

# THE RIVER RUNS

News from the Cowpasture River Preservation Association

## New Year Ushers in Regulatory Changes for Virginia's Watersheds

Regulatory powers at both the state and federal levels have been burning the midnight oil since last summer on issues that will impact most of Virginia's watersheds. On the state level, the Virginia Soil and Water Conservation Board has submitted, and the General Assembly has finalized, new stormwater regulations that were to go into effect February 3, 2010. The need for new regulations is described in the Agency's background documents. "Controlling stormwater runoff and its impacts is a serious issue facing the Commonwealth and its local governments. Citizens are complaining about flooding caused by increased amounts of stormwater runoff and the runoff is also reported as a contributor to excessive nutrient enrichment in numerous rivers, lakes and ponds throughout the state, as well as a continued threat to estuarine waters and the Chesapeake Bay." Over the years, the primary threats to watershed health have moved from industrial point source pollution in the 70's to non-point source pollution from general phenomena like stormwater runoff. Runoff contributes destructive amounts of sediment, nutrients, and other pollutants that are picked up along the way as it travels to waterway destinations. As proposed, these new regulations were touted by conservation groups as being a leading example of environmental stewardship for the entire nation. As is often the case, however, compromises were made during the legislative review process in an effort to balance the needs of the Commonwealth for clean, well-managed water resources with those of groups and individuals that would be heavily impacted by the changes. And, it's necessary to interface Virginia's regulations with those known to be coming from the federal agency soon.

The regulatory documents involved in this legislation total hundreds of pages, but a few examples are provided here. In general, the proposed regulations contained a tightening of water quality standards statewide, primarily related to construction activities. The VSWCB proposal included reducing the phosphorus standard to a stringent 0.28 lbs/acre/year and a requirement "that total phosphorus loads be reduced to an amount at least 20% below the predevelopment phosphorus load on prior developed lands". In addition, allowable peak flow rates of stormwater discharge from a construction site, if flowing through an "unstable channel", were reduced to standard levels of flow seen in forested (highly absorbent) lands. In the final



*Frozen in time. A swinging bridge and swimmer's rope along the river hung lonely and silent as winter settled in hard and early for the Highlands. More snow scenes on pages 8 and 12.*

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2009-2010

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## From the President

Greetings from the frigid Cowpasture River Valley,

As of this writing, the river looks more like the Delaware that Washington crossed rather than the gurgling stream we are used to. In places, the river is almost entirely iced over. Luckily the near record setting snow did not melt at once; otherwise we would have had a near record setting flood.



While some may brave the cold weather, the board holed up in early January in a toasty warm Heirlooms of Clifton Forge to review the Strategic Plan. I encourage everybody to go to the website and take a look at the strategic plan to see the priorities of the association for the 2007-2012 period. We reviewed progress on the various strategic plan objectives. We are doing well in meeting our objectives. Some of the points we highlighted during the session are:

Revamping the website. We're reviewing the current website to make it more attractive, user friendly, and informative. Go take a look at it at [www.cowpastureriver.org](http://www.cowpastureriver.org). If you have any suggestions, please let us know.

Becoming more proactive in environmental education in the local schools by working through organizations already involved in the schools. A very relevant activity would be tying in with Trout Unlimited and DGIF's program, "Trout in the Schools".

We will review expanding the scope of our river monitoring program. **More volunteers are needed!**

Three board members' terms will expire in May creating board member openings. We encourage any member interested in helping guide the organization to consider serving. If you would like to serve as a board member, please contact Polly.

Looking forward to seeing you at the annual meeting or on the river,

Eddie

**Save the Date: Annual Meeting, May 8th, 2010**



## Executive Director Update

No, I haven't been spending all of my time playing in the snow (although I have been shoveling ALOT!) I've also been working hard on training activities, cleanups, planning and, most recently, the annual campaign which, by the way, has been absolutely REMARKABLE! I've asked members to step up, dig deep, and bring in new friends and everyone has responded with a hugely generous spirit and new memberships to the clan. We are so fortunate to have you all. Over half of our donors increased their contributions this year! This will allow us to continue moving forward and expanding programs. What I would LOVE to see this spring (if it ever comes) is more of our members out and about with us, learning conservation and monitoring skills, making and using rain barrels, planting trees, coming to outreach events, and talking to friends and neighbors about the river and why it's so important. People are our power! Please watch for opportunities to enjoy and spread the word about this special river. Stop by our display at Highland's Maple Festival in March (better yet—volunteer to join Board members and help us at the display) or join us for the Annual Meeting in May or the 2010 Mussel Festival! And a special thanks goes out to all of our contributors, text and pictures, to this edition.

## WHILE YOU WERE OUT... BOARD ACTIVITY IN 2009

*The Board of Directors of CRPA consists of fifteen volunteers who collectively work very hard each year to guide and develop the organization into the future through meetings held bi-monthly. For such a small organization, our complex mission of education, advocacy, protection, outreach, and social comradery provides challenges. The strategic plan was fine tuned in 2007 to help guide the board and executive director (ED), but it requires constant review and vigilance to keep us all on track. While the membership is enjoying reading *The River Runs*, coming to educational and training programs, cleaning up the river, and having fun at the annual meeting and social events, the board is making this all happen behind the scenes. Just to keep the membership abreast of what the board's been up to, here's a synopsis of activity in 2009.*

*Development and implementation of operations and funding strategies* to meet the needs of programs. CRPA functions largely on dues and contributions with some help from grants. The executive director may write the grants and do the legwork, but the board has to decide what programs need to be funded each year and propose means to obtain that funding, deciding whether to go into the existing coffers or raise money by some other means, as well as how the ED should devote time and resources. Operations are continually being improved for efficiency and a balanced operating budget must be developed, approved, and followed each year. Examples of discussions that have arisen in these efforts are whether or not the CRPA should begin to include advertising in *The River Runs*, how we might fund website improvements, how to best prioritize ED activities, how to increase electronic communications methods, among others. The purchase of audio-visual equipment was recently approved to meet the needs of increased activity in education and outreach.

*Addressing the needs and potential growth of the membership.* In 2009, the board developed guidelines for and made a recommendation to the membership for the creation of a Junior membership to encourage more active engagement of the community's youth. This was approved at the annual meeting, in May. In addition, the membership committee continually searches for efficient ways to seek out new members through advertising, research and outreach, and ways to improve the website to provide a better means to enhance community awareness of and involvement with the river and the CRPA. Discussions about the best methods for communications among members and the board is also a popular topic.

