

THE RIVER RUNS

News from the Cowpasture River Preservation Association

FISH KILL UPDATE

By Paul Bugas — Fisheries Biologist, Virginia Department of Game and Inland Fisheries — June 20, 2007

As I write this piece for your newsletter, we still have “issues” with some of the fish that the Department of Game and Inland Fisheries (DGIF) has collected from the Cowpasture River as recently as last week. Our initial focus on the Cowpasture River was downstream of Route 39, but it is apparent that the bacterial infestations have spread as far upstream as Williamsville. The Bullpasture River and the Cowpasture River between Williamsville and Route 250 have not been examined. Fisheries technicians with DGIF performed spot-checks at Fort Lewis and Sycamore Bend Farm on June 14 and found a significant number of rock bass, smallmouth bass, and redbreast sunfish with lesions, fin rot, and fungus. Roughly, 20 to 30 percent of the rock bass were infected and most smallmouth and redbreast sunfish had lesions.



[Fish with lesions and fin rot taken from Cowpasture River at Walton Tract, May 2007]

One type of bacteria that has been cultured in many of the sick fish from the Cowpasture, as well as the James and Shenandoah, is *Aeromonas salmonicida*. This bacterium is associated with the disease called furunculosis, which is normally associated with coldwater environments. It is interesting that the water temperatures taken on June 14 ranged from 60⁰ to 64⁰ F., more than likely keeping *Aeromonas salmonicida* very active. *Aeromonas salmonicida* has been present in Virginia waters for decades, so our focus is to try to identify the stressor(s) that opened the fish to infection. We are starting to see the incidence of sick fish dropping off in the James and Shenandoah as water temperatures warm. Many of the sick fish will recover as water conditions improve. We have tested many fish from the Cowpasture for viruses, but to date, no signs of a virus have been detected. Some suckers, fallfish, and chubs have exhibited signs of lesions, but largely, this has affected members of the sunfish family.

In This Issue

- President's Column
- Executive Director Update
- CHESA & the Farm Bill
- Proposed Changes to VA Water Quality Standards
- River Monitoring Training
- The Monitoring Report
- James River 400
- National River Cleanup
- Scholarships Awarded
- Upcoming Events
- Controlled-Release Nitrogen
- River Day Picnic

DGIF has been very active in your watershed since the detection of this outbreak in late April, 2007. Our first goal was to get a handle on the species affected and their spatial distribution. Our sample locations have been: Wallace Tract, Fort Lewis, Sycamore Bend, Walton Tract, and Fork Farm (near the confluence with Jackson River). As I mentioned, we have tested fish for bacterial infections, viruses, tissue health, and intersex condition. The Department of Environmental Quality is running water quality tests and has retrieved the “virtual fish” that act as fish tissue and pick up pollutants. Virginia Tech is screening macroinvertebrates for us, as part of the ongoing Shenandoah River investigations. Our collaborative work on all three watersheds are focusing on contaminants (heavy metals, herbicides, pesticides), animal waste streams, immunosuppression (ability to fight disease), and new viruses. Some of this testing is very expensive and takes time, so all of the numbers are not in as of this writing.

Please see page 3

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President's Corner

Hello,

I trust everyone is enjoying these early days of summer. It's always a thrill to see the spring flowers grace the river banks and hear the bullfrogs croak up and down the river.

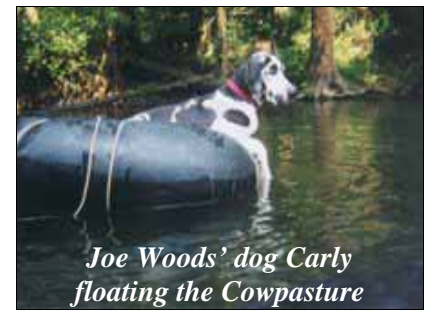
It has been a busy time for your CRPA since our annual meeting in May. The Board has been very active. Seven Board members visited the MeadWestvaco waste treatment plant to get a better understanding of bio-solid wastes. It was an informative tour, and we gained a better understanding of how waste-treatment plants operate and how the sludge is generated and how it could be used.

In conjunction with the National River Cleanup, we participated in three river clean-up projects on June 2 and 3. Even though a Friday night thunderstorm muddied the river, we patrolled the banks and camping areas to collect trash and debris. We are grateful for all those who came out to help and hope that we can continue to have more of these types of events.

The most important question we all have is what is causing the recent fish kill along the Cowpasture River. Several of the Board members have been working with the Department of Game and Inland Fisheries. We have accompanied the shock boat, and samples have been sent to Cornell University, Virginia Commonwealth University and Virginia Tech for analysis. Hopefully we will soon know what is causing this alarming fish kill. We can't speculate on the cause; all water samples are in the "good" range so we have no answers as to what is causing this horrible situation. I would hope each of us would write our state and federal representatives and request additional funding to help solve this problem. Any information we get on this fish kill will be posted on our web site.

