



AMERICAN
RIVERS
Life Depends on Rivers.™

America's Most Endangered Rivers® of 2023

10 RIVERS. 10 THREATS. 10 SOLUTIONS.

America's Most Endangered Rivers® of 2023

“This report sounds the alarm. It is a national call to action to defend these rivers and all of the life they support.”

— Tom Kiernan, President
and CEO of American Rivers

COVER PHOTO: GRAND CANYON, ARIZONA
AMY MARTIN

OHIO RIVER, OHIO
LORI COLEMAN

Life Depends on RiversSM.

Two-thirds of our water comes from rivers. Rural and urban areas depend on rivers for clean drinking water, food production, economic vitality, and cultural connection. Rivers provide natural habitat indispensable to fish, birds, and other aquatic and land animals. Like the veins and arteries in our own bodies, our health and our future are directly linked to our rivers.

But too many of our rivers are sick. Forty-four percent of waterways in the United States are too polluted for fishing or swimming, according to the US Environmental Protection Agency. Freshwater species are going extinct faster than ocean or land species, and rivers are among

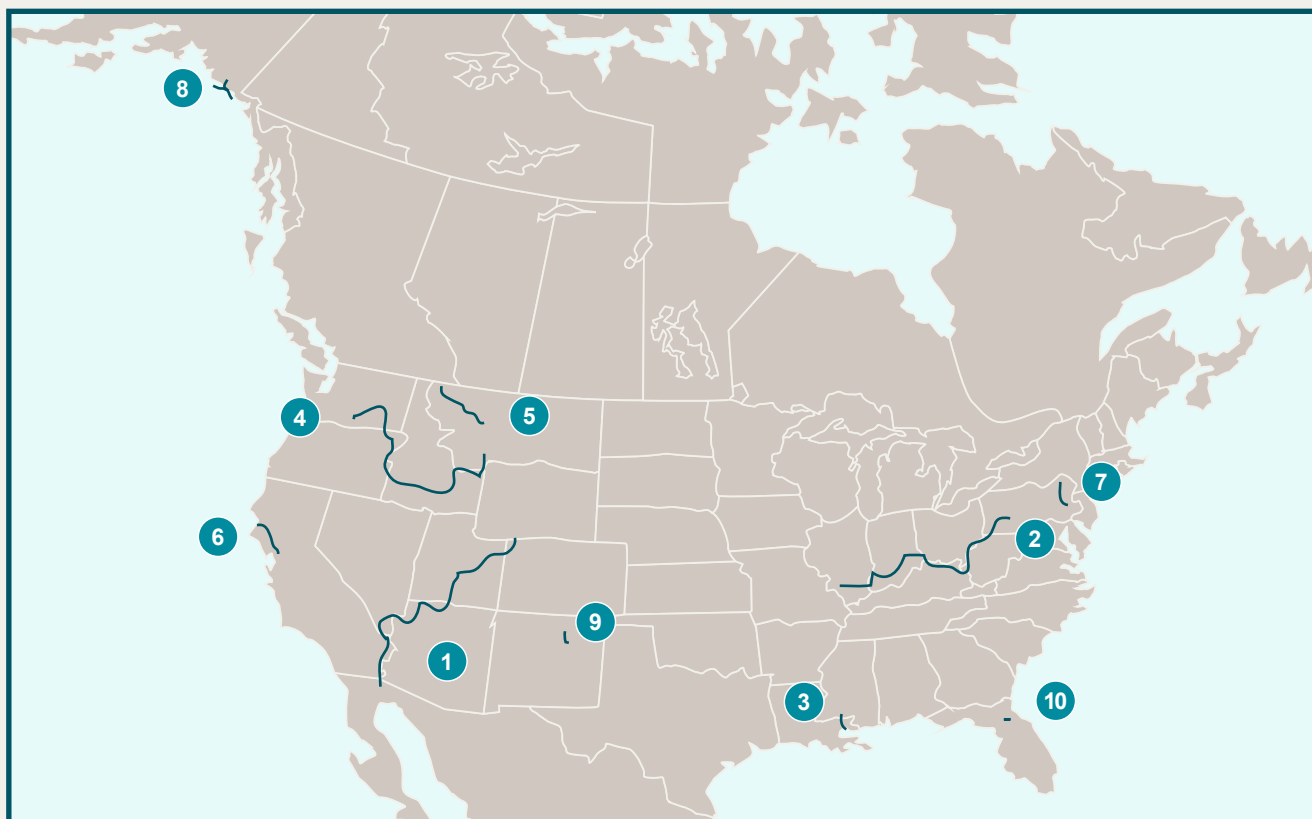
the most threatened ecosystems on the planet. Meanwhile, climate change is fueling more severe floods and droughts — and unjust policies put the burden of all these impacts disproportionately on Communities of Color and Tribal Nations.

Healthy rivers are essential to human health and public safety. When rivers are sick, people and nature suffer.

In its 38th year, America's Most Endangered Rivers® amplifies the voices of local leaders speaking up for rivers at risk. The 10 rivers on this year's list underscore how health and safety are threatened by climate change, pollution, dams, and other threats to rivers.

As American Rivers marks 50 years of conservation impact, we know we need to work shoulder to shoulder with strong leaders and partners on rivers all across the country. We are proud to join with partners like those advocating for the future of America's Most Endangered Rivers® of 2023. Together, we must defend these 10 rivers — and demand greater protections for all 3 million miles of rivers across our country.

Healthy rivers are essential to human health and public safety. When rivers are sick, people and nature suffer.



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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 people and nature.
- » The magnitude of threat to the river and its communities, especially in light of climate change and racial injustice.

ABOUT AMERICAN RIVERS

American Rivers is championing a national effort to protect and restore all rivers, from remote mountain streams to urban waterways. Healthy rivers provide people and nature with clean, abundant water and natural habitat. For 50 years, American Rivers staff, supporters, and partners have shared a common belief: Life Depends on RiversSM.

FOR MORE INFORMATION: AMERICANRIVERS.ORG

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COLORADO RIVER IN THE GRAND CANYON

THREAT: Climate change, outdated water management

STATE: Arizona

AT RISK: Ecosystem health, reliable water delivery, regional economy

SUMMARY

The Colorado River's Grand Canyon is one of our nation's, and the world's, greatest natural treasures. A sacred place of deep cultural significance, it is also a beloved recreation and travel destination, and home to endangered plants and animals. But rising temperatures and severe drought driven by climate change, combined with outdated river management and overallocation of limited water supplies put this iconic river at serious risk. As it makes critical decisions about water management along the Colorado River, the Bureau of Reclamation must consider the environment a key component of public health and safety and prioritize the ecological health of the Grand Canyon.

THE RIVER

The Colorado River flows nearly 1,500 miles from the Rocky Mountains to the sea in Mexico. Along its way, the river traverses some of the driest and hottest areas of the country, providing drinking water to 40 million people, including some of the nation's largest cities including Los Angeles, Phoenix, Las Vegas, and Denver, as well as 30 federally recognized Tribes including the Navajo, Ute, Havasupai, and many others. The Colorado River provides irrigation water for nearly six million acres of ranch and farmland, including farms that grow 90 percent of this country's winter vegetables. The river is also the engine of a recreational economy dependent on adequate river flows and water supplies to operate. In all, the Basin feeds a \$1.4 trillion economy integrally connected to the broader national economy.