*Strategic Plan review.* Each year, the board reexamines the Plan to identify areas of progress as well as areas that need more attention, and any changes that need to be made because of new ventures or practical limitations. The strategic plan is ambitious and resources limited, so the board tries to gain the biggest advancement possible within economic constraints. During review last March, education and outreach were identified as priorities.

*Consideration of endorsement requests.* In the advocacy realm, the CRPA constantly receives requests from regional and national organizations to endorse particular initiatives and causes. These requests may require funding, time, or political support and these decisions ultimately rest with the board. They are sometimes simple requests and other times have significant implications for time and resource use or may be politically complex. This year, the CRPA chose to endorse the federal Water Protection and Reinvestment Act introduced in the House last summer. In addition, CRPA has supported local and regional watershed groups in advocacy efforts.

*Outreach and Community Resource.* Each year, the board decides on new and existing outreach programs. In 2009, it was decided to launch a wood duck program in which wood duck nest boxes were constructed and sold at cost. The goal was to get more boxes into the hands of members for placement near the river in order to increase the nesting population of wood ducks. Fifteen new boxes went to this program and volunteers helped put them up for members who participated. Festival attendance for outreach continues based on resources and volunteer availability. In addition, the board continues to discuss means by which CRPA can become an information resource for the general community on topics related to the river. One approach that is being worked on is the production of lay language documents and web postings that clarify some of the laws surrounding use of the river by the public as well as general information to help educate the public as to what good stewardship means when using the river.

*Determination of Scholarship Recipients.* The Education Committee works with the local schools to advertise and then review applications for 3 scholarships awarded to graduating seniors headed toward college in environmentally relevant programs. Board members make these awards at ceremonies, when held by the schools.

## Stormwater Regulations, continued: Cha- Cha- Cha- Changes.

version of the regulations, the phosphorus standard is higher, 0.45 lbs/acre/year, total loads must achieve 10% below predevelopment for disturbed lands less than 1 acre, and peak flow rate allowances are greater, limited to those seen in pastureland, unless construction is in a forested area in which the forest standard is still applied. Part of the reason that the standards were adjusted from the proposed levels has been attributed to happenings at the federal level.

In an effort to create more effective strategies to improve the water quality of the Chesapeake Bay (CB), the Environmental Protection Agency has launched the development of a new program to contain and prevent the further demise of Bay health by curbing pollution. Known as the “Chesapeake Bay TMDL”, this program expands the concept of “Total Maximum Daily Load”, a term that many of us are familiar with for streams and rivers around Virginia that have been identified as impaired and for which local authorities have been tasked with improving water quality. Under state TMDL programs, the Virginia Dept. of Environmental Quality identifies endangered waterways and then implements a program in which there are maximum amounts of nitrogen, phosphorous, and sediment that are allowed to be released into a stream—a “pollution diet” if you will. These waterways are monitored over time to insure that the limits are being met and that the water quality improves as a result. The Bay TMDL program will provide similar controls, but on a scale not seen before in the U.S. It will cover all of the 64,000 square miles of watersheds across six states and Washington D.C. that feed into the CB. Watersheds of all of Virginia’s rivers from and including the James to points north will be included, but rivers south and west of these points run either to the Mississippi or the North Carolina sounds and are not targeted in the program.

The Bay TMDL program is still being developed and levels of acceptable nutrient and sediment standards have not yet been determined by EPA. So, Virginia’s agencies are taking a moderate approach to stormwater regulation with the thought that amendments will be required once the national program is established and criteria are clearly defined to make sure that Virginia’s regs make sense in light of federal programs.

One complication of the focus on the Bay is that in the end, Virginia’s stormwater regulations will likely not be

consistent across the state since some watersheds will not come under the national program. This has been a concern for those interested in seeing statewide consistency in increased water quality standards.

Another change between the proposed and final regulations is a new section that was added to the final form that grandfathers, under the existing regulations, projects meeting certain local criteria if their permit coverage is achieved by July 1, 2010, including those of state agencies, those using federal funding approved by July 1, 2010, as well as certain other public works programs. This can buy additional time for compliance up to 2014 or even 2019 depending on the details of program management. Also, although statewide criteria for regulation are given, flexibility is provided in the final language to the localities that implement these regulations allowing them to require stricter or more lenient criteria, depending on problems in their local area and/or the demonstrated ability of management and maintenance by project operators. Local programs have also been freed up somewhat from requirements for locality inspections, homeowner inspections, and maintenance agreements under some circumstances of management of residential runoff.

Another forthcoming change in the regulations is not too surprising — a change in permit fees. With a few exceptions, most fees for stormwater permits will increase, in some cases, substantially. The VSWCB stated in agency documents that “The primary advantage of this regulatory change for the public is an enhanced statewide stormwater management program that will be properly funded and administered at the local level.” They go on to state “Today’s fees for permits associated with construction activities are set at levels insufficient to support the vast majority of responsibilities associated with administering a stormwater management program.” It is hoped that increased funding at the local level, where administrative resources are often quite limited, will better enable the oversight and management required for strict compliance to existing and new regulatory standards and, again, increase consistency across the Commonwealth.

**Breaking News.** As of January 26, 2010, the VSWCB has suspended this final stage of legislative action and has posted a new effective date of July 1, 2010.

*Continued on page 12.*

# Tidbits: Around Virginia

**Conference Update: Virginia Citizens for Water Quality (VCWQ), August 15, 2009— Charlottesville, VA**  
*By Lou Robinson*

The VCWQ is composed of a group of Virginians and organizations focused on the health of our state waters. The VCWQ's mission is to coordinate volunteer monitoring efforts and methodologies, provide funding for water quality monitoring, and promote watershed health issues. The organization started informally, but has grown to include bylaws and a board of directors.

Members consist of many grassroots organizations, including the CRPA, as well as state and federal agencies such as the Department of Environmental Quality (DEQ), Game and Inland Fisheries, Forestry, and Fish and Wildlife, along with Ferrum College. As leaders of the Virginia Save Our Streams (VaSOS), a program of the Isaac Walton League, Jay Gilliam and Stacey Brown have also been major contributors and have worked hard to organize the group.

VCWQ holds a full day annual meeting each year in Charlottesville at UVA's Clark Hall and is attended by about 100 people from around the state. The sessions consist of presentations on various topics, demonstrations and occasional field trips. This year's conference was organized by Chris French of the Alliance for the Chesapeake Bay. Presentations included a report on the impact that citizen scientists and volunteer water monitors have had on state policies, a proposed report card system for rating volunteer monitoring groups, updates from the DEQ, and case studies of various monitoring groups. The importance of citizen involvement in the health of Virginia's waterways was given the spotlight.

