

# REPORTER

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Interstate Commission on the Potomac River Basin

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C. Dalpra

Canada geese observe the Potomac River Watershed Cleanup near a storm drain in Anacostia Park In Washington, D.C. Story inside.

## Winter's Effects to be Felt this Summer

To many, it all seems long ago. Record levels of snow on the ground in mid-February, which turned black, gritty, and salty before slowly melting. The snow was eventually followed by torrential rains in March, which washed the last of the snow away and caused flooding in some areas.

The winter snow storms were more than an inconvenience—hundreds of thousands of basin residents were without power, some for several days. Others were injured in car accidents, and others were not able to conduct business or make it to medical appointments.

As flood waters from subsequent torrential rain storms receded, a call went out for volunteers, who with personnel from the C&O Canal National Historic Park and the Maryland Department of

Natural Resources collected hundreds of fish from the canal that were trapped in isolated pools.

Trash washed down in the storms was plentiful along the canal, and many other areas. Cleanups were organized in Anacostia Park in Washington to deal with the mounds of trash left along the bank by the high flows.

As the flood waters moved toward the bay, large amounts of nutrients, primarily nitrogen and phosphorus, were carried with it. The nutrients will be available this spring as a feast for algae, which are likely to cause green blooms as the water warms. When these tiny aquatic plants die off, they will help form the “dead zones” of depleted oxygen that are common to the lower Potomac and the deeper parts of Chesapeake Bay. The storms led to

***Our mission is to enhance, protect, and conserve the water and associated land resources of the Potomac River and its tributaries through regional and interstate cooperation.***

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predictions of larger dead zones and blooms of harmful algae later in the summer. These effects happen with any major storm.

The additional insult from the winter is in the salt carried into streams with the plowed, melting snow. Salt and other de-icing chemicals used to clear roadways can cause problems for the fish and plants that live in the stream, and the effects of road salting on some streams can be detected throughout the year. Road salts have the greatest impact on smaller, freshwater streams, and also can seep into groundwater tables, potentially contaminating drinking water sources. Water filtration plants that use surface water incur additional expenses to treat the saltier water. As ICPRB Executive Director Joseph Hoffman noted in an April 2009 opinion-editorial in the Washington Post, "We know that too much salt in our diets is bad for our health, but few recognize the impact that excessive salt has on our drinking water."

The amounts of salt used are both expensive and staggering. By February 11, the District of Columbia had reported using 11,000 tons of salt. Virginia reported using 27,000 tons. Maryland's salt use was difficult to determine, but the state spent well over \$100-million on plowing, compared with about \$26 million during the previous mild winter. Nationally, it is estimated that more than 20 million tons of salt are used to keep roadways clear.

Road salting is a major culprit in rising year-round levels of salt in some urban streams. It can remain long after the last snowflake falls, and can last through summer, up to a level 100 times greater than in unaffected forest streams. Research on Baltimore-area streams by University of Maryland researchers detected a four-fold increase in chloride concentrations over a 20-year period. Generally, urbanized areas with the most roads and parking lots are seeing the biggest increases. These increasing levels of salt can change the biology of fresh water streams over time and stress fish, amphibians, and plants that live in or near the stream. During the past winter, no reports of fish kills due to salt were reported.

Road salting also has an effect on area drinking water treatment processes. The Washington Suburban Sanitary Commission (WSSC), which supplies water to Montgomery and Prince George's counties, reported increased costs for water treatment and in time spent with some groups of customers.

Operations Chief Joe Johnson noted that the agency is concerned by both increasing salt levels in their intake water (much of which comes from the Potomac) and also the additional problem of high ammonia levels generated by the

interaction of the salt with organic compounds in the soil and riverbank. The increased ammonia requires greater use of chlorine to maintain needed residual levels in the distribution system, Johnson said. Tests by the agency have documented increased salt levels after heavy snowstorms. The increased salt levels are watched closely so that special needs users such as hemodialysis centers are notified. Increased salt levels in finished water, though well below federal guidelines, can sometimes prompt taste and odor inquiries from customers. The WSSC incurs extra costs both in treatment chemicals and in public relations efforts, Johnson noted.

Other water utilities acknowledged that road salt in their source water causes them to alter their treatment operations. Several smaller water treatment plants reported no changes to their treatment processes. This may reflect the lower amount of roads and parking lots in more rural areas.

Despite having some differing treatment experiences, water utility managers agree with Tom Jacobus, head of the Washington Aqueduct that provides drinking water for the District of Columbia, who said, "We certainly support the prudent and most efficient use of any chemical that may get to the source water and to limit its ability to reach the Potomac River."