The Grand Canyon is the iconic heart of the Colorado River. This 277-mile stretch of river in Northern Arizona is unmatched in nature. Recognized as a World Heritage Site, one of the Seven Natural Wonders of the World, and one of the most famous landscapes on earth, the Grand Canyon is the foundation of the Colorado River Basin's natural and cultural fabric, and the National Park draws millions of visitors each year.

The biodiversity of the Grand Canyon is astounding. From alpine meadows and soaring Douglas fir of the North Rim at over 8,000 feet to the stiff Blackbrush and fuchsia petals of the Pincushion cactus in a desert the same elevation as Tucson, the Grand Canyon is an ecological refuge. It is home to unique wildlife including bighorn sheep, mountain lion, elk, and beaver, as well as fish such as the endangered Humpback Chub and Colorado River Pikeminnow.

The Grand Canyon is the lifeline between the Upper and Lower Colorado River Basins and is bookended from above and below by two massive dams, forming the two largest reservoirs in the country. The Grand Canyon National Park starts 16 miles below the tailwaters of Glen Canyon Dam located in Page, Arizona.

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COLORADO RIVER IN THE GRAND CANYON

Continued

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COLLEEN MINIUK

Construction on the dam was completed in 1963, and waters began to back up behind the dam, flooding the back country of Glen Canyon to create Lake Powell. Hoover Dam in Nevada was completed in 1936 and backs up water to form Lake Mead — the largest reservoir in the US — backing up the river 65 miles at its longest reach to Pearce Ferry at the western end of Grand Canyon.

THE THREAT

The Colorado River is on the brink of collapse, and the Grand Canyon is in the crosshairs as river managers make critical decisions about how to allocate dwindling water supplies. While the river originally terminated in Mexico's Sea of Cortez, it has been so over-tapped since the mid 1900s that it dries up 100 miles from its original end point. Over the past 20+ years, river flows have dropped precipitously, and water levels of Lake Powell and Lake Mead have fallen to historic lows, in large part driven by climate change.

To protect critical infrastructure including dam integrity, hydropower generation and the ability to deliver water

through the Grand Canyon to Nevada, Arizona, California and Mexico, the federal government and the 7 basin states must continue to modify the amount and timing of water allowed to flow through Glen Canyon Dam. The question before river managers is "will we attempt to solve the basin's water challenges by sacrificing the health of the Grand Canyon, or will we pursue lasting solutions that balance water demands with environmental health and safety?"

In response to more than two decades of dry years throughout the Colorado River basin, in 2022 the Bureau of Reclamation (BOR) took emergency actions to protect infrastructure at Lake Powell. Despite the prospect of an above average water year in 2023, which may buy a little time for the basin, reducing water deliveries and resulting changes in flows through Glen Canyon Dam into the Grand Canyon in the coming years is inevitable.

Altering flows from Glen Canyon Dam has significant impacts on the Grand Canyon. The prolonged drought and accelerating impacts from climate change triggering falling lake levels at Lake Powell has already caused significant harm to the canyon. If future flows are severely altered without consideration for the environment, it could further devastate the Grand Canyon's irreplaceable natural, cultural, and recreational values.

For many, the Grand Canyon and its surroundings are sacred. Reducing releases from the dam to turn the river into a mere trickle would not only impact native fish, plants, and wildlife, but also the health and well-being of those who are inextricably tied to this place. More than a dozen Native American Tribes and Pueblos revere the Canyon, and millions of people a year find awe, healing, and excitement by just being in and around this place. These challenges are serious threats to the health and well-being of both people and the environment, and if not solved, could do serious, lasting harm to arguably the most recognizable National Park in the country, and all people who love it.

Furthermore, with the rapid and consistent decline of water elevations at Lake Powell, Colorado River flows from Glen Canyon dam are warming. That is, the warmer layer of water in the top of the reservoir's water column has dropped to a level where that warm water is flowing through the dam's hydropower tubes. This situation has allowed high-risk, non-native fish such as smallmouth bass to pass

COLORADO RIVER IN THE GRAND CANYON

Continued

AMY MARTIN

through the dam into the Grand Canyon. Smallmouth bass are new to the Grand Canyon environment and biologists fear they will cause serious harm to both cold-water sport fish (rainbow and brown trout) and juvenile native and endangered fish such as the humpback chub. Without a mechanism to stop these and other types of non-native fish from getting into the Grand Canyon, cold-water and native fish populations that have been supported through long-term investments of millions of dollars and countless operational hours will once again be placed in serious jeopardy.

WHAT MUST BE DONE

We simply cannot allow the beloved Grand Canyon to become an ecological sacrifice zone as we work to solve the Colorado River basin's ongoing water crisis. The BOR is currently considering two federal actions where the public can participate and encourage the development of flow regimes that will incorporate and consider ways to protect the ecological, cultural, and economic values of the Grand Canyon.

Low flows in the river are creating a perception that we can no longer implement the types of flows needed to support environmental and natural resources in the Grand Canyon because there is not enough water. We can, however, both protect public health and safety and support the ecosystem by ensuring that water delivered through the Grand Canyon is released in a way that not only accounts for critical infrastructure and sustains the river's essential connection to the Lower Basin States and Mexico, but also protects the canyon's cultural heritage and the natural environment from extinction.

BOR is requesting public comments around a

Supplemental Environmental Impact Statement (SEIS) to temporarily amend a set of rules known as the 2007 Interim Guidelines that could alter flows through Glen Canyon Dam in the short-term. BOR's purpose for this action is to address the immediate emergency to the Colorado River community's water supply and public health and safety for the Basin. It is critical that BOR recognize the environment as a key component of public health and safety.

The Grand Canyon's ecological stability is at stake and must be part of the calculations for operating the Colorado River system under the SEIS. That is, in determining the suitable range of flows to pass through Glen Canyon Dam in response to the emergency conditions in Colorado River Basin, it will be imperative to identify and assess the critical resource needs within the Canyon and the operational opportunities available to help sustain and improve physical conditions of the Colorado River in Grand Canyon. Specifically, BOR should consider how it can best utilize and time the altered flow volumes from Glen Canyon Dam to replicate natural flow dynamics through Grand Canyon.

Understanding the impacts from the range of possible flow options must be comprehensive to fully evaluate and prioritize the tradeoffs to the array of physical, biological, and cultural values and what adaptation or resilience strategies will be needed to protect and sustain these resources.

This future is not possible without leadership and representation of Colorado River Tribes. As sovereign nations, tribes must have an equal role in the deployment and implementation of federal infrastructure dollars and all future Colorado River management decisions. It is imperative that the seven Colorado River Basin states and the Biden administration establish a way to formally engage with Tribal Nations to address this river emergency. They must act with urgency to invest and implement equitable and proven solutions to reduce water risk in the Basin and build a stronger future centered around a healthy Colorado River.

