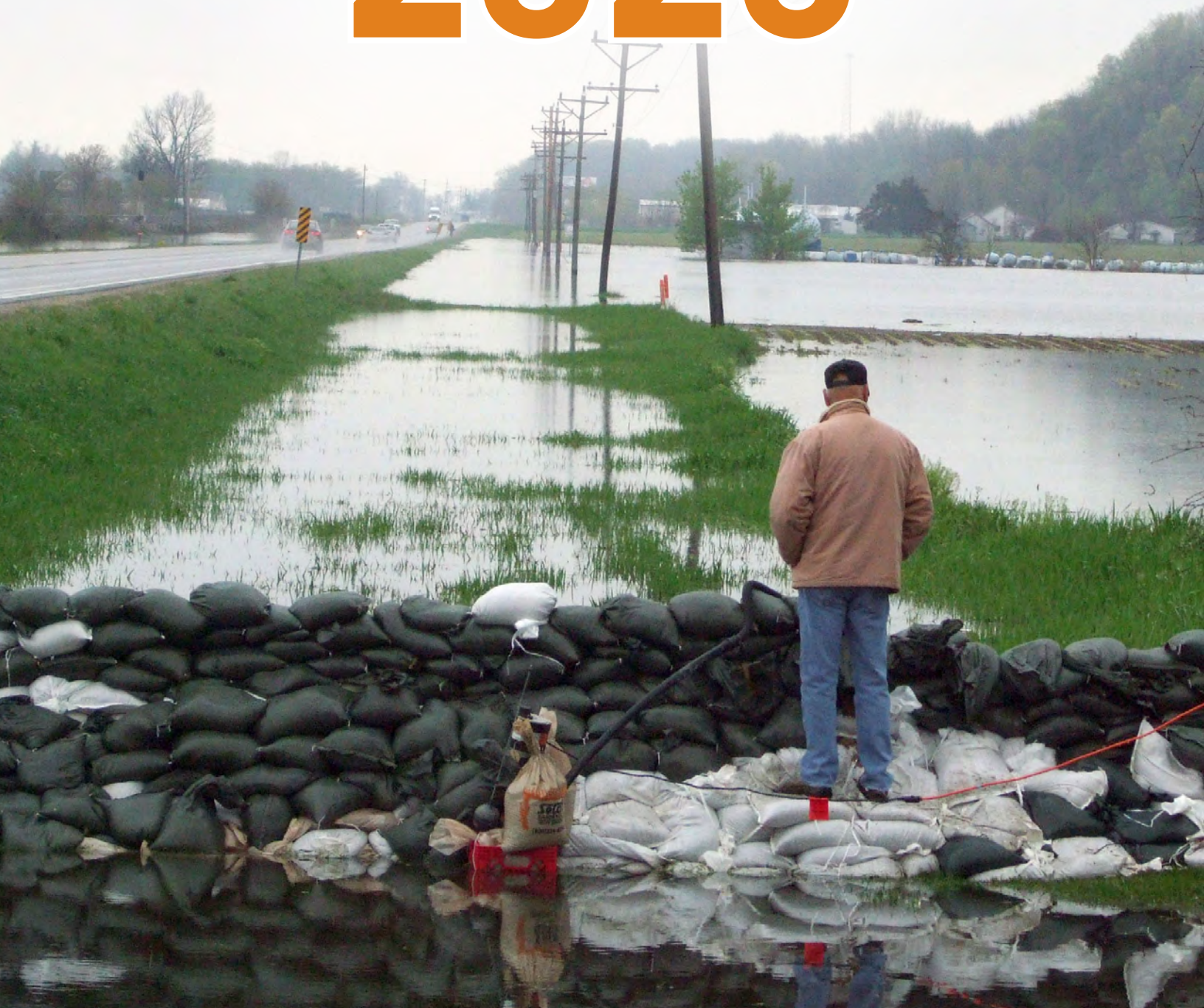




American Rivers  
RIVERS CONNECT US®

# AMERICA'S MOST ENDANGERED RIVERS® 2020





# 2020

## AMERICA'S MOST ENDANGERED RIVERS®



**“Every single person — no matter where they live, what they look like or how much money they make — should have access to clean water and a healthy river. It is a human right.”**

— Bob Irvin, President and CEO of American Rivers

### LIFE NEEDS RIVERS

It's not just that rivers make our lives better. We cannot survive without them.

Healthy rivers give us critical services, from clean drinking water to flood protection. They support local businesses and strong economies. They give us opportunities to get out, be healthy, and enjoy the beauty and wonder of the natural world. And rivers connect us — to each other and to our future.

But climate change threatens our rivers and all of the benefits they provide. Maybe you've seen the impacts where you live: devastating floods, massive superstorms, crushing droughts.

That's why now is the time to be bold. To make sure our rivers and water withstand the damage climate change will inflict. And to make sure people of color, low-income communities and Indigenous Peoples — who will be hardest hit by the climate crisis — can take the lead on crafting the solutions and making the decisions that will shape their lives.

America's Most Endangered Rivers® of 2020 highlights what's at stake — and the solutions we can choose to create a better future.

Life needs rivers, and rivers need us.

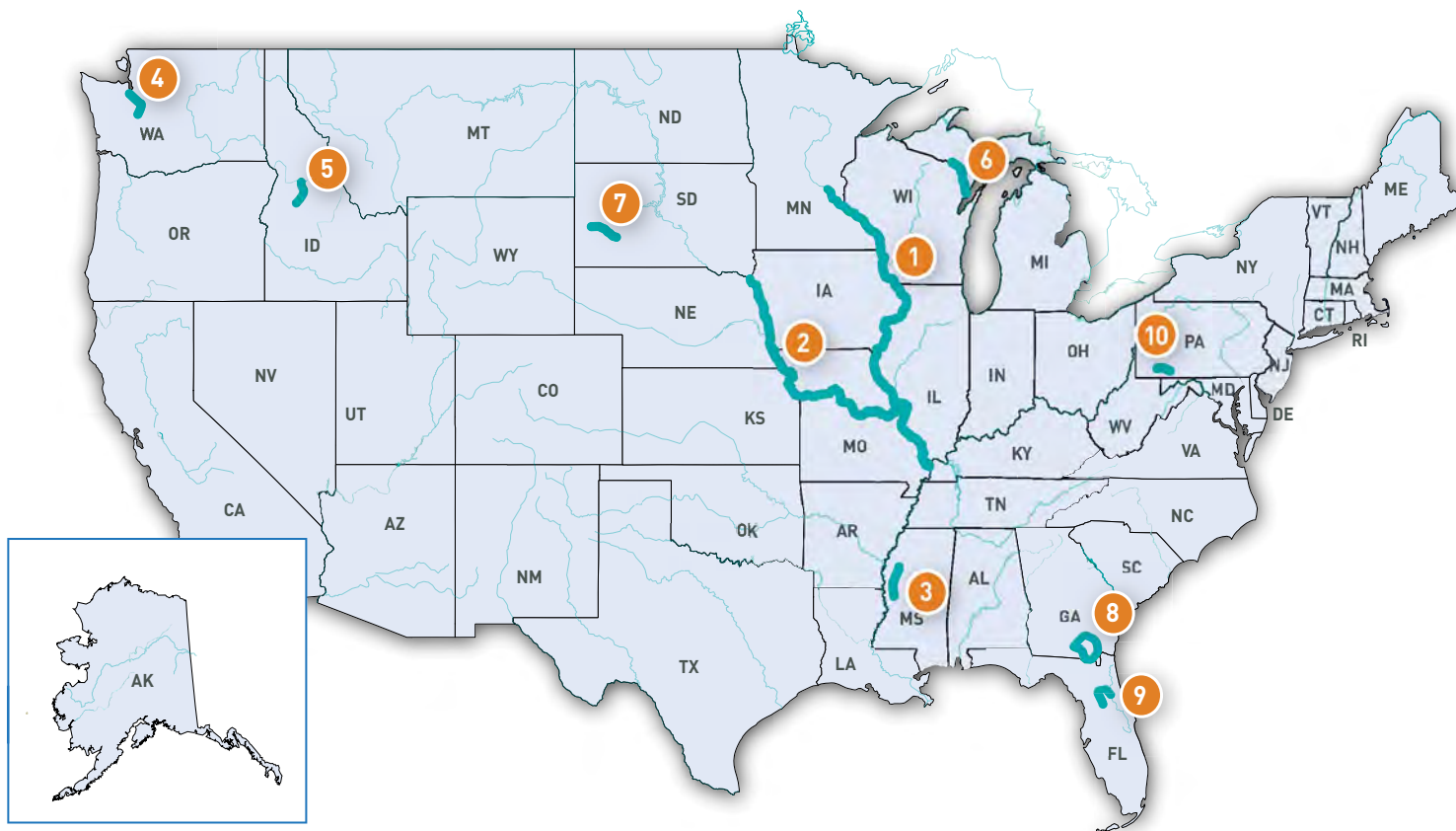
### BACKGROUND

The America's Most Endangered Rivers® report is one of the best-known and longest-lived annual reports in the environmental movement. Each year since 1984, grassroots river conservationists have teamed up with American Rivers to use the report to save their local rivers, consistently scoring successes that benefit rivers, clean water and communities.

