

REPORTER



C. Dalpra

The Ramblers begin their journey from Oldtown, Md. The C&O Canal National Historic Park, a green ribbon that follows the river from Cumberland, Md., to Georgetown in Washington, D.C., is a great benefit to river travelers.

Potomac River Ramble Draws Paddlers Closer to River's Resources

Cool temperatures, clear skies, and crisp air blessed ICPRB's Fall Foliage River Ramble in the Paw Paw Bends of the Potomac River. The Ramble, which ran the river on the weekend of October 12-15, brought river stewards, old and new, together to learn more about the Potomac's resources through campfire presentations, activities, and paddling. While the fall foliage itself was observed, it was not cooperative. Despite the chilly temperatures, many of the leaves were just beginning to turn.

The Fall Foliage Ramble focused on the food web and how aquatic and terrestrial animals and plants work together. Friday's lunch program focused on macroinvertebrates, or the critters that live in streams, and are an important food source for fish, frogs, turtles, birds, and bats. Tim Craddock, Citizen Monitoring Coordinator of the West Virginia Save Our Streams Program, led Ramblers to a small tributary of Town Creek to have a closer look at the aquatic critters that make up the base of the food web. He showed the group three-tailed mayflies, wormy-looking caddisflies, and other odd

aquatic dwellers that eat fallen leaves, aquatic grasses, and even other small macroinvertebrates. As we began paddling again, it was hard not to consider the small, but important, animals that keep the water clean and become food themselves.

The day's paddle ended at Paw Paw Tunnel Campground, where we were joined by Julie Kidwell, the mayor of Paw Paw, W. Va. Kidwell had just become mayor of the sleepy West Virginia hamlet, and started by explaining that this would be her first "political speech." She shouldn't have worried, because she was eloquent in telling of her efforts to establish a loop trail utilizing the abandoned railways that bridge the Potomac several times in the area. She sees the proposed 14-mile loop trail as a resource that can help hikers and bikers appreciate the area, and just as importantly, pump some economic life into an area that desperately needs it. "I would like to see Paw Paw be able to support a nice restaurant and other things," she lamented to the group. She spoke during dinner, after the Ramblers had hiked to the historic Paw Paw Tunnel, which carried the C&O Canal under a mountain, and cutting off about six

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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Historian and biologist Doug Wood captivates his fireside audience of “British colonists” as Cherokee warrior Ostenaco, who fought with the British in the French and Indian War.

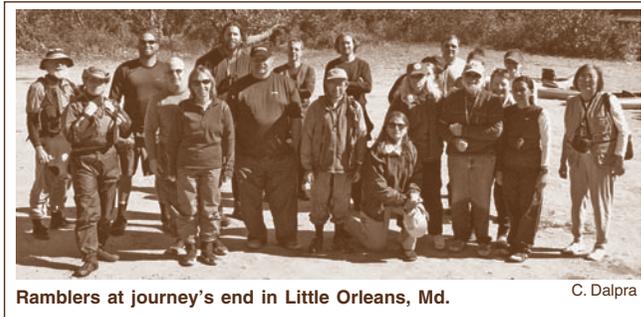
miles of meandering river bends for barges. Lasagna was on the menu that night, complete with salad and garlic bread, and was well-received by the cold campers.

After dinner, Ramblers surrounded the campfire as Doug Wood of the West Virginia Department of Environmental Protection Watershed Assessment Program presented a Chautauqua-style story of his adventures as Man-Killer Ostenaco, a Cherokee war captain allied with the British during the French and Indian War. He came dressed and in character and interacted with Ramblers as though we were British colonists in 1758. Ostenaco described his journeys over the last several winters as he traversed thousands of miles on foot fighting the French and Indian enemies of the British and King George II. The group learned that Native Americans allied with the British played an important role in shaping the history of the area, including the Potomac watershed. Once back at their campsites, Ramblers remarked at the number of stars visible in the skies at night, and a number of shooting stars were observed throughout the evening.