OHIO RIVER

THREAT: Pollution, climate change

STATES: Pennsylvania, Ohio, West Virginia, Kentucky, Indiana, and Illinois

AT RISK: Clean water for over 5 million people

SUMMARY

The Ohio River unifies 30 million people across 15 states, from New York to Mississippi. Protecting this precious resource is essential to ensuring the endurance of cultural identity, historical significance, biodiversity, vibrant river communities, and safe drinking water. But the upper river is threatened by industrialization and pollution, recently exemplified by the East Palestine train derailment. This ongoing chemical disaster underscores the vulnerability of the Ohio River and need for increased safeguards and durable funding for additional and continuous monitoring. To protect the Ohio River, Congress must designate the river as a federally protected water system and commit to significantly fund both the Ohio River Restoration Plan and Ohio River Valley Water Sanitation Commission's technical upgrades.

THE RIVER

The Ohio River begins at the confluence of the Allegheny and Monongahela rivers in Pittsburgh, Pennsylvania, flowing southwest and defining boundaries of Ohio, West Virginia, Kentucky, Indiana, and Illinois before flowing into the Mississippi River in Cairo, Illinois. The watershed covers more than 200,000 square miles and provides drinking water for over five million people.

The Ohio River is rich in Indigenous history and culture. The word "Ohio" comes from the Seneca name for the river, Ohiyo, which means "it is beautiful." Many ancestors of Native American descendants still living in Ohio today were forced to relocate. In addition to Native American history, the river also holds deep significance in our nation's struggle for justice from an African American perspective. A sign in Parkersburg, West Virginia reminds us that before emancipation, the Ohio River was the gateway to freedom for those enslaved south of the Ohio River. If you could cross the Ohio River, you had reached freedom. The river remains a significant historic site and a symbol of freedom.

In addition to its cultural and historic importance, the river provides critical habitat for 150 species of fish and the watershed protects endangered species such as the candy and diamond darter, several species of mussels, and crayfish. The rivers, streams and lakes are a source of recreation for communities throughout the watershed.

THE THREAT

The Ohio River Basin drains areas affected by environmental pollution from heavy industrialization, including mining and resource extraction for energy development, chemical production, and durable goods manufacturing. This history has resulted in significant discharges of toxic chemicals, including both legacy chemicals (such as mercury, dieldrin, PCBs, and dioxins) and chemicals of emerging concern (especially PFAS and Gen-X chemicals). These discharges, with associated carbon and methane

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OHIO RIVER

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BREWSTER RHODS

emissions, threaten human and ecosystem health.

Pollution from disposal of coal ash and acid mine drainage also impact the watershed. Ongoing discharges from industrial, municipal, and agricultural sources remain a challenge as a decades-long effort to improve and sustain the river system continue. Despite measurable progress, two thirds of the river is listed as impaired for bacteria under the Clean Water Act. High levels of nutrients present in the river results in the formation of toxic algae outbreaks. The cumulative impact of all of this pollution threatens drinking water and public health, while also putting vulnerable communities at risk.

One example of the continued challenges occurred on February 3, 2023 when a Norfolk Southern train carrying hazardous chemicals derailed in East Palestine, Ohio, 16 miles from the Ohio River. This train was carrying at least five toxic chemicals. Of immediate concern was the vinyl chloride, a chemical used in plastic products. Fearing an uncontrolled explosion, Norfolk Southern chose to “vent” this chemical by burning the substance from 5 railcars. Additionally, butyl acrylate leaked into nearby streams that flow into the Ohio River. Soon after came reports of rashes and headaches, fish kills and animal deaths. Officials began tracking a plume of chemicals in the Ohio River in real time. ORSANCO, in conjunction and coordination with local and state emergency response officials and environmental agencies, stepped up to the plate to safeguard drinking water through monitoring and technical expertise. Unfortunately, ORSANCO is operating its staff and systems — including the organic detection system currently being used to navigate the East Palestine tragedy — on the same federal appropriation formula it received in 1972. Sustained increases in financial support for ORSANCO are needed to protect the communities and the environment in the Ohio River basin.

WHAT MUST BE DONE

This recent chemical tragedy underscores the precious value and vulnerability of the Ohio River. To protect the safety of drinking water for the 5 million people who depend on the river, ORSANCO requires robust, sustained funding to prevent disasters and pollution through immediate testing, long term monitoring, and technical expertise. Sustained funding is required for technical upgrades to their monitoring system and increases to staff capacity.

The Ohio River Basin Alliance (ORBA), a multi-state effort in partnership with hundreds of stakeholders across the region, is drafting a basin-wide restoration plan. The Ohio River Restoration Plan is a collaborative effort modeled after successful restoration projects such as the Federal Great Lakes Restoration Initiative. This “blueprint” presents goals, objectives and actions for general improvements to safeguard drinking water, support the ecological well-being of the river, and invest in quality of life for communities along the river. Members of Congress from across the Ohio River watershed must support the plan to designate the Ohio River as a distinct water system worthy of substantial federal funding to support its recovery, protection, and future value.

3

PEARL RIVER

THREAT: Dredging and dam construction

STATES: Louisiana, Mississippi

AT RISK: Clean drinking water, local and downstream communities, fish and wildlife habitat

SUMMARY

The Pearl River is one of the most biodiverse rivers in the U.S. and the primary drinking water source for Jackson, Mississippi. But this natural treasure is threatened by a devastating private real estate development scheme masquerading as a flood control project. This “One Lake” project would dredge and dam the Pearl River to create new waterfront property, destroying vital fish and wildlife habitat, worsening Jackson’s flooding and drinking water crisis, increasing toxic contamination, and reducing freshwater flows critical to the region’s important seafood and tourism economies. The Biden administration must stop this project and invest in environmentally-sustainable flood relief for the predominantly Black community of Jackson while protecting the Pearl River and all the communities and economies that rely on it.

THE RIVER

From its headwaters on native Choctaw lands, the Pearl River flows nearly 500 miles through Mississippi and Louisiana to the Gulf of Mexico. The Pearl River provides habitat for more than 300 species of birds, fish, and wildlife, including the federally threatened Gulf sturgeon and ringed sawback turtle, and 125,000 acres of wetland and bottomland hardwood conservation lands. The Pearl supplies freshwater flows critical to the health of the Gulf of Mexico; the region’s oyster, crab, shrimp and tourism industries; and hundreds of industrial and municipal users.

The Pearl is the only public drinking water source for the city of Jackson, which includes 150,000 residents, 83 percent of whom are Black. The city has struggled for decades to maintain basic water and sewer service and is currently under an Environmental Protection Administration (EPA) consent decree to enforce established rules and regulations due to sewage discharge violations in the billions of gallons annually. In 2022 the city’s residents were left without clean drinking water for months when one of the city’s two drinking water treatment plants failed.

THE THREAT

One Lake is a private real estate development scheme masquerading as a flood control project that threatens public health and safety, river and coastal ecosystems, and regional economies. It will dredge 10-miles of the Pearl River, destroying 2,500 acres of mostly wetland habitat, disturbing eight highly contaminated toxic sites with no plan to protect public health, and causing a harmful rise in the river’s water temperature. A new dam will be constructed to contain the dredged 1,900-acre impoundment, and the dredged material will be used to build new waterfront property for real estate development putting more people in harm’s way.