**The time to act — for our clean water, health and safety — is **NOW**.**

UPPER MISSISSIPPI RIVER, MISSOURI

PHOTO: NANCY GUYTON



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American Rivers reviews nominations for the America's Most Endangered Rivers® report from river groups and concerned citizens across the country. Rivers are selected based upon the following criteria:

- A major decision (that the public can help influence) in the coming year on the proposed action
- The significance of the river to human and natural communities
- The magnitude of the threat to the river and associated communities, especially in light of a changing climate

## ABOUT AMERICAN RIVERS

American Rivers believes every community in our country should have clean water and a healthy river. Since 1973, we have been protecting wild rivers, restoring damaged rivers and conserving clean water for people and nature. With headquarters in Washington, D.C., and offices across the country, we are the most effective river conservation organization in the United States, delivering solutions that will last for generations to come.

**FOR MORE INFORMATION:** [AmericanRivers.org/EndangeredRivers2020](https://AmericanRivers.org/EndangeredRivers2020)



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# Upper Mississippi River

**STATES:** Illinois, Iowa, Minnesota, Missouri, Wisconsin

**THREAT:** Climate change, poor floodplain and watershed management

**AT RISK:** Public safety and biodiversity

## SUMMARY

The upper Mississippi River is critical to the nation's economy and is a globally significant ecosystem. However, climate change is driving more intense rain storms, leading to more frequent and prolonged flooding in the Upper Midwest. This new reality puts people, habitat and infrastructure at risk — and communities along the upper Mississippi are dangerously unprepared. These risks are greatly exacerbated by two centuries of shortsighted floodplain- and watershed-development decisions that have cut the river off from hundreds of thousands of acres of its floodplain, dangerously constricted the upper Mississippi River, and degraded vital fish and wildlife habitat.

Fortunately, extensive opportunities exist to restore the river so that it can safeguard communities and critical infrastructure. State and federal agencies should take full advantage of these opportunities by developing a basin-wide water management framework that coordinates river and watershed management actions, ensures vulnerable communities are involved in the decision-making process, accounts for climate change, gives rivers room to flood safely and restores lost habitat.



PHOTO: CRYSTALL DOROTHY

## THE RIVER

The Mississippi River has been the lifeblood of many cultures. Located near modern-day East St. Louis, Illinois, Cahokia was the largest pre-Columbian settlement north of Mexico and was once home to as many as 20,000 people. The Mdewakanton Dakota continue to live along the river's banks near Red Wing, Minnesota. Today, our Upper Mississippi River cities and towns are located on Sioux and Algonquin land.

Since Europeans settled the Upper Midwest, the Upper Mississippi River's rich resources have served as a lifeblood for communities. Now, the river generates \$345 billion annually, provides over 643 million gallons of water per day for domestic and industrial uses along its 133-county corridor, and supports a \$673 million shipping industry. But so much industry comes at a cost.

The broad and rich Upper Mississippi River floodplain lands have been heavily developed to support agriculture and people. Loss of the region's natural floodplains — lands flanking the river — and diverse river habitats is a major contributor to the decline of numerous federally protected species, including the pallid sturgeon, rufa red knot, piping plover, whooping crane, Indiana bat, decurrent false aster, eastern prairie fringe orchid, and several types of mussels, that rely on the complex aquatic habitat provided in natural floodplains.

Even with this damage, the Upper Mississippi's natural resources are able to support a vibrant economy. Tourism and outdoor recreation along the river generate roughly \$25 billion annually and support more than 420,000 jobs. People are drawn to the Upper Mississippi River for its scenic vistas and wildlife experiences. The Mississippi is a globally significant flyway used by hundreds of species of birds and provides unique habitat for fish, mussels, reptiles, amphibians and mammals.

## THE THREAT

The Upper Mississippi River is threatened by climate change, shortsighted floodplain and watershed development, and river engineering that threatens public safety and degrades the natural ecosystem. The 2019 flood along the Upper Mississippi River broke records, not only in

# 1

## Upper Mississippi River

*Continued*

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### TAKE ACTION:

**AmericanRivers.org/  
UpperMississippi2020**

terms of flood levels, but also in duration — homes, farms, roads and businesses were underwater for more than 100 days. The flood came on the heels of three consecutive years of record-breaking rains across the country, and is in line with climate scientists' projections that extreme downpours in the U.S. could increase by 400 percent by the end of this century.

The magnitude of major flood events in the Mississippi basin has increased by 20 percent over the past 500 years. Much of that increase has been caused by the combination of river engineering and climate change. Throughout the basin, 40 to 90 percent of the land has been developed and almost every river has been dammed, leveed and/or constricted, including the Upper Mississippi itself. .

Almost the entire Upper Mississippi River watershed has also been developed to enhance agricultural productivity including extensive use of drainage systems used to move water off the landscape as quickly as possible. This development exacerbates flood damages by preventing the landscape from naturally retaining and slowing the release of rainfall.

As the disconnection and degradation of floodplain ecosystems has contributed to the decline of many native species-restoration efforts do exist. Unfortunately, development and pollution continues to degrade habitat up to four times faster than it can be rehabilitated. This impacts the river's ability to filter pollution, such as nitrogen and phosphorus. Poor water quality can seriously harm drinking water supplies, and can make fishing, swimming and boating dangerous.

Urbanized areas, including those located behind levees, are at particular risk. These risks often fall disproportionately on communities of color and/or low-income due to ongoing institutional injustices, like redlining. Even today, the most effective flood risk reduction solutions, like home buyouts, are not offered to communities of color at the same rates enjoyed by the white population.

Flood management decisions throughout the basin are made in a piecemeal and siloed manner. Individuals, cities, counties, drainage districts and states all act in near isolation to protect themselves during flood events, with little to no regard for the possible impacts on their neighbors.

## WHAT MUST BE DONE

The Upper Mississippi River needs a water management plan that coordinates river and watershed management actions, ensures vulnerable communities are involved in the decision-making process, accounts for climate change, gives rivers room to flood safely, and restores lost habitat.

Water management planning is not a novel idea. Since the 1920s, management of the lower river has been carried out through the Mississippi River and Tributaries Project. But when that project was designed in the 1920s, engineers and scientists did not understand how vital healthy floodplains are to river ecosystems. As a result, extensive loss of living floodplains has degraded habitat. Conversely, the California Central Valley Flood Protection Plan and Conservation Strategy is an example of a plan in which nature-based flood risk reduction projects will deliver multiple benefits — from flood safety and improved water quality to habitat and public parks.

A process is already underway that could lead to the development of an environmentally sound and economically sustainable Upper Mississippi River water management plan. Last year, the Upper Mississippi River states and the U.S. Army Corps of Engineers initiated the *Upper Mississippi River Flood Risk, Sediment and Drought Management Study*, which is intended to build a more sustainable and cooperative river management system to evaluate flood risk, sedimentation and drought hazards in the Upper Mississippi River Basin. The largest attempt by any federal or state entity to respond to the economic and public safety threats posed by climate change, the study could integrate watershed and river programs and produce multi-benefit, climate-adaptive projects that protect public safety and restore river health. Adequately funded and supported by the public and Congress, the study would transform how the United States manages its rivers and floodplains.

Unfortunately, efforts to develop the watershed study and flood risk management plan are already threatened by lack of public engagement, lack of adequate funding and levee engineers who wish to maintain the status quo. The public must urge decision-makers to support an integrated water management plan that will prioritize natural and nature-based solutions to protect communities from flooding and deliver a wide range of benefits.



# 2

## Lower Missouri River

**STATES:** Iowa, Kansas, Missouri, Nebraska

**THREAT:** Climate change, poor flood management

**AT RISK:** Public Safety

### SUMMARY

A critical artery of the Great Plains, the Lower Missouri River plays a vital role in our nation's economy. But excessive dam building on the upper river and levees throughout the region, combined with increasingly frequent and severe flooding exacerbated by climate change, put the river's communities and industries at risk. The Great Flood of 2019 resulted in extremely high and prolonged flooding that overtopped and breached levees in hundreds of locations. Experts predict a wetter-than-normal 2020 will bring another year of heavy flooding. In order to protect public safety and taxpayer investment, states and local governments must initiate flood protection solutions that give the river room, and the U.S. Army Corps of Engineers must prioritize multi-benefit projects that reduce flood risk and restore habitat.



PHOTO: HEATH CAJANDIG

### THE RIVER

Flowing for 2,300 miles from Three Forks, Montana, to St. Louis, Missouri, the Missouri River is America's longest waterway. Its watershed encompasses one-sixth of the United States. The Indigenous People of the Great Plains called the river the "Center of Life." Because of the river's role in Lewis and Clark's famed expedition from 1803-1806, it is often referred to as the "Gateway to the West."

Once a meandering, dynamic river that spread out across wide floodplains, today's Missouri River is channelized, leveed and dammed to meet conflicting demands, including flood control, navigation, irrigation, hydropower, water supply, water quality, recreation, and fish and wildlife habitat. The Lower Missouri River from Sioux City to St. Louis is confined by hundreds of miles of levees that have contributed to the destruction of side channels and islands and have resulted in the federal listings of multiple endangered species, including the piping plover, interior least tern and pallid sturgeon.

