

Waterworks

Kentucky Water Resources Research Institute at the University of Kentucky

Vol. 10, No. 2, 2004

KWRRI Director Leads Coal 2020 Conference Panel

KWRRI Director Dr. Lindell Ormsbee moderated a panel discussion on sustainability during the Coal 2020 Conference, co-sponsored by Cinergy Corp. and the University of Kentucky.



Kentucky Water Resources Research Institute Director Dr. Lindell Ormsbee

With its “Burning Questions” theme, the October 12th–13th conference brought together coal producers, researchers, political figures, and a variety of other concerned individuals to address major environmental, economic, and technology issues associated with coal production and use in the region. Dubbed “a national conference on the vital role of our most abundant and economical fuel in our nation’s energy future,” the event also marked the tenth anniversary the creation of Cinergy Corp.

Kentucky Governor Ernie Fletcher and UK President Lee Todd opened the conference, which featured distinguished panelists and speakers from around the country. Panel topics included “What Will Shape Coal’s Future,” “Where Will the Coal Come From,” “How Will the Use of Coal Change,” and “What Opportunities Exist for University and

Industry Collaboration on Future Research?”

The panel moderated by Dr. Ormsbee, “How Shall We Ensure Sustainability,” included presentations from U.S. Environmental Protection Agency Assistant Administrator Jeffrey Holmstead, Natural Resources Defense Council Policy Director David Doniger, Western Kentucky University’s Institute of Combustion Science and Environmental Technology Director Weiping Pan, Energy and Mineral Law Foundation President Thomas Meng, and Purdue University’s Center for Coal Technology Research Director F.T. Sparrow. The panelists discussed the proposed Clean Air Interstate Rule (CAIR), SO₂ and NO_x levels, CO₂ emissions trends, reduction of mercury through Selective Catalytic Reduction combined with Flue Gas Desulfurization, litigation’s effects on the drive toward sustainability, and the Midwest’s “clean coal revolution.”

For more information on the “Coal 2020: Burning Questions” conference, visit <http://www.cinergy.com/coal2020>.

KRWW Website Launches

The Kentucky River Watershed Watch, a tax-exempt, non-profit corporation whose membership focuses on water quality monitoring and improvement efforts within the Kentucky River Basin, launched its website in November.

Containing notices of funding opportunities, Citizen Action Plans for watershed improvements, data reports, and other information on the basin’s priority watersheds, the site is located at <http://www.uky.edu/OtherOrgs/KRWW>.



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Meet the Researchers: Randall L. Paylor and James C. Currens



Randy Paylor analyzes data from ongoing urban karst research

other urban activity appears to increase groundwater flow significantly. Typical wastewater and water supply infrastructure has been estimated to lose from 8% - 60% of its flow to underground leakage and is likely a major factor in the observed base flow change.

This study proposes to monitor three karst springs in the Bluegrass Region that show the most significant deviation from normal base flow. Monitoring the impacted springs will quantify urban pollution that is reaching the karst aquifer and will help determine the source of groundwater impacts. Russell Cave Spring and McConnell Spring in Lexington and Big Spring in Versailles are the target monitoring points. McConnell Spring discharges into Wolf Run, a tributary to 303(d) first priority Town Branch. Russell Cave Spring discharges into 303(d) second-priority North Elkhorn Creek, upstream of the backup water intake for the City of Georgetown. Big Spring feeds into Glenn's Creek, and all three locations eventually flow into the Kentucky River.

Information from the study will be relevant to any location where urban areas overlay karst aquifers. The study will provide learning opportunities for Kentucky Geological Survey student interns, and the results can be used to educate residents, businesses, and local agencies in best management practices to minimize targeted pollutants and to identify infrastructure problems.

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Education

M.S. in progress, Geology
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Education

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Current Research

Characterizing pollution impacts to urban karst aquifers from artificial and enhanced recharge

Pollution in urban areas has been documented extensively throughout Kentucky and is one of the top three contributors to impairments of surface streams in the Commonwealth. Well-developed karst terrain occurs in 25% or more of Kentucky, and many of the largest urban areas are built on karst. Little filtering or degradation of the pollutants occurs before reaching groundwater in karst areas because

of the relatively rapid water movement.

Recent research of base flows at karst springs in Kentucky identified an undocumented groundwater effect within the urban areas. When compared with rural karst springs, the springs located in urban areas discharge from two to ten times their predicted base flows. Increased impervious surface in urban areas is known to reduce precipitation infiltration and natural groundwater recharge. However, artificial or enhanced recharge from leaking infrastructure, lawn watering, and

Call for Abstracts

Kentucky Water Resources Research Institute Annual Symposium

The Kentucky Water Resources Research Institute's Annual Symposium encourages information transfer by providing opportunities for individuals conducting water-related work (e.g., research, management, education) to discuss their findings, preliminary or final, with others interested in the waters of the Commonwealth. The 2005 Symposium will take place on Thursday March 3, 2005, at Marriott's Griffin Gate Resort (1800 Newtown Pike, Lexington).

