CITIZEN SCIENCE – A WONDERFUL TWO WAY STREET

At Potomac Riverkeeper Network, our members and volunteers help us achieve our mission of protecting and defending the Potomac and Shenandoah Rivers. This incredible team means the difference between success and failure, whether it’s grassroots advocacy, river clean ups, informing us of pollution spills, grabbing water quality samples, or helping us with our RiverPalooza paddles.

Our marvelous volunteers have been the key to success in our Swimmable Potomac campaign, newly launched this year, with goals of lifting the swimming ban in DC waters and making all the waters up and down the river safe to swim, paddle, fish, and recreate. Our volunteer water quality monitoring program allows the community to help us protect the rivers and let others know when swimming and paddling is safe.

The program also gives life to an important component of the Riverkeeper movement: connecting the community to our water resources, as our volunteer community members become intimately acquainted with the river and its health while continuing a long tradition of citizen science in the United States and worldwide. From paleontology to archaeology and from meteorology to ornithology, citizen scientists have contributed raw data fueling critical discoveries to our understanding of the natural world.

We are in the age of citizen scientists, and we’re proud to be a part of it! It’s more important than ever as government dollars shrink and members of the public are increasingly interested in how they can help gather and document pollution that poses a public health risk.

Our Water Quality Monitoring Program engages highly trained citizen scientists to procure data of the highest quality and veracity. The data, because of its assured reliability, can then be shared with other scientists, decision-makers, and the public, to help them make decisions ranging from whether it’s safe to go swimming this weekend to identifying locations and sources of pollution so public money can be spent on remediation.

We are not alone in the work we’re doing. Alliance for the Chesapeake Bay provides the training and infrastructure needed for its 81 Volunteer Water Quality Monitoring programs. All this raw data is accessible to the public through the Alliance’s Data Explorer (https://cmc.vims.edu), an interactive database which presents water quality information in layman’s terms.

We also use SwimGuide, a Waterkeeper-developed mobile app and website platform, to share water quality results with the public and to indicate whether a certain public access site has met the relevant Recreational Water Quality Standards. We provide this information every Friday during the swim season so you know whether it is safe to go in the water.

You never step in the same river twice. Water quality can vary significantly from site to site and week to week. Our Alexandria sites consistently show higher levels of bacteria than our...
HELLO FRIENDS,

I love kayaking. I’ve been eight times this year already, which is more than I ever have before in my life, and I love it! I could, and probably will, write a letter for these pages about why I love having a job where kayaking is part of the job description, but for this issue, I’m instead going to reflect on what our region has to offer for river enthusiasts and why our campaign to make the Potomac swimmable again is so important.

Some people may know the Potomac only from seeing it from a bridge or from a waterfront restaurant in Georgetown or the Wharf, but while it is beautiful from those spots as well, it is spectacular when you are in a kayak or inner tube or raft out on the water. We provide all those opportunities through our RiverPalooza series every summer – and we do it through most of the watershed, from the headwater, mountain streams in West Virginia of the Paw Paw Bends down to Mallows Bay, a recently designated National Marine Sanctuary, where it’s possible to see a unique collection of World War I sunken battleships.

But here’s the important point: we have a majestic river – the Nation’s River – right outside our door. The fact remains, however, that much of the river isn’t available to us to enjoy the way water is meant to be enjoyed: in it and on it, because, even though President Johnson, decades ago, urged us to act so that the Potomac would be swimmable by 1975, swimming is still banned in much of the river, including all of the waters in DC.

But the tide is starting to turn. Dean Naujoks, your Potomac Riverkeeper, helped several groups hold open water swims at National Harbor this summer by doing the hard work of testing the water repeatedly to demonstrate that it met public health standards for swimming.

Our Swimmable Potomac Campaign is designed to lift the ban on open water swimming in DC and to ensure that the public has the information it needs to decide whether to go in the water. We are working closely with colleagues at Anacostia Riverkeeper and others to provide that information – because right now it is not available in a timely way from the government. We’re testing the water once a week at ten sites along the river and, with your help, we hope to expand that next year and the year after until we have timely and accurate data up and down the river to let you know whether swimming is safe.

