



J. Duncuigeen

ICPRB's Jim Cummins at a heavily trashed site on Watts Branch in Prince Georges County, Md. Shopping carts and car parts are mingled with smaller floatable refuse.

ICPRB Staff Assists with Anacostia Trash Survey Coordinated Effort Seeks End to Trashy Anacostia

Anacostia watershed water quality leaves a lot to be desired, a victim of high population and impervious surface density, deluges of stormwater, and other insults. But if the water quality of the river and its tributaries, an area shared by suburban Maryland and Washington, D.C., were to by some miracle become pristine, with healthy populations of plants and animals, the loads of trash found in streams and shores would still give the strong impression of a wasted resource.

The trash problem throughout the watershed is well-documented after 20 years of Potomac watershed cleanups (see March/April *Reporter*), and much of the refuse found in and along streams is carried there in stormwater flows. Inertia is

building to clean up the entire Potomac watershed, and the Anacostia in particular.

Beginning this year, staff from ICPRB is assisting the Metropolitan Washington Council of Governments in performing an intensive survey of the trash problem in the Anacostia. The survey will gather information on the amounts and types of trash found on some 30 selected stream segments in Montgomery and Prince George's counties in Maryland. The sites are being monitored four times over the course of a year to examine seasonal variation. Other monitoring will try to quantify the types and amounts of trash entering the river through stormwater outfalls, several of which will be fitted with traps to capture debris after rainfall. In assessing trash at the various

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sites, other information, such as land use type and other demographics will help provide the best assessment possible into the types and quantities of trash that is coming from particular sources.

Along with other information, the investigation will create a basis for a Total Maximum Daily Load (TMDL) study for trash in the larger Maryland portion of the watershed. A TMDL is a pollution budget that identifies and quantifies a contaminant and allocates the pollution load from different sources. The plan will provide a path toward reducing the pollution so that the stream will meet water quality standards.

Maryland listed the Anacostia and its tributaries as impaired after several groups photographed and documented trash levels in the streams that impaired their use by the public. Under the federal Clean Water Act, streams found to be impaired are studied to guide cleanup activities. The trash TMDL is the first of its kind in the region, following an earlier trash TMDL being implemented for the Los Angeles River in California. The earlier Los Angeles TMDL has served as a template for creating the Anacostia TMDL, noted Rich Eskin, Director of the Science Services Administration of the Maryland Department of the Environment.

The TMDL will include load allocations based on the trash surveys and identified land use types that can guide government efforts to effectively intercept trash. Different parts of the watershed can benefit from different trash control strategies; traps on stormwater outfalls, street sweeping, or changes in the way trash is collected could be used depending on the sources and amounts of trash in a particular area. The plan also should be flexible enough to alter tactics as the program is applied and experience is gained, Eskin noted. That flexibility is another feature of the Los Angeles trash plan, which will be reassessed when the program reaches a 50-percent reduction of trash flows.

The Anacostia TMDL is being coordinated with existing trash control efforts for some streams in the counties and in Washington, D.C, which also is surveying its streams to assess the problem. The Anacostia TMDL should be completed by the end of 2009, Eskin said.

Of course, the TMDL will be a *plan* of action to address trash, and its success will largely depend on it being implemented and strongly supported. It also will not address some of the larger trash found in our streams, such as tires and large car parts, many of which seem purposefully dumped, rather than carried to a stream or the river by stormwater. That kind of pollution is documented by the trash survey teams, and by 20 years of volunteer cleanup efforts in the watershed.

"Some of this trash has to have been dumped intentionally," said ICPRB staffer



J. Ducnuigeen

Watts Branch features a collection of trash both dumped and carried by stormwater.

Jan Ducnuigeen, part of the interagency team surveying the sites. “When you find two-dozen tires in one place, or heavy car parts, its hard to believe that they were carried by storm flows,” he said.

The survey teams are assessing 30 stream sites. Each includes a 500-foot length of stream and its width to bank-full, and are assessed for 20 different types of trash. Not surprisingly, the more urban areas are significantly worse. “Especially in the urban areas, its sad just how much we find,” Ducnuigeen said.

If the trash TMDL is effective, it still will only be removing the trash that enters the system. Making a real change in the Anacostia and its tributaries will take more than a regulatory program. Luckily, a broader plan exists—the Trash Reduction Strategy produced under the auspices of the Anacostia Watershed Restoration Committee. That plan assesses current efforts by local and state governments to curb trash and promote recycling, and lists strategies for trash reduction and public involvement that provides a valuable overall path for coordinated activities to reduce existing trash and to stop the flow of trash. The plan can be downloaded at http://www.anacostia.net/download/Anacostia_Trash_Reduction_Strategy_06.pdf.

