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**2017**

## America's Most Endangered Rivers® 2017

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

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

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

The report highlights ten rivers whose fate will be decided in the coming year, and encourages decision-makers to do the right thing for the rivers and the communities they support.

The report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers confronted by critical decisions that will determine their future.

The report presents alternatives to proposals that would damage rivers, identifies those who make the crucial decisions, and points out opportunities for the public to take action on behalf of each listed river.

### About American Rivers

**For More Information**  
[www.AmericanRivers.org/EndangeredRivers](http://www.AmericanRivers.org/EndangeredRivers)

**For Press Inquiries**  
[Amy Kober](#)  
Senior Communications  
Director  
(503) 708-1145

American Rivers protects wild rivers, restores damaged rivers, and conserves clean water for people and nature. Since 1973, American Rivers has protected and restored more than 150,000 miles of rivers through advocacy efforts, on-the-ground projects, and an annual *America's Most Endangered Rivers®* campaign. Headquartered in Washington, DC, American Rivers has offices across the country and more than 250,000 members, supporters, and volunteers.

Rivers connect us to each other, nature, and future generations. Find your connections at [AmericanRivers.org](http://AmericanRivers.org), [Facebook.com/AmericanRivers](https://Facebook.com/AmericanRivers), and [Twitter.com/AmericanRivers](https://Twitter.com/AmericanRivers).





# #1: Lower Colorado River

Arizona, California, Nevada

Threat: Water scarcity and demand

At Risk: Reliable water supplies; economy and river health

## Summary

The Lower Colorado River provides drinking water for one in ten Americans, nourishes cities including Las Vegas, Los Angeles and Phoenix, and grows approximately 90 percent of the nation's winter vegetables. However, water demands are outstripping supply, and climate change makes the situation even more urgent. The river is at a breaking point, with looming shortages in supply that could threaten the security of water and food supplies and a significant portion of the national economy. The Trump Administration, state water leaders and the congressional delegations of Arizona, Nevada and California must prioritize innovative water management solutions to ensure the Lower Colorado can continue to sustain the Southwest and the nation as a whole.

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Credit: Amy Martin

## The River

The Colorado River is the lifeblood of the Southwest. The Lower Colorado begins at Lee's Ferry and winds through Nevada, Arizona and California, with so much water withdrawn along the way for agricultural, industrial and municipal uses that it dries up before reaching the Gulf of California. The Lower Colorado provides drinking water to 30 million people in some of the fastest-growing metropolitan areas in the U.S., including Las Vegas, Phoenix, Tucson, Los Angeles and San Diego.

The river is critical to the future of agriculture in the region, providing water for over five million acres of farmland growing crops worth roughly \$600 million annually. The Lower Colorado supports thriving recreation and tourism, carving the Grand Canyon and supplying water to the fountains along the Vegas Strip. All told, the Lower Colorado has an annual economic impact of \$900 billion. The river also provides essential habitat for six threatened and endangered species and is a treasured recreational and spiritual resource in the region.

## The Threat

Over the past several years, federal agencies and state water leaders have made considerable progress toward water conservation and programs that reduce overuse of the river. This success is threatened by the Trump Administration's Fiscal Year 2018 Budget proposal, the implementation of which would cut funding to critical federal programs like the Bureau of Reclamations' System Conservation Program, the U.S. Department of Agriculture's Regional Conservation Partnership Program, and the Department of Interior's WaterSMART program and Title XVI grants for municipal conservation and efficiency efforts. These cuts could potentially reverse progress made by states, cities and farmers to reduce water consumption in the Lower Colorado River Basin.

Each year, the Lower Basin uses an average of 1.2 million more acre-feet of water than it receives in flows from the Upper Colorado River Basin, equivalent to the water use of two and a half million



Lower Colorado diversion canal | Credit: Justin Clifton

households in the Southwest. To date, Lower Colorado Basin water users have overcome this supply imbalance by drawing from storage that accumulated over decades when water demand was lower. This is not a sustainable solution in the face of climate change, drought and rapid population growth, which are already straining dwindling water supplies.

Failing to address the overdraft in the immediate future will result in severe economic and ecological impacts to the Lower Colorado River. Water levels will continue to drop, triggering an official “shortage declaration” by the Bureau of Reclamation and forcing mandatory water delivery curtailments. While heavy snowpack in the Rocky Mountains may temporarily reduce the risk of shortage, as recently as August 2016, the Bureau projected a greater than 50 percent chance of shortage in 2018. Cities and farms would almost certainly face new water use restrictions. Arizona water users would be the hardest hit— even though California farms and cities are further downstream, federal law gives Arizona lower priority access to Colorado River water.

Declining water levels also present serious threats to the river’s fish and wildlife. Less water means reduced hydropower revenues to fund federal programs designed to restore endangered species and enhance water quality.

### What Must Be Done

It is vital that Congress and the Trump Administration provide leadership and financial resources for innovative water savings projects to conserve and share the region’s water assets. The federal government and the states of Arizona, California and Nevada have been negotiating a Drought Contingency Plan (DCP) to help stabilize water supplies in the Lower Colorado River Basin. In the DCP proposal, states are considering additional voluntary curtailments of Colorado River water deliveries in order to stabilize the system and avoid deepening water shortages. These water savings will come from all sectors of the water community, including agriculture, industry and municipalities.



Credit: Amy Martin

The success of the DCP requires that Arizona immediately develop a plan for implementing the voluntary curtailments. Arizona is referring to this effort as “DCP Plus,” which involves a series of additional water savings measures designed to stave off a Shortage Declaration, at least temporarily. Governor Ducey and the Arizona Department of Water Resources have been instrumental leaders in creating partnerships to develop and support DCP Plus, which will reduce demand on the river and create a more flexible water supply system. Supporting the Department’s efforts with adequate federal funding for the DCP Plus is a critical step toward water supply security for the state and the overall health of the river. If the DCP Plus is not funded, a water shortage will likely trigger curtailments that will destabilize the water supply in the Lower Colorado River Basin.

By supporting the funding for both of these efforts, Congress and the Trump Administration will protect the livelihoods of millions and help ensure the Lower Colorado will continue to sustain the region and our nation for generations to come.

### For More Information:

Matt Rice, American Rivers, (303) 454-3395, [mrice@americanrivers.org](mailto:mrice@americanrivers.org)

Robert Fanger, Hispanic Access Foundation, (317) 410-7668, [robert@hispanicaccess.org](mailto:robert@hispanicaccess.org)

### Take Action:

[www.americanrivers.org/LowerColorado](http://www.americanrivers.org/LowerColorado)



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# #2: Bear River

California

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Threat: New dam

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At Risk: Native American culture; fish and wildlife habitat; recreation

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## Summary

One of the great rivers of the Sierra Nevada, the Bear River supports Native American culture, fish and wildlife and community recreation. Much of the watershed has been dammed and developed for water supply and energy production, making the few remaining free-flowing stretches of the Bear River all the more valuable. But now, one of these last free-flowing reaches is threatened by the proposed 275-foot tall Centennial Dam. Instead of rushing to build an expensive, damaging and unnecessary new dam, Nevada Irrigation District must consider other water supply solutions, and the U.S. Army Corps of Engineers must fully analyze alternatives at a critical time for water planning in California..