A hard frost settled on tents and gear overnight and made for a chilly Saturday start. River booties and gloves were warmed by the fire before starting the day's journey through the Bends. Thick fog lifted from the still surface of the Potomac that morning and as the sun broke from behind the trees, it burned the fog a brilliant orange. The first Ramblers on the water appeared as mere silhouettes amidst the light. The Paw Paw Bends feature slow-moving water punctuated with shallow riffles. The forested banks rose up from the water's edge in one of the most pristine and secluded stretches of river in the watershed. Purple asters dotted the rock cliffs with color as the Ramblers meandered down the river. A couple paddlers tipped their boats through this section, but guides and safety-boaters were quick to offer assistance. Several dry bags full of warm clothing and other equipment also accompanied us down river in case anyone became too wet

or cold, but were luckily not needed. The day's focus was forests and the terrestrial pieces of the food web. Just after lunch, Ramblers learned about the damaging effects of invasive species, such as Japanese stilt grass, multiflora rose, and tree-of-heaven from James Tilley, Recreation Coordinator for the Potomac Conservancy. The Conservancy encourages using native plants and trees in the landscape and their Growing Native program helps by providing native seeds to the John Ayton Maryland State Nursery to grow out and be sold as seedlings. Maryland Department of Natural Resources (DNR) Forest Service Forester Cody Miller was on hand to answer questions about how citizens can get free trees through Backyard Buffers, a riparian reforestation program that provides 25 seedlings to residents who live near a waterway.

The day's paddle complete, Bryan Seipp, the Potomac Conservancy's forester and director of restoration, explained the importance of native trees and helped identify several at the Bonds Landing campground in Green Ridge State Forest. Ramblers helped collect spicebush berries,



Ramblers at journey's end in Little Orleans, Md.

a common understory tree, but they were reminded to leave a third to a half of the fruit on each tree as they provide food for many terrestrial critters.

Forests continued as the topic as Donnelle Keech of The Nature Conservancy spoke about the Three Sisters Watershed project, an initiative to help preserve forests in Sideling Hill, Fifteenmile, and Town creeks, three of the most pristine watersheds in the Potomac basin. Mark Bealls, a DNR staffer at Green Ridge State Forest enlightened the group about the history of Green Ridge State Forest, including its earlier time spent as apple orchards, and told a few local ghost stories.

The Ramble attracted a diverse group of



West Virginia DEP Biologist Tim Craddock helps Ramblers discover some of the many aquatic insects living in Town Creek. The tape across the stream is used to help measure stream flow.

paddlers to the Upper Potomac this fall, from first-timers to old-timers. We saw those new to the water adjust quickly and listen eagerly to the advice of our guides who gave impromptu tips and examples of various paddle strokes. We also enjoyed watching 70 yr-old Bob Mumford, our unofficial local expert, pilot his solo canoe through the rapid sections while standing.

The trip ended with a leisurely lunch at Bill's Place in Little Orleans, Md. Ramblers took their time enjoying lunch, saying their goodbyes, and remembering the highlights of the journey. Each stroke of the paddle, each macroinvertebrate examined, and each seed collected gave Ramblers an idea of the importance of the watershed and their efforts as stewards. The ICPRB hopes to encourage many more stewards through the camaraderie, action, and education of the Rambles. The Ramblers battled cold nights, some strong winds, and a few even got harmlessly dunked, but to a person, ICPRB staff heard only good things from the group. It is a joy of the Rambles that we get to see someone learn their first

paddle strokes on a quiet river shrouded in fog and magic, and later hearing them plan for their next journey on the new friend that they have found.

The Fall Foliage River Ramble was made possible by a generous donation of \$5,000 from Pepco, and in-kind services and meals from the National Park Service C&O Canal National Historic Park, the Potomac Conservancy, and the Maryland DNR Forest Service, as well as the presenters from the Nature Conservancy and West Virginia Department of Environmental Protection who shared their knowledge and passion so willingly. Future Rambles are in the planning stages now. Check the ICPRB website for updates on next year's Rambles at www.potomacriver.org/ramble.htm.

