

America's Most Endangered Rivers®

2022



American Rivers
RIVERS CONNECT US®

AMERICA'S MOST ENDANGERED RIVERS® of 2022

“The water supplies and well-being of tens of millions of people are at risk. We’re amplifying the leadership of Tribal Nations and frontline advocates and calling for action.”

— Tom Kiernan, President and CEO of American Rivers

THIS PAGE AND COVER PHOTO:
LAKE MEAD, NEVADA
PHOTO: COLLEEN MINIUK

Catastrophic drought. Disastrous floods. Fish and other freshwater species nearing extinction, as rivers heat up.

Many people in the United States have imagined climate change as a problem in the future. But it is here now, and the primary way that each of us is experiencing climate change is through water. The climate crisis is a water crisis.

No matter where you live in the United States, your river and your drinking water are affected by climate change. Black, Indigenous, Latino/a/x and other communities of color feel these impacts most acutely, due to historical

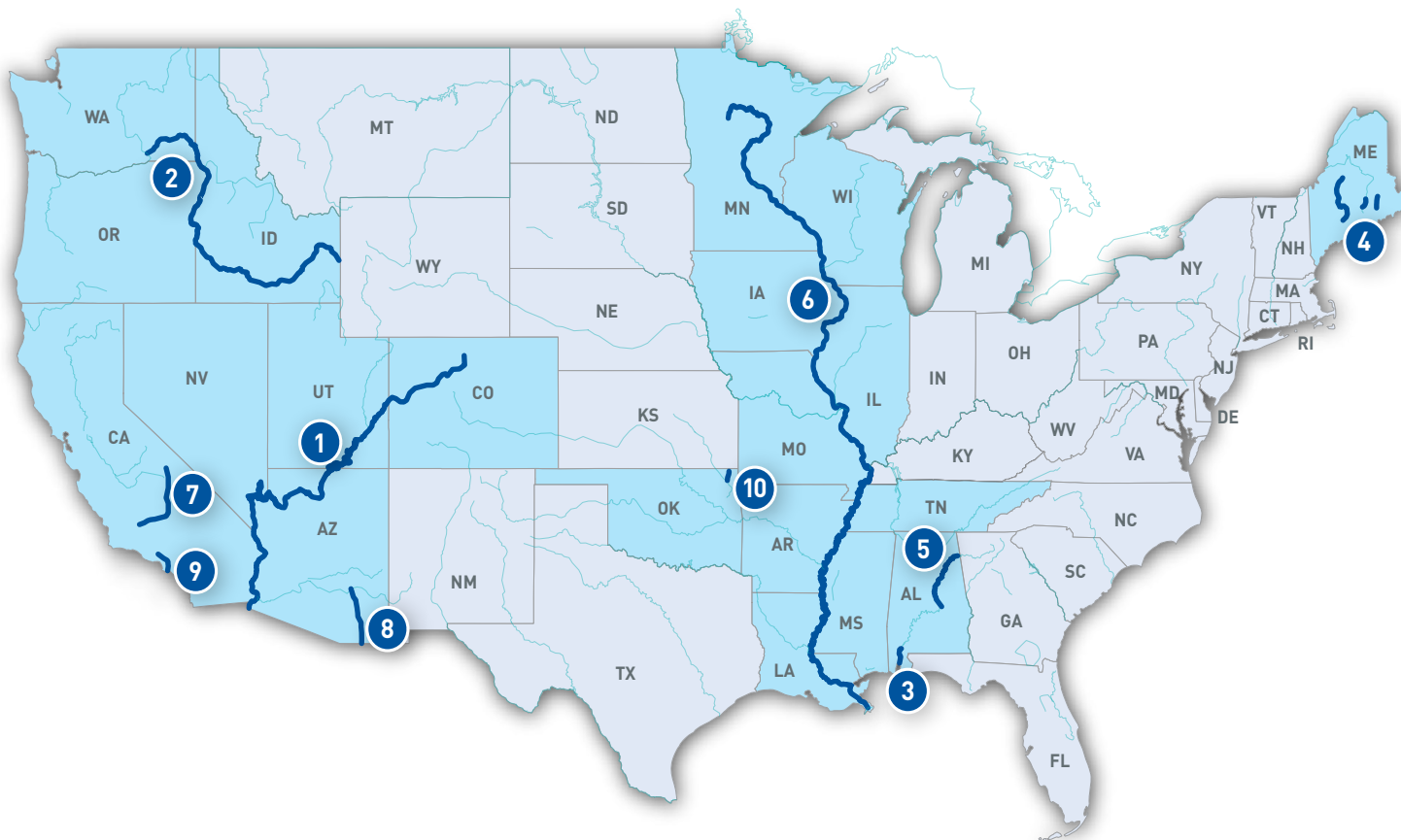
and contemporary policies, practices, and norms that maintain inequities. It’s time to follow the lead of Tribal Nations and frontline communities that are advancing solutions for rivers and clean water — solutions that will make us all safer and healthier, and our nation stronger.

America’s Most Endangered Rivers® of 2022 sounds the alarm that our nation’s rivers and clean water are in crisis — and it shines a light on urgent solutions. This is not simply a report, it is a loud and clear call to action.

If we are to meet this moment and confront the challenges facing our

clean water, environment and communities, we must come together as a powerful movement, speaking up for the rivers that give us life — for these 10 endangered rivers, and all of the rivers essential to our shared future.

The interconnected crises of climate change and injustice call for bold, urgent action.



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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 a changing climate and/or environmental justice.

ABOUT AMERICAN RIVERS

American Rivers believes a future of clean water and healthy rivers everywhere, for everyone is essential. Since 1973, we have protected wild rivers, restored damaged rivers and conserved clean water for people and nature. With headquarters in Washington, D.C. and 300,000 supporters, members and volunteers across the country, we are the most trusted and influential river conservation organization in the United States, delivering solutions for a better future.

FOR MORE INFORMATION: AmericanRivers.org/EndangeredRivers2022

1

COLORADO RIVER

THREAT: Climate change, outdated management

STATES:

U.S.: Arizona, California, Nevada, Colorado, Utah, New Mexico, Wyoming

Mexico: Baja California, Sonora

AT RISK:

Reliable water supplies, regional economy, river health

SUMMARY

The Colorado River provides drinking water for 40 million people, irrigates five million acres of farm and ranch land, and supports a \$1.4 trillion economy. All of this is at risk due to rising temperatures and drought driven by climate change, combined with outdated river management and overallocation of limited water supplies. River flows are at historic lows and the levels of Lake Powell and Lake Mead reservoirs are dropping precipitously. With the passage of the Infrastructure Investment and Jobs Act, the seven basin states and the Biden administration now have a critical opportunity to implement proven, equitable solutions that enhance water security and river health, while building resilience to future climate change. Failure is simply not an option, given all that depends on a healthy, flowing Colorado River.



YUMA, ARIZONA
PHOTO: AMY MARTIN

THE RIVER

The Colorado River is a vital lifeline for the Southwest and the entire nation as well as Northwestern Mexico. Beginning as snowmelt from the Rocky Mountains, the river flows 1,450 miles through seven states and into the Republic of Mexico on its way to the sea. It provides drinking water for 40 million people and supports some of our country's largest cities including Denver, Salt Lake City, Santa Fe, Las Vegas, Los Angeles, San Diego, Phoenix and Tijuana. The river is vital to our food supply, irrigating nearly 90 percent of the nation's winter vegetable crops. It flows through nine National Parks and is essential habitat for more than a dozen species of endangered fish and wildlife. The Colorado River supports a \$1.4 trillion economy, including \$26 billion in recreational spending and hundreds of thousands of jobs across the West. However, the river is so over-tapped that it dries up nearly 100 miles from its mouth at the Sea of Cortez.