After 20 years of annual Potomac Watershed Trash Cleanups, the Alice Ferguson Foundation has been leading a Potomac watershed-wide comprehensive trash elimination plan. The Potomac Watershed Trash Free Initiative recently held its third annual meeting at the World Bank in Washington. The group pushed for the trash TMDL as a part of a many-pronged approach to eliminate litter from

streams.

The Trash Free Initiative has brought together scores of agencies and local governments in an advocacy coalition seeking progress in the whole range of issues that the problem encompasses. The TMDL is just one component of the initiative's goals, which also include strengthening anti-litter laws and their enforcement, creating incentives for business and industry involvement in managing the problem, market-based approaches to trash reduction, support for government programs, and a strong emphasis on education and outreach to create a change in the littering behavior of many residents.

Initiative members are working toward a region-wide public education and awareness program to inspire voluntary citizen and business activity to end litter through outreach and

advertising targeted to specific demographic groups.

The effort is supported by public opinion surveys and focus groups conducted in 2007. The results showed that there is a large citizen base concerned about litter and want something done about it. The survey found that littering is widespread among all demographics, but is especially acute among young men, of which 25 percent under the age of 25 admitted to littering food wrappers. Most cited convenience or laziness as a reason, as well as knowing that there would be no repercussions to their littering. The survey also found that most people did not realize that litter washed down a storm drain went directly into area streams without treatment.

Obviously, these attitudes and misperceptions, left unchecked, will hamper attempts to address the trash problem in a meaningful way. The annual Potomac Watershed Cleanup has helped to create a growing stewardship among the public, who are pushing the anti-litter message year-round in their daily lives.

“Getting citizens and businesses to take action is critical,” said Tracy Bowen, executive director of the Alice Ferguson foundation. “We need to get the message about trash out to everyone where they work, where they recreate, at their homes, their schools. We need them to take action,” she said. She also noted that businesses can respond, and employees can get the message through their workplace. She cited the Phillip Morris Company, which recycles 75 percent of its solid waste, and noted that recycling is now becoming commonplace among the company's employees at home as well as at work.

Tidal Potomac Ramble Opens Eyes, Minds



Ramblers gather on the water before a long day of paddling.

C. Dalpra

Educating the public on the important role of the Potomac River and its tributaries in the everyday lives of the region's residents and encouraging them to become stewards of the resource is an important ICPRB mission. Nothing accomplishes that mission as dramatically as helping people experience the river "up close and personal."

Each year, the Potomac River Ramble trip drives that point home as small groups of people paddle in and camp along the river for several days. At the end of the trip, most people say that they will never look at or read about the river in the same way again. Several talk about buying a canoe or kayak to continue their adventures.

This year, 27 Ramblers signed up to paddle the upper tidal Potomac downstream of Washington, where they learned about fish, submerged vegetation, birds, ecology, and the culture and history that make the Nation's River a wonderful and unique environment worth preserving and protecting.

From as far away as Binghamton, N.Y., the 2008 Potomac River Ramble participants gathered on the banks of Piscataway Bay on June 19. Though strangers at first, they shared in a desire to wet their appetites for exploration in the waters of the Potomac. The Ramblers and ICPRB staff were bid welcome by the Accokeek Foundation, stewards of the National Colonial Farm, as the group settled in for a two-night's stay. The first evening consisted of an informal meet-and-greet over a barbecue dinner.

Early the following morning the group was roused to the sound of birds and the sight of a burning sunrise on the hills of Mt. Vernon, home of George Washington. The waters of the Potomac and Piscataway Bay lay glass-still and beckoned the beginning of the journey. After a hot breakfast and a safety briefing by the colorful river guides, the Ramblers launched from the shores of the Colonial Farm. The morning's destination was clear and lay ominous in

the haze-Fort Washington, a long-standing defender of our nation's capitol, and today, a National Historical Park. The Ramblers crossed the mouth of Piscataway Bay and pulled up on the shores of the historic fort. As the group hiked up the steep hill, it became obvious that were the Ramblers attackers, an attempt to reach its doors would be futile. The fort was the idea of George Washington, who realized that the deep narrow channel just off the Maryland shore created a bottleneck for boat traffic, and were a fort built to defend this channel, river access to the city of Washington could be controlled. After a fine tour of the fort, the



B. Biser

A Fish and Wildlife Service team shows off some freshly captured snakeheads from their electro-shocking boat.

group sat atop its ramparts gazing out at the Potomac, and pondering what lay ahead. In thanks to the National Park, the Ramblers helped to clean trash laid by the tides along its shores.