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PEARL RIVER

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CHRIS LOCKHART

In addition to the massive loss of floodplain, wetlands, and in-stream habitats, One Lake will worsen Jackson's significant urban flash flooding and stormwater drainage problems. One Lake will permanently elevate water levels in eight tributary creeks that flow through primarily low-income Black neighborhoods in Jackson. During the four years of project construction, Jackson will be forced to somehow find an alternative water source for the one drinking water plant that was able to operate during the city's most recent drinking water crisis. One Lake will then add to the city's drinking water and water quality problems, including by confining the rampant discharges of raw and

poorly treated sewage that has already closed the Pearl to public contact recreation in the Jackson area. The low-head dam will reduce and alter the delivery of freshwater flows and nutrients vital to a healthy river-Gulf ecosystem and the communities and industries that rely on those flows.

Instead of subsidizing private real estate development, the federal government should invest in already identified flood relief solutions, including setting some levees farther back from the river, investing in floodplain and wetland easements, targeted elevations, and voluntary relocations of structures in flood-prone areas.

WHAT MUST BE DONE

One Lake is a federal civil works project that was rejected by the U.S. Army Corps of Engineers multiple times in the past. This project has been revived by local developers under a unique process that allows non-federal project sponsors to study federal civil works projects. While the Army Corps is currently reviewing the environmental documents developed by the private interests and has yet to decide whether the project merits moving, the agency has already committed \$221 million from the Infrastructure Investment and Jobs Act to construct the project.

The incredibly destructive One Lake project will not protect communities from flooding. Instead, it will result in more environmental injustice harm in metro Jackson's communities of color by worsening urban flooding, exacerbating the city's long-standing drinking water crisis, and funneling critically needed investments and resources away from marginalized communities—all for the benefit of private real estate developers.

The US Army Corps of Engineers, US Environmental Protection Agency, and US Fish and Wildlife Service must protect the Pearl River for people and wildlife by rejecting the One Lake project. These agencies should prioritize non-structural and natural infrastructure solutions to provide effective, environmentally sustainable flood relief to Jackson while protecting the river's unique ecology and wildlife.



4

SNAKE RIVER

THREAT: Four federal dams

STATES: Idaho, Oregon, Washington

AT RISK: Tribal treaty rights and culture, endangered salmon runs, rural and local communities

SUMMARY

Salmon in the Columbia-Snake River basin are on the brink of extinction in large part due to four dams on the lower Snake in eastern Washington. Restoring salmon runs and honoring treaties and responsibilities with Tribal Nations across the region requires removal of these four dams. Momentum and support for this river restoration effort is growing, but it is critical that the hydropower, transportation, and irrigation services of the dams are replaced before dam removal can begin. The region's congressional delegation and the Biden administration must act with urgency to invest in infrastructure so that the dams can be removed, setting the Northwest on a course to climate resilience, economic strength, abundant salmon, and cultural revitalization.

THE RIVER

The Snake River begins high in the mountains of Wyoming and flows for more than 1,000 miles before merging with the Columbia River at the Tri-Cities in eastern Washington. As the largest tributary of the Columbia, the Snake once produced 2-6 million fish annually, or 40 percent of the prized Chinook salmon and steelhead in the Columbia River Basin. Each year, fewer Snake River salmon complete the return trip from the ocean in what remains the longest distance, highest elevation salmon migration on earth.

Salmon are at the heart of the cultures of Northwest Tribal Nations — integral to religion, identity and physical sustenance. Historically, the region's tribes were wealthy people thanks in large part to a trade economy based on abundant salmon. Tribes have led regional salmon recovery efforts for decades. In recent years, the lack of salmon has been devastating to communities across the region. Businesses that depend upon the recreation and tourism dollars that salmon bring are suffering, and commitments to Northwest Tribal Nations remain unfulfilled.

THE THREAT

The four dams on the lower Snake River provide irrigation, transportation, and hydropower generation benefits to economies of the inland Northwest. Since construction of the dams concluded in 1975, the four lower Snake River dams have contributed to dramatic decreases in the basin's salmon and steelhead populations. All Snake Basin salmon and steelhead populations are now listed as threatened under the Endangered Species Act.

In January 2023, the American Fisheries Society, the world's oldest and largest organization dedicated to strengthening the fisheries profession, advancing fisheries science, and conserving fisheries resources, issued a position statement calling for

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SNAKE RIVER

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NEIL EVER OSBORNE

the removal of the lower four Snake River dams. The statement reads in part; “(w)hen the body of scientific evidence is considered, it is clear that breaching the four lower Snake River dams is necessary to (1) substantially improve the probability of recovering these cultural and ecological keystone species to healthy and harvestable populations and (2) safeguard those fishes from extinction.” It’s clear that salmon cannot recover with the lower four Snake River dams in place.

The urgency of removing the lower four Snake River dams has been increased by current and future threats from climate change. The dams turned was once a free-

flowing river into a series of still-water reservoirs that act as a bathtub left in the sun, contributing to increased water temperatures and exacerbating climate change through emissions of methane. Temperatures in the lower Snake now consistently reach 70 degrees, a temperature which can be lethal for salmon and steelhead, in July and remain high throughout summer months. Upstream from the four dams lies some of the best cold-water fisheries habitat in the continental United States, with the Salmon, Grande Ronde, Clearwater and other Snake tributaries projected to represent over 65% of the nation’s coldwater fish habitat by the year 2080.

WHAT MUST BE DONE

Washington Governor Jay Inslee and Senator Patty Murray issued a report in late 2022 that showed that the services the dams provide can be replaced with new infrastructure, and that these investments must be made before the dams can be removed. Even the important, though modest, contributions of power to the Northwest electrical grid can be replaced with a variety of new clean energy resources. Nimiipuu Energy, a project led by the Nez Perce Tribe, is leading the way in developing alternative energy resources, with the ultimate goal of producing 5,311MW of solar power- the amount BPA has stated is required to replace the power generated by the lower four Snake River dams.

We need an action plan that identifies the additional strategies and development needed to replace the services provided by the dams — irrigation, transportation, and energy — with other forms of infrastructure that allow for local economies and salmon to thrive in harmony, rather than in conflict. With Northwest Tribes leading the way on renewable energy, Federal and Northwest State governments and agencies should follow this lead and procure new clean energy resources and prioritize investments in grid modernization and energy storage to set in motion this transition.

5

CLARK FORK RIVER

THREAT: Pulp mill pollution

STATE: Montana

AT RISK: Public health, fish and wildlife

SUMMARY

The Clark Fork is a regional boating and angling destination and supplies some of the richest habitat in the lower 48. Throughout European settlement and industrial development, the Clark Fork was the backbone of large-scale enterprises that left a legacy of pollution and ecological damage. Community members, advocates, Tribes, and government officials are among many who have been helping to heal the river, however, the shuttered Smurfit-Stone pulp mill threatens to reverse the gains made. Sitting along four miles of the Clark Fork downstream of Missoula, Montana, Smurfit-Stone is poisoning the groundwater and river with dioxins and heavy metals. These pollutants threaten fish and wildlife and put the health of tribal subsistence fishers at risk. Through federal Superfund law, the polluters are responsible for cleaning up the site.