The VCWQ meeting is an excellent opportunity for CRPA members to learn more about what is happening around Virginia with regard to protecting our waters. It is also an opportunity to meet and get to know some of the key players in water quality from around the state. I would encourage CRPA members to attend future sessions.

***They're Baaack... Another Biosolids Permit Application Submitted for the Shenandoah Valley.***

The Spring '09 edition of *The River Runs* contained a story on an application to the Dept. of Environmental Quality (DEQ) by Recyc Systems, Inc. for a permit to apply biosolids to farmlands in the Shenandoah Valley and which was questioned by the Friends of the North Fork of the Shenandoah River (FNFSR). That application was ultimately withdrawn by the company before a public hearing could be

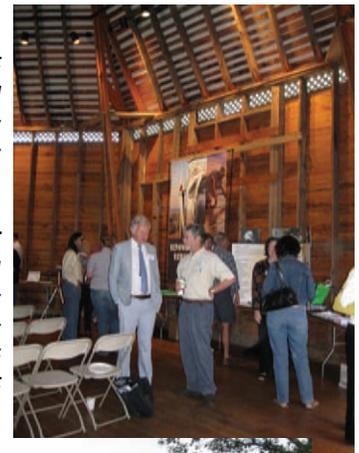
held. But in November of 2009, Recyc Systems applied for another permit to spread biosolids in the Valley over several hundreds of acres near or within the North Fork flood plain. FNFSR has asked for help and CRPA has sent in another request to DEQ for a public hearing on the permit.

***"Conservation Weekend" Brings Impressive Attendance.***  
*By Polly Newlon*

In September, the Valley Conservation Council teamed with the Virginia Conservation Network for their annual meetings which were held over a weekend at the Frontier Museum in Staunton. This was a delightful and well equipped venue. The event drew attendees from over 100 organizations around the Commonwealth and included a Green Tour of the Staunton area on Friday. I represented CRPA during the activities on Saturday which included two morning lecture sessions. It was a great opportunity to hear the latest on the stormwater regulations before the legislature. This was followed by a fascinating and enthusiastic keynote speech by Tim LaSalle of the Rodale Institute in Pennsylvania. The Institute has the longest running comparison trial of organic and conventional farming techniques and LaSalle spoke about how organic farming can help address climate change and world hunger. He showed some remarkable crop yield data gathered at the Institute using various experimental protocols for organic agriculture. His motto is if you fix the soil, you can fix the planet. Interesting food for thought.

***Right. The Octagon Barn at the Frontier Museum was a great place to network between sessions and visit displays.***

***Below. The afternoon was for field trips and I opted for a hike along the top of Shenandoah Mountain at the Augusta/Highland line. I was able to point out to all just where the CpR runs!***



# People Matter: Annual Campaign Taps Springhead of Generosity

*At publication time, the annual campaign has raised \$23,085. We are soooo close! Thanks to everyone who has given and recruited new members to the CRPA family. We're not quite there yet, so if it's slipped your mind, it's not too late.*

## **Wallawhatoola Society**

Lucius and Pam Bracey  
Stewart and Lissy Bryan  
Elizabeth Biggs and Nelson Hoy  
Cowpasture Camp, Inc.  
Kent and Ellen Ford  
Ross Waller and Anne Huebner  
George and Frances Phillips  
Lou and Betty Robinson  
George Snead Jr.  
Don and Donna Thomson

## **Watershed Stewards**

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Morrison and Meryl Manner  
Clifton Marshall  
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Todd and Ann Nugent  
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David and Sandra Peters  
Martha Rule  
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Eddie Nicely  
Marjorie and David Ray  
Tommy Slusser  
Eddie Stinespring  
Steve and Kelly VanLear  
Mercer Watt  
Ten Eyck Wellford

## **In Memory of:**

### **Paul Arnold**

Michael and Marla Whiteside

### **Claude Cunningham**

Keith, Mike and Conley Saunders  
Millie J. Moore  
Timothy and Cynthia Meadows  
William H. Bursey  
Fred and Peggy Paxton  
Attic Productions

### **Bolling Hobbs**

Carrington Pasco

### **Jack Manner**

Lou and Betty Robinson

*Note: List represents contributions made during the annual campaign. Every effort has been made to be accurate. We apologize for any errors or omissions and will correct them if you call (540) 474-2858 or send an email to [directorcrpa@gmail.com](mailto:directorcrpa@gmail.com)*

# People Matter: “Fording” the River Takes on New Meaning

By Polly Newlon



***On the go! Ellen and Kent cover a lot of ground on and off the farm, monitoring water quality along many miles of the CrP. Photo courtesy of Cindy Kane.***

If you’re ever going to talk about the cornerstones of the CRPA, you simply must include Kent and Ellen Ford. These two individuals, true partners in life, probably spend more time doing for and thinking about the CRPA and the Cowpasture than anyone on the planet. Members since 1975, Kent presently runs the monitoring programs for both bacteria and macroinvertebrates. Ellen is actively engaged in monitoring and chairs the CRPA Board’s Monitoring Committee in addition to serving as Secretary of the Board, in which role she is the official recipient of all CRPA correspondence and makes all bank deposits, along with other duties. One thing’s for sure. If there is a CRPA event, Kent and Ellen will be there.... without fail. And, they will bring along anything and everything they may have at home that might help the event run more smoothly, often including a thermos of fresh gourmet coffee. They are always reaching out to learn more and to encourage others to get involved in understanding, protecting, and enjoying the river.

Kent hails from Clifton Forge where his father was a businessman and introduced him to the CRPA through friends who were CRPA founders. His family had a camp on the river in Alleghany County since before World War I. The original cabin was washed away in the flood of 1918, but a second cabin was constructed in the late 20’s which served as a summer residence for the family who had to ford the river to get there. Kent tells of carrying a refrigerator across in a Jon boat at one time!

From the time they met and married in the early 60’s until Kent’s retirement, the Ford’s made their permanent home and raised three children, Kent III, Russell, and Jeannette in the Washington metropolitan area. That’s where they had met while both were working for the Carnegie Institution of Washington. Now branded as the Carnegie Institution of Science, it was founded in 1902 by Andrew Carnegie to enable scientific exploration by “exceptional individuals so that they can explore the most intriguing scientific questions in an atmosphere of complete freedom.” Kent had trained in physics at UVa, and found his way into astronomical research through work he had done in thin-film photo-sensor technology. Throughout his three decades at Carnegie, Kent spent time at premiere astronomical research facilities around the country, including our region’s Green Bank National Radio Astronomy Observatory.

