s to the late 1960s. In recent decades, the spring has been left to return to its natural state, and it is an idyllic place to spend a fall afternoon. Following our tour of Paradise Springs, we walked across the road to a recently-restored pioneer cabin and had a scenic walk through a superb prairie restoration.



Throughout the day we were treated to wonderful weather, enlightening conversation and the reminder of the importance of Wisconsin's bountiful natural resources to the past, present and future of our state. A PDF of the Field Trip guidebook can be found at www.wgwa.org.

Remembering Boyd Possin

As many WGWA members may already know, WGWA and the Wisconsin environmental consulting community recently lost a prominent member. Boyd Possin passed away unexpectedly at his home on January 3, 2010. Boyd Possin was very important in the many roles he played for the Wisconsin Ground Water Association. First and foremost, he had a stabilizing effect on the fledgling organization which was prone to the short-term commitments of a consultant's world. He was President Elect in 2001 and continued to alternate between that position and President (or Past President) for the next 5 years until 2006. He knew how things were done, did them efficiently, and brought a great passion to his work. Boyd became the public face of WGWA both at meetings and with his "personalized" WGWA Notes that kept members constantly updated on their groundwater world.

Following are some personal remembrance from members that new him well.

I met Boyd in the mid-1990s when I heard that Boyd and a few other Fox Valley consultants were forming a discussion group to support each other in PECFA work, which was a large chunk of most consultants' business back then and a major headache for most of us. We met in Fond du Lac, at a supper club near the mall, and I was surprised to see that he had brought together a group of about 30 to 40 consultants willing to spend a beautiful summer afternoon confessing everything they really wanted to know about PECFA but were afraid to ask. After a few more meetings, we decided on a name for our group, the Alliance for Environmental Regulatory Communication (AERC). In a short span, we formed regional groups with full participation from DNR, Commerce and state legislators, and we sponsored statewide meetings in Madison to sold-out crowds. Through it all, Boyd was at the helm, keeping everyone informed by newsletter. He even gave a half-hour interview on Wisconsin Public Radio and made PECFA sound interesting. I don't recall how or when exactly it all ended, but our group had more than met its goals, and the demands of running a business while keeping an entire state updated on regulatory issues became a bit too much to rest one guy's shoulders. But I do remember that Boyd had a great passion for teaching us that we are all in this together, and despite our competitiveness as consultants, we could flourish in our businesses and actually do something positive along the way with knowledge and better communication (sounds like WGWA, huh?). I still have all of the AERC newsletters in an electronic file, but most importantly, I believe I have every hilarious joke or cartoon that he sent me over the years.

Katherine Juno

I have known Boyd professionally for 35 years. Our relationship early on was a bit 'rocky' when he severely damaged the Geology Dept drill rig attempting to drive it under the Park Street bridge (famous for its low clearance) the weekend before I was to use it for three weeks of thesis field work in Central Wisconsin. He more than paid me back for that inconvenience over the rest of his life, initially as a valuable mentor on lakes/watersheds (which many hydro grad students were doing in the mid 70's) and later as a mentor in starting my own company. I could count on Boyd for thoughtful and insightful advice which he offered freely. I also served with Boyd on various code advisory committees (e.g. NR500, ILHR47). I am confident that if there any rules in heaven, they will be improved significantly by the time we arrive. Boyd also shared with me his one personal/professional rule. Whatever he did, it had to be fun. How lucky we are that he enjoyed giving his experience and time to our profession and the improvement of our water resources.

Bob Karnauskas

My personal memories of Boyd are in his position leading WGWA. He was capable of doing it all, but was very grateful for the help of volunteers like myself. He was bold and innovative in trying to join the groundwater people and the surface water people at the same conference (Green Bay 2003) and Wisconsin plus Minnesota people on the same field trip (2004). He was the first WGWA President to send out the newsletter via email (2002). Though he suffered several health problems, he always entered into the field trip hikes with a big smile.

Lee Trotta

Minutes of WGWA Board Meeting held October 14, 2009

Location: Conference Call

Attendees: Paula Richardson, Jim Drought, Aaron Schneider, Corey Pagels, Andrew Solberg,

Previous Meeting Minutes: not addressed.

The Treasurer's Report: was unavailable.

Board Meetings: Paula indicated that we currently have three conference call IDs for board meetings and that having three has been cause for some confusion when setting up conference calls. She suggested that we go down to just one ID for future meetings. The board agreed.

Fall Field Trip: Paula indicated that overall the Fall Field Trip was a success. The treasurer's report was not available but Paula assumed a loss in part due to the bus size and low attendance. There is interest in trying something a little different next year, a WGWA camping trip in the Northern Kettle Moraine (suggested by Kallina Dunkle), which we hope to persuade Dr. John Isbell and Dr. Tom Hooyer (UWM) to lead at least part of.

Spring Conference – The spring conference is set to take place March 19th at the Marriott Milwaukee West in Pewaukee. It will not coincide with the AWRA conference after unfavorable results last year. It was agreed that that the conference would be a whole day event to make it more worthwhile for those traveling from out of town. Other suggestions for the Spring Conference included holding the poster session during lunch, providing the career roundtable in the evening, having the keynote speaker before the career roundtable.

