



# Summary

## WRRC Activities

### Fiscal Year 2006

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#### Current Water Research Projects Supported with USGS Funding

- *Hydromorphological Signatures to Determine Flow Related Habitat Thresholds for Instream Communities*, 2006-2008. Piotr Parasiewicz, University of Massachusetts Amherst and Christina Cianfrani, Hampshire College.
- *Monitoring Estrogenic Hormones – Undesired Fish Contraceptives, and Investigating Their Sources, Transportation, and Fate in Buzzards Bay*, Massachusetts, 2005-2007. Yuegang Zuo, University of Massachusetts Dartmouth.
- *Perchlorate Reduction in Groundwater Using Elemental Sulfur*, 2006-2007 Ashish Sahu, University of Massachusetts Amherst (graduate student).
- *A Regional Approach to Conceptualizing Fractured-Rock Aquifer Systems for Groundwater Management*, 2004-2007. Steve Mabee and Michelle Cooke, University of Massachusetts Amherst.

#### Upcoming New USGS-funded Research Projects

- *Environmental Behaviors of Engineered Nanoparticles in Water*, 2007-2009. Baoshan Xing, University of Massachusetts Amherst.
- *Development of a standardized protocol for fish bioassays detecting estrogenic exposure*, 2007-2008. Lauren Moffat, University of Massachusetts Amherst (graduate student).

#### Recent Completed Research Projects

- *Sources of E. coli during Wet-Weather Events*, 2005-2006. Sarah Dorner, Department of Public Health and WRRC, University of Massachusetts Amherst.
- *Cryptic Marsh Birds as Bioindicators of Wetland Health*, 2005-2006. Brian Tavernia, Tufts University (graduate student).

#### Massachusetts Water Watch Partnership

- Published a guide for Quality Assurance Project Plans for coastal groups under contract with MA Coastal Zone Management Program, written in collaboration with the Salem Sound Coast Watch. Responded to an RFP issued by the Executive Office of Environmental Affairs for a similar guide for inland monitoring and an associated training program (pending).
- Continued to assist the volunteer monitoring community. Conducted a two-day training workshop on benthic macroinvertebrate monitoring and provided consultation assistance and equipment loans to numerous monitoring groups. Volunteer monitoring activities may increase in the coming year with additional state support for volunteer monitoring efforts through a \$250,000 legislative appropriation for volunteer monitoring grants.
- Continued collaboration with UMass Extension on the *Stream Continuity project*, which organizes and trains volunteers to conduct visual surveys of culverts, bridges and other stream crossings to determine their impacts on movements of aquatic and other wildlife.

#### Acid Rain Monitoring

- Continued work on the *Acid Rain Monitoring Project* for the sixth consecutive year under a contract with the MA Department of Environmental Protection. A total of 150 sites were sampled among with 26 long-term sites for more detailed analyses. Data has been entered and is being analyzed to determine long-term trends. Organized a meeting of experts to advise MA DEP on acid deposition research needs in Massachusetts.

## Stormwater Project

- **Completed** – Staff concluded the initial 2-year phase of the *Massachusetts Stormwater Technology Evaluation Project* in collaboration with the Engineering, under contract with the MA Department of Environmental Protection. Related to this project, the WRRC has been asked to submit a proposal to the Imbrium Corporation to conduct a one year performance test of the Stormceptor stormwater treatment unit.
- **Starting** – A contract has been issued to WRRC to undertake phase two of the project which will run three years. The project goal is to continue to provide technology transfer information on innovative stormwater BMP. The project team will maintain and update the database in place ([www.mastep.net](http://www.mastep.net)) and will continue to expand the database by adding information pertaining to more than twenty new proprietary BMPs and ten conventional and ten low impact development BMPs.

## Information Technology Applications for Watershed Education

- MEMEX-Microsoft funding supported collaborations with the Computer Science Department to undertake a *Community Journaling Project*, exploring the use of information technology in natural and cultural resource-based research, education and recreation.
- Submitted a paper to the 16<sup>th</sup> International World Wide Web Conference.
- Collaborated with the History Department and the University's Community Service Learning Program along with several community organizations to offer a public history course on the environmental and industrial history of Athol and the Millers River. Related proposals have been submitted to continue these and similar collaboration.

## WRRC Conference 2007 Themes and Planning

- Conference Date - April 9, 2007
- Four Concurrent Tracks under development
  - *Water, Climate, and Ecosystems*
  - *Transboundary Waters*
  - *Managing Water Resources for Sustainability*
  - *Water Science, Community and Information Technology*
- Keynote speaker: Evan Dollar of Natural Resources & the Environment, Council for Scientific and Industrial Research, South Africa
- Sponsors and Exhibitors