In the 70’s, upon returning from a two year sabbatical in Tucson, AZ with beloved horses in tow, the Fords started looking for a farm in the Alleghany Highlands where they had family memories and ties. In 1976, they found Indian Draft Farm, a peaceful place on Stuart Run, just north of Windy Cove. The farm served as a continuous project and vacation spot for the whole family until Kent retired in 1990 and they became full-time residents. But, even as part-time residents, they spent much time in Bath and dove into the CRPA, with Kent serving several terms on the Board. The Fords have become progressively more involved with conservation practices and the river. They’ve recently created a conservation easement on some of Kent’s family property through the Nature Conservancy.

Since the 90’s, inspired by CRPA members Dave Peters, Carolynn Beach, and Jay Gilliam, Kent and Ellen received training in water quality monitoring techniques, including week-long training sessions for Kent at the National Conservation Training Center in Shepherdstown, WV. He is a certified trainer in stream monitoring through the Virginia Save Our Streams Program and both are certified monitors. In addition to her work with CRPA, Ellen Chairs the Board of the Mountain Soil and Water Conservation District. Kent also teaches in the Virginia Master Naturalist Certification Program. Both serve on the Upper James Resource Conservation and Development Council.

When asked what they like most about the CRPA, Ellen immediately points to the interesting people that she has met and worked with over the years. Kent enjoys staying connected with science and learning from the agency biologists through collaborations related to the river and its aquatic life. And if you join them for an outing it’s immediately clear that they are just out there having fun! So, if you happen to run into Kent and/or Ellen, please be sure to thank them for being there— *exceptional individuals exploring intriguing scientific questions* about the Cowpasture River.

# People Matter: Hello and Farewell

## *Welcome and Thank you! New Members/Donors Since July, 2009*

Robert Albergotti  
Norfolk, VA

Rachel Mair  
Lewisburg, WV

Andrew Armstrong  
Dallas, TX

Bobby and Beth Morris  
Midlothian, VA, Bath

Kevin and Jenny Bertelsen,  
Charlotte, NC, Bath

Robert Pasco  
Strasburg, VA

Charles and Jennifer Black,  
Baltimore, MD

Everette Rosen  
Roanoke, VA

Sterling Ford  
Berkshire, VT

John and Barbara Warley  
Beaufort, SC

Charles Garratt  
Warm Springs, VA

Gary and Delores Wilkinson  
Washington, D.C.

Heidi Lewis  
Cabin John, MD, Highland



*Special thanks to new member, Everette Rosen who took these great shots of the big snow at Mike & Marla Whiteside's Cabin in Alleghany County. And while this privy may have you thinking of the good ol' days, thankfully gone by, a the path tells us that this one's still in use!*



## *Claude Cunningham 1917—2009 By Mike Cunningham*

On Thanksgiving morning, November 26<sup>th</sup>, Claude Cunningham, formerly of Clifton Forge, passed away at The Glebe in Daleville. Mr. Cunningham was a good steward of the Cowpasture River he and our family shared many years of pleasure swimming in, fishing on and exploring the river. Dad was born in Clifton Forge in 1917 and except for the last few years of his life, was a life-long resident. His days on the Cowpasture began before his service in World War II and ended with his last visit to his beloved Highlander Hunt Club in 2005. Many of the milestones of his life were spent on the river. In 1945, after returning from war in Europe, he and my Mom spent a belated honeymoon at the Withrow Camp on the river. In the 50's when he owned a store in Clifftondale Park, many of our summers were spent at Carter's Camp. He was a founding member of the Highlander Hunt Club, whose first camp was a rented farmhouse on the CpR near Williamsville. In 1959, the club acquired 30 acres on the river near the Virginia Elk's Youth Camp. In the 60's he purchased land on the river and with help from Keith Saunders, built his first cabin there. Our family shared endless float trips down the river, sometimes putting in at the Hunt Club property and getting out at the small camp downstream. Most of our holidays were spent at one of our camps. Deer season was always a special time because all of the father's at Hunt Camp would pack us kids up and we'd spend a week pursuing the then more illusive white-tailed deer. Many of our most memorable moments happened on the CpR and it is only fitting that in Dad's passing we requested a donation to the CRPA. In the future, when we visit the river, we'll always think of the good times we had there with Dad and we'll miss him, but we'll also rejoice in the lessons we learned from him about caring for the land the river. The lessons he imparted will always be with us.



## Education Matters: Stream Monitoring Training Sessions

In July, *The River Runs* contained an article about our success in obtaining a grant for \$10,000 from the Gwathmey Memorial Trust to facilitate educational and outreach programs. One area that has been a priority is to train more monitors in the skills of collection and identification of benthic macroinvertebrates or, as we affectionately call them, river critters. We managed to squeeze in two training sessions before the snows fell—one in August in Bath County, and one in September in Highland. A third, planned for October in Allegheny County was rained out. Join us in spring of 2010!



*After a grueling test (not really), the group enjoyed lunch and then headed to the river. The Bath session included several CRPA members and 4 members of the Virginia Master Naturalist Program, Allegheny Highlands Chapter. Seated, left to right, are David Kirk, Dewey Holdaway, Carl Pattison, Brian Hirt, Martha Rule and Keith Carson. Not shown: Rachel Johnson*



Join us!  
Spring, 2010

*Top Left: A small, but attentive group attended the Highland training. Clockwise: Bill Oliver (kneeling), Cynthia Kennedy, Polly Newlon, Art Applegate, Ellen Ford, and Blanche Morgan.*

*Bottom Left: Kent Ford and Keith Carson work on the bottom line, counting the various types of animals and tabulating the "multimetric index" for this site on the river. It was a long day with just short of 700 bugs captured in one 20 second net. They were returned to the riffle after counting.*

Join the fun! More educational programs are coming this spring and summer.....

Macroinvertebrate Monitoring Classes are being planned. We're aiming to suit people's schedules so if you're interested, contact Polly Newlon to discuss your availability 540.474.2858 or [directorcrpa@gmail.com](mailto:directorcrpa@gmail.com)

More Rain Barrel Workshops: Save the Dates! May 26th, Dabney S. Lancaster Community College, Clifton Forge; June 5th: Highland Center, Monterey; April (TBD) Bath County.

And, more.... Check the Spring newsletter and the website for updates on workshops!

These programs are made possible by a grant from the Richard and Caroline T. Gwathmey Trust.

