



# Climate Resilience Through River Protection

September 2024

As the social and ecological consequences of climate change intensify, the need for adaptive management of our nation's public lands and waters to increase resilience has never been more critical. We commend the Biden-Harris Administration and federal land management agencies for initiating meaningful discussions and policy adaptations to address the challenges posed by a changing climate, despite shrinking land management budgets and strained capacity. We especially appreciate the Administration's commitment to the America the Beautiful Freshwater Challenge,<sup>1</sup> which sets a bold, new national goal and partnership to protect, restore, and reconnect 8 million acres of wetlands and 100,000 miles of our nation's rivers and streams by 2030. This effort, as well as the development of national guidance, policies, and directives, represents a significant step forward in managing public lands and waters in this new era.

However, for these initiatives to be truly effective, they must adopt a comprehensive approach that fully recognizes and values the essential role of high-functioning and free-flowing river systems and the clean freshwater and other resources they provide to society and nature. Intact rivers and riparian areas are not only vital for healthy ecosystems due to the high level of biodiversity and other ecosystem services they support, but they also serve as crucial natural buffers against climate change. From mitigating the effects of extreme weather events such as floods and droughts, to providing critical habitats for wildlife and aquatic species, high-functioning, free-flowing rivers are indispensable to the resilience of landscapes and communities. Resilient landscapes and waters also yield practical management efficiencies by allowing restoration dollars and capacity to be allocated elsewhere. In addition, river systems provide cultural values that include recreation, aesthetics, and spiritual connections facilitating activities of social consequence.

In this context, the protection of our nation's rivers must be integrated into broader climate policies and land management strategies. Currently, only a fraction of U.S. river miles are safeguarded under the range of mechanisms that protect rivers, including the Wild and Scenic Rivers Act and other federal lands legislative and administrative designations. Existing policies fall short of providing the robust protections necessary to ensure rivers contribute to a national climate resilience strategy – and in some cases, policies are leading to reductions in protections.

Going forward, we believe that the Administration must take decisive action to expand and strengthen river protections across federal lands. By doing so, management practices can better align with the best available climate science and fulfill agency missions to conserve natural resources and support communities in the face of an uncertain climate future.

## Climate Policy Calls for Increased River Protections

There are numerous federal directives that support increased protections for rivers. In 2021, President Biden issued Executive Order #14008, which instructed government agencies to “combat the climate crisis”<sup>2</sup> and, among other actions, “strengthen our clean air and water protections”<sup>3</sup> by “identifying strategies that will encourage broad participation in the goal of conserving 30 percent of our lands and waters by 2030.”<sup>4</sup> According to Secretarial Memorandum 1077-004, “Drought, extreme weather, flooding, and catastrophic wildfires driven by the growing climate crisis threaten the health and resilience of our communities, lands, waters, and wildlife.”<sup>5</sup> The Memorandum directed the Department of Agriculture to “assess climate change vulnerabilities and risks to key National Forest System resources...including...watersheds.”<sup>6</sup>

Further guidance under the U.S. Forest Service’s Climate Adaptation Plan directed the agency to “fully integrate climate vulnerability assessments and adaptation strategies into land management planning and other planning across landscapes”<sup>7</sup> and “identify and protect climate refugia, such as cold water streams and cool microclimates, as well as movement corridors for species migration.”<sup>8</sup> Secretarial Memorandum 1077-044 also directed the agency to “identify potential gaps in current management where changed or additional direction may be needed to enable more effective adaptation or mitigation actions.”<sup>9</sup>

In response to the aforementioned climate-related directives, the U.S. Forest Service initiated an Advance Notice of Proposed Rulemaking in April of 2023 asking for public input on how the agency should adapt current policies to protect, conserve, and manage national forests and grasslands for climate resilience. The agency noted the importance of watershed health as a top issue raised during the public process consistent with other goals and objectives of the agency and Administration.

In December of 2023, the Administration adopted a suite of policy changes aimed at protecting old growth forests.<sup>10</sup> The Administration recognized the outsized role that old growth forests play in climate resilience and mitigation. This rule provides incidental conservation benefits for watersheds but is not sufficient to preserve the network of high-functioning rivers and streams across National Forests consistent with the public demand expressed during the public process.