I hope to see you at our annual picnic on August 11. Until that time... enjoy the River!

Best regards, Joe



Joe Woods' dog Carly floating the Cowpasture



CRPA Members Tour MeadWestvaco

Fish Kill

Continued from page 1

It is natural that citizens in the affected watersheds would like the problem(s) identified and rectified immediately. If the same pattern holds, as is has for the Shenandoah River, we can expect more of the same next year. All I can tell you is that we have a team of excellent scientists and involved citizens on these cases and eventually society will have to determine how to better deal with animal and human waste to improve water quality in our rivers. Contacting your elected representatives or the Secretary of Natural Resources and letting them know that our rivers need more protection would be a positive step for CRPA. Our data indicates that there is no health risk to swimmers, tubers, waders or canoeists. Other signs of river health (water quality and macroinvertebrates) are very positive, and that is a beacon of light in what has become a troubling time for the fish we love to catch in the Cowpasture River. <'>><



Executive Director's Update

Back in April, I received a call from the Department of Game and Inland Fisheries that dead fish and fish with lesions, fin rot, and fungal infections had been reported on the Cowpasture River. I immediately contacted members to be on the look out for any diseased or dead fish and to report findings to CRPA/DGIF/DEQ. Since then, numerous reports have been made by members, and CRPA continues to offer any and all support to DGIF and DEQ staff investigating this issue. I will continue to report any findings or other relevant information to you via email and on our website where I have links to both the DEQ and DGIF websites.

Meanwhile, CRPA has continued with our own monitoring of the Cowpasture River and its tributaries. Throughout the year, CRPA volunteers conduct water quality monitoring in the Cowpasture River Watershed. On page 6 and 7 of this newsletter you can learn a little about these types of monitoring in an article about our recent monitor training event and in a new column called, *The Monitoring Report*. I plan to use this column on a regular basis to publish information about our monitoring efforts.

Despite the recent issues with the fish, our macroinvertebrate populations (which is what we measure in our benthic macroinvertebrate monitoring) remain in the "acceptable" range in all sites we have monitored since April. You might ask the question, how can this be? According to DEQ officials, this is consistent with the data collected in the Shenandoah River Watershed; however researchers at Virginia Tech are taking a closer look at the macroinvertebrate populations in the rivers at issue and I look forward to sharing that data with you when it is available.

This does not mean that our work is any less important or unnecessary; if anything, our monitoring efforts are more greatly needed now than ever. The affected watersheds include hundreds of miles of river and government staff time and financial resources are limited, so citizen reporting and involvement is extremely important in documenting the water quality, assisting with data collection, and asking our government officials to make this investigation a priority. I strongly encourage you to become involved in our monitoring program either as a volunteer or to provide financial support to help cover our monitoring costs. Virginia Save Our Streams will be holding a monitor training session in the Upper James River Watershed on August 11. I will post the location and time on our website when it is available or you can contact them directly at 888-656-6664 or check their website at www.vasos.org. If you would like to support our monitoring program with a tax-deductible donation, please do so by completing and returning the form on the back page of this newsletter. Another way to become involved is by contacting your elected representatives as Paul Bugas mentions above in his cover story. One easy way to do this is to go to the Chesapeake Bay Foundation website's Action Network at www.cbf.org/action. Whether you prefer to get wet, write a letter or open your wallet, I hope you will choose to help us now! <'>><

CRPA Supports CHESSEA & the Farm Bill

CRPA has joined with environmental organization throughout the Chesapeake Bay watershed in support of CHESSEA and the 2007 federal Farm Bill.

The Chesapeake's Healthy and Environmentally Sound Stewardship of Energy and Agriculture Act of 2007 (CHESSEA) is an aggressive federal solution to help correct the region's water quality problems while maintaining farm viability.

CHESSEA would target states that are a part of watersheds like the Chesapeake—those with recognized nutrient pollution and oxygen degradation, agreed-upon multi-state commitments that address pollution, and identified restoration plans and goals.

Background

For years, the Chesapeake Bay and many of its rivers and streams have languished on the EPA's 'dirty waters' list, with pollution contributing to severe oxygen-depleted "dead zones" and loss of keystone biological communities like underwater grass beds and native oysters. In 2000, the Bay states, the District of Columbia, the Chesapeake Bay Commission, and the EPA signed the Chesapeake 2000

Agreement (C2K)—a binding pledge to cut the amount of nitrogen, phosphorus, and sediment pollution discharged into the Bay and its rivers. As of 2006, implementation of the Agreement's goals has been seriously impeded by lack of federal funding.

Solution

CHESSEA seeks to help maintain farm viability and improve local water quality by placing a priority on conservation practices that reduce pollution in the Bay and its rivers and streams. It also addresses the problem of regional equity in federal farm funding (Bay state farmers currently receive less than half the national average of federal farm dollars), and advances efforts to reduce greenhouse gases through agriculture and renewable energy.

