Sassafras Update

Sassafras River Association
P.O. Box 333
Georgetown, MD 21930
www.sassafrasriver.org

December 2010

SRA Welcomes Two New Members to it's Board of Directors

SRA is extremely proud to have Pam Duke and Ken Shumaker as new Board members.

Pam recently became an attorney and works in the Kent County Court system. Previously she was the development officer at Kent School. Having grown up locally, Pam has spent her life boating on Eastern Shore waters, and knows the region and its people intimately.

Ken Shumaker is a retired engineer & physiologist who arrived on the banks of the mighty Sassafras in 2003 after working and living in Minnesota & Pennsylvania. He lives at the intersection of the Sassafras River and Coppin Creek.

The annual election of officers was held with the following results: President: John Burke; Vice President: Charlotte Staelin, Treasurer: Ted Carski; Secretary: Ken Shumaker.

SRA Receives Two Grants
The National Fish & Wildlife Foundation, and the Chesapeake Bay Trust, have both dedicated funds to the wetland restoration project, described below. One of the grants also supports SRA's outreach programs to prevent runoff pollution from farms and neighborhoods. These investments in the River acknowledge the strong local interest in the River voiced by SRA members.

Watershed Events

Check out our website for complete details.
www.sassafrasriver.org

- **Agricultural Breakfast**
  January 19th
  Galena Firehouse
  Contact Josh Thompson for more info at: (302) 841-0176

- **Water Quality Sampling 2010 Season Review**
  January 25th, 7pm
  Kitty Knight House
  Come see our 2010 monitoring results, and learn about what's in store for the Sassafras Samplers in 2011. All are welcome!

Specialized Wetland to Treat Nutrients and Sediments

Over the past year, SRA has worked closely with a team of engineers and soil scientists to determine the best course of action for addressing a major erosion and sediment problem on a farm field downstream from a major egg layer facility in Cecil County. This issue was discovered while pouring over aerial photos of a Phosphorus "hotspot" (determined from State nutrient survey). After meeting landowners and visiting the site, it was discovered that a huge volume of nutrient laden stormwater is running off of the poultry facility onto the adjacent farm and then into a natural wetland system. Due to the energy of the stormwater, the grassed waterway, that was the original intended conveyance and first line of defense against sediment loss, has blown out, straightened, and incised several feet. The excessive storm loads, generated on approximately 15 acres of impervious surface, (the roofs of the poultry houses), ultimately blew out the banks of the waterway and cut through the crop field of the neighboring property. After eroding a significant section of topsoil from the neighboring farm, the water finally dumps into a small, shallow wetland and stream bottom. Again, the high energy of the storm flow has heavily degraded the existing wetland and stream, essentially nullifying its treatment capacity. SRA followed up with grab samples during a storm event which showed extremely elevated Nitrogen and Phosphorus.

Lead project engineer, Albert McCullough, of Sustainable Science in Denton, MD, steered the direction of the group toward a fairly new and innovative technique called "vertical flow treatment wetlands", which is a series of wetland cells that are sized and designed to remove nitrogen and phosphorus from the water as it percolates and moves through the soils and plant communities. Originally designed for treating wastewater in more urban settings and to treat dairy and swine waste effluent, this project will be the first time that this tool will be utilized in a non-point source, rural application. Because of the high storm loads, Mr. McCullough is working closely with NRCS engineer Anne Baldwin to design a forebay to retain water during high precipitation events. The forebay will be outfitted with a custom designed floating outlet orifice to ensure a constant but consistent flow into the wetland system which is vital to optimal function and nutrient removal. As part of the project, SRA intends to work hand in hand with Cecil County NRCS to restore the degraded natural wetland and stream. Not only will this create vital wetland habitat, but it will increase treatment of the stormwater as the effluent moves from the engineered wetland and into the natural system. SRA is currently developing a monitoring strategy with the Center for Watershed Protection and University of MD Wye Research and Education Center. As an additional measure to ensure maximum sediment and nutrient removal, SRA and NRCS plan to restore the incised grassed waterway and install a native warm season grass buffer around the wetland system.