The remainder of the afternoon was spent exploring Piscataway Creek until it was time to return to National Colonial Farm. On the way, Ramblers passed through thick beds of hydrilla, an invasive aquatic plant making itself at home in the Potomac, which added some difficulty to the paddling.

Back at the farm, the group received an interpretive tour of the Colonial farm by Accokeek staff person Matt Mattingly, who explained how it represents farming as it was in the 1700s, complete with historic structures, heirloom livestock species, and

colonial farming practices. The evening finished with ICPRB staff arborist Jen Willoughby leading the Ramblers on a riparian tree tour examining the numerous species found on the grounds.

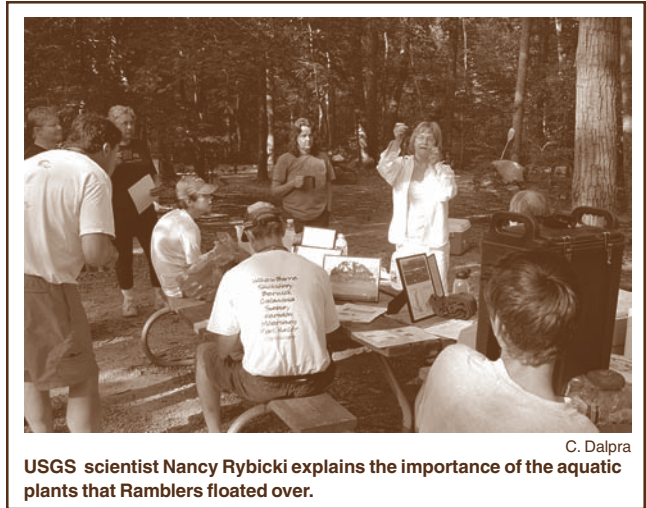
The following morning was a replay of the first, another beautiful sunrise throwing its rays on Mount Vernon. Ramblers began to stir and break down their tents and prepare for a full day of paddling across the river to Virginia and a trek down river. After another hot breakfast and the morning safety briefing, the Ramblers proceeded down the Maryland shore to the first stop on the water.

Just upstream from Marshall Hall, the group rendezvoused with a team from the U.S. Fish and Wildlife Service. They were in their electro-fishing boat to deliver a program about the exotic invasive snakehead fish. An electro-fishing boat produces an electric field that destabilizes a fish's muscle control and allows them to be caught with a net. The electric field does not kill the fish, allowing the biologists to safely sample the diversity of fish in an area. The biologists had captured five large snakeheads and the ramblers were full of questions about this strange fish. In this area of the Potomac, sport-fishing for bass and other gamefish is a major industry and a valuable source of income for the local counties. Snakeheads are a cause for concern as researchers try to determine what effect, if any, the large predators are having on other fish populations. In the meantime, the snakeheads are increasingly targeted by sport anglers. After lunch on the shore, the group thanked the fisheries crew for their informative program and continued on.

The flotilla then pointed across the river to the Virginia shore and Pohick Bay. Here, the Potomac River is over a mile in width and can prove a difficult crossing to kayakers. Winds can turn the flat water into whitecaps and the river is shared by barges, large yachts, and speedy bassboats and jet-skis. Prepared for the worst, the Ramblers were treated to smooth water that seemed all to themselves. The winds were light, and the flotilla formed a large "V" as it made the crossing, taking care to remain as a tight group. Once on the Virginia side, the Ramblers were welcomed by a pair of bald eagles flying along the shore. The group of canoes and kayaks followed along, continuing downriver and easing into Pohick Bay. Having made the crossing in no time at all, the Ramblers decided to make the short run up to the mouth of Accotink Creek and a large tidal freshwater marsh. There, large groves of

spatterdock, a type of native water lily, encircled creek's mouth with its flowers, and the group paused to watch great blue herons fish in the flats. One heron come up with a small bullhead catfish and carefully worked the fish with its bill in order to dispatch and swallow it without fear of its pectoral spines. In another part of the creek schools of large long-nosed gar, a native freshwater fish, snapped their long tooth-filled mouths at baitfish at the water's surface.

The day wore on, and the boats turned toward the evening's destination, the Pohick Bay Regional Park. Camping at the park afforded a campfire for s'mores and a hot shower. Feeling refreshed, some of the Ramblers struck up an impromptu jam session with guitars, a steel pan drum, and



C. Dalpra

USGS scientist Nancy Rybicki explains the importance of the aquatic plants that Ramblers floated over.

a trumpet. The park is a popular local camping destination, with a large camping area, a pool, horse-riding trails, and other amenities. Several large boat ramps that provide regional water access stayed continuously busy with boats coming and going.