The Washington Aqueduct, other metropolitan area water utilities (Fairfax Water and the WSSC), local, state and regional water management agencies, and the U.S. Environmental Protection Agency are collaborating to help find solutions to potential threats as the Potomac River Drinking Water Source Protection Partnership. The partnership's website, which contains information and links on road salt, emerging contaminants, and other safe drinking water issues, was helpful to ICPRB staff working to answer a number of media inquiries when the snow remained heavy on the ground.

Those inquiries demonstrated that there remains a general lack of knowledge about the effects of road salt. Media questions included how much salt is filtered out of the snow when it enters storm sewers (none), and why it may not be such a bad idea for governments to just push the snow into the tidal river (larger bodies of water, especially tidal areas that naturally contain salt, can easier assimilate the added salt than small freshwater streams). Overall, it was a good opportunity to increase the knowledge level of the media and public.

Over time, area public works and highway departments have been working to reduce the use of salt on highways. Their concerns go beyond the environment, as road salt applications can corrode cars, concrete road surfaces, steel guardrails and bridge structures, and stormwater and



other pipe infrastructure. Some of the innovative practices include the use of integrated weather monitoring systems, including automated pavement sensors and other technologies to guide ice management decisions, reduced salt use in sensitive areas, pretreating roads with a brine mixture that reduces overall salt use, and other types of deicing chemicals (such as beet juice) that are less harmful.

Concerns about road salt damage and cost were reflected in a bill introduced to the Maryland General Assembly that would require local governments with snow removal responsibilities to complete plans that would aim at reducing salt use. Budget concerns caused the Maryland Association of Counties and the state's Department of the Environment, which would be required to review the plans, to oppose it. The bill did not pass.

For more information on road salt issues, visit the DWSPSP web site at [www.potomacdwspp.org](http://www.potomacdwspp.org).

## Volunteer Power Cleans Trashy Watershed

A dry, cool, sunny day made for a strong turnout for the annual Potomac River Watershed Cleanup. The good weather brought thousands of volunteers to local rivers and streams in the 22<sup>nd</sup> annual spring cleaning of the watershed led by the nonprofit Alice Ferguson Foundation. The group also leads the Trash Free Potomac Watershed Initiative, which seeks an end to river trash by 2013. The ICPRB is a partner in both efforts.

At hundreds of sites spanning each of the Potomac's jurisdictions, individuals, school groups, scouts, corporate staff and others gathered to work together for a few hours to collect trash and to make a statement about ending it. About half of the sites performed their cleanups on April 10 with the remainder being held on later weekends.

The 2010 effort has already generated some impressive statistics. With 257 of the 511 registered sites reporting, 8,330 volunteers have removed more than 171 tons of trash. High on the list of offensive



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**Student Conservation Association volunteers cleaned and performed trail maintenance with a cross-cut saw at Heritage Island in the Anacostia River.**

objects picked up stream-side were more than 121,000 recyclable beverage containers and 22,000 plastic bags.

Volunteers picked up much more than those items. They were awash in the stuff of everyday life and could have created households of the leavings: enough parts to build any number of cars (including old license plates), enough lumber, shingles, plumbing pipes, sinks and appliances to build a house. Furniture, clothing, kitchen tools and other items were found in abundance. Lawn mowers and wading pools for the backyard could round out the needs for a complete home. The lesson to be learned is that without care and forethought, just about everything we make, buy, (or eat) can end up contaminating our environment.

Disturbingly, the cleanup frequently sets new records in the amount of trash collected, while it sets more in the numbers of volunteers and sites.

Tracy Bowen, executive director of the Ferguson Foundation, noted the many negative effects that trash, as a pollutant, has on our waterways: harm to wildlife and destruction of their habitat, decreased property values, financial obligations to local governments, and public health concerns. The Trash Free Initiative is an offshoot of the 22-year-old cleanup, and Bowen hopes that the effort will be the cleanup's logical conclusion. "We don't want to pick up trash anymore," Bowen said with a smile.

Some of the sites in the cleanup have been on the list for many years, and in some places, returning volunteers have noticed some areas get permanently cleaner, and some of those sites have been dropped. Others, due to their location near stormwater outfalls and the flows of the river, seem perpetual trash havens.

Anacostia Park, a heavily used open space along the eastern side of the river in

the District, looked fairly clean on the day of the cleanup. There was still trash to remove from the shoreline, but the brunt of the work had been done a couple weeks earlier when volunteers gathered several times to clear the trash left by the severe storms and flooding in March.