Drinking Water Partnership is an Added Level of Protection

Drinking water delivered to the taps of the region's residents by public water suppliers is a taken-for-granted resource. For some residents of the Potomac watershed, water rates have risen in recent years, and the increases in cost have increased awareness. For the majority, though, water comes out of the faucet when the tap is turned, end of story. A regional survey some years back found that a significant number of water utility customers could not name the utility, or say how much they paid.

Residents have that luxury because water utility personnel work constantly to ensure a safe, economical product. One part of that effort is the Potomac Basin Drinking Water Source Protection Partnership (DWSPP), formed in 2004. The partnership is an outgrowth of federal regulations that require drinking water facilities to assess current and potential threats to the utilities' sources of water. The assessment highlighted an opportunity for water providers, state and federal agencies with water supply responsibilities, and other stakeholders to join forces to address a growing number of issues that can affect the raw water sources used by the water utilities.

The group, which held its second annual meeting on October 25, has focused on a number of issues, including pathogens found in intake water (such as cryptosporidium and giardia), emerging contaminants (including endocrine disrupting chemicals, such as pharmaceuticals used in medicine and agriculture, personal care products, and other chemicals), disinfectant byproduct precursors, urban issues, agricultural issues, and development of an early warning and emergency response system.

The DWSPP, with more than 20 organizational members and participants, held its annual meeting in Gettysburg, Pa., to stress the watershed-wide outlook of the growing coalition. The meeting was hosted by the Adams County, Pa., Conservation District and the Pennsylvania Department of Environmental Protection (DEP).

Attendees began with a tour of best management practices at a nearby dairy farm and a visit to Gettysburg's drinking water intake on Marsh Creek. During the field trip, attendees learned that runoff pollution from agriculture and housing developments are impacting water quality and raising concerns about adequate water



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Partnership members began the meeting at a covered bridge straddling Marsh Creek. The creek is a source of water for Gettysburg. The area's tremendous growth is stressing water supplies.

supplies. Adams County, which includes Gettysburg, is one of the fastest growing counties in Pennsylvania. The group also was briefed on the results of the source water assessment and protection report, prepared for the Gettysburg Municipal Authority by ICPRB.

The meeting featured reports from workgroups, with the emerging contaminant report especially relevant from media attention paid to endocrine disrupting chemicals found in the Potomac (see related story). In the coming year, the group plans to continue tracking research being performed in relation to water quality and intersex fish. The group also will use geographic information systems and other tools to identify areas and contaminant sources that could impact water supplies, continue work on pathogen research by monitoring, updating emergency procedures, reaching out to strengthen interest in water supply issues by stakeholders and the public, and other initiatives. The group also heard a report about Pennsylvania's ongoing effort to provide adequate supplies of clean water through a new state water resources law. The ICPRB has been assisting Pennsylvania in the state's portion of the Potomac watershed.

The group also appointed a new chairman, Jon Capacasa, representing the U.S. Environmental Protection Agency, a charter member of the group. In passing the gavel, outgoing chairman Charles Murray of the Fairfax County Water Authority (Fairfax Water), noted the importance of DWSPP in helping protect public water supplies from a wide range of challenges. Murray noted that the groups focus on meeting these challenges is, in a sense, another part of the process of providing adequate supplies of pure water and is a part of the "multiple barrier approach" to keeping contaminants out of public supplies.

More information on DWSPP can be found at www.potomacriver.org.

CO-OP, Water Suppliers Play Serious Game

While ICPRB Section for Cooperative Water Supply Operations on the Potomac (CO-OP) staff try to make the annual, week-long drought operations exercise with the major Washington metropolitan area water suppliers as interesting and engaging, as possible, the stakes are serious. The annual drought simulation that includes CO-OP, the Fairfax County Water Authority (Fairfax Water), the Washington Suburban Sanitary Commission, and Washington Aqueduct ensure that actual drought operations

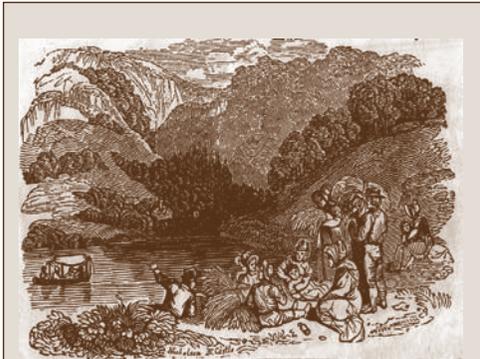
(which last occurred in 2002) work smoothly.