Water scarcity has always dictated the rhythm of life in the Colorado River Basin. Pre-Puebloan people followed water across the desert landscape, and many waterways in the Southwest are considered sacred to Tribal Nations living in these arid lands. There are 30 federally recognized Tribal Nations in Colorado River Basin, many of whom depend directly on the Colorado River. The Gila River Indian Community, Cocopah and Quechan have pledged water in support of Lake Mead, practice crop-switching and fallowing and engage in restoration work to reduce impacts to the Colorado River system.

THE THREAT

There is not enough water in the Colorado River to meet all current needs. River management plans were built on a flawed assumption that the river carries nearly 18 million acre-feet (an acre-foot is about the amount of water to cover a football field, one foot deep), while in reality only about 13 million acre-feet has been historically available. The entire system is operating at a deficit, and climate change is expected to further reduce the river's flow by 10 to 30 percent by 2050.



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COLORADO RIVER

Continued

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LAKE POWELL, UTAH

PHOTO: RAINER KRIENKE, UNSPLASH

Drought has impacted large portions of the Colorado River Basin for years—shrinking snowpack, hotter temperatures and increasing evaporation have led to widespread aridification (i.e., extreme dryness) that endangers water supplies and river health. In July 2021, water levels at Lake Powell fell to the lowest point since 1969 and have continued dropping.

This “new abnormal” is seriously impacting the environment and economy from the headwaters to the sea. For the first time ever, mandatory cutbacks triggered by water shortage will cause Arizona to lose more than 500,000 acre-feet in Pinal County alone (roughly the drinking water supply for nearly 1.5 million households). According to the most recent U.S. Bureau of Reclamation models, states and other water users in both the U.S. and Mexico could lose access to even more water in coming years that will impact cities and towns, and especially farms and ranches, across the Southwest. While collaborative efforts, such as Minute 323, the 2019 Drought Contingency Plan and the 500+ Plan show some promise, they do not go far enough to adequately address the significant and likely permanent decline in regional water supplies.

Furthermore, many Tribal Nations across the basin suffer from a lack of modern water infrastructure to deliver water to their people, due to systemic racism and historic disinvestment. Historically, tribes have been excluded from major river management decisions, despite having some of the most senior water rights across the Basin. Recently, Tribal Nations have imparted their wisdom, authority and influence via negotiations and collaboration with state and federal governments to find Basin-wide solutions to this crisis.

WHAT CAN BE DONE

The Bureau of Reclamation’s hydrologic modeling signals that it is time to do more than plan for the possibility of hotter, drier conditions in the Basin. We need to take bold action now to protect our water supply and the health of the Colorado River. With the passage of the Infrastructure Investment and Jobs Act in the U.S., Colorado River Basin states have access to billions of dollars for projects that build climate resiliency and support the people and wildlife that depend upon the river. This is an unparalleled opportunity to invest in strategies that will position the region with its rivers, farms, and economy to adapt and even thrive in a hotter and drier future. The current crisis has forged closer ties and increased collaboration with Mexico, creating conditions for innovation and synergies at the international boundary. The [10 Strategies Report](#) is one example of a road map for investment of federal infrastructure dollars as well as innovative practices to keep more water flowing in the Colorado River and reduce the pressure on the regional water supply.

Federal agencies should include resilience priorities in spending plans for the Infrastructure Investment and Jobs Act and other funding, while deprioritizing projects that will not urgently enhance the resilience of the Basin to climate change. At the state level, governments should work to ensure that there are adequate match resources available and support capacity building for organizations to implement on-the-ground projects.

This future is not possible without leadership and representation of Colorado River Tribes. As sovereign nations, tribes must have a leading 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 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.



2

SNAKE RIVER

THREAT: Four federal dams (Ice Harbor, Lower Monumental, Little Goose, Lower Granite)

STATES:

Idaho, Oregon, Washington

AT RISK:

Tribal Treaty rights and culture, endangered salmon runs, rural communities, local economies

SUMMARY

Four dams have pushed salmon in the Snake River – once the most prolific salmon-producing river in the Columbia River Basin – to the brink of extinction. Snake River salmon are sacred to Tribal Nations across the region and are the keystone species for ecosystems from the Salish Sea in Washington to the lower Columbia River estuary to the mountain streams of north-central Idaho. By removing the four dams on the lower Snake River and replacing their services, the Northwest has a once-in-a-generation opportunity to restore Snake River salmon to healthy, harvestable levels, honor our commitments and treaties with Northwest tribes, create jobs for rural economies across the region and modernize the infrastructure of the Pacific Northwest. The region's congressional delegation and the Biden administration must take action to develop and implement a plan to remove the dams in an expedient fashion.

LOWER SNAKE RIVER, WASHINGTON

PHOTO: CARL ZOCH

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 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. The Snake River and its main tributaries, including the Clearwater, Salmon, Grande Ronde, Imnaha and Tucannon rivers, once produced 2 to 6 million salmon and steelhead every year. As a keystone species, these fish support the entire food web from the Rocky Mountains to the Pacific Ocean, including at least 135 species from eagles to salamanders to the highly endangered Southern Resident killer whales.

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. Today, the annual salmon return and the First Salmon ceremonies continue to ensure the renewal of all life. 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

From 1955 to 1975, the U.S. Army Corps of Engineers built four dams on the lower Snake River in southeast Washington to enable barge transportation to Lewiston, Idaho, and to produce a modest amount of hydropower. The dams— Ice Harbor, Lower Monumental, Little Goose and Lower Granite— have provided benefits to the region, but they have come at a staggering cost.

Wild salmon returns plummeted by more than 90 percent following the construction of the four dams. Today, 13 salmon and steelhead runs in the Columbia and Snake rivers are listed under the Endangered Species Act, and the federal government has repeatedly failed to



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SNAKE RIVER

Continued

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CHINOOK SALMON

PHOTO: OREGON DEPARTMENT OF FISH AND WILDLIFE

produce an effective and legal recovery plan required by the law. Researchers with the Nez Perce Tribe's Department of Fisheries Resource Management have predicted that by 2025, 77 percent of wild Chinook populations will become functionally extinct, meaning they have passed a biological threshold of long-term viability. Scientists believe all four salmon and steelhead runs in the Snake River Basin will go extinct without urgent action.

The four lower Snake dams turned 140 miles of cool, free-flowing river into a series of slow-moving reservoirs that release methane, a greenhouse gas 80 times more potent than carbon dioxide. The dams disrupt

and slow natural river flows, create lethally high reservoir temperatures for salmon, while non-native predators thrive. The dams also impede migration of salmon to and from the Pacific Ocean and kill young salmon attempting to pass through the dams to the ocean. The threats posed by the four dams are exacerbated by climate change, which is increasingly warming the Snake River and making conditions even more dire for salmon. While the dams are heating up the main stem of the Snake River below Lewiston, Idaho, climate models project that the thousands of miles of streams above the dams will continue to provide clean, cold water owing to their high elevation and pristine condition. Scientists estimate that by 2080, the Snake River Basin will provide two-thirds of the coldest, most climate-resilient stream habitats for salmon and steelhead on the West Coast.