KWRRI invites abstract submissions of recent or ongoing water research or other related environmental activities. Authors should limit abstracts to two (2) pages, including illustrations, utilizing the following format:

ABSTRACT TITLE CENTERED AND IN CAPS

Principal Investigator(s)
Mailing Address
Phone Number
Email Address

The abstract's text should be single-spaced, 12-point Times New Roman (similar to this typeface), with double-spacing between paragraphs. One-inch margins at the right and top and 1.25-inch margins on the left and bottom are required in order to fulfill binding and page numbering needs. Illustrations, including figures, maps, diagrams, and graphs, should be clear, legible, and suitable for black and white duplication. Do not include photographs in your abstract.

The following methods of submission are acceptable:

1. email attachments (Word or Word Perfect format) sent to kipp@uky.edu;
2. email body sent to kipp@uky.edu;
3. Word or WordPerfect file on diskette submitted to the KWRRI address below; or
4. original paper copies if electronic transmission is not possible.*

All paper copies **must be camera ready.*

The deadline for receipt of abstracts is January 17, 2005. Authors should clearly indicate the preferred format for their presentation (platform or poster) in the original abstract submission.

Authors will be notified of acceptance in early February and will be expected to present on March 3. Abstracts will appear in the printed proceedings, which will be distributed at the Symposium. It is anticipated the platform presentations will be 20 minutes in length.

Proposals for theme sessions may also be submitted. Volunteers for organizing/moderating such sessions should indicate their interest(s). In addition, a limited amount of space is available for poster presentations and exhibits. If you are interested in hosting a theme session or placing an exhibit at the Symposium, or if you have questions, please contact Jim Kipp.

Symposium Inquiries

James A. Kipp, KWRRI
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Sponsors

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Ohio River Basin Commission
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KENTUCKY RIVER WATERSHED GRANT ANNOUNCEMENT

In 2003, the Kentucky River Authority initiated a Watershed Grant Program to provide financial assistance to local groups interested in engaging in watershed education, management or water quality sampling activities. Grants of up to \$2,500 were awarded to four applicants in the spring of 2004. These included Boyle County High School (Clarks Run, Boyle Co.); Kentucky Riverkeeper (Muddy Creek, Madison Co.); Town Branch Trail, Inc. (Town Branch, Fayette Co.); and Letcher County Sewer and Water District (North Fork Kentucky River, Letcher Co.). Further details about the 2004 grant recipients can be found online at <http://www.uky.edu/OtherOrgs/KRWW>.

Based on a positive response from basin residents and the continuing willingness of the River Authority to assist grass-roots interest in improving Kentucky River watersheds, the KRA Board renewed their watershed grant program for FY2004-05 and increased program funding to \$15,000. The Kentucky River Authority is now soliciting

applications for the second round of watershed grants.

ELIGIBILITY

Local groups wanting to:

- increase interest and understanding of the water quality within a local watershed;
- educate public or students about local water quality status;
- improve water quality of local water bodies; and
- engender an appreciation of community water resources.

Grants will be awarded to legal non-profit organizations, such as schools, city/county agencies, environmental groups, youth organizations (e.g., Boy Scouts, Girl Scouts), etc.

FUNDING LEVELS

Grants of up to \$3,000 will be awarded to individual applicants.

WHY APPLY?

Water resources within the Kentucky River Basin provide a variety of functions and benefits to the basin's communities. These include recreational opportunities, drinking water, habitat for fish and other wildlife, and scenic attractions for tourists and residents. Protecting and improving water resources in the Kentucky River Basin will benefit current residents, as well as those of future generations.

IMPORTANT DATES

Completed applications should be mailed by February 28, 2005. Grants will be awarded in May 2005.

SEND APPLICATIONS TO:

KWRRI

Attn: Malissa McAlister

233 Mining & Mineral Resources Bldg

Lexington, KY 40506-0107

Ph: (859)257-1299

E-mail: mlmcal2@uky.edu

NATIONAL INSTITUTES FOR WATER RESOURCES AND U.S. GEOLOGICAL SURVEY

WATER RESOURCES RESEARCH NATIONAL COMPETITIVE GRANTS PROGRAM REQUEST FOR PROPOSALS, FY 2005

The U.S. Geological Survey in cooperation with the National Institutes for Water Resources requests proposals for matching grants to support research on the topics of water supply and water availability, which are issues of importance nationwide.

Proposals are sought in not only the physical dimensions of supply and demand, but also quality trends in raw water supplies, the role of economics and institutions in water supply and demand, institutional arrangements for tracking and reporting water supply and availability, and institutional arrangements for coping with extreme hydrologic conditions.

Any investigator at an institution of higher learning in the United States is eligible to apply for a grant through a Water Research Institute or Center established under the provisions of the Water Resources Research Act of 1984, as amended.

Proposals involving substantial collaboration between the USGS and university scientists are encouraged.

Proposals may be for projects of 1 to 3 years in duration and may request up to \$250,000 in federal funds.

Successful applicants must match each dollar of the federal grant with one dollar from non-federal sources.