It was proposed that we reward all student posters and highlight that in the call for papers. Jim indicated that possible speakers would be Kallina Dunkle (a PhD student at UW and past presenter at WGWA meetings) on groundwater

resources, and/or Nick Vreeland (a master's student at Iowa State) on his drumlins thesis work. The option to provide a catered lunch and snack items for the dinner was generally favored. Paula indicated that a Conference planning call will take place in the next week or so (date TBD) to get some big picture items solidified (theme, dinner or no dinner, general program, etc.). More information and direction will be available after that time.

Paula has sent out a task list and call for volunteers for the spring conference and other miscellaneous WGWA events.

Other ideas proposed by Mike Raimonde for the spring conference include:

Meeting Theme: Ground water resources and applied ground-water science in Wisconsin
Meeting Agenda:

1. Morning – Ground water resources
 - a. Sustainable ground water management
 - b. Hydrogeologic characterization
 - c. Wisconsin ground water regimes
 - d. Hydrostratigraphic modeling
 - e. Artificial recharge
 - f. Climate change hydrogeology
2. Afternoon – Applied ground water science
 - a. Isotopes in ground water
 - b. Migration and assessment of non-aqueous phase liquids
 - c. Construction dewatering
 - d. 1,4 – dioxane in ground water
 - e. Endocrine disrupters in ground water
 - f. The future for ground water scientists
3. Evening – Career roundtable

SE Regional Meeting: The meeting is set to take place November 12 at the Reinhart Conference Center in Waukesha. The lecture will be led by M. Theresa Evanson (WDNR) and

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Ms. Laurie Parsons (Natural Resource Technology) and will focus on the "Wisconsin Closure Protocol Study." About 20 people registered so far and will be sent out in early November. We decided that our January meeting (date TBD) will center on the Milwaukee 7 Water Council, what they are doing, who they are, how they relate to WGWA and what our groups can do for each other. We would like to get that invite out on or before the Nov. 12 meeting.

Newsletter/Web Page: It was agreed that progress has been made on the layout and content of the web page. However, the newsletter is still lacking. Troy and Wayne will continue to collaborate on the Newsletter and will brainstorm a bit on potential regular contributors. It was agreed that aside from keeping the web page current and possibly using the web page as a place to gather WGWA correspondence (letters, emails, etc.), the web page will stay as is. Paula suggested having templates put together for correspondence (letters, emails, etc.) for continuity in future years/presidents. Paula will be sending the Water Council updates to Aaron, who will determine whether he will send them on to the SE group.

Potential WGWA Events: A WGWA camping trip in the Northern Kettle Moraine was suggested Kallina Dunkle. Will try to persuade Dr. John Isbell and Dr. Tom Hooyer (UWM) to lead at least part of it. Lori Huntoon has suggested a WGWA bike ride. Paula will inquire if Lori would like to spearhead that event. A WGWA beer cruise/brewery tour was also suggested. Jim also suggested trying a WGWA social get-together again.

Student Liaison: Jim Drought suggested creating a new position within WGWA, a student liaison or student representative position. There seems to be interest in having the WGWA board nominate the liaison. Katherine indicated that it may be favorable for the liaison to be employed in industry as opposed to a graduate student, as this would be more helpful for undergraduates in WGWA and could also provide a little more continuity in the organization and in contacts with universities.

Next Board Meeting: TBD

Adjourned 1:05 pm

Nearly 97% of the world's water is salty or otherwise undrinkable.

Another 2% is locked in ice caps and glaciers.

That leaves just 1% for all of humanity's needs - all its agricultural, residential, manufacturing, community, and personal needs.



Selected Ground Water Related Conferences and Meetings (January – June 2010)

Conferences and Meetings

Feb. 22-23: 13th Annual Ground Water Industry Legislative Conference: NGWA Washington Fly -In (#5090), Washington, DC

Mar 19: WGWA Annual Meeting

Jan 28-29: 81st Annual Iowa Water Well Association Convention & Trade Show. Coralville, IA

Feb 18-19: Illinois Association of Groundwater Professionals Annual Meeting and Expo. Normal, IL

Mar 15-16: Michigan Ground Water Association 82nd Annual Convention, NGWA, Grand Rapids, MI

Apr 25-29: National Water Quality Monitoring Council Seventh National Monitoring Conference: Monitoring from the Summit to the Sea, Denver, CO

Selected Ground Water-Related Courses and Online Seminars

Feb 18-19: Design and Construction of Wells (short course #285), NGWA, Omaha, NE

Mar 2-4: Analysis and Design of Aquifer Tests Including Slug Tests and Fracture Flow (short course #192), NGWA, Westerville, OH

EPA Ground Water-Related On-Line Courses (free, see www.clu-in.org)

Jan 26: Implementation of Triad for Petroleum Brownfield's Cleanup and Reuse (12:00 -1:30 PM EDT)

Jan 26: Performance-based Environmental Management (2:00 -4:15 PM EDT)

Treasurer's Report

Transactions Between July 1 and September 30, 2009

Account Name	Withdrawals	Deposits	Total
Certificate of Deposit	—	—	\$5,388.92
General Funds			
Beginning Balance 07/01/2009			\$4,958.04
2009 Membership Dues	—	\$30.00	
Fall Field Trip Costs	\$1,042.00	—	
July Luncheon Registration		\$570.00	
July Luncheon Costs	\$796.54	—	
Expenses (Office, Postal, Printing, Banner, etc.)	\$434.17	—	
Web Site and Newsletter Services	\$602.33	—	
Telephone Conference Expenses	\$51.50	—	
Ending Balance 9/30/09			\$2,631.50
All Funds Balance 9/30/09			\$8,020.42

The 2010 Board, Committee, and Area Coordinators

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