In the morning, the Ramblers awoke to begin the last day of the journey. After breakfast, the group was joined by Nancy Rybicki of the U.S. Geological Survey. Rybicki has spent years studying and surveying the aquatic plants of the Potomac, and she shared both her knowledge and wonder of the plant ecology of the river. Sitting at a picnic table, Rybicki brought along samples of the plants the group had been floating over, explaining what each was, and its importance to other animals and plants in the river. The Ramblers learned how levels of plants have risen and fallen in response to changing water quality and how invasive plants such as the hydrilla they had encountered are affecting the Potomac ecosystem.

With a bag of samples in hand, the group broke camp and set off on the last leg of its Potomac journey. Paddling back out to the mouth of Pohick Bay, the group was

joined by more eagles and some osprey, which all agreed made wonderful traveling companions. A tree-lined tidal freshwater inlet appeared along the shore, and the Ramblers dipped in for a peek. Inside, the waters were clear and filled with fallen trees. Hordes of turtles basked on the logs and green frogs called from shore. Towards the back of the cove, the group startled a large barred owl that was roosting and he quietly lifted into the air to find a more secluded perch. The cove pulled at the group to stay longer, but a lunch appointment at Hallowing Point some distance away got the group paddling.

At the point, the flotilla was greeted by Louis Harley, a local waterman and resident of the community along the point who hosted the Ramblers at a shore-side pavilion. Harley has fished these waters for years and recounted stories of the history of the area. He told the group that Hallowing Point was originally known as "Hollerin' Point." Harley recalled that two brothers once owned the point as well as a large landholding across the river in Maryland at a time when the river was both quieter and

narrower. The two brothers, on opposite sides of the river, would communicate by hollering across the Potomac. Quieter days those must have been to be able to have a conversation over that distance. A short trip further, and the Ramblers disembarked at the community's boat launch to board the shuttle bus for the return to the Accokeek Foundation, where the Ramblers said goodbyes before returning to the hustle and bustle of everyday life.

At the take out, the group formed a circle of newly found friendship and discussed the trip. Three days on the river had seemed like a much longer time, and yet much too short. Each Rambler took a few moments to tell the group about their favorite thing on the trip, and what they thought about the expedition as a whole. Everyone grinned as one by one, Ramblers recalled a campfire discussion, an eagle's flight, a jumping fish, a sunset, live music around a campfire, a new part of the world they had touched with the help of strangers that were now friends. All agreed that the Potomac, the basis for the trip, now held a place in their hearts and minds. It is how stewardship begins.

Thanks to Our Sponsors and Partners

The Potomac River Rambles would not be possible without the support of businesses, government agencies, and nonprofit organizations that contribute funds and in-kind services. Thank you!

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High Nutrients, Summer Weather Brings Algae Bloom to Tidal Potomac

A strong bloom of the potentially toxic blue-green algae *Microcystis aeruginosa* was observed in the mouth of Mattawoman Creek in Charles County, Md., in August, prompting the county health department to warn people to avoid the bloom conditions. High algae counts also were found in the adjacent section of the Potomac River and around Quantico, Va.

Ingestion of waters containing high concentrations of *Microcystis* can cause abdominal stress in humans leading to precautionary beach closures and can kill dogs and farm animals if they drink significant quantities of the bloom waters.

The department issued an advisory to swimmers or those who might come in contact with river water to avoid bright green waters that signal a bloom. *Microcystis* is a naturally occurring algae in fresh and lower-salinity waters of the

Chesapeake Bay and tributaries. Blooms may occur in nutrient-rich environments and may become harmful when they occur in high concentrations or if they produce toxins.

The advisory warns that people should avoid coming in contact with bright green waters, which also may have a surface scum that resembles green paint. Where a bloom is evident; don't drink the water; wash off with fresh water if you do contact a bloom; see a doctor if persistent skin irritation continues; and keep pets and livestock away from the water.

The high algal concentrations were observed during routine monitoring by the Maryland Department of Natural Resources and the Morgan State University Estuarine Research Center. While the algae blooms are a cause for concern and are indicative of the Potomac's nutrient pollution,

conditions have improved over time. In the 1960s and early 1970s, *Microcystis* blooms were a regular summertime occurrence in the metropolitan Potomac, and the water was often a bright green from shore to shore.