### THE THREAT

The Lower Missouri River needs more room to safely accommodate floods. Historically, the Missouri River experienced floods that spread across wide floodplains — the lands adjacent to the river. Though developers built dams in the upper river and an extensive levee system on the lower river to control flood damages, even they realized that the Missouri River needed room to flood. Federal legislation stipulated that the levees could not constrict the river more than 3,000 feet. Still, in some areas, the river corridor has been pinched to as narrow as 1,200 feet. Consequently, major floods regularly overtop and breach the levee system, particularly at these pinch points. During the 2019 flood, 850 miles of levees in Iowa, Kansas, Missouri and Nebraska were damaged. Repair costs will exceed \$1 billion dollars, according to the U.S. Army Corps of Engineers. This is not a one-time expense. Levees overtop or breach in almost every flood and often at the same locations.

# 2

## Lower Missouri River

*Continued*

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[AmericanRivers.org/](http://AmericanRivers.org/LowerMissouri2020)

[LowerMissouri2020](http://AmericanRivers.org/LowerMissouri2020)



PHOTO: TECH. SGT. OSCAR SANCHEZ



PHOTO: SHELBY L. BELL

As major floods become more frequent and intense in the Midwest, the river must be allowed enough room to safely convey the floodwater. A 2012 Bureau of Reclamation report on climate change in the Missouri River Basin predicted a 10 percent increase in runoff in the lower river. If we do not change how we manage the Missouri River, we will be wasting taxpayer money rebuilding the same levees over and over again.

Unfortunately, federal policy and state relief efforts favor maintaining the antiquated levee system. U.S. Army Corps of Engineers policies continue to deter levee setbacks and favor rebuilding to pre-flood condition. State leaders and community officials within the Missouri River Basin continue to push to rebuild and fortify existing levee systems to maintain and even intensify floodplain development — putting more people and investment at risk.

## WHAT MUST BE DONE

Addressing the issues associated with outdated floodplain management on the Lower Missouri River will require a major shift in how state and the federal governments manage this important resource. First, states and local governments located where catastrophic flooding is doing the most damage must commit to non-structural and nature-based solutions in a meaningful way. This includes three tactics: setting back levees to give the river room, preventing development in the Missouri River floodplain that contributes to rising floodwaters and increased flood risk, and funding relocation and flood mitigation projects for communities already living in flood-prone areas. In particular, Missouri Gov. Mike Parson's Flood Recovery Advisory Working Group should be a leading voice in exploring how Lower Missouri River states can implement nature-based solutions strategically and efficiently.

Furthermore, as the lead management agency for the Lower Missouri River levee system, the U.S. Army Corps of Engineers must undertake a comprehensive study that identifies repetitively damaged levees — and it must plan projects, including levee setbacks, that will make room to accommodate major floods. This study should prioritize multi-benefit projects that would both reduce flood risk and restore habitat, in order to best utilize limited funding.

Finally, flood risk planning along the Lower Missouri River must be an integrated process that allows all stakeholders, including conservation groups and communities that have been intentionally left out of decision-making processes, a seat at the table. Including a diverse set of perspectives will ensure development of a flood risk management plan with multi-benefit projects that safely accommodate floodwater and improve flood risk management for Lower Missouri River communities.



3

# Big Sunflower River

**STATE:** Mississippi

**THREAT:** Wetland destruction

**AT RISK:** Wetlands, birds, fish and wildlife, local communities

## SUMMARY

The Big Sunflower River is home to abundant wetlands and habitats that support over 450 species of birds, fish and wildlife. This special place is threatened by a harmful project known as the Yazoo Backwater Pumps that would damage up to 200,000 acres of nationally significant wetlands. In 2008, the Bush administration's Environmental Protection Agency acknowledged the severe damage the project would cause and vetoed it under authority of the Clean Water Act. However, project supporters have renewed their calls to override the veto and immediately begin construction. Instead of reviving this costly and damaging boondoggle, EPA and the U.S. Army Corps of Engineers should prioritize immediate flood relief and smart safeguards for local communities, while conserving vital wetlands that provide natural flood protection.



## THE RIVER

In the heart of the Mississippi Delta, the Big Sunflower River begins in Coahoma County, Mississippi, and flows for 250 miles until it reaches the Yazoo River, a tributary of the Mississippi River. According to the EPA, the Big Sunflower supports some of the nation's richest wetland and aquatic resources, and is an important stop for migrating birds along the Mississippi River Flyway. Hunting, fishing and outdoor recreation fuel the state's nature tourism industry, generating \$8 billion per year according to the Outdoor Industry Association. Many famous blues musicians launched their careers on the banks of the Big Sunflower River, including Sam Cooke, Ike Turner, Muddy Waters, John Lee Hooker, Son House, James "Super Chikan" Johnson and 2020 Grammy nominee Christone "Kingfish" Ingram.

While agricultural production is common throughout the Big Sunflower River watershed, nearly one-quarter of the region has been protected as public land or enrolled in conservation programs that have restored it to native forest. Despite conservation efforts, agricultural water withdrawals and pollution have had a major impact on the watershed since at least the 1970s.

## THE THREAT

The Big Sunflower River is threatened by an effort to resurrect the destructive Yazoo Backwater Pumps — a project that would drain and damage 200,000 acres of wetlands in the heart of the Mississippi Delta. Authorized by Congress in 1941, the project was touted to provide flood control for the area between the Mississippi and Yazoo rivers, just north of Vicksburg, Mississippi. However, a 2007 report by the U.S. Army Corps of Engineers made clear that the project was not designed to protect communities from flooding. Instead, 80 percent of project's benefits would be agricultural, by draining tens of thousands of acres of wetlands to boost production of surplus commodity crops for trade. At that time, it was clear the proposed pumps were an environmentally devastating and extremely costly project designed to intensify agriculture. As a result, in 2008, George W. Bush administration's EPA stopped the project by issuing a veto through the Clean Water Act — one of 13 such vetoes ever issued.



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# Big Sunflower River

*Continued*

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PHOTO: STEPHEN KIRKPATRICK

The Yazoo Pumps would degrade tens of thousands of acres of public lands that taxpayers have long paid to protect and manage for people and wildlife. These areas include four national wildlife refuges, the Delta National Forest and State Wildlife Management Areas, private lands enrolled in the Wetlands Reserve and Conservation Reserve Programs, and restored mitigation lands — rich habitats that support hundreds of fish and wildlife species, including 20 percent of our nation's duck population, the Mississippi black bear, the federally listed endangered pondberry plant and several at-risk species of freshwater mussels.

Unfortunately, pump proponents are pushing to revive the project in the wake of the climate change-fueled Mississippi River flood of 2019, which caused prolonged flooding in the low-lying areas that would be drained by the Yazoo Pumps. However, the Corps has acknowledged that at least 68 percent of the lands flooded in this area would still have been underwater in 2019 if the pumps had been in operation. The Corps has also said that operating the pumps in 2019 would have caused higher flood levels in the Yazoo and Mississippi rivers, increasing flood risks for downstream communities. The pumps would push 9 billion gallons of water per day into an already flooded Yazoo River.

In short, the incredibly destructive, \$440 million Yazoo Pumps would provide little, if any, protection to homes in the sparsely populated area that the pumps are supposed to protect, and could increase flooding in downstream communities. The Trump administration has ignored far less costly and less damaging measures that could provide real protections to communities in the Mississippi Delta. Instead, the administration is working to overturn the 2008 veto — an unprecedented action that would lead to the use of hundreds of millions of taxpayer dollars to degrade massive flood-absorbing wetlands, while undermining critical protections provided by the Clean Water Act and the National Environmental Policy Act.

## WHAT MUST BE DONE

Federal programs are funded and available today to help provide cost-effective, environmentally sound protections for people's lives and property. These common-sense measures include elevating homes and roads, voluntary buyouts and relocations, and compensating farmers who volunteer to take their land out of production and restore it back to wetlands. Wetlands on private and public land store water and are the foundation of the local hunting and recreational economy. Rural and urban communities across the United States are embracing these natural infrastructure and non-structural measures to provide immediate relief and manage long-term flood risk.

Like all Clean Water Act vetoes, EPA's veto of the Yazoo Pumps was based on a rigorous analysis of potential impacts, as well as broad public input, and it was issued to permanently block construction of an exceptionally destructive project. However, some members of Congress and the Trump administration are actively working to dismantle the veto and other long-standing environmental protections and legacies of past presidents. It is critical that the public speak out to defend this ecologically significant place from destruction and defend the integrity of the Clean Water Act and its critical veto authority. It is also vitally important that local leaders immediately make use of affordable and effective flood risk solutions to protect affected people's lives, property and livelihoods.

4

# Puyallup River

**STATES:** Washington

**THREAT:** Outdated dam management

**AT RISK:** Endangered salmon, steelhead and bull trout

## SUMMARY

The Puyallup River flows from Mount Rainier and supports many species of fish and wildlife. It also provides critical resources for the Puyallup Tribe of Indians, the Muckleshoot Indian Tribe and local communities. Chinook salmon are a keystone species and part of the social and ecological fabric of the region — their spawning and migration support the entire web of life in the Puyallup River. Chinook also are the primary food source for critically endangered Southern Resident orcas. But Chinook, wild steelhead and bull trout — all protected as threatened under the Endangered Species Act — are in steep decline due to outdated management practices at the Electron Dam in Pierce County, Washington. The National Marine Fisheries Service and the U.S. Fish and Wildlife Service should ensure that all three fish species can recover by enforcing the requirements of the Endangered Species Act and demanding expedited correction of the fish-killing aspects of the Electron Hydropower Project.