Volunteers at the park reported collecting few of the ubiquitous plastic shopping bags, which can be seen decorating trees along many streams and roadways.

Across the Anacostia at Kingman and Heritage islands, volunteers from

several organizations also reported collecting fewer bags, but still plenty of other trash to pick up.

The pervasive bags were the subject of a 5-cent bag tax that began in the District last January. Designed to promote the use of reusable bags, part of the nickel-a-bag fee will feed the Anacostia River Cleanup Fund.

Although just an observation at one place at one time, the decreased number of bags help signal that the new law is changing behavior and cutting litter. The tax generated about \$150,000 for the river for January. During that first month of the new tax, retailers used about 3 million bags, compared with about 22.5-million per month during the previous year, according to a District report.

A similar bill in Maryland has not passed.

For more information on the cleanup and the Trash Free Initiative, visit [www.potomaccleanup.org](http://www.potomaccleanup.org).

## Restoration Plan for Anacostia Unveiled

The Anacostia Restoration Partnership in April unveiled an ambitious plan to restore the Anacostia River. A kickoff ceremony held at Bladensburg Waterfront Park on a summer-like day had the water sparkling in attendees' eyes as a blue heron and other birds wheeled in the breeze overhead. Even the river looked hopeful.

The plan was drawn up during two years of research and planning led by the U.S. Army Corps of Engineers, and assisted by the local, county, state, and federal agencies of the partnership. The plan is a comprehensive approach that focuses down to the subwatershed level. For each

of the basin's 14 subwatersheds, the plan identifies the major challenges and problem areas, and identifies projects that address particular issues.



Stormwater is a major focus of the plan.

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In all, the plan includes more than 3,000 projects throughout the Anacostia. More than 1,700 of them are aimed at stormwater control, which the plan notes offers the greatest opportunity for restoring the

health of the watershed. Other areas of project focus include stream restoration, wetland creation and restoration, removal of fish blockages in streams, reforestation of riparian areas with increased street tree plantings and invasive species control, trash reduction, remediation of toxic hotspots, and parkland acquisition.

Projects were assessed and ranked for effectiveness and cost to guide actions efficiently. The plan foresees clustering complementary actions in targeted areas to create the greatest benefit. The clustering of projects creates the added benefit of creating greater visibility and educational opportunities. Strong public involvement can also help provide ongoing impetus for tackling more of the projects.

The plan is an important step for the jurisdictions—the State of Maryland and its counties, Montgomery and Prince Georges, the District of Columbia, and the federal government—to work toward the watershed's restoration in a coordinated way. The plan also relies on strong involvement from citizens groups and federal agencies.

An overview of the plan notes that it is more than a blueprint—it is a “central rallying point for an extensive and committed partnership to step up to the enormous challenge that watershed restoration represents. Implementation of the plan may require up to \$2.7 billion, in addition to the costs of completing the D.C. Water and Sewer Authority Combined Sewer Overflow Long-Term Control Plan and other ongoing programs. Immediate funding for feasibility studies, engineering and design, and construction is crucial to the plan's success.” The Long Term Control Plan, projected to cost about \$1.3 billion, with annual operation and maintenance costs of about \$13.4 million, focuses on reducing the overflow from the city's older combined sewer system, where stormwater and sanitary sewage share the same pipes. During storms, the system

overflows directly into waterways.

Even more crucial to the restoration plan's success is in finding sources for funding, which currently is unidentified. Partnership members and others are looking to start public-private support and in trying to leverage new and existing programs, according to the plan. Greater public awareness about the watershed's value and its role in the quality of life of the region's residents is seen as key to creating the political will that will bring the necessary dollars.

The plan can be read at: [www.anacostia.net](http://www.anacostia.net).



## Watching the River Flow

Flow of the Potomac River fell below average in February, surging to well above average in March, according to U.S. Geological Survey provisional data, which has not been reviewed for accuracy.

Measured near Washington, D.C., the February average flow of the Potomac was about 10.4 billion gallons per day (bgd), about 7.5 percent less than the long-term average of 11.2 bgd. Daily extremes during the month ranged from a low of about 6.9 bgd on February 18, with the high flow of about 17.7 bgd occurring on February 26. Water taken from the river for metropolitan water supply averaged about 200 million gallons per day (mgd).

March flows swelled to about 30.1 bgd, or about 96.2 percent more than the long-term average of about 15.3 bgd. The river's flow ranged from a high of about 124.7 bgd on March 15, and dropping to a low of about 13.1 bgd on March 28. Water taken for municipal supply averaged about 200 mgd.