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Credit: Voice of the Bear River <http://voiceofthebearriver.com/>

## The River

The Bear River flows 73 miles from the rocky crags and conifer forests of the Sierra Nevada to the oak woodlands, open grasslands, pastures and fields of the Central Valley in Northern California. The Bear River supports recreation, cultural use, rare habitat, and water for agriculture and municipal supplies in Auburn, Placer County, South Nevada County and Lincoln. Locals and visitors enjoy hiking, birdwatching, camping, angling, gold panning, rafting and kayaking on the Bear's four-mile class II whitewater run. The river is home to numerous historic sites, including Nisenan village and burial sites. Today, the mature mixed conifer and oak woodlands along the river are used by Nisenan for plant collection and ceremonial purposes.

The river's woodlands are an incredibly diverse ecosystem that provides habitat for an abundance of sensitive species, including California black rail, bald eagle, foothill yellow-legged frog, ringtail cat and big-eared bat. The lower reaches of the river support numerous iconic species, including Chinook salmon, Central Valley steelhead, and green and white sturgeon. The Bear River flows to the overtaxed Sacramento and San Joaquin River Delta, providing critical seasonal flows and groundwater recharge.

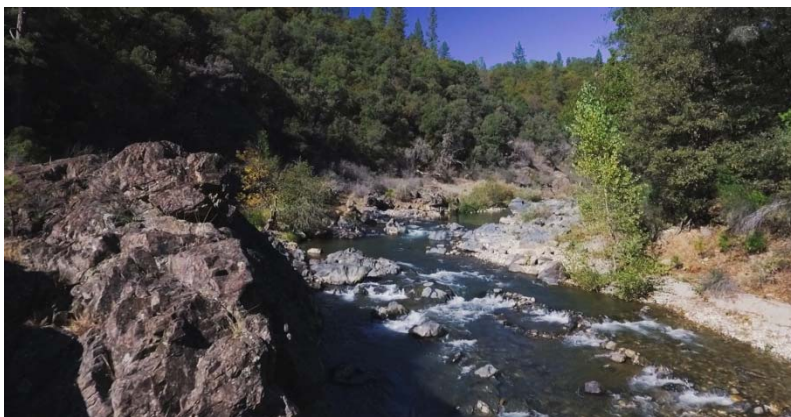
## The Threat

Much of the Bear River has been altered over the last 200 years, primarily by gold mining and dam building. The Bear is already impounded behind eight dams, leaving only a few free-flowing sections in the middle and upper reaches of the river. The undammed portions of the river are vital for local communities, including the native Nisenan tribe.

Today, the Bear River is threatened by the development of Centennial Dam— a 275-foot tall structure proposed by Nevada Irrigation District (NID). NID claims that additional water storage is needed to meet future demand and replace snowpack storage that will be lost due to climate change. However, NID has not demonstrated that it is following best practices for water conservation and efficiency, or that the water to fill this new reservoir will be available to communities in the Bear River watershed under predicted future climate conditions. Further, the project's massive costs (which NID

currently estimates to be \$500 million to \$1 billion) would undermine more effective climate change management strategies, such as water use efficiency and optimizing existing systems. Centennial Dam is a costly and damaging project that may never be able to meet its stated goals, and less damaging alternatives exist to meet future demand.

Centennial Dam would flood the last six miles of publicly accessible free-flowing river, including popular recreation sites and numerous native Nisenan village and burning sites. The dam would also flood 2,200 acres of mature riparian and oak woodland, destroy habitat for many sensitive species and pose a serious threat to vulnerable fish populations by reducing flows downstream. In addition, the project will appreciably reduce seasonal flows critical to the Feather and Sacramento Rivers, the Delta and San Francisco Bay.



Credit: Voice of the Bear River

### What Must Be Done

Building Centennial Dam is a 19th century solution to the 21st century challenge of climate change. NID must involve the community in future water planning, rather than pursuing an expensive, risky and unnecessary dam project at the expense of local communities and ecosystems. NID should work with the community and river advocates to pursue common-sense water conservation measures and alternatives that promote resilience to climate change without destroying invaluable natural, cultural and recreation resources. A new dam should be the last alternative considered, not the first.



Chinook salmon | Credit: Voice of the Bear River

Fortunately, Centennial Dam must pass through many hurdles before construction, and faces multiple turning points in the next year from state and federal decision makers. It is imperative that organizations and individuals maintain pressure on NID and other key decision makers to reevaluate the need for this new dam.

Right now, the U.S. Army Corps of Engineers (USACE) is conducting federal environmental review for the project, and has the authority to deny permits to build the dam. Join us in asking the USACE to deny permits for the dam in favor of alternative actions that would improve water security in light of a changing

climate, while preserving and enhancing the rich natural, social and cultural resources of the Bear River.

### For More Information:

Max Odland, American Rivers, (530) 478-0206, [modland@americanrivers.org](mailto:modland@americanrivers.org)

Traci Sheehan, Foothills Water Network, (530) 919-1329, [traci.sheehan@gmail.com](mailto:traci.sheehan@gmail.com)

Caleb Dardick, South Yuba River Citizens League, (530) 265-5961, [Caleb@syrccl.org](mailto:Caleb@syrccl.org)

### Take Action:

[www.americanrivers.org/BearRiver](http://www.americanrivers.org/BearRiver)



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# #3: South Fork Skykomish River

Washington

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Threat: New hydropower project

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At Risk: Fish, wildlife and local community

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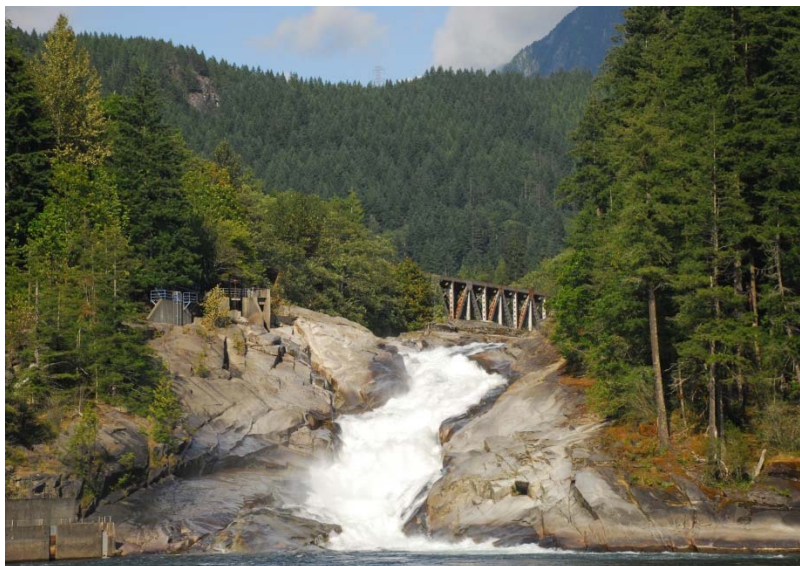
## Summary

The South Fork Skykomish River provides tremendous scenic beauty, outstanding fish and wildlife habitat, and beloved recreation opportunities for residents and visitors in the Seattle metro area. However, this river and its unique values would be destroyed by a new hydropower project proposed by Snohomish County Public Utility District. The utility must abandon this unnecessary project and Washington's Governor Inslee, the State Department of Ecology and the state legislature must uphold existing instream flow rules to protect the river.