PHOTO: USGS

## THE RIVER

The Puyallup River and its largest tributaries, the White and Carbon rivers, have their origins in the glaciers of Mount Rainier. The Puyallup River flows roughly 65 miles to Commencement Bay in Puget Sound. The Puyallup River watershed forms the third largest tributary to Puget Sound and encompasses approximately 1,050 square miles. The river flows through Mount Rainier National Park, wilderness and other forested lands, and Pierce and King counties. The watershed includes the cities of Tacoma, Fife, Puyallup, Auburn, Sumner, Enumclaw and Orting.

The Puyallup and Muckleshoot tribes have lived on and stewarded the river since time immemorial. Both tribes are sovereign nations and have treaty rights that ensure the tribes' ability to hunt and fish in their usual and accustomed areas. They both play leadership roles in river and salmon restoration efforts in the watershed.

The Puyallup River, its estuary and Commencement Bay together support several species of native fish and are home to the only spring Chinook salmon population in the South Puget Sound region. The Chinook salmon, steelhead and bull trout native to the Puyallup are listed as threatened with extinction under the Endangered Species Act.

## THE THREAT

The Electron Hydropower Project is located on the Puyallup River in the foothills of Mount Rainier and is owned by Electron Hydro, LLC and Tollhouse Energy Company. It is a run-of-the-river hydropower project constructed in 1904 that utilizes water diverted from the Puyallup to generate electricity. Because the facility predates the Federal Power Act, the Electron Hydropower Project does not have a hydropower license under the Federal Energy Regulatory Commission. Currently, the facility is also not compliant with the Endangered Species Act.

Electron Dam diverts river water into a 10-mile long wooden flume that carries water into a 20-acre forebay (an artificial body of water). Water from the forebay then enters several penstocks, which drop 873 vertical feet into a powerhouse and turbines to generate power.



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# Puyallup River

*Continued*

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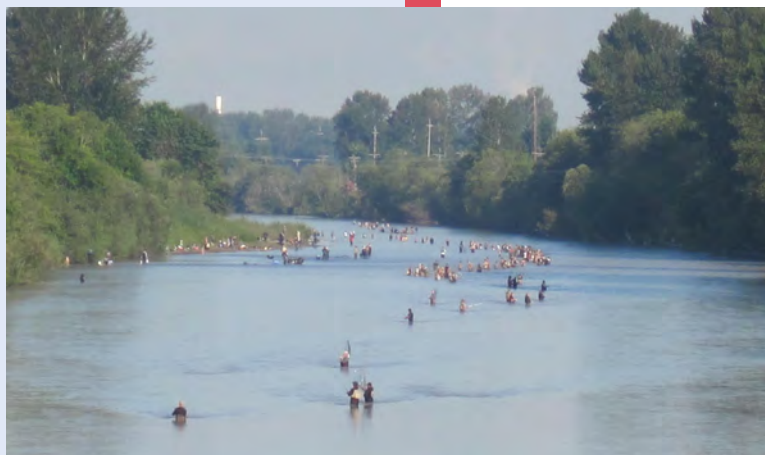
[Puyallup2020](http://Puyallup2020)



Built without fish passage, the dam blocks salmon from accessing 26 miles of habitat in the mainstem Puyallup River and 10 miles of tributaries. A 215-foot-long fish ladder was built in 2000 and requires regular maintenance after heavy rains to ensure sediment and debris do not block the intake or the ladder cells. Migrating salmon cannot use the fish ladder when it is obstructed.

Furthermore, the flume intake is not screened, so fish that enter it are sent down the flume and into the forebay. Salmon, steelhead and bull trout smolts are preyed upon within the forebay by cutthroat and rainbow trout that thrive there due to the abundance of prey. Fish are also killed when the forebay is drained for periodic sediment removal. In addition to fish mortality in the forebay, the penstocks and turbines are improperly screened and many fry, fingerlings and smolts are drawn into the turbines and killed.

The Electron facility is estimated to kill 40 percent of Chinook juveniles on their way to Puget Sound. It restricts the potential of the Puyallup River system's federally protected salmon and steelhead populations by about 34 percent.



## WHAT MUST BE DONE

The National Marine Fisheries Service and the U.S. Fish and Wildlife Service must use their authorities under the Endangered Species Act to demand expedited correction of all causes of fish mortality associated with the Electron Hydropower Project. These federal agencies should declare that Electron is in continuing violation of the Endangered Species Act, and they must ensure the project ceases killing endangered wild fish by requiring a habitat conservation plan for continued operation of Electron. It is time for the Electron Hydropower Project to implement measures that have meaningful, on-the-ground results for endangered Chinook salmon, steelhead and bull trout.

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# South Fork Salmon River

**STATES:** Idaho

**THREAT:** Mining

**AT RISK:** Clean water, threatened fish, recreation

## SUMMARY

The South Fork Salmon River is a major tributary to the beloved Salmon River — a Wild and Scenic River and the second longest free-flowing river in the lower 48 states. The South Fork provides habitat for fish protected under the Endangered Species Act and boasts some of Idaho's best expert-level whitewater. A Canadian mining company's proposal for a massive open-pit gold, silver and antimony mine in the river's headwaters threatens to pollute this aquatic treasure, adversely impacting downstream communities and tribal nations that rely on it for jobs, economic livelihoods and cultural heritage. The U.S. Forest Service must protect the South Fork Salmon, the Wild and Scenic Salmon River into which it flows, and endangered fish by denying this mining proposal.



PHOTO: ZACHARY COLLIER

## THE RIVER

The South Fork Salmon River originates high in the Salmon River Mountains east of Cascade, Idaho. This river, deemed Wild and Scenic eligible and suitable by the U.S. Forest Service, travels approximately 86 miles north to meet the Salmon River at Mackay Bar. The Shoshone Bannock, Shoshone Paiute and Nez Perce tribes have used the river for fishing and hunting since time immemorial.

The South Fork Salmon River is home to native westslope cutthroat trout and is a critical habitat for threatened chinook salmon, steelhead and bull trout. The South Fork Salmon watershed is a cornerstone in ongoing efforts to restore endangered salmon and steelhead to Idaho.

A long history of extensive logging, road building and mining have taken a toll on the river's health. Despite this legacy, the South Fork Salmon is on the mend. It boasts clear, free-flowing waters and undisturbed spawning habitat for migratory fish. The river is a magnet for expert whitewater paddlers from around the world and supports a thriving recreation economy in central Idaho. The Nez Perce Tribe has invested years of effort and millions of dollars in restoring salmon and steelhead in the watershed.

## THE THREAT

The demand for Idaho's precious gems and metals continues to threaten the state's public lands and rivers. At the headwaters of the South Fork Salmon is an old open-pit mine called Stibnite. Reclamation of the site has been underway since the mid-1990s. Federal, state and tribal entities have spent millions of dollars cleaning up the mess left when previous mining companies walked away.

Midas Gold Corporation, a company based in Vancouver, Canada, has submitted a proposal to the U.S. Forest Service to reopen and greatly expand the mine. The proposal includes expanding two existing open pits and digging a third to extract gold and antimony. Ore will be processed on-site and waste will be deposited into a 450-acre tailings storage facility built on top of undisturbed bull trout habitat in Meadow Creek, a major tributary of the river. The 400-foot-tall dam constraining



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# South Fork Salmon River

*Continued*

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PHOTO: PAM BOND

the tailings will be constructed of waste rock from the mining operation. Other waste-rock dumps will bury smaller undisturbed tributaries hundreds of feet deep.

Mining began at Stibnite in the late 1800s. Since that time, elevated levels of arsenic, mercury and antimony have been present in the surrounding tributaries. A recent study by the U.S. Geological Survey indicates that concentrations of these metals are declining. Reopening and expanding the mine will destroy any previous work done to restore the health of the river's ecosystem. Mining operations are inherently toxic for water quality and the environment. The scale at which this project is proposed could have catastrophic repercussions for the South Fork Salmon River and downstream communities that depend upon a healthy Salmon River ecosystem.

## WHAT MUST BE DONE

In July 2017, the Payette National Forest completed a public scoping process and received hundreds of comments opposing the mine from people who would be directly and negatively impacted by its operations, including business owners, campers, hunters, anglers, rafters and kayakers. Since that time, a community-based organization of local residents and South Fork enthusiasts, called Save the South Fork Salmon, has formed to fight the mine.

The Nez Perce Tribe has formally opposed Midas Gold's mining operation, which lies within the tribe's 1855 treaty territory, arguing that a project of this scale is too high risk for the health of the watershed. The Nez Perce Tribe is currently suing Midas Gold for violation of the Clean Water Act. The town of McCall and the Valley County Commission recently declined to join a community partnership with Midas Gold, citing overwhelming opposition by local residents. However, Midas is still actively courting many other rural communities.

Furthermore, six members of Congress who serve on the House Subcommittee on Interior Appropriations recently launched an inquiry into undue influence on the U.S. Forest Service's permitting process by Midas Gold's lawyers and lobbyists.