Benefits

Both timely and bold, CHESSEA represents the largest single federal investment of direct dollars toward restoring water quality in the Chesapeake Bay.

A Farm Bill containing the provisions of CHESSEA will

Please see page 8

The CHESSEA Act:

- Increases funding for the Environmental Quality Incentives Program (EQIP) from \$1.3 to \$2 billion annually. EQIP offers technical and financial assistance for conservation practices such as animal waste management and rotational grazing.
- Creates a new sub-program within EQIP that would target funds (\$175 million the first year and \$200 million thereafter) to address regional water-quality problems, and allocate 25 percent of those funds, per year, to the Chesapeake Bay watershed states.
- Increases funding for the Conservation Innovation Grant (CIG) program from \$25 million to \$100 million annually. In the Bay watershed, these grants have been used to promote practices such as precision dairy feeding and conservation tillage.
- Enhances the Conservation Reserve Program by giving priority to the creation of riparian buffers, wetlands, and other habitats that are specified in state-approved tributary strategies.
- Provides Bay state farmers with greater access to Conservation Security Program (CSP) "green payments" by allowing continuous enrollment across the watershed. CSP rewards farmers for implementing conservation practices such as cover crops, conservation tillage and enhanced nutrient management, and CHESSEA offers Bay state farmers ongoing incentives to participate.
- Encourages comprehensive conservation planning by establishing a technical assistance pilot program in the Chesapeake Bay watershed funded at \$10 million annually.
- Expands the Wetlands Reserve Program (WRP), which rewards landowners who restore lost or degraded wetlands, to achieve the wetland acreage goals of the Chesapeake 2000 Agreement.
- Provides grants and loans for the development and commercialization of bioenergy projects such as cellulosic ethanol production, soybean biodiesel, and manure to energy, particularly in the Chesapeake watershed.
- Provides loans and grants for Bay state farmers to invest in renewable energy systems and energy efficiency improvements.

Bacteria Criteria Amendment Proposed

Cowpasture River Could be De-Listed

By Caroline Bott

The State Water Control Board is conducting the Triennial Review of the Virginia Water Quality Standards, which are provisions of law designating use or uses for the waters of the Commonwealth and water quality criteria for such waters based upon such uses. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the State Water Control Law and the federal Clean Water Act. The goal of the review process is to provide the citizens of the Commonwealth with a technical regulation that is protective of water quality in surface waters, reflects recent scientific information, reflects agency procedures and is reasonable and practical.

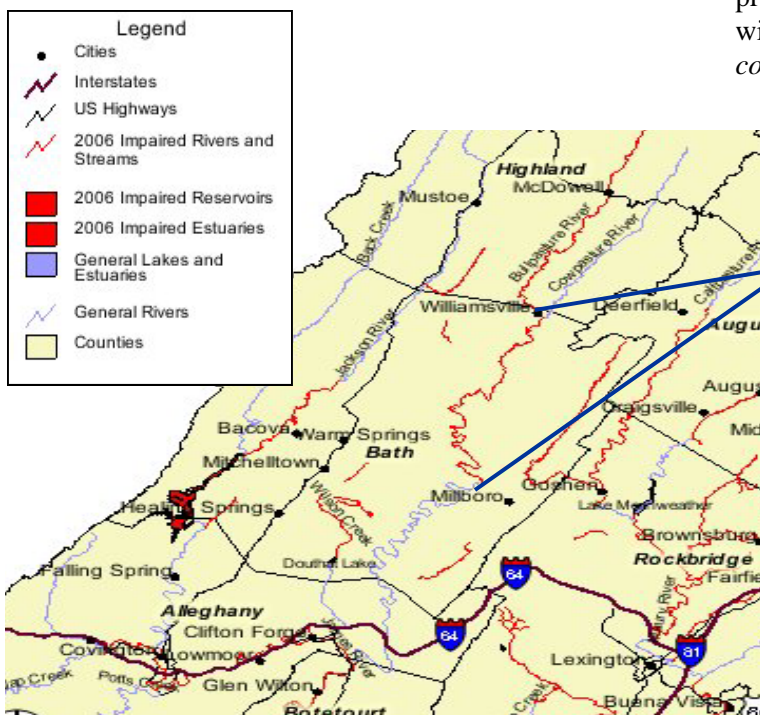
The existing Water Quality Standards contain in-stream water quality criteria for bacterial indicator organisms (*Escherichia Coli* in freshwater) to protect the public from swimming related gastroenteritis illnesses. As part of this review process, Department of Environmental Quality has proposed two alternatives for the geometric mean criteria for bacteria. The purpose of this is to receive public input on the pros and cons of both values. Only one value will be adopted into the final regulations. The first value is 126

colony forming units (CFU)/100 ml of water which is the existing criterion and is based on an illness rate of 0.8% (8 out of 1000 swimmers may get gastrointestinal illness). The second value is 206 and is based on an illness rate or 1.0% (10 out of 1000 swimmers may get gastrointestinal illness). It is the illness rate that will be the focus of public comment.