In June of 2024, the U.S. Forest Service began climate-driven revisions to its Handbook, which will institutionalize climate adaptation and mitigation within Wild and Scenic River management policy. To fulfill this goal, we believe it is critical that these policy revisions and new agency directives address the river protection gaps identified in this memo. Overall, executive action is needed to protect free-flowing rivers and streams for climate resilience, adaptation, and mitigation. Free-flowing and high-functioning rivers are the old growth forests of our nation’s network of freshwater. As vestigial features of wild America, their conservation is essential to achieving climate and biodiversity goals. Similar visionary executive action grounded in science is needed to recognize the value of our nation’s climate-resilient healthy rivers and to protect their clean water values and free-flowing status.

## Climate Science Supports Increased River Protections

Scientific studies that identify high conservation value free-flowing rivers and streams are vital for engendering climate resilience, adaptation, and mitigation,<sup>11,12,13</sup> and these studies should undergird administrative and agency climate policy. The U.S. Forest Service Climate Risk Viewer underscores how vulnerable Forest Service-managed watersheds are to climate stressors.<sup>14</sup> Adaptation Partners climate

vulnerability studies span the western United States and predict that decreasing snowpack and declining summer flows will alter the temperature, timing, and availability of water, affecting instream fishery flows and the abundance, distribution, and vigor of cold-water fish species.<sup>15,16</sup> The Rocky Mountain Research Station's Climate Shield Cold-Water Refuge Streams for Native Trout identifies future climate refuge riparian habitat on public lands in the Pacific Northwest (Washington, Oregon, Idaho, and western Montana) critical for native cold-water fish species.<sup>17,18</sup> The Adaptation Workbook represents the best distillation of these studies, and other U.S. Forest Service-endorsed research, to provide menus of climate adaptation strategies and approaches for managers applicable at watershed scales.<sup>19</sup> Studies from the Free-flowing Rivers Lab at Northern Arizona University (see <https://denielleperry.com/research/>) identify gaps in protection through a resilience lens to inform the expansion of integrated riverine ecosystem conservation across ecoregions,<sup>20</sup> prioritize dam sites for removal in 10 western states where federal Wild and Scenic Rivers policy already exists to expand those conservation values,<sup>21</sup> and lay out a strategic approach that integrates social-ecological resilience with climate change to facilitate meeting the America the Beautiful Freshwater Challenge inland water targets using a novel resilience-conservation matrix.<sup>22</sup> These strategies and approaches provide additional specificity to implement broad administrative and agency climate policy and include maintaining and restoring river channel form and function, forested wetlands and lowland areas, floodplain connectivity, vegetative cover in riparian areas, and unique refugia habitats – activities that all recognize the important nexus between free-flowing rivers, forest health, and fish and wildlife persistence.

## Protection Gaps Block Climate Goals

### **Realizing the Intent of the Wild and Scenic Rivers System**

Designated and eligible (including those also found suitable) Wild and Scenic Rivers have been awarded the best-available legislative and administrative protections, respectively, to safeguard their free-flowing character, water quality, and unique values. While Wild and Scenic protections can serve as an effective climate resilience mechanism,<sup>23,24</sup> when considered together, designated rivers (13,467 miles)<sup>25</sup> and eligible rivers (78,170 miles)<sup>26</sup> represent less than 3% of the more than 3.5 million river miles within the United States.

Wild and Scenic eligibility (also including suitable rivers) is often minimized as a precursor to formal designation by Congress. Of the total 91,637 miles of designated and eligible rivers, most (85%) are eligible, rather than congressionally designated. Thus, protection in this category is, in and of itself, a valuable and essential tool for durable environmental conservation and recreational opportunities when viewed through a climate lens. However, longstanding Bureau of Land Management and more recent U.S. Forest Service policy interpretations are resulting in reductions in eligible rivers.

Current policy and internal guidance prescribe wholesale suitability studies as part of land management planning processes to release protections on significant numbers of eligible rivers, in opposition to science and administrative climate direction. An internal U.S. Forest Service memo, for example, promotes releasing eligible rivers as a sanctioned national strategy.<sup>27</sup> The memo asserts that “Interim protection measures for eligible rivers may be overly restrictive and could reduce management ability to respond to climate-change threats,”<sup>28</sup> when, in fact, climate science and climate policy dictate the opposite.