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Credit: Thomas O'Keefe

## The River

The South Fork Skykomish River in Washington state drains approximately 835 square miles, almost all of which provide outstanding whitewater recreation, angling and hiking opportunities, and pristine wildlife habitat. The river is home to federally threatened salmon and winter steelhead species, and endangered bull trout. The Skykomish is a designated State Scenic Waterway because of these scenic and recreational values. Notably, the river is listed as a Northwest Power and Conservation Council Protected Area from hydropower development. The river has also been recommended by the U.S. Forest Service for federal designation as a Wild and Scenic River due to its scenic, recreational and fish and wildlife values. Due to the ecological importance of the river, the Washington Department of Ecology has promulgated a rule protecting minimum instream flows for the river that are designed to protect fish, wildlife and other instream values.

## The Threat

In September 2011, the Snohomish County Public Utility District (SnoPUD) began the regulatory process to install a run-of-river hydroelectric facility that would remove water from above Canyon Falls, in violation of the Department of Ecology's instream flow rule, and send it through a tunnel to turbines just downstream of Sunset Falls. SnoPUD will be filing a final license application with the Federal Energy Regulatory Commission (FERC) this year.

The proposed SnoPUD project has many flaws, but the project poses the greatest threat to fish and wildlife. In the Pacific Northwest, salmon are important economically, culturally and environmentally. Salmon are a staple food source for Puget Sound orca whales. The region's fishing industry depends on salmon. Furthermore, salmon are an integral food and cultural resource for the local Native American tribes. Young salmon and adult steelhead out-migrating to the sea will suffer if this project is licensed.

SnoPUD's hydropower project will remove a significant volume of water from a 1.1 mile section of the river and send it through a tunnel to produce electricity. This will create a stressful environment for salmon and steelhead. Removing water from the river will raise the overall temperature and decrease the level of oxygen present. These changes will endanger the fish population, as salmon and steelhead require cooler temperatures and higher oxygen levels to live. Lower flows and decreased water cover will also lead to greater bodily harm as out-migrating fish pass over waterfalls and attempt to outmaneuver predators. The Tulalip Tribes of Washington and the Snoqualmie Indian Tribe have each submitted comments to FERC urging that the hydropower license be denied because of the expected adverse impacts to fish and wildlife.

Aside from environmental concerns, the SnoPUD project makes little sense economically. Rocky Mountain Econometrics (2013) estimated that the power produced by the completed project would be two to three times more expensive than if SnoPUD were to simply buy the power from the existing grid— an added expense that would likely be passed on to ratepayers.

In an effort to bring its ill-considered project closer to the finish line, in 2016, SnoPUD testified before the U.S. House of Representatives in favor of H.R. 8. That bill, which was unable to gain passage last Congress but could be considered again soon, sought to strip from the federal government its ability to prevent damage to American Indian reservations and fisheries. H.R. 8 also could prevent the state of Washington and the tribes from managing water quality under the Clean Water Act. Rather than abandon a bad idea, or improve it to meet the concerns of the tribal, state and federal governments, SnoPUD went to Washington and asked Congress to remove the ability of states and tribes to balance power production with healthy fisheries, drinkable water and upholding trust and treaty obligations.

### **What Must Be Done**

Despite intense opposition over the past five years, SnoPUD continues to pursue a hydropower license for this project. SnoPUD commissioners must listen to the public and recognize the fiscal impact of the project on ratepayers and the importance of maintaining the Skykomish as a free-flowing river. The only responsible option at this point is to abandon the project.

Washington's Governor Inslee, the State Department of Ecology and the state legislature must continue to uphold the instream flow rule, which ensures that adequate amounts of water are retained in streams to protect and preserve instream resources and uses (such as fish, wildlife, recreation, aesthetics, water quality and navigation). They must not allow SnoPUD to modify the rule for this project. Such an action would establish a dangerous precedent and threaten the integrity of instream flow rules across the state. In addition, the public must oppose any bills in Congress that resemble H.R. 8, which seek to limit the ability of states and tribes to achieve sustainable, balanced hydropower production.

### **For More Information:**

Wendy McDermott, American Rivers, (206) 213-0330 x1, [wmcdermott@americanrivers.org](mailto:wmcdermott@americanrivers.org)

Lora Cox, Local Resident, (206) 417-0744, [lora.cox@comcast.net](mailto:lora.cox@comcast.net)

Andrea Rodgers, Western Environmental Law Center, (206) 696-2851, [rodgers@westernlaw.org](mailto:rodgers@westernlaw.org)



Juvenile coho salmon | Credit: Thomas O'Keefe

### **Take Action:**

[www.americanrivers.org/Skykomish](http://www.americanrivers.org/Skykomish)



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# #4: Mobile Bay Basin

Alabama

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Threat: Poor water management

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At Risk: Secure water supplies;  
river health; fishing industry

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## Summary

A haven of biodiversity, the Mobile Bay Basin accounts for approximately 14 percent of all the freshwater flows in the continental U.S. Failure to protect river flows at the state and federal level imperils hundreds of threatened and endangered species, the regional economy and drinking water supplies for millions of people. In 2016, drought exposed a lack of sustainable water management policies to protect the freshwater flows that are critical to this important river system. Alabama must develop a comprehensive water management plan for the state which protects the rivers, streams and delta that support millions of people and the region's economy.

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Credit: Mobile Baykeeper Swimmable Water Weekend Photo Contest

## The River

Spanning Mississippi, Alabama and Georgia, the Mobile Bay Basin is acclaimed nationally for its diverse ecosystems and for the water that it provides to millions. The second largest intact river delta system in the nation, Mobile Bay Basin includes more than 200 wetlands and waterways, including the Tombigbee, Black Warrior, Alabama, Mobile, Coosa, Tallapoosa and Cahaba Rivers.

The focal point of the Alabama state seal, the Mobile Bay watershed drains over two-thirds of the land mass of Alabama. Four of Alabama's largest cities— Birmingham, Tuscaloosa, Montgomery and Mobile— as well as large portions of the Atlanta Metro Area, rely on the watershed for drinking water and wastewater assimilation. The Basin's rivers are important for seafood, navigation, power generation, irrigation and recreation, including fishing, boating and whitewater kayaking. The Port of Mobile alone accounts for an estimated \$22 billion in total economic impact, while outdoor recreation brings in \$7.5 billion in direct consumer spending to Alabama.