Under normal conditions, the three metropolitan-area water suppliers that primarily rely on the Potomac to serve more than four-million people operate independently. Absent rainfall and with falling groundwater levels, the Potomac's flow can drop below levels needed to meet water supply demand while leaving adequate water in the river to protect the ecology below the intakes. During droughts, withdrawals by the utilities are coordinated by CO-OP staff, who also determine the timing and volume of reservoir releases upstream that provide the additional water in the river. The daily scenario of assessing river levels, demand forecasts from suppliers and checking weather forecasts, assigning withdrawal targets for both Potomac and off-river withdrawals, and releasing finite reservoir resources makes for a complex dance among managers, but one they do well because of years of practice. "The exercises help to keep personnel on their toes and off of each other's," said CO-OP Director of Operations Erik Hagen. He added that the organizations involved undergo staffing and other changes, and the exercises also help bring new staff up to speed. "The drought operations we practice have been used for only two years since the Jennings Randolph Reservoir filled in 1982 to provide stored water supply. But having actual operations fail is not an option," Hagen said.

The week-long exercise involves the water suppliers and CO-OP in a real-time simulation using a computer-generated drought. Actual releases were made from Little Seneca Reservoir in Montgomery, County, Md., to test travel time from its location on Little Seneca Creek to the river, where the added flow can bolster releases made from Randolph Reservoir far upstream on the Potomac's North Branch. The exercise also included the deployment of a temporary flow gage on the river to provide the extra information that helps guide decision-making. Assessment of the exercise includes refining policies and computer models used in the operations.

Representing an important communications link with local governments, the Metropolitan Washington Council of Governments participated to practice its role in guiding any water use restrictions that could be called for under regional agreements.

More information on the drought exercise and other aspects of the metropolitan area's water supply is available on the ICPRB website, www.potomacriver.org/water_supply.htm.



Watching the River Flow

August's dry weather reduced river flows to half the norm, while September's wet weather brought river levels back to near normal, according to data collected by the U.S. Geological Survey.

Provisional data collected near Washington, D.C., showed that August's lack of precipitation kept flows averaging about 1.5 billion gallons per day (bgd), or about 57 percent below the average flow of 3.4 bgd. Daily extremes ranged from a high of about 2.3 bgd on August 1 to a low of about 1.0 bgd on August 27. Water withdrawn for drinking use averaged about 472 million gallons per day (mgd). Freshwater inflow to the Chesapeake Bay averaged about 17 bgd, about 24 percent below the norm for August. The Potomac contributed about 13 percent of the total.

September flows averaged about 3.8 bgd, or about five percent above the normal flow of 3.6 bgd. Flows ranged from a low of about 1.8 bgd on September 1 and quickly reaching the month's high of about 10 bgd on September 5. Water withdrawn for drinking use averaged about 364 mgd. Freshwater inflow to the Chesapeake Bay was about 43 bgd, or about 85 percent above the historical average. The Potomac contributed about 12 percent of the total.

Congress Conducts Hearing Potomac Chemical Issues

The discovery of seemingly high concentrations of intersex fish in new locations in the Potomac River resulted in a congressional hearing at which federal regulators, agencies including ICPRB, and environmental groups testified. The October 4 hearing before the House Government Reform Committee, chaired by Rep. Tom Davis (Va.) heard testimony that there is concern among all parties, but that much research remains in identifying chemicals that may be involved, and whether contaminants that can mimic the human hormone estrogen and that are being increasingly found in the environment in minute amounts pose a human health threat.

