



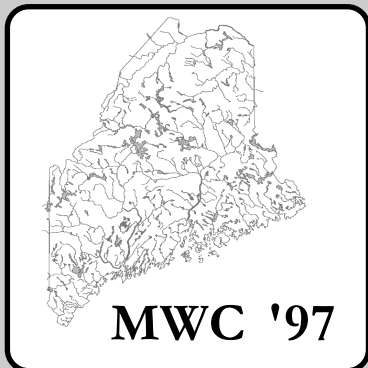
Autumn 1996

Vol. 2 • No. 3 • Published Quarterly

Maine Water Conference '97

Augusta Civic Center

April 18, 1997



Call for Titles & Session Proposals

Deadline: November 7, 1996

The Maine Water Conference (MWC) was founded in 1994 by the Water Research Institute as an annual forum for water resource professionals, consultants, citizens, researchers, students, regulators, and planners to exchange information and present new findings on water resources issues in Maine. MWC '97 will take place April 18, 1997 at the Augusta Civic Center. The format will include a morning plenary session, followed by four afternoon concurrent sessions. Poster presentations and commercial displays are also welcome.

This call for titles is seeking titles for presentations and/or sessions, along with a brief description (limit: 1/2 page). We will use this information to develop concurrent session topics, and group papers appropriately.

Continued on Page 3

Safe H₂OME Program

For many people, "home sweet home" means a safe and clean environment to raise a family. Few parts of that environment are as important as clean drinking water, and Maine residents can participate in a University of Maine Cooperative Extension program to protect the quality of the groundwater around their homes. The Safe H₂OME program offers information and guidelines to reduce the possibility of contamination from septic systems, lawns, garages and other areas.

Homeowners are also encouraged to have their wells tested through the state's Environmental Testing Lab in Augusta.



Continued on Page 3

Project WET



Over 200 educators in Maine have participated in Project WET workshops since the first one was offered in October of 1995. Results have been positive and demand is high; reserve a place for yourself or school staff early.

On Nov. 9th, Penobscot River Keepers 2000 will sponsor a Project WET (Water Education for Teachers, K-12) workshop at the Page Farm & Home Museum, UMaine. Participants will gain first hand experience of interdisciplinary Project WET and receive the guide with 91 activities, plus other local and state water related resources. CEU's are available. Connections with Maine's legislated Learning Results and the Maine Math Science Alliance "Math/Science Curriculum Frameworks" will also be included.

Continued on Page 2



Katz-Weathers Bioremediation Project

Scientists are putting bacteria to work on a startling range of activities from stripping paint off military vehicles to producing insulin for diabetics. Two UMaine faculty members are now investigating the possibility that microbes can clean-up groundwater contaminated with hazardous chemicals. The process depends on iron and is an example of a promising new technology known as bioremediation.

Lynn Katz and Lenly Weathers, UMaine Civil and Environmental Engineering, are focusing their efforts on a system which uses iron and a type of anaerobic bacteria that grow by corroding iron. Project goals are to determine the best conditions under which the iron-bacteria system can remove toxic compounds containing uranium and chromium from groundwater. Katz is an expert on the behavior of metals in water and wastewater and has studied reactions between soil particles and metals and other contaminants.

Their work is supported by a \$356,089 three-year grant from the U.S. Department of Energy (DOE). Compounds containing chromium and uranium are common pollutants at DOE-owned and industrial sites around the country. "Most of the time, corrosion of iron by bacteria is a problem," says Weathers. "It results in leaking underground gas tanks and polluted groundwater. We're turning that process on its head to clean up pollution." One undergraduate and two graduate students are part of the research team. The lab studies will be carried out in Aubert and Boardman halls, and analytical work will be done at the UMaine WRI.

In a previous study at the University of Iowa, Weathers has already shown that bioremediation can work on groundwater containing chloroform and carbon tetrachloride. These two pollutants can cause cancer and are frequent contributors to groundwater contamination at industrial sites.

Contributor: Nick Houtman, UMaine

Richard Fontaine

"New" USGS District Chief

On August 5, Richard A. Fontaine returned to the USGS office in Maine as the new District Chief, replacing Derrill Cowing who transferred to Idaho in February. Rick began his career in the Maine office in 1976, following graduation from the University of Maine with a Master of Civil Engineering degree. Rick has specialized in all phases of surface-water data collection, analysis, and modeling and is author of 28 papers and reports. He became Surface-Water Specialist for all 6 New England States in 1984. Rick transferred to Hawaii in 1991 to serve as Surface-Water Specialist and in 1995 he also assumed the duties of Data-Section Chief.

Rick will be contacting major cooperators and water resources data customers this fall.

Contributor: William Bartlett, ME USGS

Project WET

(continued from Page 1)

Project WET has recently released a new resource, *"Discover a Watershed: The Everglades"*, developed for formal and nonformal educators of middle and high school students and beyond. This comprehensive resource is divided into three parts: a reference section that includes the natural and human history of the watershed; contemporary issues and potential solutions; and learning activities.