Described by E.O. Wilson as “America's Amazon,” the basin, particularly the Mobile Delta, is home to hundreds of species of fish, crayfish, mussels, snails and other aquatic life, many of which are found nowhere else on earth. The watershed is home to well over 140 threatened and endangered species, many of which have been heavily impacted by dams, diversions, and development.

## The Threat

The Mobile Bay, its Delta and the rivers that sustain them are under threat from mismanagement of water resources within the Basin. Waste and overuse of water are rampant. Throughout the Basin, river flows are increasingly altered to accommodate excessive use and consumption. In Mississippi, flows are only protected at the most meager levels. In Georgia, water plans sacrifice the headwaters of the Basin to the relentless growth of Metro Atlanta. In Alabama, which is responsible for the vast majority of the watershed, the state does not protect the amount of water it has at all.



Tallapoosa River | Credit: Tracy Smith

Because most of the watershed is in Alabama, the state not only benefits the most from the Basin's resources, it also bears the greatest responsibility to protect its flow. Alabama's failure to meet this responsibility is repeatedly highlighted during droughts, which are occurring with greater frequency. In 2016, Alabama's mismanagement of water resources throughout the summer resulted in more than 10 percent of the watershed's streams setting new record lows due to unsustainable water consumption. In the Cahaba River, varying flows left endangered mussels stranded while fish kills were reported on tributary streams; flows on the mainstem of the Tallapoosa

River collapsed completely. The state's failure to protect these resources caused a reduction in freshwater flows into Mobile Bay, causing a dangerous increase in the Bay's salinity.

As threats to Alabama's water resources have mounted, the state has been too slow to act. Alabama does not reliably track its water use and has no enforceable policies to ensure that streams and water users are protected during droughts. Additionally, the state fails to provide protections for flows when it authorizes water use within the state or negotiates with federal regulators and its neighboring states. Likewise, the state has no policy to ensure that water conservation is required as a component of water authorizations.

Repeatedly, the state legislature has failed to enact legislation that would protect the Mobile Bay watershed. Exacerbating the problem, state leaders are currently seeking to promote even greater water consumption by relaxing standing prohibitions on water diversions, while providing incentives for farmers to increase irrigation.

### What Must Be Done

In 2012, Alabama's governor convened the Alabama Water Agencies Working Group (AWAWG) to provide a recommendation for a statewide, comprehensive water management plan. In January 2017, the AWAWG submitted its final recommendations to the governor. Now the Alabama legislature must take these recommendations and pass legislation that would provide for effective water management throughout the Basin. This legislation must be comprehensive and protect both the flows of the tributaries as well as flows to the bay. Specifically, this water management program must require the state to identify and reserve from allocation the flows and levels necessary to protect the chemical, physical and biological integrity of the state's waters. This should include real provisions for accounting for water use, and describe the steps that the state will take in order to ensure that streams, as well as water users, are protected during future droughts and water shortages.

Now that Alabama is on the brink of action, we cannot allow powerful interests to sacrifice this incredible natural resource, and the various industries that rely on upon it, all in the name of preserving the status quo. With a truly sustainable water management plan, Alabama would protect the waters within its borders and be in a much better position to negotiate with neighboring states for the protection of this watershed as a whole. The Mobile Bay Basin is too important to allow the mismanagement of water to continue to threaten it.

### For More Information:

Ben Emanuel, American Rivers, (404) 373-3980, [bemanuel@americanrivers.org](mailto:bemanuel@americanrivers.org)

Mitch Reid, Alabama Rivers Alliance, (205) 322-6395, [mreid@alabamarivers.org](mailto:mreid@alabamarivers.org)

### Take Action:

[www.americanrivers.org/MobileBay](http://www.americanrivers.org/MobileBay)



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# #5: Rappahannock River

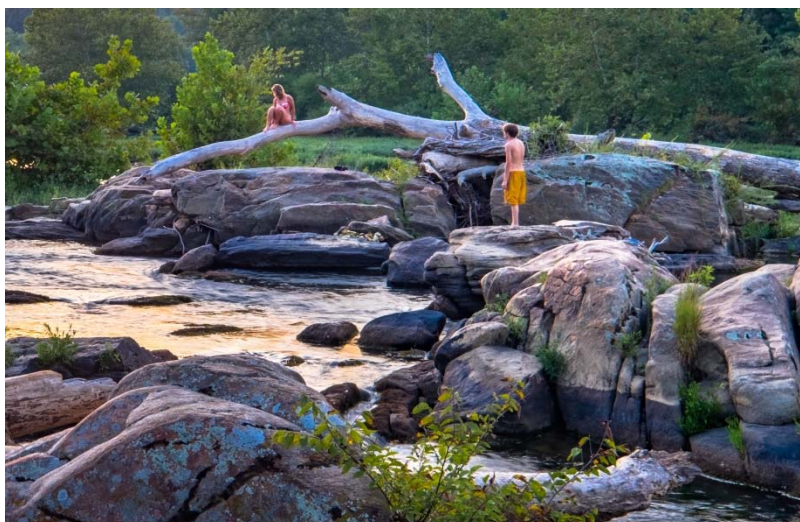
Virginia

Threat: Fracking

At Risk: Clean drinking water

## Summary

Rich in American heritage, a healthy Rappahannock River is important to the Chesapeake Bay. Unfortunately, the river and its clean water are threatened by industry interest in expanding fracking operations into Tidewater Virginia. The area overlies the Taylorsville Basin, a section of earth deep underground thought to contain shale gas deposits. Developing natural gas in this area would require drilling through the Potomac Aquifer, which supplies drinking water to three million people in Virginia's Coastal Plain and Tidewater regions. The Virginia legislature and local municipalities must maintain and, where necessary, establish strong natural gas regulations and zoning to protect communities, river health and clean water.



Credit: Harlow Chandler

## The River

The Rappahannock River is the longest free-flowing river in Virginia, and its watershed includes all or parts of 18 counties from the Blue Ridge Mountains to Chesapeake Bay. The Rappahannock and its tributaries support a thriving agricultural industry, irrigating crops and providing clean water for livestock. The most important industries dependent on the Rappahannock are the blue crab, oyster, striped bass, menhaden and other fisheries that provide the livelihoods of local watermen.

Thousands of residents and visitors take advantage of Rappahannock Basin rivers and streams for a wide range of recreational activities, including paddling, sport fishing, swimming and waterfowl hunting. Shenandoah National Park, City of Fredericksburg Watershed Property, and Rappahannock River Valley National Wildlife Refuge are all pristine, protected public lands within the Rappahannock River Basin, providing over 80,000 acres of permanently protected lands to the public for recreation. The river is also an important part of the John Smith National Historic Trail.