The ICPRB Section for Cooperative Water Supply Operations on the Potomac reported that the basin's upstream reservoirs remain full, and the probability of a release of water for water supply and environmental flow needs is low through the rest of the year.

# Shenandoah Researchers Prepare for Spring Fish Kills

The Virginia departments of Environmental Quality and Game and Inland Fisheries are continuing to watch for springtime fish disease and mortality that have been occurring in parts of the Shenandoah watershed and several other river systems annually since 2004.

Since that year, biologists and anglers have continued to see primarily smallmouth bass and some sunfish with lesions, sometimes resulting in fish kills. Research into the illness revealed that many of the male fish carry eggs in their testes, a condition known as intersex. While the discovery of intersex, which was later found in other fish in the Potomac River, and nationally in another study, is a serious concern, no direct link between the condition and the sickness and mortality has been found.

The annual fish kills occur in the spring, and the instance of kills and diseased fish declines after water temperatures rise to about 75 degrees.

The fish and their environment have been intensively studied since the formation of the Shenandoah River Fish Kill Task Force in 2005, which includes federal and state agencies and university researchers. No individual chemicals or other pollutants have been identified as a cause, and research has moved toward the idea that multiple stresses on the fish population are causing the disease problems. Assessed fish have damaged skin, gills, and internal organs, and many have high numbers of internal parasites, according to the task force members. Recent research has focused on the role of bacteria in infecting the fish that are already stressed from a number of environmental factors. So far this year, diseased and dead fish have been found, but in relatively smaller numbers, noted Shenandoah Riverkeeper Jeff Kelble.

Anglers and other members of the public have played a strong role in keeping the task force alerted to sick fish or fish kills very quickly, which has greatly helped with the research. Helpful information includes location, date, unusual water conditions, types and numbers of sick fish, and photographs. Information can be sent to the task force through its hotline, (800) 592-5482, or by emailing to [fishreports@deq.virginia.gov](mailto:fishreports@deq.virginia.gov).

In the meantime, the effort is being assisted by the nonprofit Potomac Conservancy, which recently launched its Fish Mystery campaign. By publicizing the issue, the campaign is seeking more government funding for research and regulation into the intersex problem, and



the hormone-mimicking chemicals, known as endocrine disruptors, that are thought to be related to the problem. Many commonly used compounds, including those found in some drugs, birth-control pills, pesticides, some plastics, personal care products, and flame retardants contain endocrine disruptors.

The campaign includes a petition calling for a larger and more coordinated effort to address those substances, traces of which also are found in drinking water supplies.

For more information on the campaign, visit [www.potomac.org](http://www.potomac.org).

## Carbon Markets: A Method to Improve Water Quality?

From nutrient trading to carbon trading, environmental markets continue to be a topic of discussion at the federal level and among the Potomac River Basin states. The ICPRB is exploring options for using trading programs to accelerate implementation of land management practices that improve water quality. While there still is uncertainty if trading programs for carbon and nitrogen will benefit our waterways, the ICPRB continues to be part of the region's discussion. "We do not know if the federal or state governments will implement carbon limits. At the Potomac-regional level, ICPRB needs to be involved with programs to provide the scientific basis for informed decision-making on these issues should the states move forward with formalizing carbon trading programs," said ICPRB Executive Director Joseph Hoffman.

Carbon markets are created by legislation that caps emissions. A cap is the maximum a company is allowed to pollute. Caps may be exceeded by purchasing offsets or credits. Trading becomes an option for companies whose emissions are less than their cap or for landowners that are either unregulated or can reduce pollution more than their allowable load.

Typically, carbon is discussed in

relationship to air quality and greenhouse gas emissions. The practices that sequester carbon, and create those credits available to sell, include tree planting and no-till agriculture, are the same practices that benefit water quality by reducing sediment and nutrient delivery to our waterways.

To provide an opportunity for states to plan their approaches on a regional level, ICPRB held the Mid-Atlantic Carbon Symposium in February. The purpose of the conference was to determine if there was interest in a regional voluntary carbon trading market. More than 40 attendees from state, federal, and private groups interested in the potential of carbon trading contributed to an abundance of discussion as clear answers were sought. Symposium participants discussed which aspects of land-based climate change mitigation would most benefit from interstate cooperation. Participants also discussed how to capture the current potential of voluntary carbon markets while we prepare for what is likely to be a regulatory market.