THE RIVER

Rising out of mountains along the Continental Divide, the Clark Fork captures water from 28,000 miles of creeks and streams on its 320-mile journey to Lake Pend Oreille. It supplies irrigation for farms and ranches throughout western Montana, and drinking water and hydropower for local communities. The river also provides food, shelter, and vital pathways for wildlife and is a popular fishery, supporting westslope cutthroat trout, threatened bull trout, and other game fish. The Confederated Salish and Kootenai Tribes, whose ancestral territories span the Clark Fork watershed, have treaty rights to fish the river. The Clark Fork is a recreation destination for kayakers, rafters, and recreational floaters and the river has become the primary driver of local outdoor economies.

The Clark Fork River has faced a long legacy of industrial pollution, resulting in a complex of Superfund sites in the river's hard-working headwaters — several of which have been successfully cleaned up, including the Milltown Reservoir and Dam that was removed in 2009. Cleanup work is making headway at these sites and the river is on the mend. The lack of action at Smurfit-Stone, however, puts these gains in jeopardy.

THE THREAT

In 1957, the Smurfit-Stone mill began producing pulp products on 3,200 acres adjacent to the Clark Fork. Initially, operators discharged wastewater directly into the river causing fish kills and triggering public outcry. Later, the mill stored wastewater in unlined settling ponds. Garbage and ash went into unlined, unpermitted landfills perched on top of the aquifer. After the mill closed in 2010, EPA placed Smurfit-Stone on its inventory of Superfund sites because of the high volumes of toxic industrial chemicals.

CLARK FORK COALITION

CLARK FORK RIVER

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CLARK FORK COALITION

While the remaining mill buildings are set back from the river, the unlined sludge ponds and landfills are located within or adjacent to the river's historic floodplain – allowing dioxins, furans, and heavy metals like manganese to leak into the groundwater that flows to the river. Even small amounts of these toxins can cause reproductive and immune system damage in fish and wildlife, and these toxins increase as they move up the food chain. Due to human health concerns, the Montana Department of Fish, Wildlife and Parks issued a warning to anglers against eating any fish caught in the Clark Fork for 100 miles downstream of the mill. This legacy of pollution is in

violation of the treaty rights held by the Confederated Salish and Kootenai Tribes under the 1855 Hellgate Treaty.

Although an earthen berm separates the river from the mill, annual spring runoff and periodic flooding have eroded parts of the berm – which was never engineered or licensed as a levee. Catastrophic flooding, like the Yellowstone River experienced in summer 2022, threatens to fully erode the berm and wash tons of industrial pollutants downstream. Missoula County's floodplain regulations ban unlined ponds and improperly engineered flood control structures.

For more than a decade, the EPA has failed to adequately address these threats, and the polluters continue to resist taking responsibility for sufficient pollution testing and cleanup.

WHAT MUST BE DONE

The EPA must compel the polluters, whose companies have morphed into International Paper and Westrock, to eliminate the site's immediate risk of catastrophic flooding and its ongoing release of contaminants that pollute the Clark Fork River. The place to start is by cleaning up approximately 140 acres of toxic soil and industrial waste in the unlined sludge ponds and landfills near the Clark Fork River. The EPA has authority through the Superfund process to order cleanup actions on part of a site to reduce immediate risks to human health and the environment while continuing to investigate pollution problems elsewhere at the site.

In addition to cleaning up the portion of the property that most threatens the Clark Fork River and downstream communities, the EPA must compel the polluters to undertake additional groundwater, soil, and wildlife exposure testing to better understand sources and pathways of contamination. The EPA must compel completion of tests the Missoula Water Quality District recommended in 2022.

6

EEL RIVER

THREAT: Dams**STATE:** California**AT RISK:** Fish and wildlife; tribal culture and sustenance

SUMMARY

The Eel River once teemed with abundant native fish and other wildlife, supporting the Wiyot, Sinkyone, Lassik, Nongatl, Yuki and Wailaki peoples who have lived along the river since time immemorial. Today the river's Chinook salmon, steelhead, and Pacific lamprey are all headed toward extinction in large part because of two obsolete dams that make up Pacific Gas & Electric's (PG&E's) Potter Valley Hydroelectric Project. Together the dams completely block salmon migration and harm river habitat. The license for the dams recently expired and PG&E no longer wants to operate the facilities. Moreover, in a March 16, 2023 press release, PG&E indicated that Scott Dam's seismic risks would result in a 20,000 acre foot reduction in the project's reservoir capacity. It's up to federal regulators to require PG&E to remove the dams as part of the decommissioning plan, expected during the Fall of 2023.

THE RIVER

The Eel River is the ancestral home of tribal groups including the Wiyot, Sinkyone, Lassik, Nongatl, Yuki and Wailaki peoples, and also now the home of other Tribes that were forcibly moved to the area in the early 20th Century. Many of these people continue to live along and care for the river today.

The river is the third largest in California, with an area of 3,684 square miles. The mainstem Eel River's headwaters are located in the Snow Mountain Wilderness in Mendocino National Forest, where cold waters provide an ideal refuge for native fish as the climate warms.

The Eel River was historically one of the most productive fisheries in the state, supporting a diverse array of native species, including four anadromous salmonid species (Chinook and coho salmon, steelhead-rainbow trout, and coastal cutthroat trout), two sturgeon species, and three lamprey species. The construction of Cape Horn Dam in 1908 and Scott Dam in 1922 have severely impacted fisheries in the river.

THE THREAT

Two obsolete and unsafe dams on the Eel River, Scott and Cape Horn (part of the Potter Valley Hydroelectric Project), are preventing recovery of critically endangered salmonids, including federally protected Chinook salmon and steelhead trout. The dams completely block access to high-quality habitat in the upper watershed for these fish and also prevent sediment from moving through the system, leading to habitat loss in the Eel River watershed. Once-prolific fish populations are no longer able to access 89 miles of Chinook salmon spawning habitat and 288 miles of steelhead habitat.

MICHAEL WIER, CALTROUT

EEL RIVER

Continued

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MICHAEL WIER, CALTROUT

The high elevation and cool headwaters above the dams are critical to the recovery of these native fish in an era of climate change and are especially important to rare summer steelhead, which are listed as endangered under California's Endangered Species Act. Studies have shown that resident trout living above the dams still carry the genes for ocean migration, suggesting that once the dams are removed those fish may once again return to their ancestral spawning grounds. Scott and Cape Horn Dams have caused immense harm to the Eel River ecosystem and the communities that depend on a healthy Eel River watershed. The dams adversely

impact Tribal Nations and Indigenous people for whom the Eel River holds cultural significance and who rely on it for sustenance. Loss of culturally and economically important fish runs, habitat loss and deterioration, and reductions in water quantity and quality are some of the negative impacts caused by the dams. Additionally, the way the dams are managed causes fish to struggle at key moments in their life cycle due to low water flows associated with out of basin diversions, inhospitable water temperatures caused by the reservoirs, water quality degradation including toxic algae outbreaks, excessive predation at a poorly designed fishway, and the proliferation of invasive species. In addition, PG&E recently admitted that Scott Dam, which impounds the Lake Pillsbury reservoir, presents unacceptable seismic risk when the reservoir is at full capacity.