## The Threat

There are currently approximately 85,000 acres in five counties leased for oil and gas exploration and hydraulic fracturing ("fracking") along the tidal Rappahannock and many of its tributaries. Local partners and concerned citizens have worked together for four years to raise awareness of this threat and secure protections for the communities and water resources of the Rappahannock watershed. However, only one out of five counties has passed a land use ordinance designed to protect its environment and natural resources, residents, local economy, character and important infrastructure from the impacts of industrial gas development and fracking.

In November 2016, Virginia Governor Terry McAuliffe approved new regulations for the Virginia Department of Mines, Minerals, and Energy (DMME) that would require, among other things, disclosure of fracking chemicals and baseline water testing and monitoring. During the first week in the 2017 General Assembly, however,

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representatives of the natural gas industry supported introduction of four pieces of legislation designed to weaken the new fracking chemical disclosure requirements— a key protection built into the new regulations. Fortunately, local partners and others joined together to wage a successful campaign to defeat all four bills and protect— for now— the newly established state regulations.

Unfortunately, it is clear that the threats that industrial gas development and fracking pose to the rural and agricultural communities along the Rappahannock River are not going away. The first line of defense lies with local government, which has the power to establish local protections to protect the drinking water for millions of citizens.



Harvesting Rappahannock River oysters | Credit: Amy Martin



Credit: Harlow Chandler

### What Must Be Done

In August of 2016, Virginia's King George County amended its zoning ordinance to require gas wells to be set back at least 1,000 feet from public groundwater supply wells and 750 feet from tidal wetlands and other important waters, occupied buildings and public roads. These measures left 91 percent of the county unavailable for fracking. Additionally, DMME's new regulations contain several improvements to help protect drinking water.

Despite this progress, the reality is that four out of five counties still are under threat. Tens of thousands of acres are already under lease, and the counties do not have zoning ordinances in place to help protect their drinking water and other important natural resources. Given these realities, residents and local governments in Westmoreland, Essex, Caroline, and King and Queen Counties should decide whether this new industry has a place in their communities and then establish local land use ordinances to ensure the long-term protection of the Rappahannock River and

Potomac Aquifer. In addition, the Virginia House of Delegates and Senate must uphold the Governor's new safeguards and understand that their constituents will not tolerate any attempt to weaken or remove existing regulations protecting rivers and clean drinking water from industrial gas development and fracking.

### For More Information:

Jessie Thomas-Blate, American Rivers, (202) 347-7550, [jthomas@americanrivers.org](mailto:jthomas@americanrivers.org)

Bryan Hofmann, Friends of the Rappahannock, (540) 373-3448 x112, [Bryan.Hofmann@riverfriends.org](mailto:Bryan.Hofmann@riverfriends.org)

Kristin Davis, Southern Environmental Law Center, (434) 977-4090, [kdavis@selcva.org](mailto:kdavis@selcva.org)

### Take Action:

[www.americanrivers.org/Rappahannock](http://www.americanrivers.org/Rappahannock)



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# #6: Green-Toutle River

Washington

Threat: Hardrock mining

At Risk: Wild steelhead populations; water quality; recreation

## Summary

The Green-Toutle River, flowing through public lands acquired for public recreation and conservation purposes on the flanks of Mount St. Helens, is threatened with a proposed copper, gold and molybdenum mine. The Green-Toutle River provides clean drinking water, fantastic opportunities for recreation and important habitat for wild steelhead. Despite being a proposed Wild and Scenic River and state-designated Wild Steelhead Gene Bank, the Green continues to be threatened by proposed exploratory drilling that threatens water quality and is a significant step towards the development of an industrial-scale hardrock mine. To protect the health of the Green River watershed and its irreplaceable values for future generations, the U.S. Forest Service and Bureau of Land Management must deny the exploratory drilling permits and the area must be protected long-term from future mining proposals.

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© Trip Jennings/BalanceMedia

Credit: Trip Jennings, Balance Media

## The River

The Green River flows through a glacier-carved valley surrounded by volcanic landscapes, old-growth forests, and the Mount St. Helens National Volcanic Monument. As the largest tributary of the North Fork Toutle River, the Green provides important fish habitat and impacts water quality in the Cowlitz River system, which is regionally-important for fisheries and provides drinking water for approximately 13,000 residents in Kelso and Castle Rock. The Green River's designation as a Wild Steelhead Gene Bank means that hatchery fish are excluded from the river; this system plays a critical role in the recovery of wild steelhead populations. The remote section of the Green River within Gifford Pinchot National Forest is eligible for Wild and Scenic designation based on its nationally-significant scientific, geologic, recreational and scenic values.

The surrounding valley was impacted by the 1980 eruption of Mount St. Helens, and the resulting landscape diversity provides abundant wildlife habitat. Blast-zone clearings are frequently visited by black bears and elk, and ancient forests that survived the eruption are habitat for the threatened northern spotted owl. This valley is treasured for exceptional recreational opportunities including hiking, horseback riding and backpacking. Accessible only by one, single lane road, the Green River Valley offers the increasingly rare chance to enjoy solitude in a remote and unique landscape.

## The Threat

An industrial hardrock mine near the headwaters of the Green River would be a significant threat to water quality, drinking water and fish habitat throughout the watershed. To be economically viable, a mine would likely have to be an open pit mine. This type of mining exposes the rock beneath the surface to air and water, creating conditions that can lead to the formation of sulfuric acid. Acid mine drainage is very harmful to fish and other aquatic organisms, and can continue to occur long after mining has ended. Additionally, hardrock mining and acid mine drainage often leads to increased copper levels in the water, which can be toxic to salmon and steelhead even at low concentrations. Hardrock mining creates tailings, or mine waste, that

must be stored in tailings ponds or piles. Tailings ponds are particularly risky because the dams could breach if the site is not cared for long-term, releasing toxic waste into the watershed. Mining activities, and the associated waste containment, in this remote and seismically-active region is extremely risky.

Moreover, the U.S. Forest Service purchased the lands involved in this project with money from the Land and Water Conservation Fund (“LWCF”). Lands purchased by the Forest Service with this money are intended to serve conservation and recreation purposes for the benefit of all Americans. A mine on LWCF lands is completely inconsistent with the intended purpose of these properties and would set a terrible precedent for the millions of acres protected under the LWCF Program.

Ascot Resources, Ltd., a Canadian mining company, has applied for exploratory drilling permits on approximately 900 acres of land along the Green River in the Gifford Pinchot National Forest to locate deposits of copper, gold and molybdenum. If the Bureau of Land Management and Forest Service issue these permits, the project will include round-the-clock drilling for five months and road construction; actions that would disrupt the remote landscape of the Green River Valley. Up to 5,000 gallons of water per day will be pumped from on-site wells, and toxic drilling additives would threaten water quality in the river. Exploratory drilling is the first step toward developing a toxic hardrock mine, and this mine would be located in a seismically-active region, which increases the chances of a contamination event.

### What Must Be Done

Before Ascot Resources can move forward with exploratory drilling, and subsequently a full-scale hardrock mine, they must be granted drilling permits. The Bureau of Land Management has the authority to grant these permits, but the Forest Service must consent to the permits since the project is on National Forest lands. In order to protect clean water for future generations, steelhead habitat, and the recreation and conservation values of this area, the federal agencies must deny Ascot Resources’ drilling permits.