# Health Matters: 2009 Cowpasture River Fish Investigation Highlights

By Donald Kain, Virginia Department of Environmental Quality (DEQ)  
and Paul Bugas, Virginia Department of Game and Inland Fisheries (DGIF)

**The good news.** DEQ and DGIF received very few reports of fish disease or mortality in the Cowpasture (CpR), James, and Shenandoah Rivers this year. Fishing was excellent in most waters, and fish populations in each of these rivers appear to be similar to those found before the fish kills began in recent years.

**The bad news.** The causes of the widespread fish disease and deaths in recent years are still not totally clear, so the problems certainly could occur again under the right environmental conditions.

**What we know.** Extensive water quality, physical, and biological studies have been conducted in the Shenandoah (since 2004) and upper James Rivers (since 2007) in response to observations and reports of diseased and dying fish. Although the investigations began with a long list of possible suspects, there have been no clear lines of evidence linking the fish disease and deaths with any water chemistry parameters. Some studies led to interesting discoveries about the affected rivers and their aquatic life, including presence of many man-made and natural chemicals and a condition called fish intersex, but none of these have been shown as causative factors in the fish disease or mortality.

**The latest information.** Investigations in 2009 focused largely on the biological pathogen *Aeromonas salmonicida*, a bacterium more commonly affecting cold-water fish species such as trout and salmon. In partnership with DEQ and DGIF, Dr. Rocco Cipriano of the U.S. Geological Survey's National Fish Health Laboratory in Leetown, WV has been leading this aspect of the fish investigation since 2007.

As background, in 2007, Dr. Cipriano unexpectedly found *A. salmonicida* in fish during the springtime fish disease period in these rivers. This pathogen was not found in fish before the spring "fish kill season" or later, after the events ended. Follow-up, focused work in 2008 in all of the rivers that have experienced these events led to striking findings. In early spring, fish were found to have a large variety of "opportunistic" bacteria in their bodies. Once water temperatures reached and remained above the upper 50s, a number of fish became diseased, often with skin lesions, and some percentage of them died. These diseased fish no longer had the diverse bacteria community, but were dominated by *A. salmonicida*. During the same period in other, similar rivers (such as the Maury River) with no observed fish disease, fish there continued to have a variety of bacteria with no *A. salmonicida* present. After water temperatures consistently exceeded about 70 degrees, *A. salmonicida* seemed to disappear. In laboratory challenge tests, Dr. Cipriano was able to duplicate the symptoms seen in fish

from area rivers by direct injection of the bacterium, by fish-to-fish contact (cohabitation), and through transfer of water from infected tanks.

*A. salmonicida* is known to infect coldwater fish and is most often a problem for populations of trout and salmon. Although there are records of infections in other species, such as bass, walleye, and others, it is unusual to find it in waters this far south. It is typically found in cold-water systems, and does not survive in waters that exceed the mid- to upper-70s. At this point we know it exists in the rivers where we have seen the springtime fish kills, but its origin remains unknown. In some systems it has been introduced by fish from hatcheries, but we see no evidence of that in Virginia. Introductions of this organism in local rivers could have occurred many years ago from a wide range of possible sources. More important than identifying its source is the identification of areas which provide a favorable environment for it to live year-round.

Dr. Cipriano's 2009 work focused on potential reservoirs or refuge areas that remain cool year-round and may be capable of supporting *A. salmonicida* and re-introducing it to fish populations each spring. Weekly water samples for bacterial cultures were taken from 10 sites each in the James and Shenandoah watersheds from March through July. Fish were collected at many of these same locations and cultured for bacteria while waters were still cool (before any symptoms would be expected), during the disease period (with waters between upper 50s and low 70s), and after waters warmed to typical summer temperatures. Data are still being evaluated, but preliminary evidence suggests that both coldwater tributaries and areas of the rivers influenced by major springs can function as reservoirs of *A. salmonicida*. It is interesting to note that 2009 was a cool, wet spring, with low numbers of diseased or dead fish. Consistently favorable water temperatures for *A. salmonicida* did not occur until mid- to late- May this year and were maintained for only a few weeks.



DGIF staff members Jason Hallacher (stern) and Aaron Coffman (bow) maneuver the electrofishing boat along the CpR during sampling. A current is passed through the water which stuns the fish temporarily, easing collection of specimens.

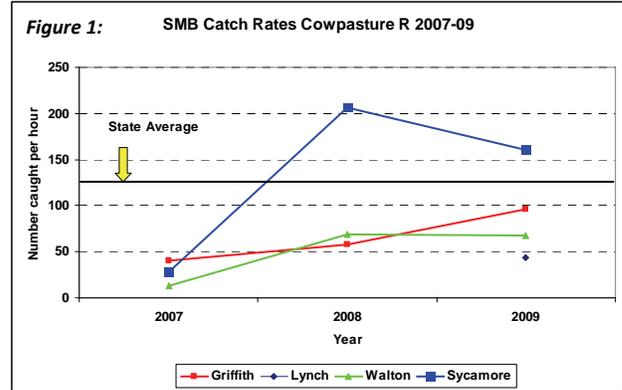
# Health Matters: Fish Investigation, continued

Fish disease investigations will continue in 2010 and will attempt to further define areas that are capable of serving as reservoirs for this cold-water bacterium. Key environmental variables, such as temperature (including duration of favorable temperatures), flow, and other factors will be further evaluated to better define the conditions that lead to disease outbreaks in fish populations.

How the fisheries resource fared in 2009 – Fisheries populations were examined in fall, 2009 by DGIF personnel to continue trend analysis of recreational stocks in the CpR. The best way to catalog changes is to minimize sampling variability by choosing permanent sampling locations and returning during the fall season on an annual basis. We have selected four locations along the river that provide adequate access for our electrofishing boat, while providing a spatial glance at the fisheries resource. Starting from the station closest to the mouth and moving upstream, they are: Griffith, Lynchburg Camps, Walton Tract, and Sycamore Bend. Due to sampling gear restrictions, we target fish that are 4 inches and larger; fish that are smaller and occupy riffle areas are usually difficult to catch with our boats and nets. Nineteen species were collected and are listed in Table 1 as either present or absent from the 2009 survey. For comparison, Julian Olden documented 28 *other* fish species in the CpR and selected tributaries in 2003. The diversity of fish species is outstanding and is testimony to the excellent water quality and habitat found in this system. Some of the species listed in Table 1 are represented by only one specimen, so long-term sampling is necessary to show species distribution with confidence.

