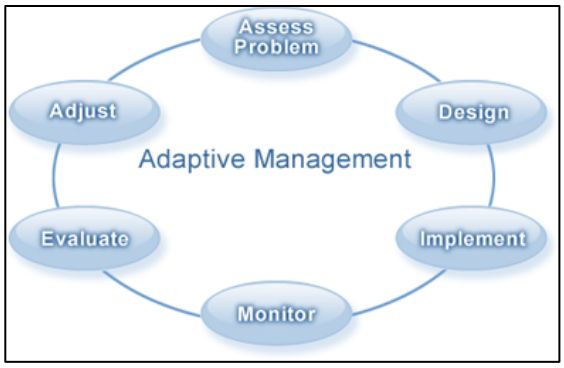
Keeping you up to date on South River Science Team activities Second Half 2012

At A Glance:
A Tool for Making Decisions in the Face of Uncertainty

Have you ever checked the weather forecast to see if you need an umbrella? If you have, then you've made a decision in the face of uncertainty.

Similarly, the South River Science Team is making decisions about ways to reduce mercury in the South River despite the uncertainties associated with both the complexity of mercury cycling and the dynamic South River system. To help the Science Team proceed with its work in the face of these uncertainties, the U.S. Army Corps of Engineers is developing a framework for enhanced adaptive management. Loosely defined, adaptive management is an iterative implementation process that couples remedial actions with active monitoring. Using this approach, the Science Team will implement remedial actions at specific river reaches (i.e., defined lengths of river) and use the monitoring data to reduce uncertainty and determine the effectiveness of the action. Enhanced adaptive management has an added structural component wherein the monitoring data results are integrated into a model and, based on the data, adjustments to the remedial action technology or application can be made. The framework is scheduled to be completed in 2013 and will be used to help design the first phase of remedial action in the river.



Adaptive management promotes flexible decision making in the face of uncertainty.

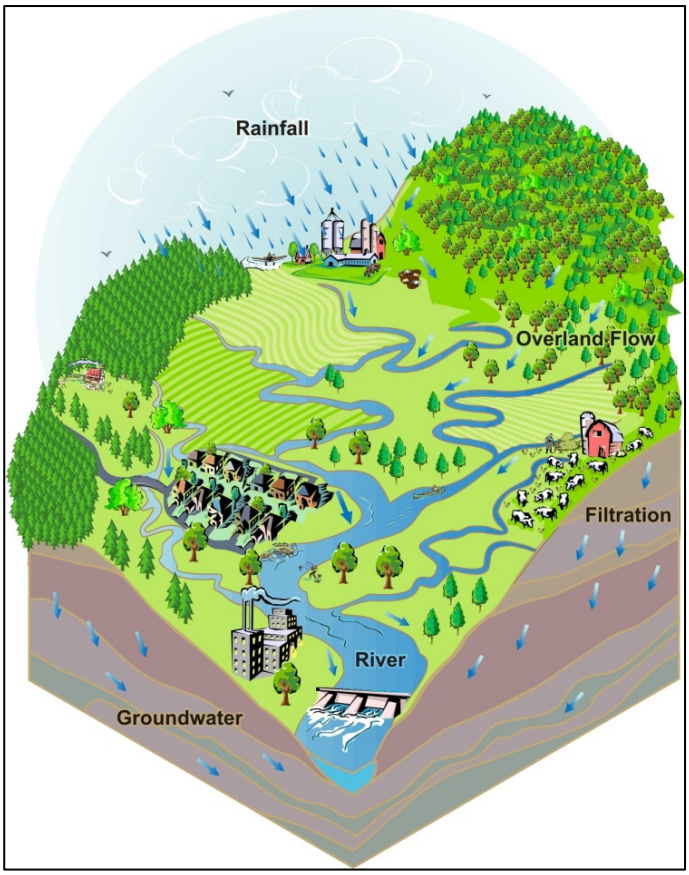
In This Issue…

About this Newsletter…

In the Fall 2000, the South River Science Team was formed to serve as a focal point for technical issues concerning mercury in the South River and downstream waterways. The Science Team is a cooperative effort between the Virginia Department of Environmental Quality, Department of Health and the Department of Game and Inland Fisheries and representatives from academia, citizens groups, the Environmental Protection Agency and DuPont. The Science Team provides technical direction for the mercury monitoring program and ensures that there is effective communication provided to the users of the river. The Science Team's goal is to understand why mercury in South River fish has not decreased over time and to identify potential solutions to improve the situation.

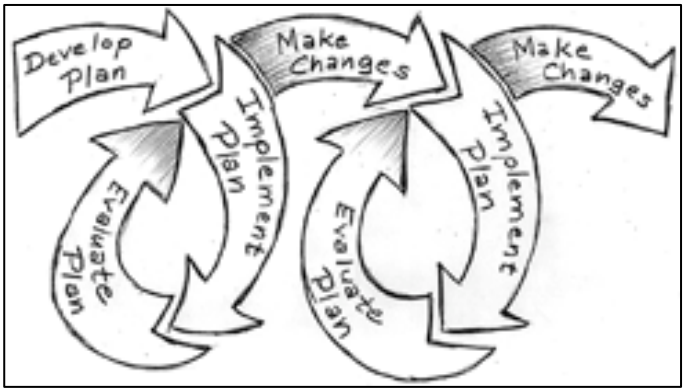
TechCorner:
Using a Watershed Management Approach

The South River Science Team plans to use a watershed management approach when making decisions about remedial actions along the South River. This approach will allow areas along the river to be prioritized based on existing data and potential remedial actions to be evaluated not only on their effectiveness in reducing mercury in the river, but also on their cumulative impact on the watershed. The Science Team believes that using this approach will lead to a logical and consistent method of decision making, allow the selection and implementation of remedial actions based on good science, and achieve the most efficient use of resources.