The hearings came after news reports that more male fish were being found with eggs in their testes, revealed after microscopic examination. Researchers are finding fish with the problem in a number of locations in the Potomac watershed, most recently, largemouth bass sampled near the Woodrow Wilson Bridge in the District. Scientists with the U.S. Geological Survey (USGS) who found the intersex condition investigating fish kills and disease in the upper watershed, think the problem may be caused by endocrine disrupting chemicals in the environment. A first kill of smallmouth bass with lesions occurred in the South Branch Potomac in 2002. Similar fish kills and disease have been observed in areas of the Shenandoah watershed in subsequent years. No strong link has been drawn between the intersex condition and the fish kills (see March/April 2006 *Reporter*).

After the discovery of the intersex condition, further research has primarily yielded more questions about the types of chemicals present in the river, and how efficiently they are removed by wastewater and drinking water treatment processes. Many thousands of chemicals in everyday use, including birth control pills, cosmetics, pesticides, agricultural chemicals and feed hormones, personal care products, and a wide range of other substances can mimic estrogen. Many of the chemicals are only partially removed from the waste stream. More of the chemicals are removed by water treatment processes, although the substances are not regulated or regularly tested for.

Through a series of presentations delivered by representatives from metropolitan area water suppliers, the U.S. Environmental Protection Agency, USGS, U.S. Fish and Wildlife Service, the Natural Resources Defense Council, ICPRB, and Potomac River Keeper, the overriding message to the committee was that what is

not known dwarfs what is known, that there is reason to be concerned by the little that is known, and that significantly more resources will be needed to learn what we should.

Testimony delivered by ICPRB Executive Director Joseph Hoffman focused on the need for coordination and cooperation among many agencies in addressing what is both a growing regional and national issue. Hoffman noted that the water suppliers and ICPRB already are addressing the issue through the Potomac Basin Drinking Water Source Protection Partnership, a group formed to help focus resources on threats to the sources of drinking water, such as the Potomac and its tributaries (see related story). A workgroup of the partnership is focused on emerging contaminants, including endocrine disrupting chemicals. The workgroup is keeping the partnership members up-to-date on new research and developments.

Water suppliers also noted the partnership involvement, as well as the need for basic research that is beyond the means of individual utilities. Those utilities have banded together under the American Water Works Association, which has funded several million dollars of research. For its part, EPA representative Benjamin Grumbles noted that the agency was accelerating its efforts to categorize and research the growing number of substances.

Brook Trout Backed by Alliance

In the watershed's coolest streams, trees overhang the banks, water boils and gurgles over rocks, and mayflies and stoneflies are busy laying eggs. These streams are home to the region's remaining trout populations. Historical evidence suggests that streams throughout much of Maryland and the east coast states once supported native brook trout populations. Brook trout serve as indicator species because they are highly sensitive to pollution. Today, much of the native brook trout population has declined or been depleted because of "impacts from agriculture, grazing, loss of riparian forests, urbanization, and competition with invasive species, global climate change, acid precipitation, and other anthropogenic alterations to the landscape," according to



the Eastern Brook Trout Joint Venture (EBTJV) Conservation Strategy Work Group.

The EBTJV is a regional partner of the National Fisheries Habitat Initiative, a nation-wide effort to organize local conservation efforts, and includes 17 states from Maine to Georgia. The Maryland Brook Trout Alliance (MBTA), part of the EBTJV, has set a goal of preserving the remaining native brook trout populations and their habitat, with a long-term goal of restoring degraded populations. The group divided the work among four main watershed regions: Gunpowder, Youghiogheny, Savage/North Branch, and Catoctin/Antietam/Monocacy, the latter two in the Potomac basin. The ICPRB participates in the MBTA meetings and work groups in the Potomac watershed. "This regional effort is important to the basin because it will increase a valuable economic and recreational resource through water quality improvements," said ICPRB Executive Director Joe Hoffman.

The North Branch Potomac and Savage River watersheds are two of the few remaining native brook trout populations in the Potomac watershed and the only intact trout populations in Maryland, according to the publication *Eastern Brook Trout: Status and Trends* from the EBTJV. The Catoctin, Antietam, and Monocacy river systems have degraded populations, but according to Frederick County Maryland Division of Public Works (DPW) Project Manager Shannon Moore, the watersheds have been assessed and the group is beginning to move forward with restoration projects. The Catoctin Antietam Monocacy Brookie Initiative (CAMBI), formed from the partners of the Frederick County Watershed Restoration Action Strategies and other groups, has drafted a strategy to protect and restore brook trout populations in their watersheds. "It will serve as a local guidebook for making management decisions in the region," said Moore.