Stopping the development of this mine will take a significant effort. In spring 2020, the Payette National Forest will release a draft environmental impact statement on Midas Gold's proposed project, followed by a public comment period. The U.S. Forest Service must protect the health of, and investment in, the South Fork Salmon River, the water quality of the Wild and Scenic Salmon River, and the long-term recovery of federally listed fish by prohibiting the reopening and expansion of the Stibnite Mine.

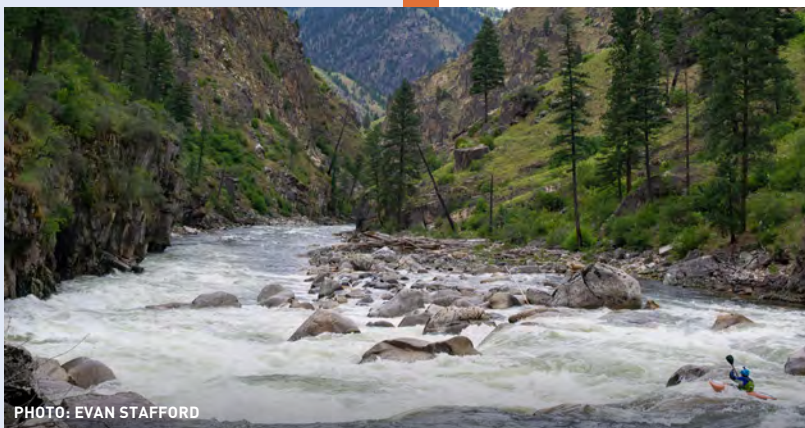


PHOTO: EVAN STAFFORD



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# Menominee River

**STATES:** Michigan, Wisconsin

**THREAT:** Mining

**AT RISK:** Municipal water supplies, Menominee Indian Tribe of Wisconsin's sacred sites and way of life

## SUMMARY

An important tributary to Lake Michigan, the Menominee River is a vital source of drinking water, is central to the history and culture of the Menominee Indian Tribe of Wisconsin, and provides treasured fishing, paddling and hiking opportunities. The river is at risk from a proposed metallic sulfide mine — the Back Forty — which could threaten drinking water for millions in the Upper Midwest and demolish the tribe's sacred sites. The proposed mining process uses cyanide and a risky upstream tailings dam that could send toxic waste into the Menominee River. Michigan's Environment, Great Lakes and Energy agency must deny the dam safety permit for this mining project to protect local communities and the cultural significance of the Menominee River.



PHOTO: WISCONSIN BUREAU OF LAND MANAGEMENT

## THE RIVER

The Menominee River, named after the Menominee Tribe, is the largest river system in Michigan's Upper Peninsula. Approximately 120 miles long, the Menominee River watershed encompasses 4,000 square miles and drains into Lake Michigan's Green Bay. A vital resource that supplies drinking water to communities in Marinette, Wisconsin, and Menominee, Michigan — which have a combined population 24,000 — the freshwater of the Menominee River is significant to ecosystems in the wetlands and rare landscapes of Shakey Lakes Savannah, the most intact, diverse area of pine and oak barren in Northern Michigan.

The Menominee River and the history of the Menominee People are deeply entwined: The Menominee Indian Tribe of Wisconsin's creation story takes place at the mouth of the river. Winding through sacred tribal lands, the river is especially meaningful to the Indigenous People, who connect 10,000 years of history, culture and heritage with this region. Today, the Menominee Tribe plays an active role in stewardship of the river and management of the land around it.

Regarded by anglers as a world-class smallmouth bass fishery, the Menominee River provides habitat to a variety of fish — including walleye, pike, trout and half of the remaining population of lake sturgeon. In addition to fishing, the Menominee supports a seasonal tourism industry offering a host of recreation opportunities, including paddling, hiking and wildlife watching. In 2018, tourism in Marinette County, Wisconsin, generated \$159 million in support of local economies.

## THE THREAT

A Canadian mining exploration company, Aquila Resources, Inc., seeks permits for a metallic sulfide mine on the banks of the Menominee River, near Stephenson, Michigan. Known as the Back Forty Project, the footprint of the mine and tailings dam encompasses 1,087 acres — or 1,435 football fields. With no prior mining experience, Aquila plans to dig a 750-foot deep pit (the equivalent of a 57-story skyscraper) only 150 feet from the river's edge.



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## Menominee River

*Continued*

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[Menominee2020](https://AmericanRivers.org/Menominee2020)



PHOTO: TIM LANDWEHR, TIGHT LINES FLY FISHING

Mining poly-metallic sulfide ore is inherently risky when located near a water source. The proposed mining process uses toxic chemicals, such as cyanide. When crushed sulfide interacts with oxygen and water, they create sulfuric acid — the same caustic substance in car batteries. Sulfuric acid leaches out toxic heavy metals, including copper, cadmium, arsenic, lead and mercury, into waterways. This is known as acid mine drainage. If this pollution seeped into surface and groundwater, the Menominee River and ultimately Lake Michigan would also become contaminated. Even at slightly elevated levels, these contaminants can

lead to cancer, failure of the respiratory system, nervous system, brain, heart, lungs, liver and kidneys. Due to project risks, many insurance companies no longer offer the liability policy required to cover any damages related to toxic leftovers. Currently, it is unclear if Michigan's Environment, Great Lakes and Energy has defined an alternative contingency plan.

The Back Forty Project would require large amounts of highly reactive and toxic leftovers, or tailings, to be stored behind a dam. Aquila plans to use risky upstream dam construction — the same method now banned in Brazil due to the 2019 dam collapse that killed over 270 people and flooded the countryside with toxic waste. Due to excessive rain, snow-melt and runoff made more variable by climate change, previous hydrological tests used to predict performance of a tailings dam are irrelevant, as they do not reflect current changes in hydrology. Cumulative impacts as a result of this level of environmental degradation would be felt for generations to come. Even without a catastrophe, the project threatens to disrupt the land and desecrate ancient agricultural and ceremonial sites of the Menominee Tribe.

## WHAT MUST BE DONE

The Coalition to SAVE the Menominee River, Inc. and the Menominee Tribe, along with communities in Wisconsin and Michigan, are fighting Aquila for the right to a clean river. The threat compelled eight counties in the region to pass resolutions against the company's proposed Back Forty mine.

After withdrawing its insufficient application in December 2019 for the last remaining dam safety permit, Aquila will have to reapply for the permit. It is critical that the content of the mining application plan is consistent with the requirements of the Clean Water Act, including the protection of the Menominee Tribe's interests. A new application will require a public hearing and comment period, providing an opportunity for the public to speak on behalf of the Menominee River. Michigan's Environment, Great Lakes and Energy agency must deny the dam safety permit for the Back Forty Project. Furthermore, Wisconsin Gov. Tony Evers and Michigan Gov. Gretchen Whitmer must oppose this harmful project, which poses unacceptable risk to downstream communities.

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# Rapid Creek

**STATES:** South Dakota

**THREAT:** Mining

**AT RISK:** Sacred sites, clean drinking water, national security

## SUMMARY

Rapid Creek runs through the Black Hills of Western South Dakota. The Black Hills, one of the western hemisphere's geological marvels, is the birthplace of the Ojéti Sakowin (the Great Sioux Nation), which encompasses the Lakota, Dakota and Nakota peoples, who deem the hills "The Heart of Everything That Is" due to the land's sacredness and healing properties. Now, the creek and the Black Hills are threatened by another gold rush. Extractive industries are being allowed to explore for gold close to Rapid Creek. Such activity devastates sacred sites and fish and wildlife habitat. It could also seriously impact the state's second largest municipality, Rapid City, and Ellsworth Air Force Base, which get drinking water from Rapid Creek and its aquifers. The U.S. Forest Service must protect Rapid Creek's irreplaceable resources by requiring a thorough landscape-scale analysis of mining's potentially harmful impacts.



PHOTO: HANS STEPHENSON

## THE RIVER

Rapid Creek — in Lakota it is called Mniluzahan (*Mni* for "water" and *Luzuhan* for "fast") — is approximately 86 miles long and originates in the ecologically rich Black Hills. It winds east into Pactola Reservoir, a recreation area and drinking water source, flows through Rapid City, the second largest city in South Dakota, and then joins the Cheyenne River, a tributary of the Missouri River. The creek's watershed includes rural and tribal communities, Ellsworth Air Force Base and Box Elder — collective populations of 89,408 — which rely on Rapid Creek water. Pennington County, the county that includes most of Rapid Creek, is home to Mount Rushmore, a U.S. National Monument, and tourism generates \$787 million per year. Rapid Creek is also a world-class trout fishery, and outdoor recreation is a major economic driver in the central Black Hills.

## THE THREAT

Currently, four companies are applying to explore for gold in the central Black Hills. At least two of the projects are in the Rapid Creek watershed — those proposed by Mineral Mountain Resources and F3 Gold. Mineral Mountain Resources has mining claims on over 7,500 acres and is drilling on private land near Pe' Sla, a major cultural site of the Lakota people. Although the 1868 Fort Laramie Treaty gave the Lakota and Dakota tribes ownership of the land, the site is so important that the tribes recently purchased a portion of Pe' Sla in order to protect it. F3 Gold holds 2,485 mining claims and wants to explore immediately above the inlet to Pactola Reservoir. Its claims extend into the lake.