Then, with the data in hand, we can best focus our efforts on what we do best – stopping pollution – to make river recreation not only fun, but also safe, for all of us.

Let’s do great things together!

Sincerely,

Nancy Stoner, President
Ordinarily, as your Potomac Riverkeeper, I write about what is happening along the Potomac – you know: coal ash, unhealthy tree cutting, sewage spills. But even though I’m a pretty tall guy, I still stand on many shoulders and today I’d like to recognize just one.

Karen Andersen is the Laboratory and Program Director for a sister organization, Friends of the Shenandoah River. It’s a position she has held for 23 years and, under her guidance, the laboratory has grown to one of the most respected sources of water quality data in the nation. Karen is this year’s Potomac Riverkeeper Network’s Volunteer of the Year Award winner, and her help in establishing our lab on the Sea Dog has been, in a word, invaluable. More about this in a minute.

Karen is a native of Fairfax, Virginia, but early in her youth, she found herself in California, where she earned her degree from UCLA. She is the proud mother of three grown children. Now, all mothers are proud, but Karen has some special reasons. One daughter is a physician, another, a scientist for the federal government, who advises all branches about issues such as climate change, and a son is an architect in Washington, DC. Pretty impressive.

Some 25 years ago or so, she found herself back in Virginia developing databases for Lord Fairfax Community College. It happened that a board member of Friends of the Shenandoah River (FOSR) attended classes there, and as the two became acquainted, the board member became convinced that Karen’s skills were vital to help with the decades of water quality data maintained by FOSR. I say maintained, but the records were only kept in filing cabinets – remember those – without meaningful organization. Karen joined up and soon, the data collected was organized in a way to be useful. Karen’s involvement with the organization grew and soon she was sampling water herself and becoming an expert in the use of an extremely high-tech Flow Analysis Instrument purchased with a grant from Virginia’s General Assembly. (How that works is really detailed, ask Karen or me at the Gala for details.)

The usefulness of water quality monitoring data is only as good as the regard in which it is held by regulators, so Karen, with the support of the FOSR Board and its Science Committee members, embarked on accreditation for the FOSR’s water-quality testing lab. She is proud to note that it was granted and that no changes in any protocols FOSR established were required. She is equally proud that Virginia’s Department of Environmental Quality (DEQ) now routinely accepts reports from FOSR, and that the work done by FOSR’s two lab members and team of 63 sampling volunteers goes on to provide the best data possible about water quality in the Shenandoah, both the river and drinking water sources.

As you already know, this past spring Potomac Riverkeeper began monitoring water quality in the Potomac with a floating lab on our recently donated research vessel, Sea Dog. Since we were new to water quality monitoring, once we acquired Sea Dog, we reached out to Karen, knowing well her skill as a scientist and lab director at Friends of the Shenandoah. Our first task was to install a water quality monitoring lab and get it working and accredited for our Swimmable Potomac campaign. Karen’s help was key. She worked extensively with Annie Bronze, our Program Assistant and Outreach Coordinator, and with Brent Walls, the Upper Potomac Riverkeeper, who did the initial work to create protocols and a quality assurance project plan so that our results would be accepted by DEQ. I can’t overstate the detail necessary for these; without them, our work would not be accepted by the government officials we are working to influence. And I also can’t overstate Karen’s help in getting us where we needed to be with this program.

Our water quality monitoring program depends on management of a team of skilled volunteers who collect samples, analyze them, and prepare reports. Here again, Karen, with her experience in managing her team of volunteers at the Friends of the Shenandoah, helped us to turn our enthusiastic, but unskilled volunteers into a cadre of highly skilled and disciplined professionals.