The dams on the lower Snake River are an ongoing source of injustice and the loss of salmon is violating the rights of Tribal Nations ensured by treaty with the U.S. government. The dams and reservoirs submerged or impacted between 600 and 700 important tribal cultural sites along the lower Snake and its tributaries, thousands of acres of treaty-based hunting and gathering places, countless graves of loved ones and sacred and ceremonial places. According to the report, *Tribal Circumstances and Impacts of the Lower Snake River Project on the Nez Perce, Yakama, Umatilla, Warm Springs and Shoshone Bannock Tribes*, loss of salmon threatens culture, community connection and well-being and is a major factor in health and income disparities.

WHAT MUST BE DONE

Representative Mike Simpson (R-ID) and Representative Earl Blumenauer (D-OR) took political initiative in 2021. Political momentum continued to build with U.S. Senator Patty Murray (D-WA) and Washington Governor Jay Inslee's launch of an effort to restore Snake River salmon runs and work with stakeholders across the region to analyze how to replace the hydropower, transportation and irrigation services provided by the four lower Snake dams. Additionally, the Biden administration agreed to work collaboratively to develop and begin implementing a long-term comprehensive solution.

The Pacific Northwest has a track record of crafting innovative, bipartisan solutions to challenging natural resource issues such as the loss of its ancient forests. Now is the time for congressional leaders, the four Pacific Northwest states and the Biden administration to work together to develop a comprehensive plan and pass legislation that restores abundant salmon runs, honors our commitments to tribes, and invests in clean energy, agricultural infrastructure and much-needed transportation upgrades that will benefit the entire region.



3

MOBILE RIVER

THREAT: Coal ash pollution

STATE:

Alabama

AT RISK:

Clean water, public health, biodiversity, groundwater

SUMMARY

A haven of biodiversity, the Mobile River watershed accounts for fourteen percent of all freshwater flowing in the U.S. However, the river is threatened by a leaking coal ash pond at Alabama Power's Plant Barry, which contains more than 21 million tons of toxic coal ash. Pollution from the coal ash pit threatens the health and well-being of the Mobile-Tensaw Delta, Mobile Bay, the historic African-American community of Africatown, the City of Mobile and the Port of Mobile.

In order to protect clean water and public health, and save the Mobile River from catastrophic pollution, Alabama Department of Environmental Management and the U.S.

Environmental Protection Agency must require the removal and remediation of coal ash from the Plant Barry site and the banks of the Mobile River.

PLANT BARRY ON THE MOBILE RIVER

PHOTO: CADE KISTLER, MOBILE BAYKEEPER

THE RIVER

The Tombigbee and Alabama Rivers join to form the Mobile River approximately 50 miles northeast of Mobile, Alabama. The Mobile River flows south in a winding course eventually forming the eastern boundary of the historically important community Africatown, founded by the last known group of enslaved Africans illegally brought to the United States in 1870. Eventually, the river reaches the Alabama State Port Authority's Port of Mobile industrial waterfront and Mobile Bay on the Gulf of Mexico.

The Mobile River has historically provided the principal navigational access for Alabama. The river basin is also important for its seafood industry, transportation, irrigation and recreation, such as fishing, boating, guided tours and kayaking. The Port of Mobile alone accounts for an estimated \$22 billion in total economic impact, while outdoor recreation provides \$7.5 billion in direct consumer spending. The U.S. Fish and Wildlife Service designates 26 rivers and streams (approximately 1,093 miles) in the Mobile River Basin as critical habitat for threatened or endangered fish and wildlife. Due to this remarkably bio-diverse watershed, Alabama is home to more species of freshwater fish, mussels, snails, turtles and crawfish than any other state, many of which are found nowhere else on earth. The watershed provides habitat for more than 140 threatened or endangered species and covers most of the state of Alabama extending into Mississippi, Tennessee and Georgia.

THE THREAT

For decades, Alabama Power's Plant Barry has dumped 21 million tons of toxic coal ash into a 597-acre unlined pit only protected from the powerful Mobile River by an earthen levee—allowing heavy metals and other toxins to contaminate groundwater and migrate into the Mobile River watershed. Plant Barry's coal ash pit is surrounded on three sides by the Mobile River and sits in a floodplain of the river next to the Mobile-Tensaw River Delta, a hotspot for diverse plants, fish, birds and wildlife. Federal law now bans coal ash ponds located in these types of locations.

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MOBILE RIVER

Continued

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MOBILE RIVER, ALABAMA

PHOTO: GEORGE DODD, SHUTTERSTOCK

Coal ash is the concentrated by-product of burning coal and contains contaminants such as radium, mercury, cadmium, arsenic, selenium and other carcinogens. According to a report compiled by Alabama Power, arsenic is currently seeping into the Mobile River's groundwater at levels 806 percent above the legal limit. It has also been well documented that the coal ash pond is currently polluting ground and surface water in the area with heavy metals. Additionally, the coal ash in the pits can and does become airborne, where it can be inhaled and deposited into the soil and water. With climate change, rising sea levels and more extreme storms, including hurricanes, in this region, leaving coal ash in an unlined pit below the water table is akin to a ticking time bomb.

Despite a public outcry, Alabama Power has decided to cap-in-place the unlined coal ash pit—leaking toxic chemicals that impair the health of people and the environment in perpetuity,

instead of digging up the coal ash, remediating the site and moving it to a safer lined landfill away from water. This move to safer practices is happening with 250 million tons of coal ash in states throughout the Southeast, including Virginia, North and South Carolina, Tennessee and Georgia. It is time for Alabama to take this same action to safeguard clean water.

WHAT MUST BE DONE

Alabama's Department of Environmental Management and the U.S. Environmental Protection Agency (EPA) must compel Alabama Power to follow the Coal Combustion Residuals (i.e., coal ash) rule and excavate and remove the coal ash at Plant Barry to a modern, lined landfill away from the river's edge that does not allow any infiltration of water into the coal ash or leaching of coal ash into groundwater. The state must also require a fence-line air monitor at Plant Barry to determine the amount of coal ash that is becoming airborne. Furthermore, the state should require all utilities to excavate and remove coal ash where it remains in contact with groundwater.

On the federal level, the EPA should not approve Alabama's Coal Combustion Residuals permitting program until the state requires that coal ash be removed from any groundwater connection and denies utility closure plans that propose to leave coal ash in contact with groundwater. In addition, on the national scale, EPA should halt utilities' decisions to cap-in-place unlined coal ash surface impoundments leaking into the groundwater, not only on the Mobile River at Plant Barry but on more than 200 rivers across the country that are impacted by this practice. Lastly, EPA should revise the Federal Regulations for Coal Combustion Residuals to include:

- Regulating coal ash as "hazardous waste" instead of "nonhazardous waste"
- Protecting groundwater from coal ash contamination and maintaining EPA's position that unlined coal ash surface impoundments cannot be capped-in-place with coal ash in contact with groundwater
- Finalizing a federal permitting program for the disposal of coal ash
- Managing ideal safe timelines for excavation, coal ash removal and remediation and closure of Coal Combustion Residual unlined surface impoundments
- Reviewing state-level coal ash program applications to ensure they are as protective as federal regulations; and
- Protecting waterfront communities from industrial pollution by minimizing contaminants released into the environment and ensuring communities near these sites have access to safe water for drinking and recreation.