The symposium began with an overview of voluntary carbon markets by Katherine Hamilton of Forest Trends Ecosystem Marketplace. Her presentation was followed by two roundtables. The first roundtable was *Status and Outlook of Existing Markets* and included participants Jean-Philippe Brisson of the Climate Action Reserve, Renee Fizer of the Maryland Department of the Environment, R. Neil Sampson of the Vision Forestry, Will Price of the Pinchot Institute, and Eric Juzenas of the Commodities Futures Trading Commission. The second panel discussed policy developments and included Emily Russell-Roy of the Pacific Forest Trust, Megan Gould of EPA's Air Division, and Richard Swenson of NRCS-USDA.

Many recommendations were made by speakers at the Mid-Atlantic Carbon Symposium. Three issues that were discussed were uncertainty about the status of federal legislation, the role of the Regional Greenhouse Gas Initiative (RGGI), and conversion of farmland away from food production.

At the federal level, several bills have been drafted that would set rules for carbon cap and trade. Concern was expressed about the uncertain status of this federal regulation. The uncertainty has been contributing to the low prices on the voluntary carbon markets. Symposium participants discussed how this pre-compliance market can serve to hedge future risk. This current situation of no federal regulation can be used to our benefit. Moving forward on the state and regional basis may motivate industry to lobby for a federal regulation that will make it easier for them to compete across a level playing field among the states. In addition,

if a state establishes a strong trading protocol, that state may then present an exemption to preemption. The federal uncertainty on cap and trade does not provide a reason for carbon trading discussions to stagnate at the state level. Several states present at the Symposium indicated that they would move forward in exploring carbon trading.

Another issue discussed at the symposium centered on the Regional Greenhouse Gas Initiative (RGGI). The RGGI is a mandatory, market-based effort to reduce greenhouse gas emissions in the northeast and mid-Atlantic states. Of the ICPRB member jurisdictions, only Maryland is a member of RGGI. The states participating in RGGI sell emission allowances from energy producers at auction and reinvest the proceeds into energy efficiency, renewable energy, and other clean technologies. The overall goal is to "reduce carbon dioxide emissions from the power sector ten percent by 2018 and create green energy jobs," according to the RGGI website, [www.rggi.org](http://www.rggi.org). The RGGI has received no applications in Maryland and RGGI has not been effective in Maryland, especially in terms of offsets. Participants indicated that RGGI can make changes if recommendations are brought forward. It was recommended that the group work with RGGI to clearly define carbon sequestration practices and those situations where additionality is an issue to help make RGGI more beneficial.

Another issue that was raised was the problem of taking land out of food production. Many farmers receive financial and technical assistance from the U.S. Department of Agriculture (USDA) for tree planting along streams, planting trees to retire cropland, and other innovative farming practices. The USDA does not provide cost-share funding for carbon sequestration practices, but has calculated the carbon benefits for each practice. Unfortunately, these recommendations have not yet been released by the State Department. Instead of receiving cost-share funding for carbon practices, farmers and other land owners can offer their carbon credits for sale, particularly to state trading programs that do not allow cost-shared activities to be part of the program. Yet it remains a major concern that farms may be taken out of production resulting in the loss of farm land for food production. Further examination of all of the unintended consequences, especially in regard to taking land out of agricultural production, is required. Land retirement options for sequestration are mature, but practices for working within the agricultural operations are less so. Science and research continues to be necessary to identify additional protocols that sequester carbon and allow a farm to be productive. Additional

research on practice permanence would also be helpful.

A full review of the recommendations and copies of the Symposium presentations are on ICPRB's website at: [TinyURL.com/ICPRB-C-Symposium](http://TinyURL.com/ICPRB-C-Symposium).

As carbon trading gains ground, ICPRB will "continue to provide a forum for serious discussion of a variety of issues related to topics associated with market-based

actions," Hoffman said. The ICPRB is uniquely suited to foster discussions in the region as we bring member jurisdictions and others together. "Holding these discussions on trading and other activities that move toward environmental restoration adds to the science-based knowledge and expertise that becomes available to the region as we strive for restoration of the Bay and the Potomac," said Hoffman.

## Come on a Ramble! Paw Paw Bends, July 8-12

"A great way to see the river." "I cross the Potomac every morning on my way to work. I never knew all this was down here." Those are the kind of things we hear from people who take a trip on the river with us on the annual ICPRB Potomac River Ramble.

This year's Ramble will travel the upper Potomac from Town Creek through the Paw Paw Bends, and ending at Little Orleans. The course winds through gorges and rolling hills, with flat water and beautiful scenery. Along the way, Ramblers will become involved in the river and its surroundings through hands-on demonstrations and participation. Come to have fun, play with and in the river with conservationists, scientists, historians, and other Ramblers. For details, visit [www.potomacriver.org](http://www.potomacriver.org), or call (301) 274-8107.

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*Potomac Basin*

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