I knew Karen before she devoted so much time to our water quality monitoring program, and I always respected her. Since we have been working so much more closely together during these last few months, my respect has deepened profoundly. We are very thankful to her for all her effort on our behalf. She richly deserves her recognition as our Volunteer of the Year.
RIOPALOOZA – EXPANDING RIVER ACCESS AND FUN IN THE SHENANDOAH VALLEY FOR LATINX COMMUNITIES

In 2018, with Shenandoah Riverkeeper Mark Frondorf’s imagination and effort, we held our first RioPalooza event in the Shenandoah Valley where we sought to engage with and better serve the Latinx community with on-the-water recreational activities. It was such a success that we decided to make it an annual event.

In 2019, Mark expanded RioPalooza and reached out to the Latinx community in Harrisonburg, VA, resulting in an event that was even more successful. Working with the U.S. Forest Service, Hispanic Access Foundation, Virginia’s Department of Game and Inland Fisheries (VDGIF), and NorthBay Adventure outfitters, the event was held on Sunday, July 21, one of the hottest Sundays this summer, and so was all the more enticing for our guests – about 100 – who enjoyed a cool respite beside, in, and on the Shenandoah at the Stonewall Riverside Park in Elkton, Virginia.

Mark and his partners lined up an afternoon of fishing, snorkeling, tubing, kids games, pony rides and history with the Buffalo Soldiers, a fish petting zoo, and presentations for children and parents on the role and mission of the Shenandoah Riverkeeper, the U.S. Forest Service and VDGIF. And thanks to a lot of help from volunteers, everything could be done in Spanish. And a special shout out to DownRiver Canoe and John Gibson, who donated a canoe, which was won by one of our guests that day – her joy was pretty plain to see.

And food! Name three things and Mark arranged for them to be there. Name three more and the same answer! The food was scrumptious.

Mark’s persuasive skills also earned us an appearance by the Latin Grammy award-winning band, Mr. G, whose bilingual performances of environmentally focused music help to dissolve borders and foster cross-cultural connections. Plus, mighty fun for dancing, as many experienced that day!

Latinx communities love and use the river as much as any other ethnic group, but language and cultural differences can sometimes be an obstacle. We want to get river lovers of all backgrounds to know each other better, to be involved in and aware of our day-to-day mission, and to become members and supporters of Potomac Riverkeeper Network as well. We want to develop relationships to share in the work and the satisfaction of working toward our goals together.

You can be sure that RioPalooza will be a regular part of our annual RiverPalooza events and we welcome ideas to make it better, to bring more people, and, if you can, your support to make it happen.

SMALLMOUTH BASS IN THE MID-ATLANTIC – CRISIS, CAUSES, AND SOLUTIONS

Throughout the Mid-Atlantic, anglers, conservationists, scientists, and fishing guides have long recognized that the smallmouth bass population is in crisis. Fish kills caused by various factors including agricultural nutrient runoff and inadequately treated sewage are regrettable common; algae blooms from the same sources contribute to declining or stressed fish populations and degrade the public’s ability to fish in our rivers. And climate change resulting in extraordinary flood and high water events are becoming more common.

Mark Frondorf, Shenandoah Riverkeeper, is taking a lead in working toward solutions.

In August, Mark convened a gathering of members of various groups who have intimate knowledge of the rivers and smallmouth bass populations. Scientists, fisheries managers, fishing guides, and biologists from the National Park Service and various state agencies attended this first of its kind Smallmouth Bass Assessment. They spent an entire day sharing the information they have on smallmouth bass in their local waters.

Representatives from the four states involved, Maryland, Pennsylvania, Virginia, and West Virginia, all made presentations on various topics, and shared their knowledge of the current state of smallmouth populations, the latest scientific research and thoughts on what the future holds for this iconic fish in our watershed, and public awareness and responses.

Many noted unusual events, such as recent extremely high water flows which create high turbidity, destroy nests, and wash away fry. Six of the highest flows in the last 100 years have occurred in the last 10 years! And conversely, they also discussed how low water flows in May diminish the ability of juvenile fish to survive.

Those same experts described their efforts at increasing spawning and restocking, and noted that regretfully most of their efforts have been unsuccessful. The good news is that as they assess their techniques and methods, they will make adjustments, such as more monitoring, better management of fry in hatcheries, and control of flathead catfish populations, to improve results.