According to the U.S. Environmental Protection Agency, a watershed is "the area of land where all of the water that is under it or drains off of it goes into the same place."
Source: www.beavercountyconservationdistrict.org

The idea of watershed management originated as part of the Clean Water Act, but has gained recent attention as a flexible way to integrate and evaluate all of the factors that influence water quality in a particular watershed. While a typical plan for remedial action focuses on addressing environmental impacts separately, a watershed approach considers the cumulative impact of the action on various aspects of the watershed. Weaving the watershed management approach into its decision making will allow the Science Team, where possible, to select and implement remedial actions that reduce mercury *and* benefit other areas of the watershed.



The iterative nature of the watershed management approach aligns with the Science Team's efforts in developing an enhanced adaptive management framework. Source: EPA 841-B-08-002

By nature, watershed approaches can have varying goals, objectives, and study elements. Yet all watershed approaches must be guided by three common principles. They must be geographically focused, involve partnerships, and use management techniques based on strong science and data. The collaborative work of the Science Team over the past several years has resulted in significant progress in characterizing the geology, hydrology, and biology in specific river reaches (i.e., a defined length of river). (This work has been routinely highlighted in past issues of this newsletter.) With this scientific basis, the Science Team's next task will be to set remedial action goals and objectives; select priority areas along the South River for remedial actions; and develop, implement, and evaluate remedial action plans in an iterative manner. The iterative nature of this process will allow the Science Team to make decisions based on the best possible information and to adjust remediation efforts based on real-time monitoring data.

For more information about watershed management or how the Science Team will use this approach, contact Dave Hirschman (Center for Watershed Protection) at (434) 293-6355 or djh@cwp.org.

From the Team…
Promotores Training Offered in Waynesboro

The Promotores de Salud is training a new group of lay health providers (i.e., Promotores) in the Waynesboro area, continuing its efforts in disseminating information and educating the Hispanic community about the details of the fish consumption advisories along the South River and South Fork Shenandoah River. As highlighted in the Second Half 2011 newsletter, the South River Science Team is partnering with the Blue Ridge Area Health Education Center (BRAHEC) at James Madison University, which coordinates and conducts the training. Last September, 18 individuals from the Harrisonburg area became certified Promotores.

With help from local organizations and residents, the BRAHEC began a new 40-hour certification training in October 2012 in Waynesboro. St. John the Evangelist Catholic Church and its Hispanic Outreach Coordinator, Jose Rodriguez, are providing space at the church for the training as well as tutoring and homework help for children while their parent is in class. In addition, Basic United Methodist Church's Casa de Amistad (House of Friendship) and Doña Rosie Cruz-Bermudez of the Waynesboro-Augusta Health Department are continuing to help with outreach efforts and with recruiting participants for the training.

Gricelda of Verona takes notes about the signs and symptoms of a heart attack. She will use the Spanish Science Team brochures shown in this photo when she completes her health contacts before the next class.

Gricelda of Verona, Andrea and Jorge of Waynesboro, and Nicolas of Harrisonburg simulate angioplasty on a body model during the training. A Cardiac Nurse, Mark Masonheimer, from Augusta Health Campus (AHC) taught the class about heart disease prevention and the AHC's new cardiac treatment center.

Seven people representing three countries (Hondoras, Chile, and various parts of Mexico) are participating in the training. The training is held weekly in two-hour increments for 20 weeks. Along with the fish consumption advisories, important health topics like nutrition and physical activity, reproductive health and prenatal care, and substance abuse prevention are discussed. To complete the course and become a certified Promotora or Promotor, a participant must attend 80% of the classes, complete weekly health contacts in which they communicate the advisories to friends and neighbors, pass the final exam, and learn to take blood pressure using a sphygmomanometer.

The program will continue through May 2014 and expand to include outreach to Arabic- and Russian-speaking populations.

For more information about the Promotores de Salud program, contact Joanna Jensen at (540) 568-5284 or jensenjb@jmu.edu.

Did You Know?
Recycled Science Team Materials = Caterpillar Habitat

A monarch caterpillar eats a milkweed plant.

An old proverb states "Use it up, wear it out, make it do, or do without." This adage must have been in the back of one South River Science Team member's mind when he volunteered to create monarch caterpillar habitats for second grade students at McSwain Elementary School in Staunton. Scott Gregory (URS Corporation) works in the Science Team's office on Main Street in Waynesboro, helping with the Science Team's field projects and participating in Science Team outreach. When Scott heard about the school's urgent need for help, he thought of the milkweed plants loaded with monarch caterpillars adjacent to the Science Team's pond amendment pilot project. Scott collected about 25 caterpillars from the area and created enclosures out of old plastic containers that had once been used by the Science Team for field activities. Milkweed plants from the pilot project area were placed in the enclosures, creating a viable caterpillar habitat. The second grade students took care of the caterpillars, cleaning out their habitats and adding fresh milkweed leaves when needed. When the caterpillars turned into monarch butterflies, teachers and students had a "release party" and set the butterflies free outside.

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