



At A Glance: Promotores to Help with Outreach Efforts

The Blue Ridge Area Health Education Center at James Madison University is partnering with the South River Science Team to increase awareness among Spanish-speaking individuals about the mercury fish consumption advisories along the South River and South Fork Shenandoah River. The plan is to train Promotores Health (“Health Promoters”) Information Specialists as community health and mercury educators. Specifically, the Promotores will be disseminating information and educating Spanish-speaking communities about the details of the fish consumption advisories

and the potential physical and environmental effects of mercury. The approach will focus on making individual contacts with neighbors, friends, and family; discussing issues with small groups such as church groups and soccer teams; and being present at larger community-wide events like health fairs and cultural festivals.

Planning for the project and Promotore training will be completed in early 2011. The program is scheduled to kick off in the late spring and continue for at least one year. Throughout the program, records will be kept on the number of contacts made and

an attempt will be made to gauge the potential increased awareness of the advisories.



The Promotores will distribute information about fish consumption advisories during programs and events like the Reading Road Show, the Harrisonburg International Festival, Riverfest, and the Rockingham County Fair.

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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:

Can Additives Immobilize Mercury in Sediment and Soil?

The South River Science Team is working with scientists from the University of Waterloo in Canada to understand the chemical form of mercury present in South River sediment and floodplain soil and to determine if additives can be mixed with the sediment and soil to immobilize the mercury. The ultimate goal of the study is to identify an approach that binds the mercury to the sediment and soil and reduces the amount of mercury being released.

As highlighted in past newsletters, the erosion of mercury-contaminated soil from riverbanks is believed to be of the predominant way that mercury is released to the South River. Under specific and not yet well understood situations in the South River, mercury on soil particles transforms and becomes available for uptake by aquatic organisms and enters the food web. By exploring the possibility of mixing additives to sediment and soil to immobilize mercury, the Science Team hopes to decrease the amount of mercury that is available to aquatic organisms and the food web.

University of Waterloo scientists analyzed South River sediment and riverbank soil samples to determine the chemical form of mercury present. Knowing the chemical form of mercury allows the Science Team to understand the mechanisms that control the release of mercury and identify which

additives may be successful in binding or stabilizing the mercury to the particles.

University of Waterloo scientists performed the next round of studies to determine if mixing additives will immobilize the mercury in sediment and soil. Several different additives were investigated, including activated carbon, clays, iron sulfide, and biochar. Biochar is an eco-friendly material that is made by heating organic carbon materials such as wood chips under oxygen-limited conditions. The experiments included biochar made from a variety of materials (e.g., pine chips, switchgrass, compost, corncobs). Overall, biochar and a few other additives have shown promising ability to bind mercury in pure laboratory experiments. Scientists are focusing future studies on those materials that remove the greatest amount of mercury, do not release unintended products, and immobilize mercury



The experiments used biochar made from (L to R) pine chips, switchgrass, cotton seed, and corncobs. The generic photos above show the raw material used. The photos below show the biochar used in the laboratory experiments for each raw material.



under changing environmental conditions.

For more information about this study, contact Nancy Grosso at (302) 999-3114 or Nancy.R.Grosso@usa.dupont.com.

From the Team...

Two New Members Join Expert Panel

In September 2010, David Hirschman (Center for Watershed Protection) and Dr. William Clements (Colorado State University) joined the South River Science Team's Expert Panel, uniting with existing panel members Dr. Ralph Turner (RT Geosciences), Dr. Mike Newman (Virginia Institute of Marine Science), and Gary Bigham (Exponent). These professionals are nationally recognized experts in the field of mercury and watershed management and bring specialized expertise and knowledge of other contaminated river systems to the Science Team.

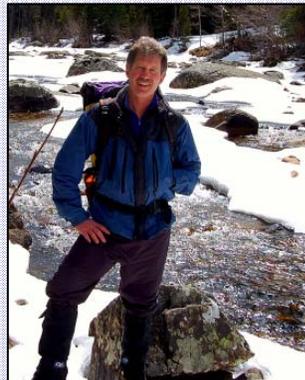
Since its inception in 2000, the Science Team has relied on Expert Panel members to keep them up to date on the most recent information and innovations pertaining to mercury in the environment, suggest issues to explore, and provide feedback on proposed team activities.

Dave and Will joined their colleagues on the Expert Panel at the Science Team's annual Expert Panel meeting in October in Harrisonburg. They will participate in quarterly Science Team meetings and become involved in various work group activities.

Meet the South River Science Team Expert Panel



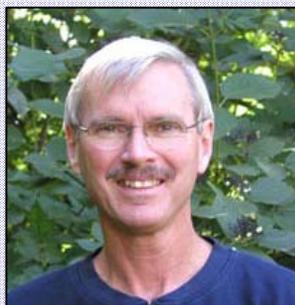
David Hirschman (left) is the Program Director at the Center for Watershed Protection in Charlottesville, Virginia. He brings to the Science Team his expertise in watershed issues, knowledge of local issues, and collaboration experiences with stakeholder groups.



William Clements (left) is a professor at Colorado State University based in Fort Collins, Colorado. He brings to the Science Team his expertise in stream ecology and restoration as well as long-term monitoring.



Mike Newman (above) is a professor at the Virginia Institute of Marine Science, which is part of The College of William and Mary. He specializes in metal toxicology and chemistry as well as toxicity models. Mike has been on the panel since 2000.



Ralph Turner (above) has his own company, RT Geosciences, in Squamish, British Columbia. He specializes in the complexities of mercury contamination and the biogeochemistry of ecosystems. Ralph has been on the panel since 2000.



Gary Bigham (above) works for Exponent, a consulting firm in Seattle, Washington. He specializes in evaluating the transport, fate, and effects of contaminants and modeling mercury cycling and bioaccumulation. Gary has been on the panel since 2000.

Did You Know?

Shenandoah National Park Celebrating 75th Anniversary

On November 5, 2010, Shenandoah National Park kicked off its 75th anniversary celebration. The park is just a step away from the South River and both locations provide a recreational outlet for visitors and residents alike. Donna Bedwell, Project Coordinator for the park's anniversary, said that the mission of the celebration is "to inspire the public to value the park's resources and to infuse a stronger sense of ownership and pride in the park and surrounding communities." With that in mind, neighboring counties are participating with specialized events to encourage residents and visitors to discover all that the park and surrounding area have to offer.

One event, "75 Reasons to Visit the Park," is a scavenger hunt that tests individuals' knowledge of facts about the park. The game will begin in April 2011, and interested individuals can pick up scavenger hunt forms at the park's visitor centers or online at that time. Individuals that answer all 75 questions will receive a certificate or patch in recognition of their participation and will automatically be included in the grand prize drawing to be held in November 2011. More information about this event and the re-dedication ceremony on June 25, 2011 is available at <<http://www.celebrateshenandoah.org/>>.



A ceremony on November 5, 2010 kicked off the anniversary celebration. Pictured (from left to right): Martha Bogle (Park Superintendent), Phil Francis (Superintendent of Blue Ridge Parkway), Karen Beck-Herzog (Park Public Affairs Officer), Alisa Bailey (President and CEO of Virginia Tourism Corporation), and Deborah Wray (great granddaughter of Herbert Hoover).

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