Fishing guides had similar perspectives and conclusions. There were some subtleties. the guides observed that the availability of less expensive watercraft is increasing access and thus pressure on fish populations.
The North Branch Potomac has seen a lot of change in the last 40 years, more so than most rivers see in a lifetime. The Appalachian Mountains were rich with geological resources, and for 200 years, mining coal and other minerals were the main economic drivers for many areas, including the North Branch Potomac region. In the 1940’s, acid mine drainage from abandoned mines was estimated at 173,000 lbs a year; acid mine drainage reduces pH levels in water, which in turn can harm aquatic life. By the 1960’s, acid mine drainage exceeded 120,000 lbs daily! Over 450 miles of streams were impaired by acid mine drainage. In 1978, the Interstate Commission of the Potomac River Basin announced there was a “near complete absence of biological communities on the NBP” from the headwaters to Kitzmiller. But, in 1977, the Surface Mining Control and Reclamation Act (SMCRA) was passed. This law set up a tax structure for new coal mines that would provide funding to reclaim pre-law abandoned mine lands.

This is where the bad becomes good. Because of SMCRA, West Virginia and Maryland had an opportunity to treat the huge volumes of acid mine drainage from abandoned mines destroying the North Branch. Two things happened over a 10 year period: the Jennings Randolph Dam was completed in 1981, and the first lime doser was installed and many more at key locations in the following years to treat acid mine drainage. Essentially, a doser drops powdered lime at the point of drainage from a mine; this rapidly changes the pH to neutral, drops out all the metals, and good clean water continues down the small tributaries. But equally, if not more importantly, the Jennings Randolph Dam was a huge success for water quality and recreation on the North Branch. The Jennings Randolph Dam was built for flood control and to provide a source of water for downstream users. But the biggest local benefit was that the Randolph Lake acted like a giant pH capacitor. In came acid mine drainage, pH change, and out came cold clean water. The second benefit was the ability of the dam to release cold water at different volumes. So now, we have acid free, clean and extremely cold water flowing downstream to Kitzmiller. The combination of the clean cold water from the dam and the use of dosers all over the region created conditions that allowed cold water fish populations to thrive and reproduce naturally. This was a huge win for the North Branch that had been used for over 250 years as the mining industry’s waste disposal site.

In 2010, Downstream Strategies was commissioned to assess the economic value of the recreational industry in the North Branch. The estimated 30,000 visitors a year to the area were spending over $2 million a year on recreation, food, and lodging just for activities on the North Branch, including to visit the naturally spawning brown trout populations.

Change has continued for the North Branch earlier this year. On June 30, the paper mill that has been a feature in the Luke, Maryland area for 130 years closed its doors. The mill processed pulp to make various kinds of paper over the years, at the same time discharging wastewater and non-contact cooling water into the North Branch. The thermal impacts from the mill’s non-contact cooling water and the treatment plants wastewater created thermal barriers in the summer for the growing cold water fisheries. During other times of the year, the cold water from the dam was sufficiently mixed with the thermal discharges, but still there was a high level of suspended sediments that impacted stream environments and stressed the habitat for cold-water fish. Although there has been great progress for clean water, pollution from the paper mill process kept the North Branch from reaching its full potential.

Our mission has always been to push for clean water, strengthen discharge permits and be a voice for the river. For over 10 years, we have been actively defending clean water in the North Branch area, assessing water quality and challenging discharge permits. We have seen the improvements over the years by the mill and by the wastewater treatment plant run by the Upper Potomac River Commission, but we know that permits can still be strengthened and new technologies implemented that can continue to increase the environmental sustainability between industry and the health of the river.

The mill’s closing will undoubtedly cause hardship to employees and their families who relied on it for their livelihood, but we hope it can also lead to new opportunities for economic prosperity from a revitalized North Branch Potomac serving as a magnet to bring tourists to this beautiful part of the state. Upper Potomac Riverkeeper stands ready to support local communities and their elected representatives to attract new investment in this region as a potential recreation destination.
Potomac Riverkeeper Network is distinguishable from many environmental advocacy groups in that we are not afraid to be in court to advance our mission – and we know how to gather the evidence that we need to win! But we can’t do it alone, so we rely on an array of organizations and law firms with talented legal professionals who represent us at no cost – pro bono.