An illness rate of 8-10 is considered protective of primary contact recreation in freshwater and is acceptable to EPA. According to DEQ, the change from 126 CFU to 206 CFU provides more reasonable, but still very challenging bacteria reduction targets. DEQ and the Department of Health have discussed this issue and the VDH has decided to remain neutral on the issue, neither supporting nor opposing the increase in illness rate.

What does this mean for the Cowpasture River? Two segments of the River were listed as impaired by fecal coliform bacteria on the 2004 Virginia Impaired Waters list or as it is sometimes referred to, the 303(d) list (as of 2008 fecal coliform will no longer be used as an indicator organism, *E. coli* will be the standard). If the new criteria is approved, there is the possibility that the Cowpasture River will be taken off of the 303(d) list because the recorded *E. coli* levels are below the proposed criteria.

Please see page 8



Two segments of the Cowpasture River are listed as impaired for fecal coliform bacteria. First is a 15.54 mile segment in Bath County from the confluence with Dry Run downstream to the confluence with Lick Run. Second is a 16.54 mile segment, also in Bath County, from the confluence with the Bullpasture River downstream to the confluence with Dry Run. The Bullpasture River was listed for the first time in 2006 for *E. coli* from its headwaters downstream to its confluence with the Cowpasture, a length of 24.25 miles.

[Map developed by Caroline Bott on 3/21/07 using Virginia DEQ Geographic Environmental Mapping System: <http://gisweb.deq.virginia.gov/>]

River Monitoring Training on the Cowpasture

At the CRPA's first river monitor training event of the summer on May 19-20, members from Bath, Highland, and Alleghany counties learned to identify many of our river's "benthic" (organisms that live on the bottom of a body of water), "macro" (large enough to be visible to the human eye), "invertebrates" (organisms that have no backbone). The session was lead by CRPA member Kent Ford, a certified Virginia Save Our Streams monitor, at the Ford's farm on Stuart Run in Bath County.

Macroinvertebrates are a good indicator of water quality because:

- They are affected by the physical, chemical, and biological conditions of the stream.
- They show the effects of short and long-term pollution events.
- They may show the cumulative impacts of pollution.
- They may show impacts from habitat loss not detected by traditional water quality assessments.
- They are important in the food web of the stream.
- Some are very intolerant of pollution; while others are tolerant of pollution.
- They are relatively easy to monitor.

(Source: *Virginia Citizen Water Quality Monitoring Program Methods Manual*, July 2003)



[Anne McCaig and Lucius Bracey collect macroinvertebrates during a "20 second rub"]

On day one, volunteers learned about the bugs and how to identify them. Participants were given identification keys and all the tools necessary to "pick and sort the critters."

On day two, the group reconvened at the Walters' Cowpasture River Farm to learn the *VA SOS Modified Method*, which involves getting into the stream, using a net to collect critters that live on the bottom of the stream, sorting and identifying your catch, and then filling out the data sheet with easy calculations to come up with an ecological score for the stream. This method can evaluate the impacts of toxic, sediment, and nutrient pollution. This method can not evaluate the impacts of bacteria pollution. For more information about the monitoring method check out the Virginia Save Our streams website at <http://www.vasos.org/method.htm>. Also on the VA SOS website there is a "virtual" training session as well as some great downloadable materials.

Many thanks to the CRPA volunteers who joined us for the weekend and especially Ellen and Kent Ford for hosting the bug identification workshop on Saturday and the Walters family for hosting and participating in the river monitoring on Sunday. <'><

CRPA is planning on hosting another training session later this summer, be on the look out for more information. If you would like to attend, please contact Caroline Bott at (540) 460-0268 or directorcrpa@gmail.com.



Martha Rule, Eddie Walters, Kent Ford, and Anne McCaig sort bugs

The Monitoring Report

Water quality monitoring is a major focus of the CRPA. The goals of our monitoring program are four-fold: 1) to engage local community members to become water quality stewards; 2) to establish and augment current water quality baseline data; 3) to document water quality changes over time; and 4) to identify potential water quality problems. CRPA conducts two types of biological monitoring, benthic macroinvertebrate and bacterial. Biological Monitoring evaluates the presence, absence, and abundance of certain organisms in the stream. This type of monitoring gives an overall assessment of the health of the stream based upon the ecological conditions of the stream (what critters are making the stream their home).

Benthic Macroinvertebrate Monitoring

Water quality can be judged by the relative abundance of benthic macroinvertebrates that are intolerant of environmental stress and pollution to those that are not and the monitoring process is relatively easy to learn (see article on page 6 for more information). Volunteers have been collecting macroinvertebrate data on the Cowpasture and reporting it to Virginia Save Our Streams since 2001. This information is available to anyone with an internet connection by going to www.vasos.org and searching on the Upper James River watershed. Ideally, data is collected from each monitoring site every three months. The VA SOS monitoring method that CRPA volunteers use is based on a 12-point index to rate the ecological condition of the site (see box to the right).