When we “shock” the Cowpasture River, our target species is usually smallmouth bass (SMB). One of the population trends we measure is *catch-per-unit-effort (CPUE)* or simply, the number of bass caught per hour of electrofishing. Figure 1 shows

the number of SMB caught per hour at four locations over the last 3 years. From the chart, we can see that SMB density is greatest at the upstream site. Before inferring too much, you will notice that only 10 data points are displayed. Several more years of sampling will give us a clearer picture of smallmouth bass density for the entire river.



Numbers of bass are one thing, but what was the size composition of the population in 2009? Table 2 shows that 99% of the smallmouths collected by biologists were under 12 inches long. During surveys, we noted several trophy size SMB that managed to avoid our nets. These data indicate that the Cowpasture supports ample numbers of small bass, with the opportunity to catch an occasional “wallhanger”.

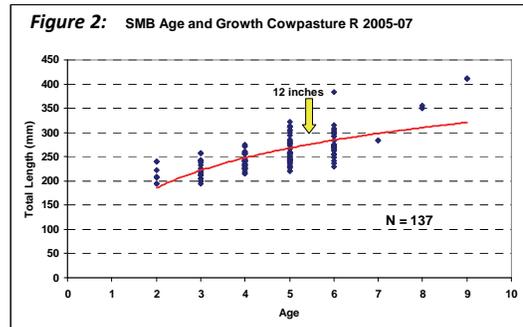
**Table 2. 2009 CpR Smallmouth Bass Size Distribution**

Size Class	Percentage of Total (N = 153)
< 4 inches	9
4-6 inches	34
6-8 inches	35
8-12 inches	21
> 12 inches	1

**Table 1. Fish species collected at four stations in fall, 2009**

Species	Griffith	Lynchburg Camp	Walton Tract	Sycamore Bend
Smallmouth bass	X	X	X	X
Largemouth bass		X		
Rock bass	X	X	X	X
Redbreast sunfish	X	X	X	X
Bluegill		X		
Green sunfish				X
Pumpkinseed		X		
Mottled sculpin				X
Yellow bullhead	X	X	X	
Margined madtom			X	X
Bluehead chub				X
Central stoneroller				X
Fallfish		X	X	X
Common shiner				X
White sucker	X		X	X
Northern hogsucker	X	X	X	X
Creek chubsucker	X	X		
Muskellunge	X			
Chain pickerel		X	X	

Figure 2. SMB length at a given age. The sample size is small, especially for fish >12 inches. Also, the range of sizes at a given age can be varied. A 5 year old SMB in the CpR can be 8-12 inches long. In general, bass from the CpR grow more slowly than their counterparts from the New River or the James River as a result of food availability, habitat, and bioenergetics (ability to transfer and use energy).



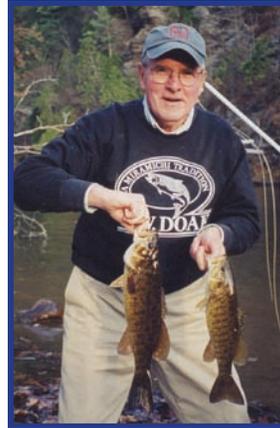
Continued, page 12

## Fish Investigation, from page 11

Other sportfish in the Cowpasture River include the sunfish family, fallfish, chain pickerel, and muskellunge. The river supports a wide variety of sunfish, dominated by rock bass and redbreast sunfish. Chain pickerel are somewhat common, and trophy muskies can be caught primarily in the lower river. Individual fish with lesions were noted by landowners and anglers in 2009, but as stated earlier, fish populations generally looked healthy.

**Thanks for your help** - One of the best tools in these fish investigations has been prompt, accurate information. DEQ and DGIF are very limited in their surveillance capabilities, especially with these problems affecting so many miles of our rivers. We appreciate the huge response from property owners and river users to get detailed information to us quickly and we look forward to continued support in the future.

If you observe problems, please contact DEQ at 540-574-7800 or e-mail [fishreports@deq.virginia.gov](mailto:fishreports@deq.virginia.gov).

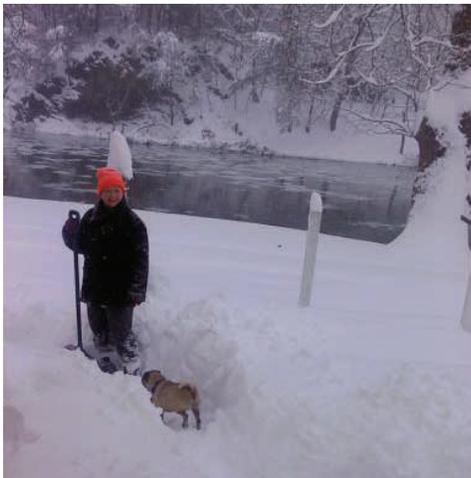


*Memories of simpler days on the Cowpasture. Before he passed away, early in 2007, Bob Brooks was a devoted steward of the CpR. Here he shows off some handsome small mouth bass caught while monitoring the river with Paul Bugas on a beautiful day in the fall of 2001.*

*Don Kain is Water Quality Monitoring and Assessments Manager for DEQ's Harrisonburg Office and has headed Virginia's Fish Kill Task Force since it was formed. Paul Bugas is a Senior Fisheries Biologist with DGIF in Verona. In July, 2009 Paul was named Conservationist of the Year for VA by Trout Unlimited for his work on behalf of Alleghany, Augusta, Bath, Highland and Rockbridge Counties. We thank them both for their continual support of watershed education and their dedication to clean water and healthy fisheries.*

## Stormwater Regulations, from page 4

According to the state regulatory website, the VSWCB received 25 petitions during the final adoption period and has suspended the effective date "to allow time for a 30-day public review and comment period on changes made since the original proposed regulations were approved." Comment can be made only on the changes between the proposed and final regulations. Looks like we'll have to stay tuned a little longer on this one!



*Ann and Olive Pearl Wright shovel their way carefully down to the river at their camp near Sharon after "the big one". Olive Pearl, about one third the height of the snow, no doubt appreciates the pathway. Photo: Roy Wright*

If you'd like to comment, please do so in writing by mail, facsimile, or email between 2/15/10 and 3/17/10 (by 5 p.m.)

**Mail:** Regulatory Coordinator, Virginia Department of Conservation and Recreation, 203 Governor Street, Suite 302, Richmond, VA 23219.

**Fax:** Regulatory Coordinator at 804.786.6141.

**Email:** the Coordinator at [regcord@dcr.virginia.gov](mailto:regcord@dcr.virginia.gov).

Written comments must include the name and address of the commenter.