WHAT MUST BE DONE

PG&E's decision to surrender their license to operate the dams and decommission the project is an enormous opportunity to remove obsolete unsafe dams that endanger downstream communities, facilitate salmon recovery, restore cultural connections, revitalize an important commercial and recreational fishery, and reconnect what would be California's longest free flowing river.

PG&E must expedite the next step towards restoring this river and its communities by removing both dams, repairing the damage they have caused, and ensuring the safety of downstream communities. They must also take immediate steps to reduce the impacts to already struggling fish populations caused by the current operation of the dams. If PG&E isn't willing to do this on their own, the federal agency that oversees hydropower dams, the Federal Energy & Regulatory Commission (FERC), should hold PG&E to account and require the full removal of Scott and Cape Horn dams as a component of decommissioning. PG&E cannot be allowed to walk away from these obsolete dams leaving a liability in place for current and future generations to contend with.

7

LEHIGH RIVER

THREAT: Poorly planned development

STATE: Pennsylvania

AT RISK: Clean water, fish and wildlife habitat, rural and local communities, open space

SUMMARY

The Lehigh River, flowing out of the Appalachian Mountains and through the densely populated Lehigh Valley region, is the “backyard river” for half a million people, and the keystone to Northeastern Pennsylvania’s outdoor recreation industry. The areas that surround the river offer outdoor gathering spaces and accessible recreation opportunities for people throughout the watershed, but especially in the cities of Allentown, Easton, and Bethlehem. But as the region becomes the logistics hub of the eastern seaboard, with over four square miles of warehouses and distribution centers built to date, the river’s health is at risk. Unless federal, state and local decision makers act to improve protections for local waterways, the area’s clean water and wildlife habitat could suffer irreversible harm.

THE RIVER

From its headwaters in the boreal forests of the Pocono Plateau, the Lehigh River flows 109 miles to its confluence with the Delaware River in Easton, Pennsylvania. The river valley is the homeland of the Lenape people and includes present-day cities of Allentown and Bethlehem.

Part of the Lehigh River is designated as one of Pennsylvania’s Scenic Rivers, and the headwaters are designated as Exceptional Value. The river’s name comes from the Lenape name for the river, Lechewuekink, which means “where there are forks”.

The Lehigh is a whitewater river, and both new and experienced boaters enjoy its rapids. The river connects rural and urban communities, is a direct drinking water source for hundreds of thousands of people, and as a tributary to the Delaware River, supports the drinking water supply of 15 million. Located in a region that has grown and contracted alongside the resource extraction industry, tourism to the Lehigh River has helped restore the region’s economies after the transition away from coal, timber, and steel.

THE THREAT

The region has become the logistics hub of the eastern seaboard, with warehouses and logistics centers already covering more than four square miles of land within the watershed. According to the Lehigh Valley Planning Commission, there’s another square mile (approximately) of development in the pipeline. Currently, only California’s Inland Empire can compare to the buildout happening in the Lehigh Valley.

Poorly planned, large-scale warehouse and distribution center development threatens the Lehigh River by converting critical forest and wetlands to hard surfaces—roofs and parking lots. These impervious surfaces prevent rainwater from soaking into the ground. Instead, warm, salty, dirty water runs off the pavement

TOM STORM

LEHIGH RIVER

Continued

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PHOTO: MICHAEL DONLIN

directly into the river and its tributaries. These impacts to water quality, and the paving of the remaining open space in the urban stretches in the Lehigh Valley, disproportionately impact downstream communities that have already borne the brunt of environmental degradation and pollution.

This development also accelerates the impacts of climate change. Based on calculations in a recent economic benefit report from Our Pocono Waters, that acceleration will be costly. Watershed ecosystems provide numerous services, like water purification, air filtration, carbon storage, nutrient cycling, soil formation, erosion control, food, and recreational

value. In the Delaware River Basin, riparian buffers provide about \$11,000 per acre through these services and \$9,000 of carbon storage benefits per acre per year. The continued destruction of these buffers will increase carbon emissions and the severity of flooding, and it will be costly for communities to replace the services provided.

Better planning and development regulations could help reduce the economic and environmental impacts of development, but many local governments feel powerless. Communities throughout the region have voiced concerns, but their capacity is limited in the face of laws that fail to protect communities and the environment.

WHAT MUST BE DONE

The public can demand federal and state government decision-makers make crucial funding and legislative decisions to protect water quality from land development throughout the watershed.

Both the federal and state governments must provide their full, fair share of funding to the Delaware River Basin Commission (DRBC). This regulatory agency oversees a multi-state approach to water resource management that includes the Delaware River and its tributaries, including the Lehigh River. Its programs address water quality protections, flow management, and recreation, which is challenging to do when chronically underfunded since 2014.

The Pennsylvania state legislature must pass what's been known as the Riparian Buffer Protection Act (previously known as HB 714). This bill would ensure that all waterways across the state are guaranteed critical protective riparian buffers of at least 100 feet. High Quality and Exceptional Value waterways would be provided 300-foot buffers, which would be an increase from the current 150 foot requirement. Impaired waters would receive additional protection, as well, of 150 feet.

CHILKAT AND KLEHINI RIVERS

THREAT: Mining

STATE: Alaska

AT RISK: Bald eagle, fish, and wildlife habitat, Tribal culture and sustenance

SUMMARY

Every year, hundreds of thousands of salmon swim from the Pacific Ocean into the Jilkaat Aani Ka Héeni (Chilkat River watershed) to spawn. Alaska Natives and other communities depend upon the river and its abundance for their culture and livelihood. But the Palmer Project, a proposed copper and zinc mine, is about to move to the next stage of development that could result in the release of hundreds of thousands of gallons per day of toxic wastewater, contaminating nearby creeks that feed directly into the Chilkat and Klehini rivers and crippling the entire ecosystem of the Chilkat Valley. This is in addition to the already concerning impacts of climate change, such as rapid glacier melting and a historic increase of rainfall. Congress and the Environmental Protection Agency (EPA) must act now to ensure the fundamental protections guaranteed by the federal Clean Water Act are not abandoned and a grave environmental injustice is not allowed. EPA must intercede immediately and direct the mining consortium to apply for a standard surface water discharge permit that will require meeting all applicable State and federal Water Quality Standards.

THE RIVER

The Klehini River is a main tributary to the Chilkat River. Together, the two rivers flow through the Alaska Chilkat Bald Eagle Preserve, critical habitat for the largest congregation of eagles in the world. The watershed also supports five species of wild salmon and a large brown bear population. Additionally, the ancient Tlingit Village of Klukwan, ancestral and current home of the Chilkat Tlingits, and the town of Haines, just downstream from the project, are totally dependent on these healthy and productive waters for their food, economy, and culture. The land being developed by the mining consortium is currently controlled by the State of Alaska and the U.S. government, but it has been Tlingit land for thousands of years and was never ceded to the State or federal government.