The CAMBI strategies include fostering an environmental ethic, restoring riparian corridors, improving impaired streams, preserving pristine areas, protecting natural

resources during land development and building capacity in public and private sectors. Several projects have been completed by the group, including riparian buffer plantings, rain garden installations, and trash clean-ups. The ICPRB has assisted in several of these projects throughout the watersheds.

According to the EBJTV Conservation Strategy Work Group, the most serious issues plaguing the brook trout's habitat are climate, land use change and acidic deposition. Brook trout require cool temperatures and special habitat to survive. Based on models, ICPRB staff predicted a mean temperature increase of 2.3 degrees by 2030 in the Potomac watershed. While the increase seems minor, an increase of only one degree can severely stress the sensitive brook trout. Many of the streams in the eastern portion of Maryland that previously supported viable trout populations have been altered because of urbanization, making their temperatures increase and altering the aquatic life in the stream.

Though temperature can adversely affect brook trout, they are one of the most acid-tolerant freshwater fishes, according to the Work Group. Despite their tolerance to acidity, the Work Group estimates that about 30 percent of Virginia's streams no longer support brook trout and "up to 10,000 miles of trout streams in the Southern Appalachian region may have been lost to acidification." While there have been some improvements in the northern states of the EBTJV, much of the Potomac watershed streams have shown little or no improvement in acidic deposition, according to the Work Group. Though much of the Washington, D.C. metropolitan area has been developed, the far western portions of the Potomac watershed, mostly the Savage River subwatershed, remain largely undeveloped.

The Savage River watershed is rural, mountainous, and full of small, forested streams--prime habitat for brook trout. Dr. Richard Raesly, the speaker at the July meeting, noted that the Savage River watershed is about 80 percent forested and only about three percent urbanized. Five percent urbanization is the threshold for stressing brook trout. The newly formed Savage River Watershed Association has taken the lead role in creating strategies and projects for protecting the intact brook trout habitat of the Savage River. At their meeting in July, the group attracted about 70 local neighbors who were undecided about the brook trout efforts. Some were interested in preserving their watershed and the fishery and some were opposed to the proposed new restrictions on the brook trout fishery above the Savage River Dam. The new restrictions would make all the tributaries and most of the mainstream Savage River a catch and release area with no bait fishing allowed.

The future of the Eastern brook trout in the Potomac watershed, where it was once a common species, will in the future be determined in the few subwatersheds

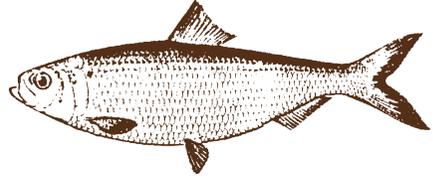
where it continues to live. A strong program to protect and enhance "native brookies" will also help preserve water quality and local ecology.

ICPRB's Cummins Honored for Shad Restoration

Field and Stream Magazine, perhaps the best-known journal of the hunting and fishing crowd, recently honored ICPRB Living Resources Unit Director James Cummins as one of its Heroes of Conservation in a September ceremony in New York City.

Cummins was cited for the ICPRB American Shad Restoration Project, which he led and has continued largely on his drive and passion. A coalition of ICPRB, state and federal fisheries agencies, a local waterman, nonprofit and school groups have played a role since the program began in 1995.

From a humble beginning with no funding and little support, the program has involved thousands of school students and volunteers who help raise and learn about



the shad fry they raise for placement in the river. Over the years, more than 17-million fry have been stocked in the Potomac, and fry from the river are now being taken for restocking in the Rappahannock and Susquehanna rivers.

The project was earlier awarded a citation by the American sportfishing Association. More information on the shad project is available at www.potomacriver.org/living_resources/shad.htm.



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