4

MAINE'S ATLANTIC SALMON RIVERS

THREAT: Dams

STATE:

Maine

AT RISK:

Atlantic salmon, tribal sustenance, clean water

SUMMARY

Atlantic salmon once filled rivers across New England, but today the species is on the brink of extinction, in large part due to the habitat destruction caused by dams. State and federal agencies are considering renewing the permits and licenses of dams on three of Maine's largest salmon rivers: the Kennebec, Penobscot and Union rivers. These rivers contain substantial amounts of climate-resilient, high-quality habitat that will support wild, self-sustaining runs of Atlantic salmon – but only if the salmon are able to get upstream. The state of Maine and federal agencies must use their authority under the Clean Water Act, Endangered Species Act and Federal Power Act to restore river health and connectivity on these rivers and ensure a future for the fish, wildlife and people that depend on them.

UNION RIVER, MAINE

PHOTO: TOBY STEPHENSON

THE RIVERS

Wild Atlantic salmon have been wiped out from the majority of their native range across New England— returning each year to only a handful of rivers in Maine, including the Kennebec, Penobscot and Union. These salmon and rivers historically supported the Penobscot, Passamaquoddy, Maliseet and Micmac tribes – Indigenous people who still rely on and care for these rivers.

These are the same rivers where log drives moved lumber that built the northeastern United States and powered the mills of the early industrial era. These rivers inspired former U.S. Secretary of State Ed Muskie to draft the Clean Water Act and floated Henry David Thoreau through his wildland explorations.

Maine's salmon rivers also support populations of other sea-run fish, including American shad, American eel, alewives, blueback herring, rainbow smelt, sea lamprey, Atlantic and shortnose sturgeon and striped bass.

THE THREAT

To prevent extinction of Atlantic salmon from the United States, significant action is urgently needed at dams on the Kennebec, Penobscot and Union rivers. Four dams on the Kennebec, two dams on the Union, and at least seven on the Penobscot are preventing recovery of critically endangered Atlantic salmon. These dams, owned by Brookfield Renewable Partners, face upcoming hydropower relicensing decisions that will determine the fate of these river systems for decades to come. For many years, Brookfield's dams have been violating the Endangered Species Act by killing and impairing the migration of endangered Atlantic salmon and harming water quality. The following issues must be addressed on these three rivers:

Kennebec: Since the removal of the Edwards Dam in 1999, the lower Kennebec River is now teeming with life, including the largest restored river herring run in the U.S., the largest natural aggregation of bald eagles ever recorded in the East, leaping sturgeon and thousands of American shad in downtown Waterville, within site of the Lockwood Dam. Above Lockwood Dam, it is a different story. Over the course of about 30 river miles, Lockwood and three other dams owned by Brookfield form an impenetrable barrier for sea-run fish and create nearly 27 miles of deadwater impoundments. All high-quality Atlantic salmon habitat in the Kennebec occurs above these dams. The removal of these four dams is essential for Atlantic salmon recovery in the U.S.

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MAINE'S ATLANTIC SALMON RIVERS

Continued

SANDY RIVER (TRIBUTARY TO KENNEBEC RIVER), MAINE

PHOTO: ATLANTIC SALMON FEDERATION

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Penobscot: Upstream of the free-flowing section of the river reborn during the Penobscot River Restoration— a collaborative effort to balance fisheries restoration and hydropower production by removing two dams and building passage at another— are dams along the river's mainstem at Milford, West Enfield and Mattaceunk, as well as on the river's wild West Branch, all owned by Brookfield that continue to block and harm salmon and other sea-run fish. These fish must have safe, free access to the river and its tributaries so they can thrive and support the subsistence-based fisheries of the Penobscot Indian Nation.

Union: For more than a century, the Ellsworth and Graham Lake dams have cut the Union River's 500-square mile watershed off from the Gulf of Maine. Fish artificially passed upstream into the river are killed or maimed while traveling back downstream through these dams. The relicensing of this project is stalled while Brookfield litigates a denied water quality certificate issued by the state of Maine that highlighted significant water quality issues related to how these dams are operated.

WHAT MUST BE DONE

Restoring passage to Maine's rivers will help save Atlantic salmon, recharge commercial marine fisheries, bring ecological and economic rebirth to the Gulf of Maine and set the stage for even more restoration efforts as native fish return or are stocked from local, conservation hatcheries. Rejuvenated fish runs in these rivers will also help fulfill long-ignored sustenance fishing and treaty promises made to the Indigenous people of Maine, who live off and steward these rivers.

The state of Maine and federal agencies, including the National Oceanic and Atmospheric Administration (NOAA), U.S. Fish and Wildlife Service and Federal Energy Regulatory Commission (FERC), must use their authority under the Clean Water Act, Endangered Species Act and Federal Power Act to ensure that Atlantic salmon do not go extinct in the U.S. Specifically— on the Kennebec, FERC must deny new hydropower licenses for the Shawmut Dam and NOAA must find that Brookfield's latest Species Protection Plan for salmon jeopardizes the continued existence of the species. In the Penobscot watershed, state and federal agencies must update management plans and restart Endangered Species Act consultation to make any dams on the river safe and "invisible" to migrating fish. On the Union, passage for all native species must be assured and clean water standards must be included in project permitting or the project should be decommissioned, the Ellsworth Dam removed and the Graham Lake Dam upgraded to protect the community, fisheries and water quality.

The amount of power produced by these dams today is not significant, green or responsible. It can be replaced by other environment-friendly solutions, such as solar or wind power. The time is now to reconnect these critical river systems before it is too late to save Maine's Atlantic salmon.



5

COOSA RIVER

THREAT: Industrial agricultural pollution

STATES:

Alabama, Georgia

AT RISK:

Clean drinking water, public health, wildlife habitat

SUMMARY

While heavily impacted by dams, the Coosa River remains one of the South's most important rivers for its rich biodiversity. However, the Coosa River and its tributaries are being choked by waste and pollution from massive industrial poultry farms. The pollution is a significant threat to drinking water and the health and well-being of the river's communities. The Environmental Protection Agency must demand that state agencies enforce existing Clean Water Act safeguards to protect clean water, fish and wildlife and public health.

COOSA RIVER, ALABAMA
PHOTO: ABRAHAM ODREZIN

THE RIVER

The Etowah and Oostanaula rivers join to form the Coosa River in Rome, Georgia. From there, the Coosa River flows 280 miles through Alabama and helps form the Alabama River, then the Mobile River, before flowing into the Gulf of Mexico. A series of major dams and reservoirs built in the 1900's resulted in one of the largest mass extinction events in North American history, forever wiping out 30 species unique to the Coosa River. Still, the Coosa is home to more biodiversity than any other river in the Mobile River Basin, the most biodiverse river basin in North America. Species including the federally-threatened trispot darter and Canoe Creek clubshell mussel (under evaluation for endangered status) live in this unique place.

Historically, the Coosa River was home to the Muscogee and Cherokee Nations. The colonizing British, Spanish and French alternately claimed the lands, believing that the Coosa and Alabama Rivers were "key to the country." Years later, the steamboat era dominated the Coosa River system transporting passengers and goods, such as cotton. Today, the Coosa supports ecotourism (\$560 million at Neely Henry Lake alone), drinking water for nearly one million people, power generation and agriculture.