Heavy snow events like we've witnessed this winter may not be thunderstorms but, depending on the melting rate, can create large amounts of runoff into the river. So far, we've been lucky with a gradual snow melt, but large volumes of snow in pastures will ultimately carry lots of animal waste and nutrient runoff into the CpR. Managing that runoff is a continuous challenge for the state and federal agencies.

The text of the VA stormwater regulations adopted in December can be found online at:

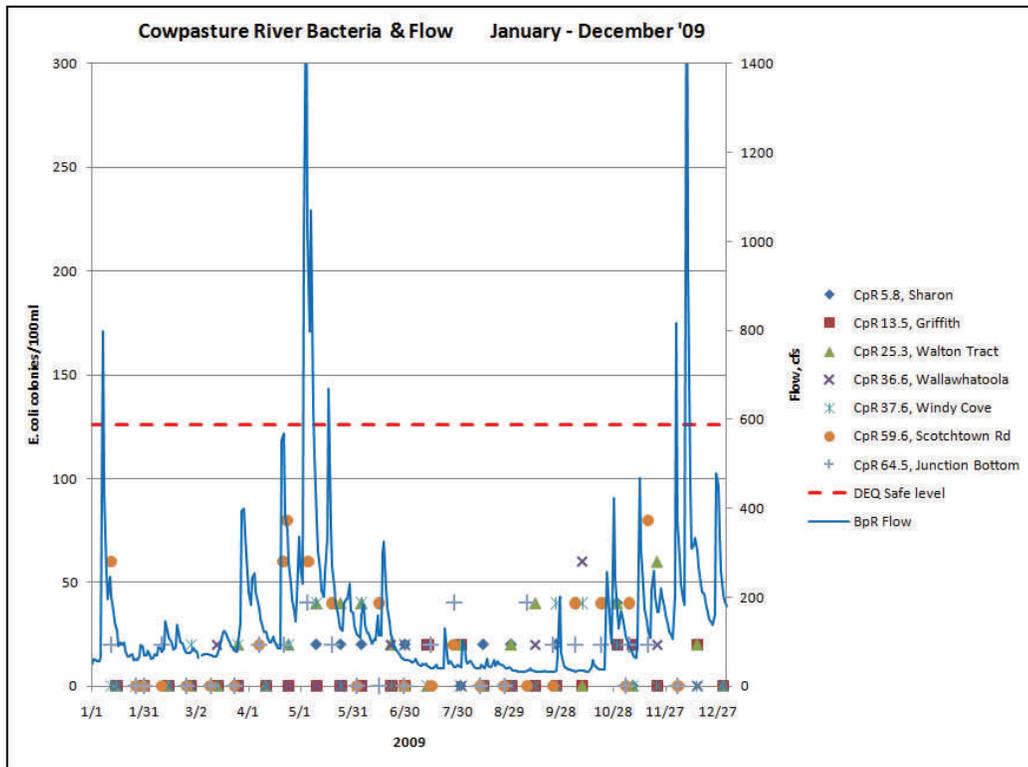
<http://legis.state.va.us/codecomm/register/vol26/iss09/v26i09.pdf>

Or can be obtained from the regulatory coordinator at 804.786.2291 or the email address above

For more information on the Chesapeake Bay TMDL program under development, visit the EPA website at:

<http://www.epa.gov/chesapeakebaytmdl>

# Health Matters: 2009 Bacterial Monitoring Data



The CRPA Water Quality Monitoring Program is an example of citizen science at it's best and is run ENTIRELY by volunteers. WE NEED YOUR HELP! Contact Polly Newlon, 540.474.2858 or [directorcrpa@gmail.com](mailto:directorcrpa@gmail.com) if you'd like training and to join our forces.



Figure 1. EColi colony counts for 2009 in the Cowpasture (CpR – above) and Bullpasture (BpR—below) Rivers. The left axis is numbers of colonies counted in each sample. The bottom axis is date of sample. The blue line (right axis) shows flow rate in cubic feet/second. The red dotted line is DEQ's danger level for swimming. Sample locations are identified in the legends at right. Volunteers were out every two weeks along both rivers collecting samples. The ideal count is zero and many samples were entirely clean. Colonies tend to increase in high flow periods, not unexpectedly in an agricultural area with pasture runoff, although the source is unknown. In 2010, monitors hope to hone in on the BpR. It tends to show higher counts and impacts the water of the CPR when they converge below Williamsville.

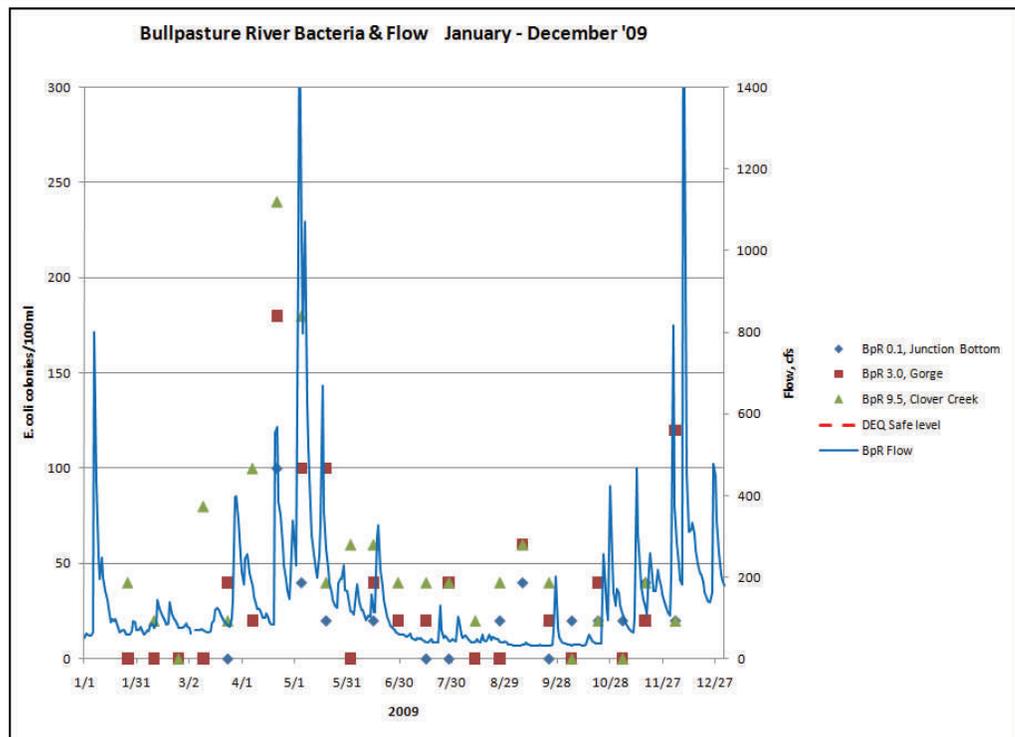
THANK YOU  
2009 CpR Monitors!