THE THREAT

The ongoing development of the Palmer Project is being pursued by a Canadian and Japanese consortium: American Pacific Mining and Dowa Mining and Metals. The next stage of development for the project is slated for the summer of 2023. The developers want to dig a mile-long “exploratory” tunnel under the Saksai Glacier, directly above the Klehini River. The excavation will create huge waste storage piles and contaminated wastewater discharges in an area with extremely high levels of sulfide deposits, rainfall, snowfall, and seismic activity. The acidic wastewater, contaminated with heavy metals, hydrocarbons from vehicles and drilling muds, and explosive residues, will flow into the nearby creeks and the Chilkat and Klehini rivers. This development is extremely dangerous to the fragile ecosystem of the Chilkat Valley.

Mining industry supporters claim the demand for more electric cars is justification for mining copper wherever it can be found, ignoring the potential for reclaiming copper through recycling, as well as acknowledging the recklessness of mining new deposits

DEREK POINSETTE

CHILKAT AND KLEHINI RIVERS

Continued

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ANDY HEDDEN

located in critical salmon habitat, especially habitat with the worldwide ecological significance of the nearby Alaska Chilkat Bald Eagle Preserve.

Congress and the EPA have the ability to ensure that the Clean Water Act is enforced. Public support could also play a significant role in convincing the federal government to allow co-management of the area by the Tribal Council of the Village of Klukwan, whose people have been living in, and protecting this ecosystem for thousands of years.

WHAT MUST BE DONE

Congress and the EPA must act now to ensure the fundamental

protections guaranteed by the federal Clean Water Act are not abandoned and a grave environmental injustice is not allowed. EPA must intercede immediately and direct the mining consortium to apply for a standard surface water discharge permit that will require meeting all applicable State and federal Water Quality Standards.

RIO GALLINAS

THREAT: Climate change, outdated forest and watershed management

STATE: New Mexico

AT RISK: Clean drinking water, farming, watershed functionality

SUMMARY

New Mexico's waterways are among the most vulnerable in the United States. The Rio Gallinas is the poster child for the adverse impacts — both ecological and cultural — of climate change on Southwestern watersheds. The river provides water for Las Vegas, New Mexico, and for the traditional acequia irrigation system. Drinking water, farming, and overall watershed functionality are all threatened by climate change and outdated forest management practices. Furthermore, without a good connection to its floodplain and a loss of wetlands, the Rio Gallinas is less able to naturally store the water needed to maintain flows during periods of drought.

In the aftermath of the largest fire in New Mexico's history, the multiple state and federal agencies charged with managing the Rio Gallinas watershed will determine the river's fate. It's essential that their work includes local communities' input and updated forest management protocols.

THE RIVER

The Rio Gallinas, flowing from the east side of the Sangre de Cristo Mountains, is a critical tributary to the Pecos River. Approximately 13,000 people depend on the Rio Gallinas for drinking water. Traditional Hispanic acequia systems, with a 500-year history on the landscape, also depend on the river to sustain agricultural and ranching communities. A large amount of the river is diverted to Storrie Lake to meet the needs of the Storrie Project Water Users Association. The Rio Gallinas watershed is home to a rich and diverse array of wildlife, including threatened and endangered species. The watershed and river also support many recreational activities such as hunting, fishing, and hiking.

THE THREAT

Over 20 years of drought, reduced snowpack, declining riparian health, high-intensity wildfire, and increased human demands are threatening the existence of the Rio Gallinas. A long history of land uses that have channelized and degraded the river and its riparian area have made them less resilient to climate change. Infrastructure (e.g., homes, roads) located in the river's floodplain further limits the ability of the Rio Gallinas to mitigate floods and fire. Most pressing, outdated agency policy and protocols on forest management, prescribed burning, and watershed management pose threats to local drinking water, traditional acequia agriculture, and the forest products economy.

The Hermit's Peak/Calf Canyon fire, a catastrophic wildfire event in Spring 2022, was started by two USFS-prescribed burns that merged and became the largest wildfire in New Mexico history. The fire devastated 341,735 acres and the majority of the upper Rio Gallinas watershed. Over 900 structures were destroyed, including over 300 homes. The fire and ensuing floods contaminated water sources watershed-wide, including the Rio Gallinas. Pollution of wells and the town's reservoir caused drinking

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RIO GALLINAS

Continued

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JACOB ERICKSON, HPWA PR DIRECTOR

water emergencies and forced mandatory water cuts. Acequias that aid in aquifer recharge were destroyed by flooding and debris flows. There have been major negative impacts to the outdoor recreation economy and traditional hunting and fishing for sustenance.

The community and environment will experience long-term impacts from continued flooding, water quality degradation, the loss of vegetation, and decreased soil stability resulting from the Hermit's Peak/Calf Canyon fire. The lack of government agency collaboration and minimal opportunities for community engagement in watershed restoration hinder efforts to save the Rio Gallinas.

While prescribed burning remains

important for forest health, modernizing forest management policies and protocols is essential to improving watershed management and stewardship.

WHAT MUST BE DONE

The federal and state agencies that steward the public lands in the Rio Gallinas watershed must overhaul their stewardship practices in watershed-friendly, transparent, locally appropriate, and community-driven ways. Public involvement is critical to making this happen. Individuals can send comments to the relevant federal and state agencies, including the Santa Fe National Forest, Army Corps of Engineers, Federal Emergency Management Agency (FEMA), New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Forestry Division, and New Mexico Environment Department, asking for:

A commitment to participate in the first annual New Mexico Fire and Water Summit in the summer of 2023, where all affected communities, decision makers, federal agencies, and state agencies come together to create a long-term management and mitigation plan.

A long-term management and mitigation plan for the Rio Gallinas that accounts for:

- Mandatory and improved public engagement protocols for prescribed burns, forest fuels treatment, and post-fire watershed impacts.
- Worsening climate change impacts, including severe storms.
- The long-term health of the river and watershed in all emergency response activities.
- Nature-based solutions to post-fire watershed and flood management (e.g., floodplain restoration, beaver dam analogs).

10

OKEFENOKEE SWAMP

THREAT: Mining

STATES: Florida, Georgia

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

SUMMARY

The Okefenokee Swamp — a unique wetland nearly half a million acres in size — is threatened by a proposed titanium mine, which government agencies predict would result in “permanent” and “unacceptable” damage to this special place. In 2022, the U.S. Army Corps of Engineers abdicated its responsibility for oversight of the proposed mine. The Corps’ decision leaves permitting to the Georgia Environmental Protection Division, which must deny the permit applications for this ill-advised project. The Corps should make it clear that a federal Clean Water Act permit is required for the proposed mine. Perhaps no clearer case exists for why meaningful wetland protections at the federal level under the Clean Water Act are so important.