THE THREAT

Millions of tons of chicken feces from billions of chickens are a major threat to the Coosa River's drinking water supply and overall ecosystem health. The waste is spread on fields, and massive industrial poultry operations discharge their wastewater into municipal sewer systems that are crumbling, where permits are inadequate to protect water quality if they are even enforced at all. Consequently, manure pollution and sewer overflows are a significant issue in the Coosa River watershed. For decades, the Coosa River has had "pollution budgets" (or Total Maximum Daily Loads (TMDLs)) established under the Clean Water Act to try to reduce nutrients, chlorophyll a, sediment, pH and bacteria, while improving dissolved oxygen and pH. However, the permits, regulations and enforcement for this industry are performed by state agencies who often focus on protecting the industry rather than the people who rely on the river for food, drinking water, recreation and sustenance, or the health of the ecosystem itself.

5

COOSA RIVER

Continued



COOSA RIVER, ALABAMA
PHOTO: BRIAN DEGAETANO

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In Gadsden, Alabama, on Neely Henry Lake, sanitary sewage dumping is contributing to violations of water quality standards in portions of the Coosa River and its impaired tributaries. The sanitary sewer overflows disproportionately impact Black and low-income residents by making roads inaccessible and waterways unsafe for fishing, swimming and recreation. In 2008, Neely Henry Lake was given a “pollution budget” for nutrients, oxygen enrichment and dissolved oxygen, but it is not enforced. State agencies have ignored their own data and concerns from the public while allowing sewer systems with inadequate capacity and lax permit limitations to overflow excess wastewater from industrial operations into streets, waterways and even homes. The local government favors industrial operators over the health of Black and low-income communities, forcing them to suffer the consequences of inadequate enforcement.

Upstream in Gordon County, Georgia, investors are backing increasingly larger industrial poultry operations in problematic locations immediately adjacent to rivers and creeks. Theoretically, these operations are required to have Nutrient Management Plans to ensure the waste is not contributing to existing pollution in the Coosa; however, most of the “plans” simply state that they intend to pay someone to come and haul the chicken feces away with no indication of where that waste will be taken or what its ultimate handling and fate will be. Chicken waste is falling through this regulatory crack as it is land-applied and running off into the Coosa River and its lakes— a pollution issue that is only exacerbated by increasingly intense storms due to climate change.

WHAT MUST BE DONE

A number of steps must be taken on all levels of government to address this ongoing problem in the Coosa River. First, the Environmental Protection Agency (EPA) Region 4 Administrator must acknowledge the severity of this problem and immediately work with Alabama and Georgia to address the regulatory gaps surrounding the transport, land application, enforcement and environmentally responsible handling of feces of billions of chickens. EPA must also demand that Alabama Department of Environmental Management adopt and enforce permits that abide by the established “pollution budgets” and update existing permits to comply with these limits.

State agencies are ignoring Clean Water Act safeguards and lack the political will to create meaningful change through enforcement actions, substantial fines and protective permit limitations. Alabama and Georgia must take steps to enforce the 2008 “pollution budget” at Neely Henry Lake and require sewer systems to resolve their repeated sewer overflow issues before allowing new industry to contribute to the existing impairment issues.

Lastly, county officials must safeguard public health from industrial agricultural operations. They must demand that the state protect the health and safety of their communities and the Coosa River.



6

MISSISSIPPI RIVER

THREAT: Pollution, habitat loss

STATES:

Minnesota, Wisconsin, Illinois, Iowa, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana

AT RISK:

Clean water, fish and wildlife habitat, biodiversity, local economies, and public health and safety

SUMMARY

The Mississippi River supports millions of people and countless birds, fish and other wildlife. Despite the importance of this critical river corridor, habitat is being degraded, new sources of water contamination go unchecked, wetlands continue to be drained and lost, and flood damages are escalating. To respond to these threats, Congress should establish a new geographic program overseen by the U.S. Environmental Protection Agency that focuses on ecosystem health, conservation and restoration of the Mississippi River through the passage of the Mississippi River Restoration and Resilience Act.

MISSISSIPPI RIVER IN ST. PAUL, MINNESOTA
PHOTO: TOM REITER FOR FRIENDS OF THE MISSISSIPPI RIVER

THE RIVER

The Mississippi River is an internationally important river ecosystem and an ecological lifeline for North America. The river and its 30-million-acre floodplain provide vital habitat for more than 870 species of fish and wildlife, including dozens of rare, threatened and endangered species. The Mississippi River is a critically important global migration corridor for more than 325 bird species, dozens of migratory fish and even pollinators such as the monarch butterfly. The Mississippi River has brought cultural and economic wealth to people since they first settled along the river. The largest pre-colonial settlement in North America thrived along the banks near present day East St. Louis, Illinois. Cahokia was a major metropolitan center the size of contemporary London in the 11th and 12th Centuries. Today, nearly 20 million people live in the 123 counties that border the Mississippi River. The Mississippi watershed covers 41 percent of the contiguous United States and provides drinking water to more than 50 municipalities.

The river is also a crucial economic engine, generating more than \$400 billion in ecosystem services annually and supporting 1.3 million jobs. It provides a water source for industry, a significant transportation route for grain and cargo, a recreational destination for tourists, bicyclists, boaters, hunters, anglers and birders, and transports sediment and nutrients that, at appropriate levels, help Gulf Coast wetlands and fisheries thrive.

THE THREAT

The Mississippi River has always provided abundant food, drinking water, natural resources, paths for travel and cultural and economic wealth. However, we have failed to conserve, protect and restore that river which provides so much for us. New contaminants, like microplastics and pharmaceuticals, are impacting water quality in places such as Newport and Lake Pepin, Minnesota. Water infrastructure is degraded and inadequate to handle shifts in precipitation driven by climate change. The Mississippi River has one of the most diverse ecosystems on the planet. There have been efforts to rehabilitate habitat. Yet the river is still in decline because state and federal programs are not coordinated and under-resourced.

6

MISSISSIPPI RIVER

Continued

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Iowa Environmental Council
- Kentucky:
Kentucky Waterways Alliance
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Healthy Gulf
- Missouri:
Conservation Federation of Missouri
- Tennessee:
Green Interchange
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Clean Wisconsin

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MississippiRiver2022](https://AmericanRivers.org/MississippiRiver2022)



MISSISSIPPI RIVER, LOUISIANA

PHOTO: HEALTHY GULF

Pollution from farm fertilizers is contaminating drinking water and causing toxic algal blooms in and along the Mississippi River. In Des Moines, Iowa, residents will be paying \$333 million in the next four years to remove nitrogen from their drinking water. In Louisiana, the pollution has created a more than 6,000 square mile dead zone in the Gulf of Mexico. All of these issues are harming the economy, which depends on a healthy, resilient Mississippi River to sustainably deliver a multitude of ecosystem services.

Historically, white colonists segregated Indigenous, immigrant, Black, poor and other non-dominant social groups to the Mississippi River floodplains. They bear the brunt of flooding and poor river management to this day. The Mississippi River is a transportation corridor; consequently, the adjacent floodplains are home to many

polluting industries. The under-resourced communities living in the Mississippi River floodplain are subject to frequent flooding and flood-related health and safety issues. Many are designated environmental justice zones by the U.S. Environmental Protection Agency due to air, water and/or land pollution issues.