The bloom will subside when cooler temperatures, wind, or rain showers break it up.

For additional information call the Charles County Department of Health at (301) 609-6773. To report human illness from bloom water contact, a fish kill or a fish health-related event, call the Bay Health Hotline at (877) 224-4229, twenty-four hours a day.



Watching the River Flow

Flow of the Potomac River measured near Washington, D.C. was near normal in June, falling to below normal in July 2008 according provisional data from the U.S. Geological Survey.

In June, average flow of the Potomac was about 5.9 billion gallons per day (bgd), about 4.2 percent less than the long-term average of 6.2 bgd. Daily extremes during the month ranged from a high of about 13.7 bgd on June 7, falling to low of about 2.9 bgd on June 30. Water taken from the river for metropolitan water supply averaged about 300 million gallons per day (mgd).

July flows were significantly lower, with an average flow for the month of about 2.9 bgd, or about 16.7 percent less than the June average of about 3.5 bgd. The river's flow ranged from a high of about 4.3 bgd on July 11, and falling to a low of about 2.0 bgd on July 23. Water taken for municipal supply averaged about 400 mgd in July as dry weather persisted.

Low river flows at the end of August prompted the ICPRB Section for Cooperative Water Supply on the Potomac River (CO-OP), to begin more frequent monitoring of river levels, although the probability of the need for releases of stored water to meet demand and maintain water quality goals remains very small.

Potomac Stream Gages May Shut Down

The U.S. Geological Survey (USGS) has warned In an August message on their website that proposed federal budget cuts may force the agency to shut down up to eleven stream gages on the Potomac River. Some stream gages on the Shenandoah River and its tributaries may lose some water quality measurements. The USGS operates the gages, some of which have been providing data for 70 years.

The gages are part of a network of monitoring points along the Potomac River and its major tributaries that for decades have providee stream flow records that serve many users. The network provides data used by the National Weather Service to forecast floods and warn river communities as far ahead in time as possible. Some of the gages provide information critical to the operation of Jennings Randolph Reservoir, which releases water down the Potomac during droughts, ensuring a reliable water supply for the Washington Metropolitan Area. The gages also are used by recreational white water canoeists and kayakers, as well as anglers. The information the gages produce also is used to create computer models that can enhance the way river flows are managed during floods and droughts. Gage data also is used in basic research, engineering and design, and specialized studies, such as determining changes to hydrology from land use change.

The ICPRB, using funds from the metropolitan area's major water suppliers, helps sponsor several stream gages that are critical to ICPRB-managed water supply operations during droughts, when releases from Jennings Randolph Reservoir on the North Branch Potomac boost river flows and ensure adequate water to meet drinking demands. The ICPRB has been contacted by several individuals asking why the agency cut funds to the gages. The ICPRB continues to support those gages. Some of the gages that may close are very helpful to ICPRB, both for managing reservoir releases and in conducting research that brings added efficiency and reliability to drought operations. Additionally the overall picture of the basin's hydrology will become fuzzier if the gages are shut down on the September 30 date, which marks the end of the federal fiscal year.

This plan, should it come to, pass, would leave the river without a rated gage above Point of Rocks. This would force the discontinuance of National Weather Service (NWS) stage crest forecasts for the shut down sites, and would degrade forecast quality from Point of Rocks down to the Washington metropolitan area due to

the reduction in upstream data. The plan would significantly hinder flow management operations by ICPRB when a drought occurs and if flow releases are required.

The problem is not limited to the Potomac basin. The USGS has been grappling with budget problems for several



Water Resources in Pa.: Citizens Needed

Residents of the Potomac basin in Pennsylvania have an opportunity to guide the state's efforts in preserving and protecting its precious water resources (see *May/June 2008 Reporter*). Pennsylvania's Water Resources Planning Act is nearing completion, and a final public hearing/meeting has been set for Thursday, September 18 at Mont Alto Campus of Penn State University. An open house begins at 5 p.m., a public meeting at 6 p.m., and a hearing at 7:30 p.m. For more information visit www.depweb.state.pa.us and click on the water button. See you there!

years, and has been working with a national network of more than 800 cooperating agencies that fund about 70 percent of stream gage costs. Use of USGS stream gage data continues to grow despite budget cuts.

For many reasons, the loss of a cohesive gaging network of both flow and water quality is important to many agencies and stakeholders working to keep the river healthy and able to meet the many demands society has placed on it. Those concerned about the status of the gage network in the Potomac watershed should contact their U.S. senators and urge them to provide support for the gage system.



Potomac Basin

REPORTER

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