THE RIVER

The Okefenokee Swamp is part of the ancestral lands of the Muscogee (Creek) Nation. A unique international treasure, it is a potential UNESCO World Heritage Site. The Okefenokee 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 birds, several threatened and endangered species, and the Florida black bear.

Uncompromised by agriculture or industrial development, the swamp is one of the world’s healthiest large-scale freshwater ecosystems. While 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.

Okefenokee National Wildlife Refuge — the largest national wildlife refuge in the eastern United States — receives an average of 600,000 visitors annually. In addition to \$64.7 million in local economic output, Okefenokee Swamp tourism supports over 700 local jobs.

THE THREAT

The proposed mine site is situated in a portion of Trail Ridge — the geologic formation that forms the eastern boundary of the swamp — that enables water storage and circulation within the swamp. If mining damages Trail Ridge, the U.S. Fish and Wildlife Service and Environmental Protection Agency anticipate that “permanent” and “unacceptable” damage could befall the Okefenokee Swamp.

Meanwhile, over the past three years the story of the Okefenokee has been a roller-coaster ride subject to the politicization of basic wetland protections under the Clean Water Act.

JOE COOK

10

OKEFENOKEE SWAMP

Continued

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The ill-conceived Twin Pines mining proposal benefitted from the Trump Administration's short-lived Navigable Waters Protection Rule, which eliminated many of the most basic clean water protections for wetlands across the country. Under the Trump-era rule, the Corps of Engineers issued wetland determinations in 2020 and 2021 that left all permitting decisions for the proposed mine up to the State of Georgia.

The Corps changed course in June 2022, rescinding the Trump-era wetland determinations. However, in August 2022 the Corps back-tracked as part of an out-of-court settlement with Twin Pines. Offering no explanation, the Corps reinstated the 2020 and

2021 determinations, leaving hundreds of acres of wetlands and putting the Okefenokee at risk of catastrophic changes from the proposed mine's impacts. The Corps' abdicates its important role not only in protecting the area's wetlands, but also in protecting important cultural values important to the Muscogee (Creek) Nation.

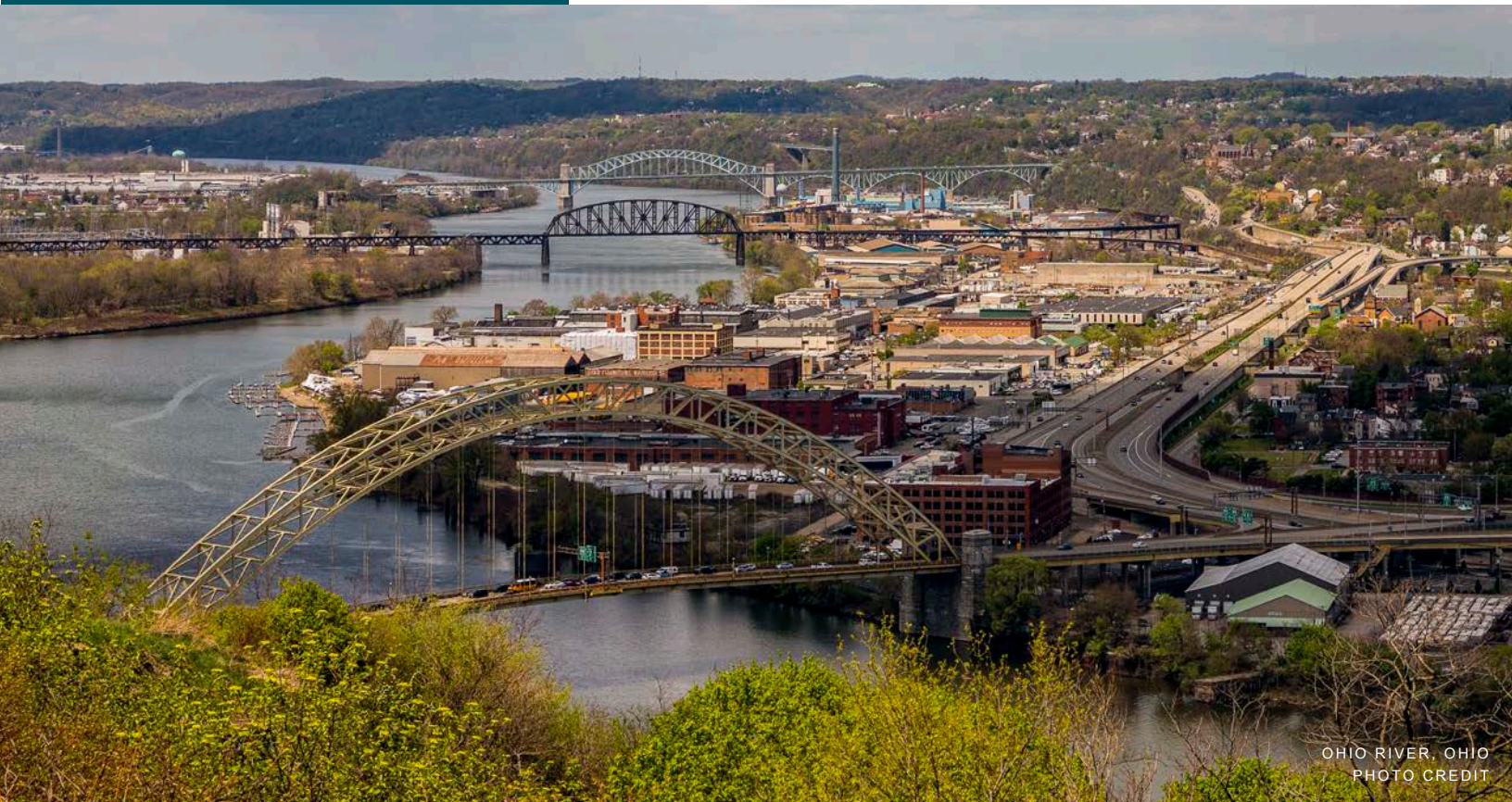
In fall 2022, Interior Secretary Deb Haaland visited the Okefenokee and subsequently wrote to Georgia Governor Brian Kemp, stating: "The proposed mining activity in this area poses an unacceptable risk to the long-term hydrology and future of the swamp ecosystem and these cultural values." Yet Georgia regulators could issue permits for the mine as soon as this spring.

WHAT MUST BE DONE

The Georgia Environmental Protection Division (EPD) must deny all permits that would enable the proposed mine to be built. Georgia EPD should heed the warnings of University of Georgia experts and federal agencies, taking all critical information into account in assessing the proposed mine's impacts on the Okefenokee's hydrology and ecology.

Further, the U.S. Army Corps of Engineers should do its duty and re-engage as the proper authority over permitting decisions regarding the proposed mine. Perhaps no clearer case exists for why meaningful wetland protections at the federal level under the Clean Water Act are so important.

Finally, Georgia leaders should pursue permanent protections for the Okefenokee Swamp and Trail Ridge, preserving the area's many natural and cultural values for future generations.



OHIO RIVER, OHIO
PHOTO CREDIT



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American Rivers acknowledges, works, and seeks to amplify Indigenous leadership in river protection and honors the traditional ecological knowledge and perspectives held by Indigenous People and Tribal Nations.

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