The climate crisis and unsustainable development are compounding the threats facing Mississippi River communities. Changes in precipitation are exacerbating flooding— carrying more pollution from farm fertilizers, sediment and other pollutants off the land and into the river. Sea level rise accelerates coastal wetland loss and saltwater intrusion, degrading freshwater ecosystems, reducing water quality and increasing flood risks for communities. Rising temperatures also contribute to toxic algae outbreaks that create hypoxic dead zones. Unsustainable development that drains wetlands, disconnects floodplains and confines the dynamic Mississippi River contributes to the global extinction crisis. These factors impact public safety, drinking water quality and the vitality of local economies.

WHAT MUST BE DONE

Many iconic waters in the nation have federal geographic programs focused on their health, conservation and restoration; however, no such program exists for the Mississippi River. Congress must fill this gap by passing the Mississippi River Restoration Initiative (MRRRI) Act (HR 4202), which authorizes a geographic program for the Mississippi River under the purview of the U.S. Environmental Protection Agency that transcends political boundaries and addresses public health and environmental threats. The MRRRI Act is modeled on the successful Great Lakes Restoration Initiative, which has had bipartisan support for its powerful non-regulatory approach and impact. Congress needs to establish a similar non-regulatory program for the Mississippi River to provide additional federal resources, grant opportunities, coordination and scientific expertise to support new conservation and environmental restoration efforts in the ten Mississippi River mainstem states.



7

LOWER KERN RIVER

THREAT: Excessive water withdrawals

STATE:

California

AT RISK:

Fish and wildlife habitat, community access to river

SUMMARY

The Kern River flows from the mountains of Central California to the San Joaquin Valley and the city of Bakersfield, where excessive water diversions for agriculture dry up the river. Instead of having access to the Kern's beauty and outdoor recreational opportunities, the residents of Bakersfield are left with a dusty, lifeless riverbed, and several species of the river's plants and animals are threatened or endangered due to the loss of riparian habitat. This year, the California State Water Resources Control Board has an opportunity to bring the river back to life by compelling water districts to adhere to minimum flow requirements, thereby putting water back in the river to support local communities, fish and wildlife.



LOWER KERN RIVER, CALIFORNIA

PHOTO: BRING BACK THE KERN

THE RIVER

The Kern River originates in California's High Sierra alpine lakes that catch and disperse snowmelt from Mt. Whitney and the other jagged peaks of the Southern Sierra. For 130 miles, the river roars through mountain canyons that draw hikers, rafters, kayakers and fishing enthusiasts. When it exits this dramatic and steep canyon, the river passes through rolling grasslands to the flats of Kern County, the ancestral home of the Southern Valley Yokuts.

Around 500,000 people live near the Lower Kern River in and around Bakersfield, California. The river provides drinking water, most of which comes primarily as groundwater that is recharged through the Kern River channel. Water flowing through the Kern River is important to prevent the groundwater table from dropping and to preserve the quality of the city's drinking water. Many of the residents of Bakersfield are from under-resourced communities that have limited access to outdoor recreation or places to cool off during the long and hot summers.

Along with water from the Central Valley Project, the State Water Project and groundwater, the Kern is one of the primary water sources for 200,000 acres of agricultural land, now largely planted at industrial farms with highly automated perennial crops, such as almonds and pistachios, in addition to grapes, citrus, dairy feed and other specialty crops.

The Kern River supports federally threatened species including the yellow-billed cuckoo, southwestern willow flycatcher and least Bell's vireo. It is home to state threatened and endangered species, including the tricolored blackbird and the Buena Vista Lake shrew.

THE THREAT

Decades of excessive water diversions for agriculture operations have dried up the last 25 miles of the Lower Kern River. Instead of allowing the water to run in the natural riverbed, water is transported to water rights holders through an elaborate system of concrete-lined canals, several of which run parallel to the dry riverbed. This denies the community access to a flowing river and harms the entire web of life, from riverside trees and vegetation to fish, birds and wildlife. Only in years with extraordinary rainfall – when there is more water than irrigation districts need – does water flow in the river. In the more common dry periods, the river that should be the gem of Bakersfield and a natural asset for roughly 500,000 residents is a lifeless eyesore.

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LOWER KERN RIVER

Continued

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KERN RIVER, CALIFORNIA
PHOTO: PETE WOLLESEN

By some estimates, allowing 15 to 20 percent of the Kern's average flow to stay in the river year-round would support a restored and flowing river. However, no water is earmarked for this purpose. Water rights holders are under no obligation to allow any water to flow through the riverbed. Water that flows through the river can still be used by cities and farms, as the flowing river recharges depleted aquifers with water that can be later recovered as groundwater. Because of this, keeping water in the river should have very little impact on water security or jobs dependent on Kern River water today.

Allowing the Lower Kern River to dry out is illegal. Under the Public Trust Doctrine, California is obligated to protect flowing waterways for the benefit of current and future generations. A dry river also does not comply with Fish and Game Code requiring dam operators to provide steady flows below dams to sustain

fisheries. These laws have been used in California to prevent waterways such as Mono Lake, Putah Creek and the San Joaquin River from being sucked dry. Despite success stories elsewhere, the state has never acted to enforce these laws in the allocation and use of Kern River water. The current process being debated by the California State Water Resources Control Board started with a lawsuit that took decades to resolve in 2007. Fifteen years later, the Board is finally trying to settle some outstanding questions from that 2007 ruling. If the river is not restored now, it may take decades for another opportunity like this to restore water to the Kern River.

WHAT MUST BE DONE

We can have thriving communities, sustainable agriculture and a flowing, healthy Kern River. It is possible to restore the Lower Kern River, but it will not happen without a new approach to water management on the river. The Public Trust Doctrine must be enforced, water rights governing Kern River diversions need to change and a flowing river must be prioritized before other uses, as is required by California law.

California's State Water Board is currently in the process of resolving water rights disputes on the Kern River via a hearing process, giving the top authorities in California water a rare opportunity to address the broken state of Kern River water management and act in favor of restoring a flowing river. To do so effectively, the Board must go beyond the scope of the ongoing hearing. It must instead conduct a comprehensive review of the Kern River's public trust resources. This includes evaluating the species and uses of the Kern that are being harmed by it running dry, the quantity of water needed to restore a healthy river, the necessary timing of these water flows and the fair allocation of the responsibility to restore the river among Kern River water rights holders. Once this assessment is complete, the Board should expeditiously implement its findings and ensure prompt action to restore the Kern. Help this river by telling the members of the State Water Board to do their jobs and fix the Kern River.



8

SAN PEDRO RIVER

THREAT: Unregulated groundwater pumping, poorly planned development

STATE:

Arizona

AT RISK:

Endangered species, riparian ecosystems, migratory birds

SUMMARY

Arizona's San Pedro River supports one of the most biodiverse ecosystems in North America and is one of the last, major free-flowing rivers in the desert Southwest. However, excessive groundwater pumping is causing stretches of the San Pedro to dry up— a problem exacerbated by poorly planned development that withdraws too much of the river's limited water. Additionally, rollbacks to the Clean Water Act initiated during the Trump administration have removed protections for seasonal and intermittent streams, which encompass almost 94 percent of the San Pedro River's waterways and provide the lifeblood that sustains the river. In order to protect the San Pedro, the Arizona legislators must pass laws to protect groundwater supplies and the Biden administration must strengthen Clean Water Act protections.