12-point VA SOS Scoring Index:

A score of 0-7 means “unacceptable ecological condition”

A score of 8 means “ecological conditions cannot be determined at this time”

A score of 9-12 is considered “acceptable ecological conditions”

Macroinvertebrate Monitoring Results To Date Summer 2007

Sampling Date	Site	VA SOS Score
05/20/07	Cowpasture River Farm (River Mile 16.8)	9
06/11/07	Windy Cove Farm (River Mile 37.5)	10
05/30/07	Scotchtown Draft Bridge (River Mile 59.8)	10

Summer 2006

Sampling Date	VA SOS Score
06/12/06	10
06/11/07	11
07/12/06	10

The above table shows that all three sites monitored this summer have fallen in the acceptable range, which is consistent with the scores from the same sites last year. It is important to note that although macroinvertebrate monitoring is designed to show cumulative impacts on a particular site, individual monitoring scores should be considered within a wider context taking into account a variety of other environmental factors such as habitat and watershed assessment.

Bacterial Monitoring

CRPA’s bacterial monitoring program measures the presence of *Escherichia coli* which is considered an “indicator” species of bacteria. *E. coli* is found in fecal waste from humans or other warm-blooded animals and can enter a waterbody from various sources including faulty wastewater treatment plants, livestock, malfunctioning septic systems, untreated sewage discharge, pets, stormwater runoff, wildlife, or boat waste. The presence of *E. coli* in the water suggests that the water may include pathogenic microorganisms that pose a health risk. To monitor the level of *E. coli* in the Cowpasture River Watershed, CRPA uses a testing media known as Coliscan Easygel. CRPA began bacterial monitoring in 2006. Be on the look out for more information about our bacterial monitoring in future newsletters.

Bacteria Criteria

Continued from page 5

If this occurs, the proposed watershed restoration plan, or TMDL as it is sometimes called, to be completed by 2016 will not be required. CRPA will have to consider the implications of this, both good and bad.

According to DEQ, the number of impaired sites across the state could drop from approximately 61% to 46% if the new criteria are adopted, with the main benefit being more reasonable and cost-effective management plans to attain the water quality standards. Furthermore, DEQ states that under the proposed criteria, a more cost-effective mix of approaches can be relied upon to achieve standards.

At their June 27th meeting, the State Water Control Board approved the proposed regulatory amendments for public comment. The public comment period, once set after Executive level review, will be at least 60 days and will begin in the late fall (Oct-Nov) with hearings in Richmond and potentially several more around the state. DEQ will consider all public comments and make final changes to the regulation before going back to the Solid Waste Control Board for final adoption in the Spring of 2008. If adopted by the Board, the regulations will still have to pass another Executive level review in Virginia and then be approved by the EPA before an effective date is published in the Virginia Register.

CRPA will continue to monitor the amendment process and inform members when the public hearings are scheduled. For more information about the potential change, please refer to the DEQ website <http://www.deq.virginia.gov/wqs/rule.html#TR> or stay informed about this or other regulatory changes proposed in Virginia by logging on to the Virginia Regulatory Town Hall website at <http://townhall.virginia.gov/>. <''))><

CHESSEA & the Farm Bill

Continued from Page 4

provide the federal funds needed — approximately \$200 million more annually — to meet nitrogen-pollution reduction goals from agricultural sources, as required by the Chesapeake 2000 Agreement. With projected matches from states and farmers, this should translate into a 65 million pound annual reduction of nitrogen pollution entering the watershed, potentially 59% of the C2K reduction goal.

In addition, CHESSEA will result in reductions of greenhouse gases responsible for global climate change. Many agricultural “best management practices” (including riparian buffers, cover crops, and the restoration of wetlands and forests) that benefit water quality also sequester carbon. By promoting bioenergy and energy conservation, CHESSEA will reduce the use of fossil fuels, the main source of carbon dioxide, a major greenhouse gas. Passage of CHESSEA will mean healthier farms, cleaner rivers, and a major advance toward restoration of the Chesapeake Bay.

Status: With Congressmen Chris Van Hollen (D-MD), Tom Davis (R- VA), Bobby Scott (D - VA), and Wayne Gilchrest (R-MD) providing instrumental leadership, 21 bipartisan Bay-region Congressional representatives introduced this historic piece of legislation. Senator Barbara Mikulski (D-MD), introduced a companion bill in the Senate with co-sponsors Senators Benjamin L. Cardin (D-MD), John Warner (R-VA), Jim Webb (D-VA), Jay Rockefeller (D-WV), Joseph Biden (D-DE), Thomas R. Carper (D-DE), Robert Casey (D-PA) and Arlen Specter (R-PA). The bill will be debated through the spring and summer, and a final Farm Bill could come to a floor vote sometime in the fall. Working with partners including the Chesapeake Bay Commission and the Northeast Midwest Institute, CBF is dedicating considerable staff and financial resources to ensuring CHESSEA is part of the 2007 federal Farm Bill. <''))><

Source: CHESSEA Fact Sheet from The Chesapeake Bay Foundation CHESAPEAKE BAY FOUNDATION (April 15, 2007).