Proposals must be filed on the internet at <https://niwr.org/> by 5:00 PM, Eastern Standard Time, February 22, 2005, and must be approved for submission to the National Competitive Grants Program no later than 5:00 PM, Eastern Standard Time, March 4, 2005, by the Institute or Center through which they were submitted.

The Government's obligation under this program is contingent upon the availability of appropriated funds.

Notice of Free Erosion & Sediment Control Workshops For Construction Site Personnel

Due to popular demand - and some additional support - Tetra Tech has offered to conduct seven free day-long workshops on Erosion and Sediment Control for Construction Sites in 2005. During 2003-04, 1200 people attended 20 such workshops in 15 Kentucky cities.

The workshops are primarily for construction site supervisors, equipment operators, site inspectors, public agency staff, and anyone else involved in erosion and sediment control and stormwater management.

All attendees will receive at least one free copy of the *2004 Kentucky Field Guide to Erosion Prevention and Sediment Control at Construction Sites*. An electronic copy of the field guide is posted at http://www.watershedtraining.net/pdf/esc_guide.pdf.

The EPA and state Division of Water have been increasing inspections and oversight of construction projects. The Tetra Tech workshops will provide an overview of federal and state stormwater regulations that require erosion and sediment control plans, practices, and inspections, as well as information on how to implement erosion and sediment control BMPs that minimize soil runoff and meet the regulatory requirements.

Local workshop sponsors will not be charged for hosting; however, they will be asked to secure a workshop location, manage promotion, and provide refreshments and necessary equipment for the presentations.

For additional information, contact Barry Tinning at barry.tinning@tetrattech.com, or phone 859-499-0712.

KEPPC Environmental Protection Scholarships

Environmental Protection Scholarships are available to college juniors, seniors and graduate students. The Environmental and Public Protection Cabinet, Dept. for Environmental Protection (DEP) sponsors this program through KWRRI. Scholarships will be awarded to students in academic disciplines that are of critical need to the Cabinet. The number of scholarships awarded depends on availability of funds.

Scholarships cover the cost of in-state tuition, room/board, books, and fees. The amount of support is determined by the Financial Aid office at the respective university. Scholarship recipients are obligated for employment with the DEP following graduation, at the rate of six months of employment for each semester of financial aid received.

Applicants must be or become full-time students who, by their initial funded semester, will have completed a minimum of 60 semester hours, or met the entrance requirements for graduate school. Applicants must be enrolled in a public university in Kentucky. Major course work must be in an academic discipline of need to the Department.

Scholarship recipients will be selected on a competitive basis. Selection criteria include: GPA, a written essay, letters of recommendation by faculty advisors, and evidence of leadership/service. A state university advisory board of the KWRRI will review all applications and make their recommendations to the DEP.

For additional information, visit www.uky.edu/WaterResources, or contact:

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Previous issues of Waterworks can be viewed on the KWRRI web site at <http://www.uky.edu/WaterResources>



From Director Lindell Ormsbee

Greetings from UK. This has been an incredibly busy Fall semester. In addition to our normal project activities, the Institute has been actively involved in several issues that affect our state ranging from the environmental impacts associated with energy production to stream water quality and TMDLs. As noted in the introductory article of the newsletter, in October, I had the opportunity to chair a panel discussion at this year's Coal 2020 Conference. In November, I had the opportunity to testify before the governor's Energy Task Force on behalf of the Kentucky Environmental Quality Commission. I have also had the privilege of serving on Secretary Wilcher's Task Force on Blackwater Issues this year, and we hope to have a final report completed at the end of December. I am very optimistic that this report will provide some new BMPs for the coal industry that will hopefully minimize if not eliminate most of the blackwater releases in the state of Kentucky.

The Institute continues to provide administrative support to the Kentucky Research Consortium for Energy and Environment, and we are pleased to report that the Consortium received the remaining \$2 million dollars in support as part of the overall \$5 million earmark. At this point we are supporting ten separate research teams that are involved with 15 different projects. We hope to finalize a new web site associated with the Consortium next quarter.

We continue to investigate ways to improve the water quality of the waters of the Commonwealth. Currently, we have three different water quality assessment projects underway. Additionally, as discussed in the newsletter, we are pleased to announce the launch of a new web site in support of the Kentucky River Watershed Watch through a contract from the Kentucky River Authority. The web site will provide direct citizen access to previous annual monitoring

reports as well as actual data. In addition, the site can be used to track the progress of ongoing watershed management projects in priority basins.

We are pleased to note that we were recently notified by the USGS that our program received a positive five year evaluation. This is largely a tribute to the efforts of Jim Kipp, who served as acting Director over the last three years. Among the comments of the reviewers was the commendation "for its efforts to involve a number of other educational institutions in Kentucky in water resources research and information transfer programs."

Don't forget to put Thursday, March 3rd, on your calendar. That is the day for our annual conference. This year we will celebrate the 40th anniversary of the Institute, and several special events are being planned. We hope you will be able to join us for what promises to be an outstanding conference.