SAN PEDRO RIVER, ARIZONA

PHOTO: STEVE SPRAGER

THE RIVER

Originating in Sonora, Mexico, and flowing north through southeast Arizona, the San Pedro River supports a lush ribbon of cottonwood-willow galleries that provide significant habitat for millions of birds each year, including nearly half of the 900 species of migratory birds in North America. The San Pedro is also home to many endangered and threatened species, such as the jaguar, ocelot, southwestern willow flycatcher, western yellow-billed cuckoo, lesser long-nosed bat and the rare Huachuca water umbel plant. Recognizing the importance of the San Pedro, Congress protected 40 miles of the upper San Pedro River as a National Conservation Area in 1988.

Humans have depended on the San Pedro River for at least 10,000 years— the Clovis people at one time hunted for mammoths in the surrounding valley. Other Indigenous peoples who have depended on the San Pedro include the Cochise, the Hohokam and the Sobaipuri, who were largely driven out of the valley by Spanish colonists. Today, the river supports local communities by offering extensive recreational opportunities, including internationally-renowned bird-watching opportunities.

An expansive network of seasonal and intermittent streams supply the San Pedro with huge volumes of water from the mountains during storm events and are essential to the functioning of the river in this arid region. These types of small, headwater streams recharge the underground aquifer, providing almost 50 percent of the San Pedro River's baseflow during drier times of the year. In addition, wetlands associated with the river help to stabilize the water supply, lessening the extreme effects of flood, drought and fire, and maintaining and improving water quality by removing sediment, nutrients and pollutants from surface water— all essential functions to maintain a healthy ecosystem.

THE THREAT

Groundwater pumping poses a massive threat to the longevity and health of the San Pedro River. The base flow of the river is sustained by groundwater from the regional aquifer, which keeps the river flowing during the long dry seasons. However, groundwater levels across much of the river's sub-watershed are declining due to ever-increasing human and agricultural uses.

8

SAN PEDRO RIVER

Continued

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SAN PEDRO RIVER, ARIZONA

PHOTO: BOB WICK, BUREAU OF LAND MANAGEMENT

Stretches of river that previously flowed year-round are drying up. To complicate matters further, Arizona's water laws fail to recognize the connection between groundwater and surface water. While diversions from surface waters are approved based on historical use rights, the state allows for unlimited groundwater pumping in most places including the San Pedro River, leaving groundwater largely unregulated at the state level. Across Arizona—where more than 40 percent of the water supply comes from groundwater—residents and businesses are drilling wells deeper to reach water as they continue to dry up and the water table continues to sink. The threat to the river and water supplies will only grow with climate change, as the Southwest becomes hotter and drier.

The proposed Villages at Vigneto

development in Benson, Arizona, exemplifies the groundwater threat to the San Pedro River. This residential and commercial community development would span more than 12,000 acres and would include 28,000 homes, golf courses, vineyards, resorts and commercial buildings, potentially increasing the population of the riverside town from 5,000 to as many as 75,000. Doing so could increase groundwater pumping from approximately 800 acre-feet to as much as 13,000 acre-feet per year, sucking water from aquifers that maintain the San Pedro's stream flows. The development would also increase stormwater runoff and flooding and lead to destructive sediment accumulation in the river.

This ongoing problem was exacerbated in 2020, when the Trump administration issued what has become known as the "Dirty Water Rule," which cut millions of streams and wetlands out of safeguards guaranteed by the Clean Water Act by excluding them from the definition of "Waters of the U.S." Modeling showed that nearly 94 percent of all wetlands and flowlines in Arizona's Upper San Pedro watershed would lose protection under the Rule. By omitting small, headwater, seasonal and intermittent streams from protection, the Dirty Water Rule allowed the very sources of many of our rivers and streams, including the San Pedro, to be polluted or destroyed, negatively impacting downstream waters. If we do not address these threats to both types of water sources for the San Pedro, especially in light of a changing climate and increasing levels of drought in the Southwest, the river may dry up for good.

WHAT MUST BE DONE

First, the Biden administration must issue a more robust, science-based rule clearly defining the Waters of the U.S. to protect all our nation's waters and ensure against the degradation of treasured places, like the San Pedro. The administration will likely commence a rulemaking process in Spring 2022 by soliciting public comments on how to protect our waters and the public must resound that protecting small streams under the Clean Water Act is the only acceptable option.

Second, Arizona legislators must pass laws limiting groundwater withdrawals. Right now, outside of the central, populous parts of the state, there are no restrictions on how much groundwater can be pumped, and no limits on the number of wells that can be drilled. Arizona must address this issue and protect groundwater in rural Arizona— for healthy rivers and communities.

The San Pedro River has long inspired passionate defenders, who have succeeded in fighting back threats and protecting the river for future generations. That work must continue if the river is to survive the ever-increasing threats of excessive groundwater pumping and regulatory rollbacks.

9

LOS ANGELES RIVER

THREAT: Inadequate management, climate change and pollution

STATE:

California

AT RISK:

Clean water, healthy communities, wildlife habitat

SUMMARY

The Los Angeles River (LA River) is perhaps best known for its concrete. Some may not even recognize the flood control channel as a river, with 95 percent of its riverine habitat already lost to urbanization. However, the river's natural heart still beats and its future is at stake. As urbanization continues to impact the river's health, a number of public agencies— the LA Flood Control District chief among them— are considering plans that determine the river's fate. They must abandon plans that prioritize concrete and instead embrace a vision that prioritizes river health, equitable community access and climate resilience.

LOS ANGELES RIVER, CALIFORNIA

PHOTO: FRIENDS OF THE LA RIVER

THE RIVER

The Los Angeles River flows 51 miles through 17 cities, including Burbank, Glendale, Compton, Long Beach and Los Angeles, from its headwaters in the San Fernando and San Gabriel Valley of California to the Pacific Ocean. The river was once a water source for the region's Tribal Nations, including the Fernandeano Tataviam Band of Mission Indians, Gabrielino-Tongva, Gabrielino-Kizh and Chumash tribes.

The LA River is one of the only remaining semi-natural places accessible to the historically marginalized communities through which it passes. Los Angeles has distinct dry and wet seasons, causing the river to fluctuate between low and high flows during storms. The LA River is prone to floods in large storms and communities are put in harm's way as floodplains are developed. Following several devastating floods in the 1930s, the U.S. Army Corps of Engineers spent 40 years channelizing in an attempt to control the river. Today, the Los Angeles County Flood Control District and the Army Corps govern the river, which is seen more as a flood control channel than a living river.

Some natural sections of the LA River do remain. Thanks to the advocacy of local organizations, volunteers and activists, as well as key investments by the City of LA and Army Corps, nature is reemerging. These areas serve as vital water-filtering, carbon-sequestering habitats that bolster biodiversity and provide millions of people access to nature.

THE THREAT

The LA River is at a critical crossroads with two vastly different visions for its future— one vision prioritizes nature and connecting communities; the other seeks to control nature and divert water from the river, possibly rendering it dry and leading to increased climate risks. While major cities across the globe are freeing rivers from concrete channels and creating more equitable access to nature, LA County is pushing a new Master Plan that is overly reliant on concrete and other outdated approaches and denies communities natural climate solutions that could ameliorate extreme climate impacts.

9

LOS ANGELES RIVER

Continued

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LOS ANGELES RIVER, CALIFORNIA

PHOTO: FRIENDS OF THE LA RIVER

Simultaneously, the cities of LA, Glendale and Burbank are all embarking on significant water recycling projects that would stop the flow of water to the river if they are done without proper planning. Currently, the LA River is fed by water coming from wastewater treatment plants. In theory, recycling wastewater makes a lot of sense. However, if all of that water is recycled and none is returned to the river, then nothing will be left to sustain life in the river or provide the opportunity for water-related amenities for under-resourced communities along the river.

