



The Massachusetts Water Resources Research Center

supports research, education, and outreach on water resources issues of state, regional, and national importance as part of the national system of institutes authorized under the Water Resources Research Act of 1964. Established in 1965, the Center has been a unit of The Environmental Institute since 1984. The Center supports faculty research and training of graduate students and is a national leader in the use of volunteers for high quality water quality monitoring of surface waters. The Center's primary objectives are to conduct research responsive to state and regional needs; support the education and training of students; and disseminate information on water resources research and methods.

The Center encourages an interdisciplinary approach to address water resources problems and has involved the University and many other Massachusetts colleges and universities in Center research over the years. The Center operates a statewide competitive grants program open to all academic institutions in Massachusetts. Current research priorities include watershed and ecosystem management, non-point source pollution, drinking water supply, and water quality.

Last year, the MA WRRC continued to support one innovative research project: *Monitoring Estrogenic Hormones – Undesired Fish Contraceptives, and Investigating their Sources, Transportation and Fate in Buzzards Bay, Mass.* by Dr.

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Yuegang Zuo of UMass Dartmouth, and supported one graduate student, Ashish Sahu of the UMass Amherst Civil and Environmental Engineering Dept. to study *Perchlorate Reduction in Groundwater Using Elemental Sulfur*.

In 2007, the Center awarded a second year grant for *Hydromorphological Signatures to Determine Flow Related Habitat Thresholds for Instream Communities*, led by Scott Jackson of UMass Natural Resources Conservation, Piotr Parasiewicz of Mt Holyoke College, and Christina Cianfrani of Hampshire College, and the first of a two-year grant to Dr. Baoshan Xing of the UMass Plant, Soil, and Insect Science Dept. to study *Environmental Behaviors of Engineered Nanoparticles in Water*.

A UMass Amherst graduate student project on *Development of a standardized protocol for fish bioassays detecting estrogenic exposure*, by Lauren Moffat of the Animal Biotechnology and Biomedical Sciences Dept. is also supported this year through the WRRC grant program.

The Acid Rain Monitoring project volunteers continue to survey pH and alkalinity for 150 sites. Of these, twenty-six long-term sites are analyzed further for major anions, cations, and color. This WRRC program updates information on acid deposition impacts on Massachusetts surface waters, and analyzes long-term trends in lakes and streams. A related project is the ARM database project, which has made the full ARM database of water chemistry (more than 40,000 records covering more than 20 years) available to search and download by all web users.

Another WRRC program, the Massachusetts Water Watch Partnership, provides technical assistance to citizen groups to

monitor and remediate water quality problems.

The Center continues to work with UMass Extension to examine the barrier effect created by road crossings on streams. The team is running pilot surveys of crossings in several watersheds, involving volunteers in developing an inventory of existing crossings. The project will result in a priority scheme for culvert replacement on a watershed basis.

A new Center project examines the concept of Watershed Community, employing a variety of approaches including use of information technology to enhance individual and community relationships with local landscapes.

The Center is also working on a stormwater clearinghouse project that enables users to search the web for stormwater Best Management Practices and to find innovative technologies available to treat stormwater (www.mastep.net).

The fourth annual MA WRRC Conference, *Sustainable Waters in a Changing World: Research to Practice*, was held on April 9, 2007. The fifth annual conference will be held on April 8, 2008.

CENTER

Paula Rees
INTERIM DIRECTOR

Marie-Françoise Walk
ASSOCIATE DIRECTOR

Jerry Schoen
MA WATER WATCH PARTNERSHIP DIRECTOR

Miira Wirth
INFORMATION TRANSFER SPECIALIST

Contact Information

Mass. Water Resources Research Center
Blaisdell House, 310 Hicks Way
University of Massachusetts
Amherst, MA 01003
E-Mail : wrrc@tei.umass.edu
Web : <http://www.umass.edu/tei/wrrc/>
Phone: 413.545.2842 Fax: 413.545.2304