Gold mining has an unsavory history in the northern Black Hills. After the 1868 Fort Laramie Treaty reserved the area to the Lakota, Dakota and Nakota peoples in perpetuity, non-indigenous people proceeded to enter the area to explore for gold. The Black Hills have been sacred to Indigenous Peoples since time immemorial. For over 150 years, the U.S. government has tried to get legal title to the Black Hills. The Lakota have rejected the offer of a settlement. In the meantime, billions of dollars of gold were mined from the northern Black Hills without compensation to the Great Sioux Nation. Mining operations have harmed the land, wildlife and water, and a former gold mine has been declared a Superfund site.



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## Rapid Creek

*Continued*

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PHOTO: BRUCE ELLISON

Large-scale gold mining must be stopped from moving south into the Rapid Creek watershed, where it would threaten Lakota homelands, treaty territory, and present-day reservation lands and rural and ranching communities. This threat is especially severe due to the geology of the eastern Black Hills. As Rapid Creek flows east from Pactola Reservoir into Rapid City, it crosses an area where large amounts of water drop out of the stream and into two underground aquifers. Rapid City's water supply comes from Rapid Creek and from wells drilled into these two aquifers. Climate change and associated droughts will only exacerbate demands for clean water.

In the case of a mining spill, Rapid Creek would be polluted with cyanide, arsenic and other heavy metals, and the aquifers would be polluted soon after. The area's major population center, tourism and a large Air Force base would be severely compromised, with major long-term consequences.

## WHAT MUST BE DONE

The U.S. Forest Service has announced that environmental assessments will be conducted for the Black Hills projects, as required by the National Environmental Policy Act. The Forest Service must go beyond that and do more thorough environmental impact statements on the proposed projects potential impacts, including formal consultation with 16 tribal nations. Thousands of people over the last two years, through a variety of public outreach efforts, have opposed mining development in the Black Hills. The Forest Service must take landscape-level impacts into consideration with these collective proposals to explore for gold on public lands in the central Black Hills. If these mines cannot be implemented without environmental and cultural harm (none have been able to do so thus far), the projects must be denied.

# Okefenokee Swamp & St. Marys River

**STATES:** Florida, Georgia

**THREAT:** Mining

**AT RISK:** Fish and wildlife habitat, wetlands, water quality and flow

## SUMMARY

The Okefenokee Swamp, the largest blackwater wetland in North America and the headwaters to the Suwannee and St. Marys rivers, is home to a rich diversity of plants, birds, fish and wildlife. A popular recreation destination, the area generates millions of dollars each year for the local economy. However, this natural wonder is threatened by titanium mining, which government agencies predict would result in “permanent” and “unacceptable” damage. The U.S. Army Corps of Engineers must deny the permit application for this ill-advised project.



PHOTO: TOM WILSON

## THE RIVER

Forming the headwaters of the St. Marys River and flowing past the cities of St. Marys, Georgia, and Fernandina Beach, Florida, the Okefenokee Swamp is designated as a National Natural Landmark, a Wetland of International Importance and a potential UNESCO World Heritage Site. Okefenokee National Wildlife Refuge is the largest national wildlife refuge in the eastern United States.

The Okefenokee Swamp is an unparalleled wetland system made up of peat beds, island prairies, open lakes, creek channels and cypress forests. It is home to alligators, carnivorous plants, an abundance of bird species and the Florida black bear. Several state- and federally listed species depend upon the refuge, including the eastern indigo snake, wood stork and red-cockaded woodpecker. Small populations of endangered shortnose and Atlantic sturgeon also call the St. Marys River home.

The Okefenokee Swamp is a unique international treasure. Unlike Florida’s Everglades, the swamp’s health remains essentially unchanged. Uncompromised by agriculture or industrial development, the swamp is one of the world’s healthiest large-scale freshwater ecosystems. And whereas other large wetland ecosystems have suffered ditching, draining and channelization, the Okefenokee retains its original hydrologic function, storing immense volumes of water through both flood and drought years and feeding the rivers that drain from it.

The Okefenokee National Wildlife Refuge receives an average of 600,000 visitors annually, who come for canoeing, fishing, hunting and wildlife viewing. In addition to the \$64.7 million in local economic output this generates for the four counties surrounding the refuge, tourism supports over 700 local jobs.

## THE THREAT

Trail Ridge, the geologic formation that forms the eastern boundary of the swamp, has long been a target of the titanium mining industry. In the 1990s, the DuPont corporation attempted to mine a vast swath of land along the refuge boundary — a proposal that faced near-universal



# Okefenokee Swamp & St. Marys River

*Continued*

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PHOTO: JAY BLANTON

opposition. Because the project threatened to impair the function of the swamp, as well as its famed wildlife habitat, then Interior Secretary Bruce Babbitt declared that mining “should never happen,” and has no place next to what he called a “very uncommon swamp.” Extensive public outcry and government opposition led DuPont to abandon the project and donate much of the property for permanent protection.

Yet, the threat of mining persists. In 2019, Twin Pines Minerals submitted an initial application to the U.S. Army Corps of Engineers to operate on 2,414 acres, located 1.7 miles from the refuge boundary. Though Twin Pines submitted a revised application in 2020, in which it slightly reduced the size of the first project area, government agencies expect operations to eventually grow to 12,000 acres, potentially coming within 400 feet of the swamp itself. This multiphase project would first impact more than 500 acres of wetlands along the Trail Ridge. However, the full project is expected to hold additional impacts over a 30-year timeframe.

The Twin Pines mine site is situated in an area of Trail Ridge that is arranged in distinct layers of semi-permeable soils that allow for water storage and circulation within the swamp. Should mining damage these soils, the U.S. Fish and Wildlife Service and U.S. Environmental Protection Agency anticipate that “permanent” and “unacceptable” damage could befall the Okefenokee Swamp.

The destruction of wetlands and tributaries would not only diminish the value of the swamp but also degrade the St. Marys River, which is renowned for its excellent water quality and habitat for endangered Atlantic and shortnose sturgeon.

The nature of mineral mining requires freshwater sources, and the most reliable source of many millions of gallons of water in Southeast Georgia is the Floridan aquifer. Withdrawals required for titanium mining operations could lower the Okefenokee Swamp’s water table and reduce the natural flows of the Suwannee and St. Marys rivers. Groundwater drawdowns could also exacerbate fire frequency and intensity and contribute to droughts, thus compounding the impacts of climate change.

## WHAT MUST BE DONE

The U.S. Army Corps of Engineers and other permitting agencies must reject any proposals that risk the long-term protection of the treasured swamp and the rivers it births. In addition, Gov. Brian Kemp of Georgia and other public officials should ensure that this resource remains protected and prevent any future mining projects that have the potential to impair the Okefenokee. Permanent protection of the Trail Ridge lands around the swamp is of utmost importance to the quality of the natural and historic resources of the area. Until the public has undeniable evidence that the Okefenokee Swamp and the St. Marys River are protected from harm, the public must continue to advocate for the Okefenokee and the permanent protection of this national treasure.

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# Ocklawaha River

**STATE:** Florida

**THREAT:** Dam

**AT RISK:** Clean water, manatee and fish habitat

## SUMMARY

The Ocklawaha — a unique river of natural springs, abundant fish and manatees — was unnecessarily devastated in 1968, when Rodman Dam was built for a canal that was never completed. For more than 50 years, the river and its fish and wildlife have suffered. Fish are blocked from migration pathways, and the dam has created serious water quality problems. Gov. Ron DeSantis of Florida can right this wrong. He has already prioritized protecting the state's waterways, so now he must take the historic step and support the breaching of Rodman Dam to restore life back to the Ocklawaha River.



PHOTO: DOUGLAS J. ENG

## THE RIVER

The 74-mile Ocklawaha River rises from the swamps and lakes of north-central Florida, winds along the Ocala National Forest, connects with the spring-fed Silver River and travels east near Orange Springs before reaching the St. Johns River, an American Heritage River. Silver Springs, a world-renowned spring and one of the biggest in Florida, provides 60 percent of the Ocklawaha's flow. The river runs through Marjorie Harris Carr Cross-Florida Greenway and Silver Springs River State Park.

The Ocklawaha River has a rich history. The fossil remains of paleo-mammals, such as mastodons and saber-toothed tigers, are often found near the river. The Timucua people inhabited the region centuries ago, and in more recent times the Creek, Choctaw and several other tribes displaced from their lands by European settlers formed the Seminole nation on the banks of the Ocklawaha. Much of the river remains largely undisturbed, providing natural landscapes of hydric hammocks, long leafed and slash pine, and the sugar sandy soils that give Florida its white sand beaches.

## THE THREAT

In 1968, the natural connection of the Ocklawaha River to the St. Johns River was severed by the Rodman Dam, part of the Cross Florida Barge Canal project, which was never built. The dam flooded over 7,500 acres of forested wetlands, 20 springs and 16 miles of the Ocklawaha River. It caused significant harm to threatened and endangered species and adjacent wetlands and forests. Moreover, the loss of flows to the St. Johns River undermined the ecological health of that river and its estuary and severed important routes for migratory fish.

The dam serves no useful purpose, but the reservoir behind it — Rodman Pool — is a popular bass-fishing destination. The pool itself has never functioned as a natural lake and must be



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# Ocklawaha River

*Continued*

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artificially maintained and drained every three to four years to kill nuisance aquatic vegetation with herbicides.