To further ensure that the exceptional values of this area are maintained, it must be protected from future mining proposals. The Secretary of the Interior must withdraw this area from mining. Additionally, Congress must pass legislation to further support the withdrawal and designate the Green River as a Wild and Scenic River. The public can best enjoy the exceptional recreation opportunities, scenery and habitat value of the Green River when the surrounding landscape is protected from toxic hardrock mining.



Credit: Trip Jennings, Balance Media

### For More Information:

David Moryc, American Rivers, (503) 827-8648, [dmoryc@americanrivers.org](mailto:dmoryc@americanrivers.org)

Nicole Budine, Cascade Forest Conservancy, (503) 222-0055, [Nicole@cascadeforest.org](mailto:Nicole@cascadeforest.org)

### Take Action:

[www.americanrivers.org/GreenToutle](http://www.americanrivers.org/GreenToutle)





# #7: Neuse and Cape Fear Rivers

North Carolina

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**Threat:** Industrial agriculture waste in floodplains

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**At Risk:** Clean water and public health

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## Summary

Roughly two out of every five residents of North Carolina get their drinking water from the Neuse and Cape Fear river basins. Now clean water and public health are threatened by the hundreds of millions of gallons of animal wet waste stored in ponds and tons of dry waste piled adjacent to rivers and streams. There is a straightforward, broadly agreed upon solution that can significantly reduce the threat to our water resources and communities—move the existing concentrated animal feeding operations (CAFOs) out of the floodplain. The North Carolina General Assembly must include funding to do so in the Hurricane Matthew recovery bill currently under consideration, and the North Carolina Department of Environmental Quality and the North Carolina Department of Agriculture must support this action.

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Cape Fear River, Wilmington, NC | Credit: Virginia Sanderson [flickr]

## The River

For hundreds of miles, the Neuse and Cape Fear rivers wind from central North Carolina to the coast, offering amazing riverscapes as they travel through rural and urban areas. The Neuse Basin covers more than 6,000 square miles. The Cape Fear River Basin is North Carolina's largest watershed with more than 6,500 miles of navigable waterways. Combined these two river basins have more than 10,000 miles of streams and rivers and contain nearly 400,000 acres of estuary.

More than four million people in North Carolina get their drinking water from the rivers, including the growing cities of Raleigh, Durham, Fayetteville and Wilmington. In addition, the estuaries of these two river systems play a large role in the economically important seafood industry, accounting for more than 90 percent of the commercial seafood species caught in North Carolina. The Neuse and Cape Fear rivers are vital to supporting North Carolina's \$1.7 billion fishing industry.

## The Threat

North Carolina is the second leading producer of hogs and the third leading producer of poultry in the country. Prior to slaughter, these animals are predominantly raised in CAFOs to make production more economical. Much of the animal production in North Carolina occurs in the Coastal Plain, where shallow water tables and frequent precipitation, including extreme weather events, increase the chances of waste getting into surface and groundwater supplies. The hundreds of millions of gallons of wet animal waste from these operations are held in open lagoons near the CAFOs and tons of dry waste is piled in nearby fields. This waste contains bacteria, pathogens, concentrated levels of nutrient pollution and residual antibiotics that if released into nearby rivers and streams would cause significant contamination.



Neuse River CAFO 2016 flood | Credit: Rick Dove, Waterkeeper Alliance

The Neuse and Cape Fear River basins have endured two 500-year floods from hurricanes in less than 20 years, during which dozens of animal waste lagoons within the 100-year floodplain were flooded or breached, discharging millions of gallons of raw animal waste directly into the rivers. In 2016, flooding caused by Hurricane Matthew overwhelmed 15 CAFO waste lagoons, spilling waste into public waterways. These lagoons were located in the floodplain and have yet to be moved out.

The Neuse and Cape Fear rivers have repeatedly suffered harmful algal blooms and massive fish kills— a symptom of nutrient pollution. Nutrient pollution has also led to chronically low

oxygen levels in two of the most important aquatic nursery systems in the world— the Pamlico Sound and the Cape Fear Estuary.

### What Must Be Done

There is a simple and commonsense action that can be taken to reduce the threat to our water resources and communities— remove the existing industrial CAFO facilities from the floodplain. The opportunity to accomplish this may never be better than it is now, in the first legislative session following Hurricane Matthew. The General Assembly must include funding to restore the Swine Buyout program and include language expanding it to all CAFOs in the floodplain as part of the Hurricane Matthew recovery bill. In addition, the North Carolina Department of Environmental Quality and the North Carolina Department of Agriculture must support this action.

The threat these facilities and their antiquated waste operations pose to our waters will only increase as the effects of climate change become more prevalent and North Carolina is subjected to more frequent powerful storms. Allowing these facilities to remain within the floodplain is an imminent threat to our rivers. North Carolina regulators and lawmakers must support farmers' efforts to move these waste facilities into less vulnerable areas.



Magnificent ramshorn *Planorbella magnifica* | Credit: USFWS

### For More Information:

Peter Raabe, American Rivers, (919) 682-3500, [praabe@americanrivers.org](mailto:praabe@americanrivers.org)

Matthew Starr, Upper Neuse Riverkeeper, (919) 961-2240, [upperneuserk@soundrivers.org](mailto:upperneuserk@soundrivers.org)

Travis Graves, Lower Neuse Riverkeeper, (252) 637-7972, [lowerneuserk@soundrivers.org](mailto:lowerneuserk@soundrivers.org)

Kemp Burdette, Cape Fear Riverkeeper, (910) 762-5606, [kemp@cfrw.us](mailto:kemp@cfrw.us)

### Take Action:

[www.americanrivers.org/NeuseCapeFear](http://www.americanrivers.org/NeuseCapeFear)



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# #8: Middle Fork Flathead River

Montana

Threat: Oil transport by rail

At Risk: Wild and Scenic values; human health and safety; water quality; fish and wildlife

## Summary

Bordered by Glacier National Park and other protected areas, the Wild and Scenic Middle Fork Flathead River is a pristine national treasure. Unfortunately, the rail shipment of toxic and flammable Bakken oil threatens this special place. An oil train derailment could permanently degrade the river and downstream waters, harming communities and the economy. The Federal Railroad Administration must act now to address the threat of transporting oil along the Middle Fork Flathead River by developing a safety compliance agreement with Burlington Northern Santa Fe Railroad. This agreement must include site specific safety measures that would prevent derailments in this federally protected and critically sensitive Wild and Scenic river corridor.

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Credit: Lee Cohen

## The River

The Middle Fork Flathead River originates in the Bob Marshall Wilderness and flows 98 miles to its confluence with the North Fork Flathead River near Columbia Falls, Montana. It was here on the Middle Fork where the idea for the Wild and Scenic Rivers Act was born, when famed wildlife biologist John Craighead was fighting the proposed Spruce Park Dam in the 1950s. Ultimately, the dam proposal was defeated and the Middle Fork was protected as a Wild and Scenic River in 1976.