James River 400

Looking to the Past and to the Future



[Photo Credit: Cathy Benson, *The Fincastle Herald*]

organizations passed the America's Founding River flag – designed by college student from Virginia Commonwealth University – down river from one to another, similar to the Olympic Torch relay, so that the flag traversed the entire course.

The *James River 400* connected with other notable activities taking place during the same time period as this trip such as the James River Bateau Festival – from Lynchburg to Maidens – and the Alliance for the Chesapeake Bay's James River Sojourn, which began in Columbia, Va., and concluded at Dutch Gap Recreation Area in Chesterfield County.

On June 4, CRPA Executive Director Caroline Bott joined a paddling posse of James River advocates to take part in the first leg a month-long floating relay.

Organized by the James River Association and the Virginia Paddlers Association, the *James River 400* is designed to both commemorate the river's integral and nurturing role in Virginia's history (400 years worth), help develop a 400-mile James River water trail, and to call attention to the significant and growing threats to its health and vitality.

"The James River is an abiding link to Virginia's history and a waterway that is just as vital to us today, and yet our collective inaction to improve its health threatens the river's very future," said Bill Street, executive director of the James River Association. "Through the *James River 400* we hope to raise greater awareness about the issues that imperil the James, particularly polluted runoff, which is the river's single biggest killer, from its headwaters to its mouth."

Street noted that more than 1,500 miles of the James River and its tributaries are listed on the Clean Water Act's 'Dirty Waters List' because they do not meet water quality standards. As part of the trip, participants collected water-quality data which will be posted on the JRA website and shared with local and state officials.

The canoe flotilla set off from the confluence of the Jackson River and Cowpasture River where the James River proper begins. During the 30 day journey, the participating

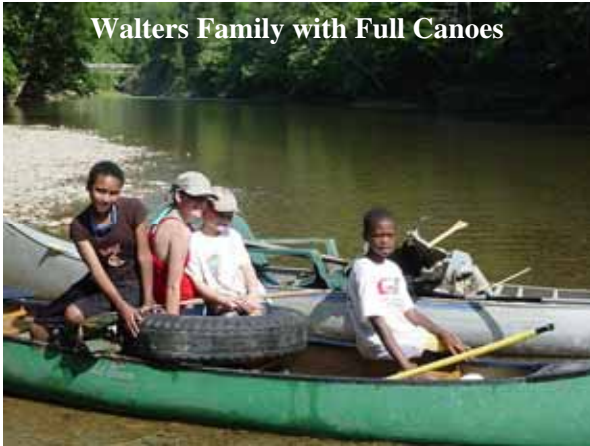
The journey will also help establish a 400-mile James River water trail to encourage diverse recreational uses of the river and its tributaries. The water trail will build on similar water trail efforts such as the Commonwealth's John Smith's Adventures on the James and JRA's Middle James River water trail guide. Information on access points, camping locations and river features will be assembled in a guide book following the trip. <''))><

The James River Association (JRA) is a member supported, non-profit organization dedicated to the protection and restoration of the James River – America's Founding River. The mission of JRA is to provide a voice for the River and take action to promote conservation and responsible stewardship of its natural resources. Their website is www.jamesriverassociation.org.

The Virginia Paddlers Association's mission is to promote and preserve Virginia's James River Heritage Water Trail. Their website is www.jamesriver400.org.



CRPA Participates in National River Cleanup Week



Walters Family with Full Canoes

From June 2 – 10, CRPA members and volunteers came together to cleanup the Cowpasture River as part of National River Cleanup Week sponsored by American Rivers. Cleanup events were held at the U.S. Forest Service public access points on the Wallace and Walton Tracts in Bath County and the Evans Tract in Alleghany County. In addition CRPA members floated portions of the river in Bath and Alleghany counties to collect trash and debris. In total, 42 individuals participated in the cleanup effort and 47 bags of trash were collected along with five tires, two chairs, various articles of clothing, inner tubes, road signs, scrap metal, and cinder blocks. A washer and dryer were also spotted and will hopefully be recovered soon.

Since its inception by America Outdoors in 1992, National River Cleanup Week has helped to raise public awareness of the magnitude of trash accumulating in our nation's waterways. Over the years more than 500,000 volunteers have participated in over 4,500 cleanups across the country, covering more than 100,000 miles of waterways.



Making the Evans Tract a Cleaner Place



Truck loads of fun at the Walton Tract



A Very Wet Cleanup Crew at the Wallace Tract

The Life of Litter

- Glass Bottle...1 million yrs
- Plastic Soda Bottle...1,000 yrs
- Monofilament Fishing Line...600 yrs
- Plastic 6-pack rings...450 yrs
- Aluminum Can...200-500 yrs
- Tin Can...80-100 yrs
- Plastic Bag...10-20 yrs
- Cigarette Butt...1-5 yrs
- Apple Core...2 months
- Newspaper...6 weeks
- Orange Peel...2-5 weeks
- Paper Towel...2-4 weeks

Source: California Waste Management Bulletin.
Federal Bureau of Land Management. Lake
Pontchartrain Foundation Beach Sweep.