These policies and practices are shrinking the number of eligible rivers in an already small protected river system. Gaps continue to exist between climate policy and science, and their implementation in

multiple-use Federal agency policies, internal guidance, practices, and attitudes as they relate to eligible Wild and Scenic Rivers.

### **Maintaining High-Functioning Rivers and Streams Under the Watershed Condition Framework**

The stated watershed condition policy goal of the U.S. Forest Service is “to protect National Forest System watersheds by implementing practices designed to maintain or improve watershed condition, which is the foundation for sustaining ecosystems and the production of renewable natural resources, values, and benefits.”<sup>29</sup> The Watershed Condition Framework was developed to create a process for maintaining and improving the health of watersheds on national forests and grasslands. Its objective is to guide the management of watersheds to protect the condition of high-functioning streams and improve the condition of streams needing restoration through implementation of integrated activities within priority watersheds, validation and monitoring of watershed condition class changes, and aggregation of program performance data for national reporting.<sup>30</sup> In regions with adequate capacity and support, the Watershed Condition Framework has enabled the U.S. Forest Service to understand the conditions of its watersheds and invest agency and partner resources more strategically in projects that enhance the conditions of priority watersheds.

Unfortunately, there remains a gap between U.S. Forest Service watershed condition goals and objectives and the implementation of policy and guidance under the Watershed Condition Framework to achieve desired conditions. In practice, the Watershed Condition Framework has been used largely to identify the most at-risk and degraded watersheds for the purposes of restoration, when it has much more expansive application and potential to proactively protect the condition of climate-critical watersheds. The primary benefit of the Watershed Condition Framework is that it provides an agency-wide, consistent framework for conducting watershed condition assessments when implemented as intended through desired conditions and plan components that broadly preserve ecological integrity for watersheds.

## **Policy Changes Needed to Reach Climate Goals**

Currently, no robust single system on public lands exists to ensure river and watershed resilience in the face of climate change, but there are opportunities to increase protections consistent with administrative and agency policy and guidance. Swift executive action is needed to direct river management agencies to increase protection of high-functioning and free-flowing rivers. We propose an executive order, or other directive, that includes the following elements:

1. **Statement on Wild and Scenic eligible rivers as a valued system of administratively protected rivers.** Across our public lands, these administratively protected rivers undisputedly serve essential conservation and climate resilience purposes of national importance, but agency actions often fail to recognize their value to the nation. We recommend executive action to clearly recognize rivers deemed Wild and Scenic eligible (including those also found suitable) as a vital system of administratively protected rivers, rather than merely rivers awaiting release or congressional designation.
2. **Directive to consider climate resilience, adaptation, and mitigation in eligibility determinations.** Even in contemporary analyses, climate is ignored or dismissed as a key factor in protecting free-flowing rivers as Wild and Scenic eligible. Agencies should include climate

refugia, critical habitat connectivity, and natural infrastructure among the Outstanding Remarkable Values they expressly identify and protect for eligible rivers, rather than trying to shoehorn them into existing values, like Fish. Overall, agencies should seek the protection of a sufficient number of rivers across distinct ecoregions needed for climate resilience and adaptation, rather than de minimis numbers of the most exceptional rivers. This expansion of protections will empower managing agencies to significantly advance the protection of critical habitats and ecosystems, bolster climate resiliency, mitigate against climate change impacts on public lands, and better allocate scarce management dollars and personnel capacity.