The Middle Fork Flathead forms the southern boundary of Glacier National Park. The nation's third most visited national park, Glacier welcomed 2.36 million visitors and generated \$198 million in revenue in 2015. The Flathead Valley, which includes the cities of Whitefish, Columbia Falls, Kalispell and Polson, depends on a recreation and tourism economy based on proximity to pristine lands and waters, including the Middle Fork Flathead.

The Middle Fork Flathead provides some of the best habitat in the nation for two native trout, the federally-threatened bull trout and the westslope cutthroat trout (a Montana Species of Concern). Both species require clean, cold and connected habitat.

## The Threat

Burlington Northern Santa Fe Railroad crosses the continental divide at Marias Pass, runs through Glacier National Park, and follows the Wild and Scenic Middle Fork Flathead River corridor. Burlington Northern carries Bakken crude oil from North Dakota and eastern Montana through this corridor to ports on the West Coast. A decade ago, barely 4,000 railroad tank cars moved crude oil nationwide. Now, up to 18 trains, each with 100 tank cars, pass along the Middle Fork Flathead each week. One tank car can carry 30,000 gallons of crude oil and each train can haul up to three million gallons.

Bakken oil is known to be especially volatile and flammable. In June 2016, a Union Pacific train carrying nearly three million gallons of crude oil derailed as it passed through Mosier, Oregon, along the banks of the Columbia River. Of the 96 tank cars on the train, 16



BNSF Train along the Middle Fork Flathead | Credit: Ryan O'Connor

derailed. During the derailment, several cars were either punctured or had outlet valves sheared off, allowing crude oil to spill into the river. According to the Federal Railroad Administration, this accident was the result of inadequate track maintenance by Union Pacific combined with other factors.

Although there has not yet been an oil spill along the Middle Fork, between 2000 and 2012, 37 derailments occurred in this corridor. A Burlington Northern train derailment resulting in an oil spill, explosion and fire, or other hazardous materials release, such as benzene or chlorine, would be disastrous for human health and safety, water quality, fish and wildlife and the economy of the region. The steep, narrow, winding mountain corridor would make timely emergency response and

cleanup almost impossible. The river's swift current would carry toxic material many miles downstream to Flathead Lake before an adequate response effort could be deployed. Thus, when it comes to protecting the river and its clean water, it is critical that we prevent oil train derailments rather than rely on a response plan. This special place deserves a collaboratively developed, science-based plan to protect it from an oil train disaster.

### What Must Be Done

The National Transportation Safety Board has included, "Ensure the Safe Shipment of Hazardous Materials," on its 2017-2018 Most Wanted List of Transportation Safety Improvements.

The Federal Railroad Administration must address this threat by developing a safety compliance agreement with Burlington Northern. This agreement should require additional measures to reduce the risk of a catastrophic train derailment specific to the Middle Fork Flathead river corridor. The safety compliance agreement should include site-specific management practices and a timeline for implementation. For example, installing avalanche sheds at critical sites along the rail corridor and increasing the frequency of rail track inspections, are two additional actions that can be taken now to increase protection of the Middle Fork Flathead River.

The Federal Railroad Administration recently developed a compliance agreement with Union Pacific, requiring increased safety measures to reduce the risk of derailments, in response to the disastrous oil train spill in Mosier, Oregon. We must not wait until a toxic spill occurs in the Middle Fork Flathead to take action. To protect this nationally significant Wild and Scenic River, wildlife and communities, we need a Flathead-specific management plan. The Federal Railroad Administration and Burlington Northern need to act now to protect the Middle Fork Flathead River.



Credit: Lee Cohen

### For More Information:

Kascie Herron, American Rivers, (406) 546-2316, [kherron@americanrivers.org](mailto:kherron@americanrivers.org)

Robin Steinkraus, Flathead Lakers, (406) 883-1346, [lakers@flatheadlakers.org](mailto:lakers@flatheadlakers.org)

Dave Hadden, Headwaters Montana, (406) 270-3184, [dave\\_hadden@headwatersmontana.org](mailto:dave_hadden@headwatersmontana.org)

Erin Sexton, Flathead Lake Biological Station, (406) 982-3301, [erin.sexton@mso.umt.edu](mailto:erin.sexton@mso.umt.edu)

### Take Action:

[www.americanrivers.org/Flathead](http://www.americanrivers.org/Flathead)



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# #9: Buffalo National River

Arkansas

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Threat: Pollution from massive hog farm

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At Risk: Clean water; recreation

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## Summary

The Buffalo River is one of the longest undammed rivers west of the Mississippi. It was designated as the nation's first National River by Congress in 1972 to preserve its clean water and other outstanding values. But today, a Concentrated Animal Feeding Operation feeding 80,000 hogs per year generates waste equivalent to a city of 30,000 people along a Buffalo River tributary. Despite public outcry, millions of gallons of hog waste are sprayed on fields and stored in manure ponds, threatening the river's clean water. The Arkansas Department of Environmental Quality must deny the project's permit for continued operation in order to safeguard this national treasure for today's communities and future generations.

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Credit: Arkansas Department of Parks and Tourism [flickr]

## The River

Winding its way through the forested Ozark Mountains of northwest Arkansas, the 153-mile long Buffalo National River flows through soaring bluffs, deep pools and gravel bars that lure millions of visitors annually from all over the world. People come to camp, paddle, hike river trails, and enjoy the vistas, clean air and sparkling waters of the Buffalo National River. In 2015, more than 1.46 million tourists visited the Buffalo National River generating \$62 million and employing more than 960 people from tourism related activities (e.g., cabins and hotels, restaurants, kayak/canoe rental).

The upper reach, flowing from the headwaters through the Upper Buffalo Wilderness to the boundary of Ozark National Forest, is protected as a Wild and Scenic River. From the national forest boundary to its confluence with the White River, the Buffalo is designated as a National River and managed as a unit of the National Park Service. The Park Service's mandate is to, "preserve, conserve, and interpret a clear, clean, free-flowing river and its Ozark Mountain setting of deep valleys, towering bluffs, wilderness and pastoral landscapes."

The Buffalo River supports more than 300 species of fish and wildlife including beaver, elk, black bear, smallmouth bass and catfish. The federally-endangered gray bat, Indiana bat and Northern long-eared bat are found in the karst cave networks surrounding the river.

## The Threat

Concentrated Animal Feeding Operations (CAFOs) are one of the largest contributors of pollutants to streams and waterways across the U.S., according to the Environmental Protection Agency (EPA). In 2013, a 6,500-head hog CAFO was quietly permitted and constructed by C&H Hog Farms, Inc., unbeknownst to the public. The hog CAFO, including massive indoor feedlots and two manure filled ponds, sits on a hill along one of Buffalo National River's main tributaries, Big Creek, less than six miles from the mainstem of the river.