One of these groups is Environmental Integrity Project. It’s more than fair to say that without their help, many of our successes simply wouldn’t have happened. We’re honored that they use their skills on our behalf – and on behalf of everyone who uses and enjoys our rivers.

Founded in 2002 by Eric Schaeffer, former director of the Environmental Protection Agency’s office of civil enforcement, and a lawyer colleague also from the EPA, the Environmental Integrity Project (EIP) is a nationwide, nonpartisan, nonprofit organization. For more than the last decade and a half, it has been dedicated to the principle that politics should never get in the way of compliance with and enforcement of environmental laws.

With offices in Washington, D.C. and Austin, Texas, and a team of attorneys, data analysts, and other experts, EIP takes legal action to stop big polluters through investigations and incisive, data-driven reports that have pushed both federal and state governments to tighten regulations and better protect public health.

With help from EIP attorneys, Leah Kelly and Abel Russ, we recently achieved a major success to protect the Potomac River from continuing toxic coal ash pollution. When permits for two coal plants, located in Morgantown and Dickerson, Maryland, expired, Potomac Riverkeeper Network and EIP worked together to urge Maryland’s Department of the Environment (DEP) to adopt better wastewater treatment standards. The resulting permits are among the most stringent in the nation keeping arsenic, selenium, lead, and mercury out of the Potomac.

Unfortunately, NRG, the owner of the plants, promptly appealed the permits. But with EIP’s invaluable assistance, we joined with the State of Maryland to defend the permits. Thanks to some great legal work by EIP, two different judges in Maryland upheld both permits! And the permit for Chalk Point plant in our neighboring Patuxent River Watershed was also upheld. That’s 3-0 for our rivers!

Well done, Environmental Integrity Project!

**MEET D. RANDALL BENN, OUR NEWEST BOARD MEMBER**

Our newest board member, Randy Benn is a seasoned lawyer, lobbyist and strategic consultant in Washington D.C., has been a Partner in two of the world’s largest law firms, and recently co-founded the Earth and Water Group, a consortium of experienced practitioners advancing client interests across a broad range of environmental and business matters. He is also a Georgetown University and ICF-certified Executive and Leadership coach who works with high potential individuals across a number of professions.

He has represented Fortune 500 corporations, municipalities, non-profits, trade associations and start-up companies before regulatory agencies, the courts and Congress on energy, environment, natural resources, infrastructure, cybersecurity, transportation, science, arts, housing and financial services issues. He has also served as Attorney Advisor to the Assistant Administrator for Water at the U.S. Environmental Protection Agency and as a Senior Fellow at the Nicholas Institute for Environmental Policy Solutions and the Nicholas School of the Environment at Duke University.

Most recently, Mr. Benn led strategic planning processes for a university, a non-profit and a think tank, obtained Congressional funding for water quality research, and worked through the Department of State, the U.N. and the World Bank to reduce the illegal wildlife trade in Asia. He has also helped launch a real estate partnership in Costa Rica, a solar company in Switzerland, and tech startups in D.C., London and Dubai. He sits or has served on non-profit Boards or Advisory Boards working to promote water quality and quantity, protect endangered species, address the Muslim/West divide, increase interfaith peace and justice and reduce gun violence.

Mr. Benn is a magna cum laude graduate of Duke University and Duke University Law School. He is married with three grown children and performs regularly in a rock and roll band.

**SMALLMOUTH BASS IN THE MID-ATLANTIC (CONT’)**

At the same time, all noted decreased daily catches; one even told the story of a day, the first time in his 40 years on the river, of landing no fish at all after a full day of fishing.

All agreed that more farmers need to adopt better agricultural practices to reduce runoff, and to examine current practices, such as no-till, which prevents erosion but also requires more herbicides. And also agreed that we all must do a better job of controlling sewage discharges and overflows throughout our watersheds. No one failed to notice, of course, that all these solutions require more money and thus, more education so that those paying the costs – all of us, ultimately – know why we’re spending the money.