Decades of federal and state agency science, agency recommendations — from the U.S. Army Corps of Engineers, U.S. Department of Agriculture, U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, Florida Department of Environmental Protection and St. Johns River Water Management District — two environmental impact statements and more than 30 conservation organizations across the state support improving river health by breaching the earthen dam at the historic Ocklawaha River channel.

This plan would restore river and spring

flows and improve water quality and floodplain function. The plan would also include measures to improve public access, including building new fishing docks and boat ramps.

A free-flowing Ocklawaha River would reconnect Florida's iconic Silver Springs to the Atlantic Ocean, providing habitat and restoring migration for American eel, American shad, channel catfish, striped bass, Atlantic sturgeon and endangered shortnose sturgeon to their primary spawning habitat. Restoration would provide access to Silver Springs and critical thermal refuge sites for threatened manatees. Forest and wetland restoration would link the Ocala and Osceola national forests, part of the Florida Wildlife Corridor. It would make North Florida waters from Silver Springs to the St. Johns Estuary more resilient to impacts of climate change, including rising seas and saltwater intrusion.

Restoring the river would give the public more opportunities to fish, camp, hike, kayak, birdwatch, study nature and swim in springs. It would re-open a lost blueway (water trail) for motorboats and paddlers from the Atlantic Ocean to the Harris Chain of Lakes. A 2017 University of Florida study estimated direct annual recreational expenditures for a restored, free-flowing section of the Ocklawaha would be \$13.6 million versus \$6 million for the current, impounded section of the Ocklawaha. This study also showed use of the impoundment has declined since 2004.

Unfortunately, this restoration of regional significance has been held hostage in the past by politically well-connected and very vocal local interests that value the impoundment as a bass-fishing destination.

## WHAT MUST BE DONE

The Florida Department of Environmental Protection's greenway plan states that the Ocklawaha River should be "partially restored" if funds are made available and permits are issued.

Gov. Ron DeSantis of Florida can now make history by restoring the Ocklawaha River by fulfilling the state's formal greenway plan. The permitting agency, St. Johns River Water Management District, has concluded that partial restoration is permissible based on decades of water quality monitoring during the drawdowns conducted every three to four years. Gov. DeSantis has demonstrated his commitment to the improvement of Florida's water resources by dedicating millions of dollars to support Everglades restoration. Lending his support to Ocklawaha River restoration is essential to the health and economy of three outstanding rivers and one of the state's largest and most important springs.



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# Lower Youghiogheny River

**STATES:** Pennsylvania

**THREAT:** Natural gas development

**AT RISK:** Clean drinking water,  
recreation

## SUMMARY

Despite recent improvements to river health, the Lower Youghiogheny River faces a critical tipping point in 2020. Beloved for its fishing, paddling and swimming opportunities, and drinking water supply for almost 75 municipalities, the Lower Youghiogheny is being overrun by natural gas development, including fracking wells, tanks, pipelines, freshwater pump operations — and a new power plant may soon get the green light. Unless Gov. Tom Wolf of Pennsylvania demands a thorough, landscape-scale assessment of potential impacts to this treasured river, the health and welfare of Western Pennsylvania's residents and visitors could suffer serious harm.



PHOTO: SCOTT TAYLOR

## THE RIVER

In the Algonquin language, Youghiogheny means “a stream flowing in a contrary direction,” a reference to the river’s unique northerly course. This part of the river has its roots in coal mining, logging and the nearby steel industry, and many residents were raised here by families who settled along its banks. Affectionately called the “Yough,” the river flows 134 miles north from West Virginia and Maryland to Western Pennsylvania, where it empties into the Monongahela River in McKeesport. Along its course, the river flows through forest, farmland and residential areas. The river is popular for whitewater kayaking and rafting, drawing paddlers from across the region to enjoy class II-III rapids. Downstream of the whitewater stretch, the Yough flows quietly through the Appalachian ridges parallel to the Great Allegheny Passage trail, passing wooded riverbanks, small towns and riverside parks.

Many communities along the Yough and GAP trail that were previously reliant on coal and industry have seen an economic transformation. The positive economic impact from outdoor recreation has created opportunities for restaurants, breweries and bed and breakfasts. Thanks to the Clean Water Act and the work of local volunteers, the river has rebounded from decades of industrial pollution, and now touts fantastic freshwater fisheries, including bass and stocked and native trout.

## THE THREAT

The Lower Youghiogheny River is threatened by current and proposed natural gas infrastructure, operations and leasing that could devastate the river’s fish and wildlife populations and clean drinking water for generations.

A vast network of large-scale drilling pads, wells and storage tanks are being built along both sides of the river’s steep terrain. Fracking sites will extract natural gas from the Marcellus Shale geological formation along the mountain slopes and tributaries. Historically prone to flash flooding and landslides, the land is now being further disrupted by fracking and earth



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# Lower Youghiogheny River

*Continued*

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PHOTO: MOUNTAIN WATERSHED ASSOCIATION

work. Toxic waste from natural gas drilling is being discharged into nearby streams, yet operations continue despite dozens of unresolved violations flagged by Pennsylvania's Department of Environmental Protection.

Meanwhile, a complex infrastructure of natural gas, electrical and water pipelines link hillside drilling sites to the river. Pumps draw 4 million gallons of river water daily for fracking on land owned by the National Park Service. Meanwhile, the conversion of public land to private use has not yet been approved by the federal government. In addition, a segment of the statewide 300+ mile Mariner II Pipeline is transporting 350,000 barrels a day of highly flammable natural gas fluids under the Yough.

Overriding the objections of most residents attending a December 2018 public hearing, Elizabeth Township rezoned a 147-acre parcel of rural and conservation land next to the Youghiogheny River and GAP trail for a 550-megawatt electric, natural-gas-fired power plant. Preparations are currently in process for submission of permit requests to state agencies. The discharge from the power plant into the river is projected to be thousands of gallons daily.

Finally, elected officials are leasing vast areas of the watershed to energy exploration and production. Local residents are left with more questions than answers based on the volume of permitting/rezoning actions, withholding of planning documents, numerous unresolved environmental violations and instances of circumventing federal law. Residents, as well as members of Protect Elizabeth Township and the Mountain Watershed Association, have repeatedly called on decision-makers to slow the pace of rezoning and permitting by engaging in thoughtful, landscape-scale environmental impact assessments, but their pleas have been ignored.

## WHAT MUST BE DONE

Gov. Tom Wolf can halt the threat to the Lower Youghiogheny by suspending permits, resolving outstanding violations, demanding thorough environmental reviews conducted by independent entities, and providing full public transparency of proposed actions. Gov. Wolf must call on his agencies and officials to weigh the irrevocable harm of operating a large, full-scale natural gas drilling and distribution operation on this fragile environment.



# 2020 River of the Year

## DELAWARE RIVER

**STATES:** Delaware, Maryland, New Jersey, New York, Pennsylvania

### A RIVER RENEWED

Seventy-five years ago, the Delaware River was choked with sewage and industrial pollution. People were sickened by the smell. Parts of the river were dead zones, unable to support fish and other aquatic life. The river was slated to be carved up by dams for flood control and water supply, and the natural character of the Delaware was in danger of being lost forever.

Today, the Delaware River is on the mend and thriving. Through federal safeguards, state action and local initiative, the quality of waters in the Delaware have dramatically improved, fish and wildlife have returned in tremendous numbers, and the mainstem of the Delaware remains the longest free-flowing river in the eastern United States, with the most extensive National Wild and Scenic River protection of any watershed in the country. Today, communities along the Delaware River are setting a national example of river stewardship.

PHOTO: SACHIN DALUJA

### A TOUR OF THE DELAWARE RIVER

The Delaware River flows nearly 400 miles from the Catskill Mountains to Delaware Bay, with its mainstem forming the longest free-flowing river east of the Mississippi. It drains more than 14,000 square miles of land that includes portions of New York, New Jersey, Pennsylvania, Delaware and Maryland. From cool springs, forests and wetlands in its headwaters, the Delaware River flows through farmland and towns, including Port Jervis and New Hope. The tidal portion of the river begins at Trenton and the river winds through the urban centers of Philadelphia, Camden, Wilmington and Dover before meeting the Atlantic in Delaware Bay.

The Delaware River watershed provides drinking water to two of the five largest cities in the United States — New York and Philadelphia — and is home to one of the largest freshwater ports in the world. The watershed contributes \$22.5 billion per year to the economy from recreation, hunting and fishing, water quality and supply, ecotourism, agriculture, open space and its busy port.

With diverse and high-quality habitats, the watershed supports native fish species, including American shad, river herring, American eel, striped bass and brook trout. It is also home to numerous protected species, such as the federally endangered dwarf wedge mussel and bog turtle, as well as beaver, muskrat, otter, black bear, bald eagle and osprey.

The Lenape people have called the river home for thousands of years. Before it was called Delaware, the river was *Lenape Wihittuck*, which means “river of the Lenape.” The Delaware also figures prominently in American history. On Christmas night in 1776, during the American Revolution, George Washington and more than 2,000 soldiers crossed the river from Pennsylvania to New Jersey, surprising British troops at Trenton. The river’s abundant shad runs helped feed Washington’s Continental Army.