CRPA Awards Scholarships to Local Students

By Christie Hardbarger

The Cowpasture River Preservation Association awarded its third annual round of scholarships this spring. The scholarships are given to a graduating senior at each of the three schools in the Cowpasture watershed: Alleghany High School, Bath County High School, and Highland High School. The students must plan to major in an area of science or environmental studies and they must write an essay about how growing up near the river has influenced their lives and their career choices. Consideration is also given to the student's high school academic achievements and participation in extra-curricular activities.

The winners this year include, Jared Ward of Alleghany High School, Haley Woodzell of Bath County High School, and Cody Armstrong from Highland High School.



Jared plans to continue his studies at UVA, majoring in science with the hopes of attending medical school in the future. He stated that growing up in a rural area such as this had impressed upon him the need

for excellent professional care and he hopes to someday

give back to the place from which he feels he has received so much.



Haley plans to attend Ferrum College and major in biology. She one day hopes to teach and was inspired to do so by the excellence and dedication of her high school biology teacher.

Cody will begin her education at Blue Ridge Community College and then plans to transfer to a four year university and major in environmental science and architectural design. She hopes to combine her love of horses, nature, and the environment to design barns and equine facilities which are efficient and ecologically friendly.



The CRPA is proud to be contribute to these outstanding students' futures and we wish them well in their endeavors! <''))><

UPCOMING EVENTS OF INTEREST

Citizens for Water Quality Summit — July 21 (Charlottesville)

- To register and see more information go to www.virginiacwq.org/summit2007.htm or contact Stacey Brown at Stacey@vasos.org or 804-615-5036

VA SOS Macroinvertebrate Training in Upper James River Watershed — Date TBD (Aug 11 or 18)

- Contact Stacey Brown at stacey@vasos.org or 804-615-5036

CRPA River Day Picnic — August 11 at Lynchburg Camps, RSVP by August 4.

VA SOS certification session tentatively scheduled for September 8.

- Contact Stacey Brown at stacey@vasos.org or 804-615-5036

Alleghany Highlands Environmental Council, September 12 at 2 pm at Old Dairy in Warm Springs.

- Contact Sally Johnson at sjohnson@homesteadpreserve.com or 540-839-3421

2nd Annual Chesapeake Watershed Forum, "Sharing Strategies to Manage Growth and Protect Our Waters." October 12-14, Shepardstown, MD.

- Information available at AllianceChesBay.org

EPA Region III Volunteer Water Monitoring Conference "Volunteer Water Monitoring In the Mid At: Citizen Scientists Involved in Their Local Watersheds: — Oct 12-13 (Winchester)

ESN Controlled-Release Nitrogen.... An Environmentally Friendly Alternative

By BJ Bilas

Editor's note: There has been a lot of effort and money applied to cleaning up the Chesapeake Bay and its tributaries. One of the main problems is caused by the excess nitrogen that ends up in the Bay. While nitrogen is a natural and essential part of both marine and terrestrial environments, an excessive supply of nitrogen can cause rapid growth and accumulation of algae. This can decrease light transmission through water and decrease oxygen levels. These negative impacts result in poor water clarity, loss of habitat, and low oxygen levels, referred to as eutrophication.

One source of excess nitrogen comes from agricultural fertilizers. This article discusses ESN which is an encapsulated nitrogen polymer that allows nitrogen to be used more efficiently by crops, potentially resulting in the need for less fertilization, and thus less nitrogen.

Please note that this article is not intended to be an endorsement of this product by CRPA.

Nitrogen is the most significantly used macro-element by plants, but it is also the most difficult to control in the environment. Whether for agricultural use or by the homeowner for turf & ornamental applications, nitrogen is the most recognized element applied to both food crops and ornamentals.

Controlled- and slow-release nitrogen sources have been commonly used in high-value applications, such as turf grasses, container-grown nursery stock, and vegetable production for years. Traditional controlled-

release products have not been economical for use in production of major agricultural crops because of typically high cost versus alternative products such as urea.

Both controlled- and slow-release nitrogen sources find favor in usage outside of agriculture because they provide **sustained feeding (release)** thus afford the **possible advantage of reduced number of applications and/or reduced total nitrogen applied.** Reduction of applications and actual nitrogen applied are both economical and environmental advantages.

At present, the use of controlled-release nitrogen in agriculture is very limited, accounting for less than 1% of worldwide fertilizer consumption. The main reason for limited use is cost as these products can range between two and eight times as much as a corresponding standard nitrogen source such as urea.

Controlled-release fertilizers are primarily used in horticultural uses such as turf grass, ornamentals, fruits, and vegetables...high value applications.