Project WET's sister program, Project Learning Tree (PLT), also includes water quality activities, especially as they relate to forested watersheds. PLT is in the process of upgrading their *tree trunks full of forestry tools* to now include soil augers and soil color charts with accompanying activities. Educators can arrange to use the trunks within classroom settings.

Project WET is jointly sponsored by the UMaine WRI and the Department of Conservation. Poland Spring Bottling Co. and Maine Water Utilities Association continue to be strong supporters. Contact Project WET Coordinator, Mary Ann McGarry, (tele: 827-4582) for additional information or to register for any of the above mentioned programs.



Maine Water Conference '97

This announcement is also seeking topics for half-day concurrent sessions that would have 5 to 8 talks, a panel discussion, field trip, or workshop, on topics of statewide significance or emerging importance. Please send no more than 1 page describing the topic and some example talks or speakers. As examples:

- Issues pertaining to water quality in the industrial forest may be appropriate because of the forestry referendum.
- Dioxin in Maine waters may be relevant because of the recent state goal to eliminate dioxin fish advisories in Maine within 5 years.
- Emerging issues on legal or health aspects of water resources in Maine relating to the Safe Drinking Water Act.

Session Topics Deadline: November 7, 1996.

PLEASE SEND IDEAS AND PROPOSALS TO:

MWC ORGANIZATION COMMITTEE

Water Research Institute, University of Maine, Orono, Maine 04469
tele: 207/581-3244 fax: 207/581-3290 email: WRILINES@maine.maine.edu

Posters and displays by organizations, agencies, departments, consultants and businesses will also be accepted. Please contact the WRI for information. The deadline for registering posters and displays is March 15, 1997.



Safe H₂OME Program

With support from a U.S. Dept. of Agriculture grant over the past two years, Extension staff have been offering the program and testing wells in the Royal River watershed near Yarmouth. Results indicate that 27 percent of the wells tested are contaminated with total coliform bacteria. This class of micro-organisms commonly occurs in soil, and their presence in well water indicates a potential problem with the well. Moreover, 15 percent of wells tested have had contamination by fecal coliform bacteria which are found in animal and human wastes from such sources as faulty septic systems, road runoff and waste storage areas.

According to John Jemison, Extension water quality specialist, water-quality problems can stem from the condition of the well itself or the proximity of poorly maintained septic systems. Improper use or disposal of fertilizers, pesticides or petroleum compounds can also lead to well contamination by chemicals, says Jemison. To fix problems with bacteria, homeowners can easily disinfect their wells with a chlorine bleach solution. In addition, Jemison also suggests that potential sources of contamination be found and corrected to prevent problems in the future.

Chemical pollution includes nitrate and arsenic, problems that cannot be fixed by disinfecting the well. Nitrate comes from fertilizers and the natural breakdown of organic materials such as plants and wastes. Tests for nitrate in the Royal River watershed have not found levels high enough to cause health concerns, but statewide, nitrate is common in groundwater. Concentrations of nitrate over 10 parts per million have been shown to cause blue-baby syndrome in newborn infants, a rare condition that can be fatal. No infants in Maine are known to have died from this condition.

Some Royal River watershed wells have been shown to have high levels of arsenic. Statewide, about 8 percent of wells tested exceed the federal standard of 0.05 parts per million. Arsenic comes from naturally occurring minerals in the soil and bedrock, and in the past, it has been used in pesticides. It is still commonly used in wood preservatives. At high levels, arsenic can cause a variety of health problems, including cancer. Water treatment systems can remove excessive arsenic, but they tend to be expensive.

Information about the Safe H₂OME program is available from county Extension offices. There is a \$3 charge for materials. Well tests can be arranged with the State's Environmental Testing Lab in Augusta (tele: 287-2727).





The Water Research Institute
at the
• University of Maine •



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Maine's Groundwater Digest

Maine's Groundwater is now available as the latest issue of the series "*Maine Geographical Digest*". This issue focuses on the origins of Maine groundwater sources and summarizes facts about Maine's groundwater use, threats to groundwater quality, and actions that safeguard groundwater sources.

This 16 page digest is highlighted with photographs, graphs, and maps showing groundwater features from reports by the Maine Department of Environmental Protection, U.S. Geological Survey and other state agencies. The Maine Geographical Digest series was prepared by Sherman Hasbrouck, adjunct natural resources specialist with the UMaine WRI.

Previous digests available in the *Maine Geographical Digest* series include: Maine Lakes, Maine Seacoast and Maine Rivers and Streams. The series is available by annual subscription for \$25 (includes a three-ring binder, an introduction, and an index) or by individual digest for \$2.00 each. Orders must be prepaid and made in writing to the UMaine WRI.

See the WRI at:

<http://WWW.ume.maine.edu/~wri>



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