The vexing problem of diminishing smallmouth populations is a concern to all of us, which is why Shenandoah Riverkeeper took the leadership role to organize the unique gathering.
IT IS TIME TO STOP ALGAL OUTBREAKS

This summer has been a bad year for algal outbreaks. As the temperatures rise, storms wash nutrient pollution into the rivers, and river levels decline, we see more and more of them, especially in the North and South Forks of the Shenandoah River. And they are disgusting. They cover the river with a green algal mat that looks bad, smells bad, and can ruin your paddling or fishing trip. In other parts of the country, dogs are dying from contact with toxic algae. The news about this has gone viral as pet owners learn to avoid walks along waterways covered with blue-green algae.

We have long known that algal outbreaks are a major cause of fish kills in both the Shenandoah and Potomac. They create an unhealthy aquatic environment where weak fish get sick more easily, sensitive spawning habitat is smothered, and fish can’t breathe or find their food in algae choked water.

Algal outbreaks are also a threat to more than just fish. Tourism, and thus local economies and real estate values suffer. And an algal outbreak – especially one that has become toxic – can threaten drinking water supplies as it did in 2014 when Toledo, Ohio, had to shut down its drinking water plant.

As the problem grows, so does our response. This year, in addition to photographing algal outbreaks and sending those reports to Virginia’s Department of Environmental Quality, we are notifying the Virginia Department of Health and the EPA – and we are demanding action. Mark Frondorf, Shenandoah Riverkeeper, and Alan Lehnman, Project Manager, have filed more than 20 complaints with Virginia’s Department of Environmental Quality (DEQ) about outbreaks up and down the Shenandoah, several of them from locations above municipal water intake facilities at Winchester, Strasburg, and Front Royal. You can see the detail of these complaints when you visit “Latest Campaigns” on our website.

But solutions are at hand. There are agricultural practices that significantly reduce nutrient runoff being implemented by farmers every day in our watersheds. And there is cost share funding, which we fought for in the Virginia General Assembly, that helps farmers to implement these practices. If all farmers were to put these practices in place, we would see a lot fewer algal outbreaks.

What makes our program unique is that Alan is out on the river every day identifying the most egregious sources of pollution and working directly with county and state officials to eradicate them. The sources he goes after are not subtle – they are herds of cattle standing in the water or uncovered piles of poultry manure along the streambanks. The work that Mark and Alan do with their state and county partners removes the obvious risk posed by manure running into or being dumped directly into the river, but these risky practices need to be permanently stopped. We will need legislation to make that happen.

This year, we are now seeing algal outbreaks in the Potomac as well as the Shenandoah, so Dean Naujoks, Potomac Riverkeeper, is working to get the attention of Maryland’s Department of the Environment (MDE) to make them aware of the problem and to sample the algae to determine whether it is toxic and whether there is a risk to public health.

We cannot allow our environmental regulators to ignore this problem any longer. We need your help to document these outbreaks and to join us in demanding action.
GALA – THIS IS OUR NIGHT TO PARTY!

All three Riverkeepers have their following – the Potomac, the Upper Potomac, and the Shenandoah – but rarely can all those folks meet in one place at one time for a great celebration. It happens only once a year – at our annual Law and Water Gala!

This year there's plenty new: a new venue, at the Intercontinental at the DC Wharf, a new band, Wammie Award winning The Thrillbillys, a new powerful speaker, Maude Barlow, one of the world's leading water justice advocates, and new auction items. What’s available this year is terrific: an African safari, a private dinner at one of DC’s most prestigious addresses, a vacation in the Shenandoah or New Orleans, or a private party with Soulfire!, the band of our own board member, Randy Benn – take your pick!

But mostly, it’s our night to share our successes and our dreams.
And to have some great dinner, great drinks, and great dancing.

JOIN US OCTOBER 25 FOR THIS SPECIAL EVENT
Visit our website or contact Rachel Piering rachel@prknetwork.org about opportunities to be a sponsor or purchase tickets.