Agrium, a world leader in plant nutrient production, has successfully developed and commercialized ESN polymer coated nitrogen for agricultural use. The introduction of ESN in North America represents a major emphasis on reducing nitrogen loss mechanisms in the environment and affording the farmer exceptional crop response and return on investment.

Nitrogen fertilizer-use efficiency can be improved by

minimizing losses due to leaching, surface runoff, ammonia volatilization, and denitrification. Aside from economic losses, nitrogen which is not used by the plant (taken up) is subject to environmental loss and movement. **Leaching, denitrification, volatilization and surface movement (non-point source pollution) are likely the most common concerns.**

There is enormous potential for the increased use of environmentally friendly nitrogen in agriculture in North America and Europe if the cost of production can be reduced and advantages such as increased nutrient recovery, improved crop yield and quality, and reduced environmental impacts can be consistently demonstrated. Through ESN, Agrium has successfully accomplished the goals of environmental stewardship and improved crop response at economical levels.

ESN is a polymer coated nitrogen source. Agrium utilizes a proprietary coating at its Carlsland Alberta facility to manufacture ESN. ESN is widely used in agriculture across North America.

How does ESN work? Why is it different?

Please see page 15



You and all of your friends are invited to

RIVER DAY

the Cowpasture River Preservation Association's Summer Picnic

When: Saturday, August 11

1:00 pm — Float trip starts from Walton Tract

2:00 pm — Swim and Socialize

4:00 pm — Dinner Served

Where: Lynchburg Camps off Rt. 42 in Bath Co.

What: Traditional Picnic Fare

(hot dogs, hamburgers, drinks provided)

Please bring a side dish or dessert to share

Cost: Adults \$10, Children 12 and under \$5

Questions: Contact Joe Wood at (540) 862-9408 or
kathy@centralridge.com

Please RSVP by August 4th by returning the form on the
reverse along with a check made payable to CRPA

Come enjoy the river, see your neighbors, and
make new friends!

Directions to River Day Picnic:

Lynchburg Camp Road is off Route 42 about halfway between Interstate 64 and Route 39.

From Interstate 64 go North on Route 42 just over 8 miles. Lynchburg Camp Rd. will be on the left.

From the intersection of Route 39 and Route 42 go South on Route 42 just under 8 miles. Lynchburg Camp Rd. will be on the right.

Lynchburg Camp Rd. is marked with a brown and white road sign.

Come Join Us and Bring a Friend!

River Day Picnic Reservation Form

#Adults _____ **@\$10** **#Children** _____ **@\$5** **Total \$** _____

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Complete form & send check payable
to CRPA by August 4.
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Board of Directors Update

Congratulations to new CRPA Board of Directors members and officers!

Newly elected members at large:
Elizabeth Biggs of Williamsville & Dave Peters of Millboro

Newly elected officers:
Joe Wood – President
Jimmy Houff – Vice President
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ESN Nitrogen

Continued from Page 12

Most commonly used nitrogen products, such as urea, rely solely on moisture from irrigation or rain fall to release and provide nitrogen. Conventional soluble nitrogen sources are released immediately into the soil solution. This release mechanism in itself can be problematic because plant growth is reliant on factors beyond moisture alone. Plant growth responds to soil conditions such as pH, texture, moisture and temperature. ESN is released by soil moisture and temperature. Why is this important?

All plants have minimum and maximum temperatures for growth. Corn for example will not germinate below 50 degrees Fahrenheit; cool season turf grass becomes dormant at approximately 45 to 50 degrees. If using a nitrogen source which releases solely on moisture, this means the product could give up nitrogen at temperatures below normal plant growth ranges.

If the plant is not functioning due to low (or high) temperature, or lack of moisture, the nitrogen is susceptible to loss simply because the plant cannot take up the nitrogen. **Leaching is a common occurrence.**

ESN releases its nitrogen in synchronization with both moisture and temperature...**in synchronization with plant demand and growth.** This means nitrogen is more likely to be used by the plant for growth and yield, and less loss in the environment. ESN is a more efficient nitrogen product!

ESN being more efficient also means potential for reduced total nitrogen applied. In corn for example, university research has clearly demonstrated conventional nitrogen programs may be reduced by 15% to 25% when using ESN. Less nitrogen applied, greater efficiency and similar yields all contribute to improved environmental stewardship and economic health for the farmer.

In closing ESN is not a replacement for all nitrogen applications, but rather a “next generation” tool for agricultural production. As farm land continues to be sold for housing development and other non-agricultural use, more efficient use and production on fewer acres is the goal. <’))><

BJ Bilas is responsible for ESN sales & training in the upper central mid-west, Delmarva and Ontario. He currently resides in DeWitt Michigan and has been in the agricultural and turf & ornamentals markets for 32 years. He has held positions in marketing/sales management, field development, communications and International sales; a University of Delaware graduate and Master Gardner from Michigan State University.

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