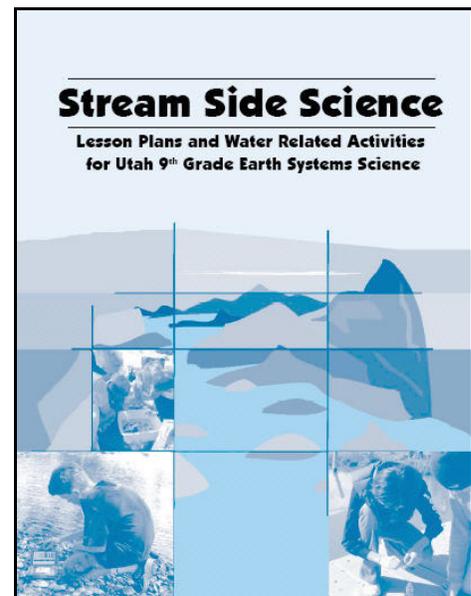




## Stream Side Science Education Program



- USU Water Quality Extension has been using stream monitoring techniques for several years to teach about NPS pollution and watershed functions, reaching on average over 5000 youth each year.
- Evaluation of activities found that many teachers were not confident in their knowledge of water quality science, wanted specific lesson plans, and were unwilling to take students out of the classroom because of safety or financial concerns.
- The evaluation process also identified increasing need for teachers to focus on core curriculum standards with end of year testing in mind. Additionally, teachers wanted graduate level credit for time spent in training.
- In response to teacher input, the Stream Side Science curriculum was developed, consisting of a series of 11 lesson plans developed around stream and wetland monitoring education activities. Each lesson plan stands alone, so teachers can use one or all of the activities, but combined they address about 1/3 of the standards and learning objectives for Utah's 9<sup>th</sup> grade Earth Systems Science core curriculum.
- The manual provides instructions for each lesson, background information and additional discussion questions, and tips on math connections, graphing, and data presentation. The manual also includes handouts, field sheets, and an Appendix with additional information including information on acquiring materials, tips on working with kids in the field, and suggestions on how to use the manual in the classroom instead of by a stream.



*The goal of the Northern Plains and Mountains Regional Water Program is to protect and improve the quality of water resources by facilitating development, delivery, and implementation of new and existing practices throughout the region.*

- The finished curriculum is clearly aligned to core standards for Earth Systems Science. It provides specific classroom and field instructions, background information, a set of questions and answers to promote class discussion, handouts, and suggestions on “bringing the stream to the classroom” when travel budgets and time constraints do not allow field activities.
- In September 2004, Utah’s Governor Olene Walker “launched” the Stream Side curriculum at the state NPS conference. She also officially endorsed it as the chosen curriculum for her statewide Watershed Initiative.
- The Region 8 Water Quality Team took this task on as a regional project with Montana State University using the curriculum as a text for an online graduate course in education. A small amount of Regional programming funds were used to develop a Higher Education proposal to expand the program to meet teacher needs, funded in the amount of \$100,000
- This program will offer distance and campus learning opportunities as a part of MSU’s National Teacher Enhancement Network (NTEN). Online teaching media will make the course available to students nationwide and worldwide.
- The Stream Side Science Program seeks to empower teachers by developing a model, multidisciplinary, online course that is offered to secondary science teachers and upper division science education majors within MSU’s Master of Science in Science Education (MSSE) program
- The Stream Side Science Program will be offered twice during a two-year grant period and has utilized the partnership of four CSREES regional water quality programs and personnel: Dr. Nancy Mesner of Utah State University, Dr. James Bauder of Montana State University, Dr. Quentin Skinner of the University of Wyoming, and Dr. Reagan Waskom of Colorado State University.

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