3. **Directive to end the practice of systematically releasing eligible rivers from protection using suitability determinations.** For decades, this practice has drastically reduced river protections on Bureau of Land Management lands and has recently resulted in similar extreme reductions of river protections on U.S. Forest Service lands. While agency-led suitability analyses may be acceptable for individual rivers in response to external development or protection proposals, systematic suitability determinations undertaken during land management planning or made otherwise in batches run counter to climate-informed conservation needs. Current release practices directly undercut the Administration's goal of protecting more – not less – of the nation's lands and waters.
4. **Directive to require that whenever eligibility assessments are conducted, streams previously released through unsuitability determinations are reconsidered for eligibility status.** Past release should not be permanent or influence future eligibility findings. Decisions that have found rivers to be not suitable have been made based on political, agency priority, and social snapshots that become irrelevant as those factors change over time. Many findings of non-suitability are decades old, predate modern climate science, and do not appropriately recognize the current ecosystem and social values of these rivers. Protecting a system of free-flowing rivers for climate benefits demands that agencies revisit, reassess, and reverse findings of non-suitability that omit consideration of climate change.
5. **Directive to promptly restore the eligibility of rivers previously released across our public lands, and reconsider eligibility for climate values.** Without a directive to revisit eligibility protections in the near term, rivers with valuable climate benefits will remain unprotected for decades due to the slow and unpredictable pace of land management plan recurrence cycles. We recommend that previously eligible streams that were released through systematic unsuitability analyses be restored as eligible through plan amendment processes that retroactively waive unsuitability findings, followed by or paired with a mandate to agency planning units to consider adding additional streams for their climate values through a new analysis. Much as the old growth executive actions recognized the urgency of protecting terrestrial climate benefits on U.S. Forest Service lands, we ask that similar urgency be applied to our remaining free-flowing rivers.
6. **Directive to administratively protect intact watersheds that provide climate resilience, refugia, biodiversity strongholds, and clean drinking water on National Forest lands by directing the U.S. Forest Service to maintain the condition of high-functioning watersheds identified under its Watershed Condition Framework.** The rivers and streams identified in the Watershed Condition Framework as high-functioning, within the highest classification, provide the backbone of our nation's strategic freshwater infrastructure. There are roughly 200,000 miles of rivers outside of congressionally and administratively withdrawn areas that, when protected,

would continue to provide freshwater benefits. National Forests should track and report progress toward meeting the goals of maintaining conditions under the Watershed Condition Framework.

These requested changes are consistent with the goals and objectives of federal law, rules, and regulations including the 2012 Forest Planning Rule. Agency directives, however, would need to be revised to remove the current direction that allows for the systematic release of eligible streams from protection.

While we acknowledge that other policy tools could create a system of administratively protected rivers distinct from the Wild and Scenic system, we believe bolstering the existing Wild and Scenic River system and broadening application of the Watershed Condition Framework are the most efficient and expedient ways to ensure there exists a robust national network of high-functioning, free-flowing rivers in response to climate change.

## Conclusion

Administrative protection of high-functioning and free-flowing rivers is not merely a matter of environmental stewardship; it is a critical component of our national strategy to combat the climate crisis. As the Administration continues to advance climate resilience through comprehensive policy adaptation, it is imperative that we elevate the status of our nation's rivers within this framework. The current gaps in river protection hinder progress toward achieving the Administration's goal of safeguarding 30 percent of our inland waters by 2030.

By embracing the proposed policy changes including broader application of the Watershed Condition Framework, expansion of Wild and Scenic eligible rivers, and integration of climate resilience, mitigation, and adaptation into eligibility determinations, we can ensure that our rivers contribute to a robust, integrated national climate change strategy. Closing the gaps we have identified will help ensure a future where our rivers, watersheds, ecosystems, and communities are resilient in the face of climate change.

Prepared by:

Kevin Colburn, American Whitewater, [kevin@americanwhitewater.org](mailto:kevin@americanwhitewater.org)

Nick Kunath, Idaho Rivers United, [nkunath@idahorivers.org](mailto:nkunath@idahorivers.org)

Lisa Ronald, American Rivers, [lronald@americanrivers.org](mailto:lronald@americanrivers.org)

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<sup>1</sup> U. S. Council On Environmental Quality, [The America the Beautiful Freshwater Challenge: A Partnership to Conserve and Restore America's Rivers, Lakes, Streams, and Wetlands](https://www.whitehouse.gov/wp-content/uploads/2024/04/America-the-Beautiful-Freshwater-Challenge.pdf). United States, April 2024.

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid., Sec. 216(a)(i).

<sup>5</sup> Vilsack, Thomas J. Secretarial Memorandum 1077-004: [Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands](https://www.usda.gov/directives/sm-1077-004), Department of Agriculture, June 23, 2022. Sec. 1.a. <https://www.usda.gov/directives/sm-1077-004>

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