Algae on the Buffalo National River | Credit: Carol Bitting

Each year, millions of gallons of liquid hog waste are sprayed onto pastures and fields, some of which lie in the floodplain. This manure spreading is particularly harmful in areas where topsoil is thin and the underlying geology is a porous limestone (karst) that is prone to fissures, sinkholes and rapid transmission of groundwater into the water table. Dye tracing studies around the hog CAFO have shown that water can travel under mountains across 13 miles of the watershed, due to the porous karst geology. Consequently, any contaminants in the manure fields or ponds are having far reaching effects, including polluting groundwater wells and threatening endangered species. Water quality indicators, including an unprecedented algal bloom in 2016, *E. coli* bacterial concentrations exceeding allowable limits and dissolved oxygen concentrations below allowable

limits, suggest the Buffalo National River and its fish and wildlife are being negatively impacted by the nutrients produced by the CAFO.

Already, paddlers, swimmers and recreational fishing enthusiasts are seeing changes in water quality as algae cover miles of river bottom. Despite public outcry, noted elevated levels of *E. coli* bacteria in nearby streams by the National Park Service in 2015, and ample evidence of pollution in other areas where these types of facilities operate, the hog CAFO has continued to generate raw, untreated sewage that equals the output of a small city. Tourist-related businesses, such as float services, restaurants, cabin rentals and motels, worry those visitors will stop coming if the water continues to degrade.

### What Must Be Done

Despite rising national protests and evidence of high *E. coli* levels and low dissolved oxygen on Big Creek and the Buffalo National River, the CAFO is seeking to change from a federal permit to a state permit that would allow it to continue to operate in perpetuity. In 2017, the Arkansas Department of Environmental Quality will consider the issuance of a Regulation 5 permit for this CAFO. The Buffalo National River flows in Arkansas, but it belongs to every citizen of our country. Continued support from a well informed and concerned citizenry will be necessary to stop this permitting change and ensure the river's protection for future generations.



Karst limestone on the Buffalo National River | Credit: Angela Peace

### For More Information:

Matt Niemerski, American Rivers, (202) 347-7550, [mniemerski@americanrivers.org](mailto:mniemerski@americanrivers.org)

Teresa Turk, Ozark River Stewards, (206) 713-2265, [Teresa\\_turk@hotmail.com](mailto:Teresa_turk@hotmail.com)

David Peterson, Ozark Society, (501) 472-9290, [drpdrp@windstream.net](mailto:drpdrp@windstream.net)

Gordon Watkins, Buffalo River Watershed Alliance, (870) 446-5783, [gwatkins@ritternet.com](mailto:gwatkins@ritternet.com)

### Take Action:

[www.americanrivers.org/Bufferalo](http://www.americanrivers.org/Bufferalo)





# #10: Menominee River

Michigan, Wisconsin

Threat: Open pit sulfide mining

At Risk: Clean water; Native culture; recreation

## Summary

The Menominee River is loved for its hiking trails, rugged terrain, old growth forests, wilderness campsites and waterfalls. Unfortunately, this special place is threatened by a proposed open pit sulfide mine on the banks of the river. Acid mine drainage could cause irreversible harm to the river's clean water and fish and wildlife. Eight Native American tribes have voiced opposition to the project, including the Menominee, which has sacred burial mounds on the mine site. The Menominee River is simply not the place for a risky mine, and the Michigan Department of Environmental Quality must deny the Canadian mining company's permit.

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Credit: Tom Young

## The River

The Menominee River is named after the Menominee Indians of Wisconsin. The Menominee tribal creation story tells how the people came into being at the river's mouth. The Menominee River is approximately 120 miles long and forms the border between northeastern Wisconsin and Michigan's Upper Peninsula, ultimately draining into Lake Michigan's Green Bay. The largest watershed in the Upper Peninsula, and one of the largest within the Lake Michigan drainage basin, the Menominee and its tributaries drain more than 4,000 square miles. The river provides habitat for smallmouth bass, walleye, pike, trout and lake sturgeon. The smallmouth bass fishery is regarded as one of the best in North America. Area businesses, including river guiding companies, depend on the health of the river for their livelihoods.

## The Threat

Aquila Resources, a Canadian mining company, is seeking permits for the Back Forty Project adjacent to the Menominee River, near the town of Stephenson, Michigan. This open pit sulfide mine would use cyanide to extract and process ore (gold, zinc, copper and silver) on site. Wastewater would be discharged into the Menominee River. Current projections estimate mining 16.1 million metric tons of mineralized material over 16 years.

The Back Forty Project poses a significant threat to the cultural and natural resources of the Upper Peninsula, Wisconsin, and the Great Lakes region. There is a significant threat of sulfuric acid leaching harmful heavy metals, including copper, cadmium, arsenic, lead and mercury, and creating acid mine drainage impacting the Menominee River.

Groundwater, rivers and ultimately Lake Michigan would become contaminated if acid mine drainage were to seep into surface and groundwater, posing a significant danger to fish and other aquatic



Credit: David Dames [flickr]

Forty mine due to the threat it poses to clean water and cultural values. The Menominee Indian Tribe of Wisconsin is concerned about potential impacts to the waters so central to their culture. Mining operations would desecrate burial mounds, sacred sites and other cultural resources. With mining exploration in the upper Midwest at an all-time high, careful consideration and enforceable regulations are necessary to preserve resources that are connected to the river, critical to the people and important to the region.

### What Must Be Done

In January 2017, the mining company applied to the Michigan Department of Environmental Quality (MDEQ) for a permit for impacts to wetlands, streams and the Menominee River floodplain. The previous application was withdrawn following a federal objection issued by the Environmental Protection Agency (EPA). The potential environmental impact of the mine is of a magnitude requiring EPA oversight. This project has already received some of the permits required by the state in order to operate the mine, and the wetlands permit is one of the last hurdles in the state approval process.

It is critical that MDEQ and the EPA reject the wetlands permit and prevent the establishment of the proposed Back Forty Mine, to preserve the region's clean water and cultural resources for today's communities and future generations.

life. These negative impacts may be amplified if, as expected, climate change intensifies storms and leads to greater precipitation across the Midwest. Consequently, the mine has the potential to adversely affect the environmental health, local economies and recreational opportunities of both northeastern Wisconsin and Michigan's Upper Peninsula.

Following the development of the Eagle nickel and copper mine in Marquette County, Michigan, the Back Forty Project would be the second sulfide mining operation constructed in the Upper Peninsula in recent years.

Citizens on both sides of the river, including the Superior Watershed Partnership and eight Native American tribes, have voiced opposition to the Back



Credit: Guy Reiter

### For More Information:

Katie Rousseau, American Rivers, (419) 936-3759, [krousseau@americanrivers.org](mailto:krousseau@americanrivers.org)

Abbie Debiak, The Superior Watershed Partnership, (906) 228-6095, [abbie@superiorwatersheds.org](mailto:abbie@superiorwatersheds.org)

### Take Action:

[www.AmericanRivers.org/Menominee](http://www.AmericanRivers.org/Menominee)