Bacterial:

Ellen Ford  
Kent Ford  
Kent Ford, III  
Sterling Ford  
Nelson Hoy  
Anne McCaig  
Celia Rutt

Macroinvertebrate:

Sara Bell  
Norm Bell  
Keith Carson  
Ellen Ford  
Kent Ford  
Brian Hirt  
Dewey Holdaway  
Rachel Johnson  
David Kirk  
Carl Pattison  
Martha Rule  
Allegheny Highlands  
Master Naturalists



# Outreach Matters: Large Crowds Attend Freshwater Folk Festival

**White Sulphur Springs, WV.** CRPA was on the road again, with display, merchandise, volunteers and games, traveling to the U.S. Fish and Wildlife Service’s 5th annual “Freshwater Folk Festival” at the USFWS National Fish Hatchery. Held each year in early October, the festival is geared toward youth, and includes many vendors, agencies, and organizations who bring educational displays and demonstrations related to fish, wildlife and natural resources. This year, the hatchery folks and hosts, Friends of the White Sulphur Springs National Fish Hatchery, went all out, leveraging the 100th birthday celebration of the town as an extra draw. In addition to demonstrations, there was a huge birthday cake, a ribbon cutting ceremony for their newly constructed outdoor amphitheatre, live music, and all sorts of good food. The weather helped too, with a beautiful sunny day, a rare event this year!



*The festival provided CRPA with great exposure to young people as well as a chance to chat with their folks.*



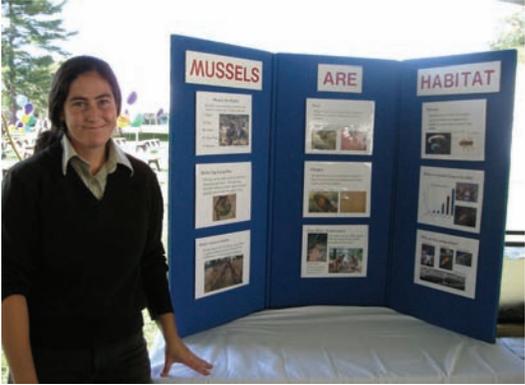
*CRPA’s E.D. tries hard to keep up with questions from a hoard of girl scouts. Photo: Kent Ford.*

Asked to bring an interactive display for the young folks, Kent Ford came up with a wonderful macroinvertebrate identification game in which bottled animal specimens had to be matched with drawn renditions of them and placed in a board. It could be played by singles or pairs, as a tic-tac-toe game. It was amazing how good the young participants were at identifying the critters! And their interest kept us hopping all day. Luckily, volunteers Kent and Ellen Ford and Lou and Betty Robinson were there to relieve Polly, as needed.

The organizing work for this festival is led by Fishery Biologist Matthew Patterson of the USFWS, with lots of help from staff biologists such as Rachel Mair. Last year Rachel, a CRPA member, was the first recipient of the USFWS’s Rachel Carson Award for Scientific Excellence. This national award is made to an employee who “exemplifies the best

in scientific contribution and application to achieve extraordinary results in fish and wildlife conservation”. The award was given for her leadership in developing a new culture system for maintaining freshwater mussels in captivity. Those attending Mussel Festival will recognize her. Congratulations, Rachel!

Attendance at the festival was close to a thousand and it was a collaborative success put on by “freshwater folk” from both Virginia and West Virginia. Be sure to make it there next year!



*Above: Award-winning biologist Rachel Mair with her display. Photo: Kent Ford. Left, the message here is hard to miss — mussels improve water quality!*



## Together Again: Members Gather for Fun and for Work

Thanks to the generosity of the McGuire/Reagan family, the annual picnic was held August 22nd on lovely Sycamore Bend Farm in Bath County. Torrential downpours that morning forced the location away from riverside and up the hill to where their rustic cabin assured shelter but, miraculously, the skies began to clear just in time for the event to begin. About 50 people braved the weather threat and it paid off with a beautiful afternoon of fun, eats, and socializing. The official river float, scheduled to leave from Ft. Lewis at noon and end at the picnic site, was cancelled, understandably, although a few diehards did a portion in the afternoon when things cleared up. "Smokin Joe" Wood brought his grill and everyone enjoyed the pot luck fare. The cabin area turned out to be a lovely afternoon spot and the river was just a short walk away for wet activities. Thanks again to Amanda, Billy, Will and Catharine for all of their hard work and hospitality.



### *But, all play and no work just won't do!*

The USFS Walton Tract was in particularly bad shape this fall. According to US Forest Service staff member, Lorraine Thomas, this was probably due in part to their loss of a security position over the summer that ordinarily keeps parties and such under better control. A small group of dedicated members worked long and hard in September to bring it back to the beauty we want to see when we visit that area. Close to 30 bags of trash were picked up as well as large items: chairs, wheels, tires, etc. Those attending should be commended, if you happen to see them. And watch for the spring cleanup ~ May, 2010. We Need you!



*Left: Monroe "Puggy" Farmer and Everette Rosen were new to the cleanup crew and VERY welcome. Each went home with a Wallawhatoola tee shirt and heartfelt thanks for showing up. Everette wasn't even a member at the time, but has since been recruited to the family. Right: The crew, Polly Newlon, Joe Wood, Dave Peters, Ellen Ford, Mike Whiteside and Puggy Farmer. Photo: Everette Rosen.*



**Did a friend share this with you? Maybe it's time to JOIN CRPA!**

- \$20 Member (minimum annual membership donation)
- \$50 River Guardian
- \$100 Headwaters Circle
- \$250 Watershed Steward  Other \_\_\_\_\_
- \$500 Wallawhatoola Society
- Junior Membership(s): 15 years and under; Cost—4 hrs./year volunteer service

NAME(S) \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY — STATE — ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

E-MAIL \_\_\_\_\_

- I prefer not to have my name published as a contributor.
- I'd like more information on the monitoring and educational programs.
- I am interested in becoming a volunteer river monitor
- I want to help save valuable resources, please send my newsletter by email



Cowpasture River  
Preservation Assn.

P.O. Box 215

Millboro, VA 24460

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