Model Constructed Wetland project in Kent County, DE

WATERKEEPER® ALLIANCE MEMBER

Sassafras RIVERKEEPER'S® COVE

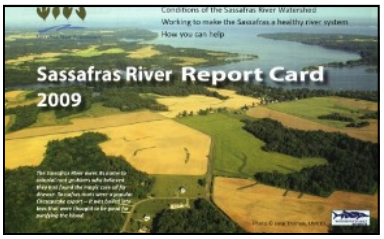
Concerns or Questions?
The **RIVERKEEPER®** can be reached at
(410) 708-3303 or
riverkeeper@sassafrasriver.org

The Sassafras Gets it's First Annual Report Card

The scores are in for Sassafras water quality 2009. Looking at grades across the river, from headwaters to mouth, shows an alarming trend. Water quality improves as we look closer to the Bay. This means that the freshwater draining from our creeks is actually more polluted than the Chesapeake Bay itself. The land users in our watershed are having a profound effect on the Sassafras River and Chesapeake Bay.

Through an effort of data collection, analysis, and fundraising that began years ago, SRA has produced it's first Report Card detailing environmental conditions throughout the Sassafras River. The Report Card is a concept gaining momentum across the Chesapeake Bay. Many other non-profits and watershed groups like SRA, are producing similar reports to communicate ecosystem health geographically, and through simple letter grades. Much like students are graded on their ability to answer questions correctly—the river is graded on its ability to pass standard thresholds indicating water quality. Report Cards from different organizations in the Bay measure ecosystem health in the same fashion, allowing for comparisons to be made year to year.

Unlike any ecosystem assessment done recently on the

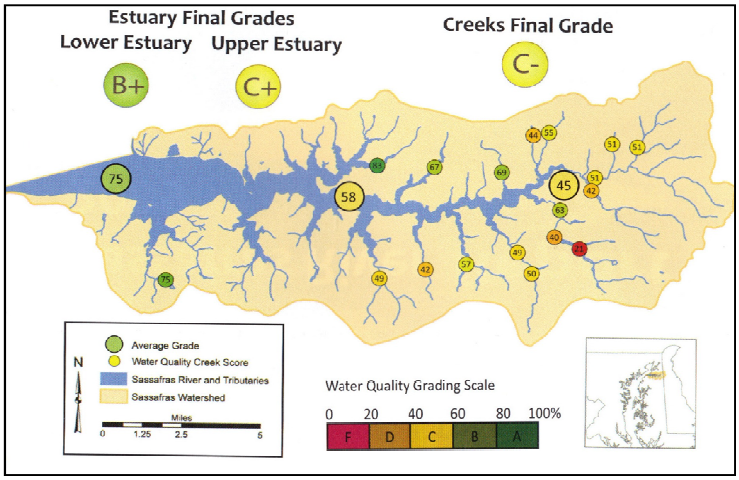


Sassafras, the Report Card ties together all the available information from across the watershed. The local focus of SRA's monitoring program also makes it possible to track river health at a much finer scale. Data collected by Sassafras Samplers, the RIVERKEEPER, as well as from the Maryland Department of Natural Resources (DNR) is distilled into a percentage and letter grade creating the most complete picture of our river seen to date.

Sassafras Creeks (non-tidal) ranked the poorest in overall scores in the watershed. In these areas nutrients like nitrogen and phosphorus were recorded at their highest levels. In each of the creeks sampled for stream bed organisms (insects or fish), scores were 0%, or an F. Significant erosion and sedimentation was documented here also.

Scores in the upper estuary region (from Budd's Landing to Georgetown Harbor) showed better scores overall, but still poor water quality. In this region the worst algae blooms were witnessed, which included blue-green algae noted for it's ability to produce a dangerous toxin. Due to high levels of algae and suspended solids in the water here, there was very poor light penetration into the water column. This characteristic prevents growth of aquatic vegetation—an important type of wildlife habitat.

In the lower estuary region (from Georgetown harbor to Betterton) most scores were higher than those seen in the upper estuary and creeks. Key indicators including light penetration, and phosphorus levels



Sassafras River Watershed with creek and estuary scores

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*If you're interested in learning more about the Report Card, and SRA's monitoring program—please join us for the 2010 Sampling Season Review Presentation. **January 25th, 7pm at the Kitty Knight House.*

however, were still very poor. At Betterton beach, bacteria advisories were also witnessed in 2009.

The news is not all surprising. The Report Card documents the impairments that have affected the Sassafras for decades—primarily too much nitrogen, phosphorus, and sediment. But the Report Card also highlights precisely where we stand with our river's health, and where improvements are needed.

With all of the beauty and unique characteristics of the Sassafras, there are also significant ecological impairments that diminish it and threaten it's future. The data shown in SRA's first Report Card will be the baseline for our protection and restoration work moving forward. To ensure future Report Cards show signs of a healthy ecosystem— the Sassafras needs most of all for stakeholders in the watershed to hear this call to action.

Jamie Brunkow,
Sassafras RIVERKEEPER®

The Sassafras Report Card is available at: sassafrasriver.org