River management as proposed in the Master Plan and wastewater recycling plans would thwart future opportunities for ecological repair and seal the river's fate as a "flood control channel." These approaches are not in the best interest of the public. We must do better and invest in a healthy habitat that keeps the river flowing, filters water, air and recharges our aquifers.

River-adjacent communities have long demanded ecological restoration, environmental remediation and access to nature. Current plans for the river do not meet these demands. A healthy LA River with trees and other riverside vegetation is critical for protecting biodiversity and achieving climate resiliency through urban cooling and carbon sequestration, promoting greater community health and equity. The time is now for bold vision and bolder action.

WHAT MUST BE DONE

Environmental and justice groups, Tribal Nations and community leaders are ready to begin the journey to restore the river and adjacent communities to health, but they need decision-makers to meet them halfway. This must start with the LA County Flood Control District halting their adoption of the Master Plan, and instead partnering with river adjacent cities, the Army Corps, and state and federal officials to establish a unified river governance structure. This body should then work with the community to adopt a holistic vision for a healthy river that prioritizes natural climate solutions for the river's frontline communities and promotes watershed permeability that allows stormwater to absorb into the ground. This process must be driven by frontline communities whose health and well-being depend on the river and must include strong anti-displacement policies and equitable access to the river.

In addition, the California State Water Control Board should determine optimal multi-beneficial river flows before cities can move forward with water recycling projects. These projects can be beneficial if they are done with consideration of river flows.

Lastly, LA City and County should expedite habitat restoration and clean-up projects to begin the long process towards a healthy LA River and resilient communities.



10

TAR CREEK

THREAT: Mining pollution

STATE:

Oklahoma

AT RISK:

Clean water, public health

SUMMARY

Tar Creek in Oklahoma flows through what was once the richest grasslands of the Southern Plains, but today is one of the country's largest Superfund sites. Heavy metals from mining have contaminated the creek for decades, and cleanup efforts continue to fall short, threatening the health of Indigenous communities and other local residents. The Environmental Protection Agency, Federal Energy Regulatory Commission, state of Oklahoma and tribes must work together to develop a comprehensive solution to clean up the pollution and safeguard public health.

ILLEGAL ROCK DAM ACROSS TAR CREEK, OKLAHOMA

PHOTO: MARTIN LIVELY

THE RIVER

Tar Creek begins in Kansas and crosses into Oklahoma, flowing through the towns of Commerce and Miami before joining the Neosho River as it flows south to the Grand Lake of the Cherokees, a major drinking water source created by the Pensacola Dam. The watershed is a destination for anglers, hunters, conservationists, artists, recreationists and nature lovers and is dammed to produce hydropower.

Tar Creek once supported a rich ecosystem – fish, crawdads, mussels and plants provided ample subsistence to the area's Indigenous people. Along Tar Creek, they found wildlife and plants that provided food, medicines and clean water. Only a few decades after many tribes were forcibly relocated to this part of Oklahoma in the 19th century, metal ores were discovered and the largest lead mine in the world transformed Tar Creek. Ottawa County is home to nine Tribal Nations (Quapaw, Miami, Peoria, Ottawa, Modoc, Eastern Shawnee, Wyandot, Seneca-Cayuga and Shawnee). Tribal members make up more than 20 percent of the population in the county, with many individuals having ancestry in multiple tribes. The watershed is further shared by the Cherokee Nation, which borders it on the West and South.

THE THREAT

After 80 years working the world's largest lead and zinc mine, industry abandoned Ottawa County in the 1960s, leaving behind 75 million tons of lead-contaminated tailings piles. The mining epicenter contains 40 square miles of abandoned mines with more than 30 major tailings piles as high as 200 feet tall. By 1979, an aquifer had filled the abandoned mine caverns, and acid mine water loaded with lead, zinc, arsenic and cadmium began flowing into Tar Creek, killing most aquatic life and turning the water orange. Ever since, one million gallons of contaminated water have discharged daily into Tar Creek.

In 1984, the Environmental Protection Agency (EPA) established the Tar Creek Superfund Site. Today the site encompasses all of Ottawa County and is among the nation's largest and most complex Superfund sites. The EPA and state of Oklahoma have done piecemeal work at the site, spending more than \$300 million, yet orange water continues to flow, tailings piles still loom on the horizon and too many children are still poisoned by lead. People are warned not to eat the fish

10

TAR CREEK

Continued

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TAR CREEK, OKLAHOMA

PHOTO: TODD STEWART

because of lead, but only in 2022, after children were repeatedly reported swimming and playing in Tar Creek, did the state actually post warnings along the creek and in mailers to families living nearby. When children are poisoned by lead, it can affect not only their IQ and how they learn, but it can harm every organ in their bodies with life-long effects. One-third of all Indigenous children were found to be affected by lead poisoning in the early 1990's. The source material has not yet all been removed, so children continue to be exposed. Lead and other heavy metals are present in water and soils throughout much of Ottawa County, endangering the health of people who fish, swim or consume edible plants grown in contaminated soil. In addition, contamination inhibits important Indigenous subsistence lifestyles and cultural practices, as well as recreational activities for all residents and visitors.

Heavy metal contamination poses a danger in two ways— upstream at the source from acid mine drainage and surface runoff, and downstream from the disturbance of contaminated sediments dispersed during floods. Homes, neighborhoods and entire farms are in danger any time a storm causes flooding. Climate change will only lead to more frequent storm events and flooding; the sediment built up behind Pensacola Dam and efforts to raise the lake level will serve to exacerbate this problem. Holding water longer to keep the lake level high will only increase the backwater effect of the dam. Ottawa County will not be free of heavy metal exposure unless both the source and migration of metals through toxic floods are fully addressed.

WHAT MUST BE DONE

The Grand River Dam Authority (GRDA), the Pensacola Dam operator, is seeking a hydropower license renewal from the Federal Energy Regulatory Commission (FERC). GRDA refuses to discuss in the official record the disturbance of heavy metals in Grand Lake and upstream toxic flooding caused by dam backwatering effects. Further, GRDA is asking to raise the lake level in its license request, which will increase the risk of toxic flooding to upstream communities.

Tar Creek is poisoned with watershed-wide pollution that requires a landscape-scale solution. In conjunction with the relicensing of the Pensacola Dam, the EPA, FERC, GRDA, U.S. Army Corps of Engineers and state of Oklahoma must collaboratively address historic and ongoing contamination throughout Tar Creek and the Grand Lake watershed. Agencies and tribes with land adjacent to Tar Creek must sign a Memorandum of Understanding that requires all parties to commit to an integrated solution to address metals contamination and cleanup within the dam's relicensing record. In addition, the lake level must not be raised as proposed because doing so will increase the redistribution of sediment-bound heavy metals during floods.

Furthermore, EPA Region 6 Administrator Dr. Earthea Nance must order a new Remedial Investigation and Human Health Risk Assessment that is more protective of human health and the environment. The health of communities around Tar Creek can no longer be ignored and set aside as an accepted casualty of historic mining. Tar Creek must be addressed as a matter of environmental justice, a priority of the Biden administration.

Lastly, Congress must fully and permanently reauthorize the Superfund Fee (or 'polluter pays' provision) under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act, which together fund cleanup at Superfund sites across the country, lifting the burden of cleanup costs from impacted communities. They must also increase the funding dedicated to cleaning up Tar Creek.