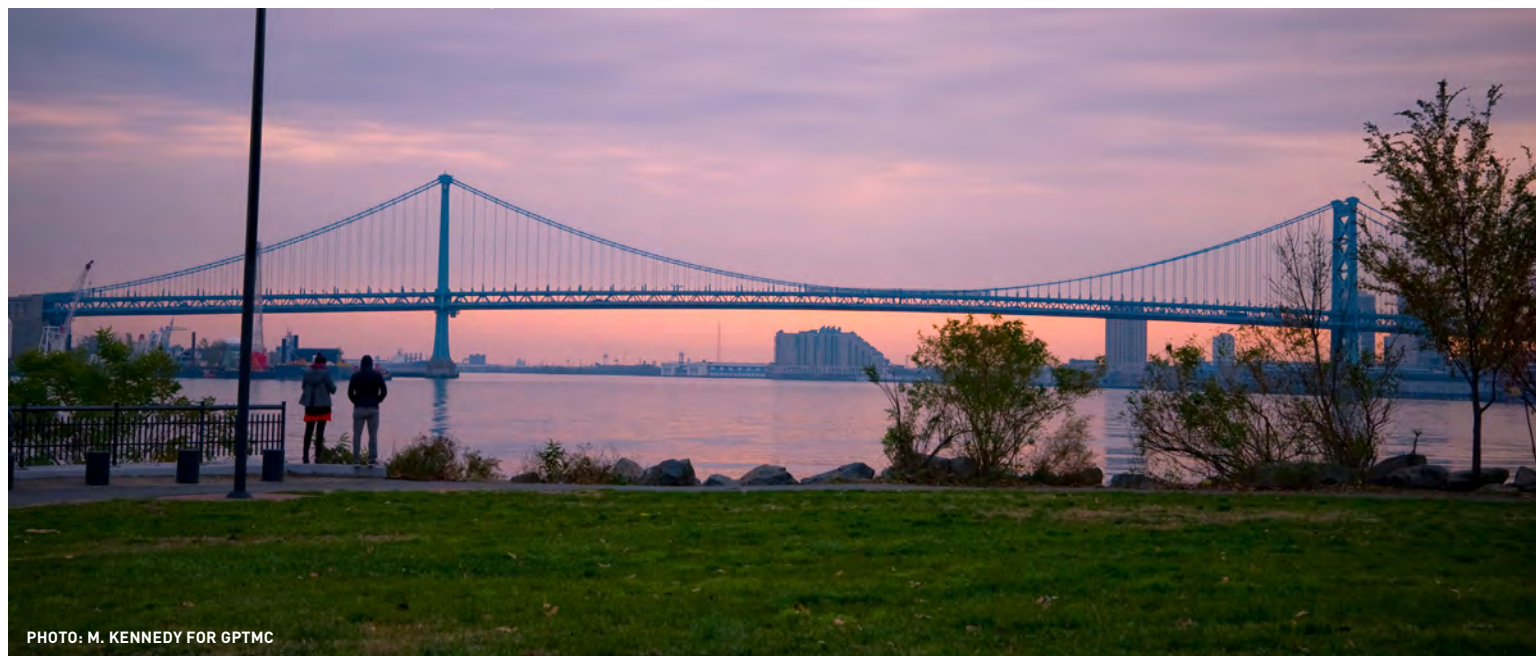


PHOTO: M. KENNEDY FOR GPTMC

## A CLEAN WATER SUCCESS STORY

By the mid-20th century, timber and mining in the headwaters, commercial and industrial activity downstream, and the burdens of a growing population had taken a heavy toll on the river. According to the Delaware River Basin Commission, “The river’s water was so foul that it would turn the paint of ships brown as they traveled through or were docked for any period of time.”

But focused investment in wastewater treatment in Philadelphia, Camden, Trenton and Wilmington led the commission to declare the Delaware estuary cleanup “one of the premier water quality success stories in the United States.” Today, thanks to a combination of federal and state regulations and local innovation, the Delaware is a river reborn — and a model for other river restoration efforts across the country.

## FOUR FACTORS HAVE BEEN KEY TO SUCCESS ON THE DELAWARE RIVER:

### → ENFORCING CLEAN WATER SAFEGUARDS

The Delaware River would not be the success story it is today without strong state and federal clean water safeguards. In 1961, the Delaware River Basin Commission became the first multistate collaborative regulatory effort focused on the restoration of a watershed. Together with the force of the Clean Water Act in 1972, regulatory tools helped stem pollution and improve river management. Key indicators of river health improved: dissolved oxygen rates went from over 7mg/l to

almost none. Phosphorus dropped from dangerously high to nearly nonexistent, decreasing fourfold in 30 years. Atlantic sturgeon, striped rock bass, white perch and American shad have all made significant recoveries — some from the brink of extinction — to commercially healthy stocks. The highest shad run in 92 years occurred in 2017. Regulatory safeguards are at work today to maintain dissolved oxygen rates, curb excess nitrogen through local, state and regional planning and practice so the Clean Water Act can realize its fundamental goal of “fishable, swimmable” waters for the entire Delaware River.

### → PRIORITIZING INNOVATION AND EQUITY

Today, the Delaware River is a hub for natural water infrastructure solutions. Communities along the river, with support from both the public and private sectors, have embraced these solutions, such as rain gardens and green roofs, to manage stormwater runoff that contributes to water treatment system overflows, pollution, flood damage and erosion. Philadelphia’s Green City, Clean Waters program was one of the first and best municipal level restoration projects to help curb urban runoff. The program, which started as a response to regulatory oversight, has inspired cities across the nation to integrate nature-based solutions into their water infrastructure management programs.

The city of Camden, New Jersey has been championing natural infrastructure to make clean water the forefront of urban revitalization, prioritize equity and ensure clean water is affordable and accessible for all. In 2019, the city released a roadmap titled, “An Equitable Water Future.”

This approach is demonstrating how cities can involve impacted neighborhoods in visioning and planning — and how natural infrastructure solutions can deliver multiple social, economic and environmental benefits to these communities.



PHOTO: NICHOLAS A. TONELLI

## → ENSURING ADEQUATE WATER SUPPLIES

In 1954, the U.S. Supreme Court issued a decree directing management of the Delaware River's flow to provide for the needs of the watershed's states. In response to growing demands on the river's water, the decree parties — the four states and New York City — have agreed to a series of flexible flow management programs since 2007. The most recent of these guides the states to balance water supply needs in the headwaters, downstream to Philadelphia, Trenton and Camden, and to greater New York City. In 2017, New York, New Jersey, Pennsylvania, Delaware and the city of New York began a 10-year flexible flow management program to ensure the headwater reservoirs of the Delaware River can meet water supply demands, protect fisheries, enhance flood mitigation and repel saltwater from intruding upstream.

## → PROTECTING A FREE-FLOWING RIVER

American Rivers and local partners successfully fought the construction of the Tock's Island Dam in the 1970s, which would have been the largest dam east of the Mississippi. Proposed as a flood control project, the dam would have created a 37-mile-long lake and was met with outcry from citizens concerned about private land condemnation, cost and environmental impacts.

Today, Delaware Water Gap — the area that would have been flooded by the dam — is protected as part of the National Wild and Scenic Rivers System. The Delaware River basin has the most extensive protection of any watershed in the system, with more than 430 miles of mainstem and tributaries designated as Wild and Scenic, including New Jersey's Maurice and Musconetcong rivers and Pennsylvania and Delaware's White Clay Creek.

Communities in the watershed, including Wilmington, are also restoring river health, revitalizing fisheries and improving water quality by removing outdated, unsafe dams. At least 136 dams have been removed across the Delaware River watershed.

## THE RIVER'S FUTURE

While communities along the Delaware should take great pride in the river's progress, important work remains to be done. Continued action is critical to address ongoing challenges, such as aging water infrastructure, urban development and climate change. Severe storms, which occur with increasing frequency due to climate change, threaten drinking water intakes with saltwater intrusion and can cause sewage overflows at ill-prepared water treatment plants.

Critical funding and additional restoration and protection projects are necessary to support the health of the river and its communities:

- Congress must defend against rollbacks to the Clean Water Act to protect the Delaware and its tributaries, wetlands and small streams. In the basin, the Clean Water Act must be implemented to support "fishable, swimmable" uses.
- The Delaware River Basin Commission, partner states and federal agencies must implement the Flexible Flow Management Plan to protect the headwaters while serving communities and water needs downstream.
- Congress must continue to provide federal funding for regional and state programs, including:
  - NOAA's Community-Based Restoration Program and the U.S. Fish and Wildlife Service's Fish Passage Program, which have been integral in restoring migratory fish populations and keeping rivers in the watershed free-flowing.
  - The Delaware River Conservation Fund and the Delaware River Restoration Fund, administered by the U.S. Fish and Wildlife's National Fish and Wildlife Foundation, and the result of Congress's commitment to the Delaware River Basin Conservation Act, which support projects to benefit habitat and water quality.
  - The Clean Water Act's State Revolving Funds, which allow states to support municipal and local projects to improve water quality and water infrastructure. These funds must continue to include a Green Project Reserve for natural infrastructure priorities. Innovative investment strategies must require planning for climate resiliency and ensure resources are allocated equitably and effectively.

With these actions, we will ensure the Delaware River continues to shine as a national example for clean water and river health, as well as an economic and recreational asset to the millions of people who call this remarkable river home.