Regional Forester
U.S. Forest Service
1220 SW 3rd Avenue
Portland, OR 97204

February 2, 2024

Re: Comments on the Forest Service's notice of intent to prepare an environmental impact statement for an amendment to the Northwest Forest Plan

Dear Regional Forester,

Thank you for the opportunity to provide comments on the United States Forest Service's (USFS or Forest Service) amendments to the 1994 Northwest Forest Plan (NWFP) by the Pacific Northwest and Pacific Southwest Regions.

We ask that the USFS use this opportunity to continue to support and prioritize watershed health as a primary resilience strategy as a part of the NWFP. The only way the Forest Service can ensure the long-term resilience of USFS lands in the face of climate change is by adopting strategies that explicitly maintaining and restore the freshwater resources on these National Forests. We recommend the Agency:

1. **Prioritizes watershed health as a primary climate resilience strategy.**
2. **Supports maintaining and improving watershed health using the Aquatic Conservation Strategy and the Watershed Condition Framework.**
3. **Integrates watershed health strategies into wildfire preparedness.**

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

Healthy forested watersheds provide multiple benefits - including bolstering resilience against drought, fire, and floods - for people and the environment. Healthy forested watersheds provide source water for people, wildlife, and agriculture. They serve as natural reservoirs, enhancing drought resilience through water storage and groundwater recharge, which can sustain flows later into the summer. Additionally, well-managed watersheds and the ecological systems that encompass them improve water quality, lower water treatment costs, store carbon[1], and benefit wildlife habitat and fisheries[2].

[1] Montane Meadows: A Soil Carbon Sink or Source? Ecosystems Nov. 2020

[2] Ten Strategies for Climate Resilience in the Colorado River Basin. Martin and McCoy, et. al. 2021, page 22.

Healthy watersheds have also been shown to bolster natural defenses including mitigating the impacts of wildfire[3] and providing flood control[4].

Forests in the United States, covering roughly 651 million acres, also supply abundant clean drinking water for some 180 million people, more than half of all Americans and 40% of all municipalities.[5] Healthy forests perform many of the functions of traditional water treatment facilities and water infrastructure. They store water, filter pollutants and transport clean water to downstream communities, but do it naturally and essentially for free. In addition to providing these water delivery and filtration services, riparian forests are also considered to be among the most ecologically important.

U.S. National Forests alone provide clean drinking water to over 66 million people in 3,400 communities in 33 states, National Forest system could be considered the largest and most important water provider in the nation. The U.S. Forest Service values the water that flows off of our National Forests alone at over $7.2 billion annually.

Watersheds on National Forests historically have been impaired as a result of beaver trapping, historical land uses such as mining, logging and intensive livestock grazing, and development. Freshwater resources are being further impaired by climate change and the prolonged drought. Rising temperatures contribute to changes in timing of water availability. The size, frequency, and severity of wildfires have also increased due to warmer temperatures and drought in the West, placing our water supplies and infrastructure at risk. However, the USFS can ensure more resilient lands and waters by protecting intact and healthy watersheds and restoring those that are degraded. Forests across the country are already working to increase the pace and scale of watershed restoration, including the restoration of riverscapes and wet meadows.

Recommendations:

1. ***Prioritize Watershed Health in the Amendment Consistent with Existing Authorities, Statutes and Executive Orders***

Executive Order 14072, Strengthening the Nation's Forests, Communities and Local Economies, recognizes the importance of healthy forests and watersheds for communities and the environment. The preamble of the EO cites early authorities, such as the Organic Act of 1897, and claims these authorities reflected "a focus on conservation and sustainability" that "shifted the focus of forest management towards:

3 Smokey the Beaver: Beaver dammed riparian corridors stay green during wildfire throughout the western United States.

4 https://www.nature.org/content/dam/tnc/nature/en/documents/Beyond_The_Source_Full_Report_FinalV4.pdf

5 Hydrologic effects of a changing forest landscape, National Research Council Water Science and Technology Board, National Academy Press, 2008.

(1) improving and protecting forests; (2) securing favorable conditions for water flows (i.e., protecting watersheds); and (3) furnishing a continual supply of timber."

The EO directs federal agencies to continue engaging in policy to protect and restore old growth forests, stop international deforestation, and deploy nature-based solutions to enhance resilience. Specifically, Section 4 of the EO, *Deploying Nature-Based Solutions to Tackle Climate Change and Enhance Resilience,* identifies the importance of nature- based solutions, "just as forest conservation, restoration, and adaptation generate broad benefits related to climate change and other areas, other nature-based solutions can advance multiple benefits. These solutions include actions that protect coasts and critical marine ecosystems, reduce flooding, moderate extreme heat, replenish groundwater sources, capture and store carbon dioxide, conserve biodiversity, and improve the productivity of agricultural and forest lands to produce food and fiber."

Nature-based solutions can provide many natural hazard risk-reduction services, often referred to as natural defenses, to reduce risks to lives, property, and communities overall. Protected and restored wetlands and riverscapes in forested headwaters can provide important natural defenses and other public benefits such as improved water quality, peak flow attenuation, aquifer recharge, and flood control[6], help sequester carbon[7], mitigate the impacts of wildfire[8] and protect essential drinking water sources and essential water infrastructure such as reservoirs. Nature-based solutions that protect restore fundamental ecological processes are the most durable and provide the greatest value and diversity of benefits.[9]

National Forests contain 400,000 miles of streams, lakes and many aquifer systems that together serve as the source of drinking water for more residents of the United States than any other source, alone providing 18 percent of the Nation's supply of drinking water and over half the water in the West[10]. In 2012 the U.S. Forest Service updated guidance on how all National Forest lands should be managed to preserve and restore watershed health under the 2012 Planning Rule (Planning Rule). The USFS should include recommendations in the proposed rulemaking that builds on the Planning Rule to operationalize the requirements to maintain and restore watersheds as a primary resilience tool.

The Planning Rule includes a strong set of requirements associated with "maintaining and restoring watersheds and aquatic ecosystems, water resources, and riparian areas in the plan area".[12] The agency is now required to "maintain or restore the structure, function, composition, and connectivity of aquatic ecosystems and watersheds in the plan area, taking into account

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6 https://www.nature.org/content/dam/tnc/nature/en/documents/Beyond_The_Source_Full_Report_FinalV4.pdf
7 Montane Meadows: A Soil Carbon Sink or Source? Ecosystems Nov. 2020
8 Smokey the Beaver: Beaver dammed riparian corridors stay green during wildfire throughout the western United States. Fairfax and Whittle, 2020.
9 Standards for Ecologically Successful River Restoration. Palmer et. al, 2005.
10 https://www.fs.usda.gov/managing-land/national-forests-grasslands/water-facts

potential stressors…" and seek ways "to maintain and restore the ecological integrity of riparian areas and prevents practices that have serious or adverse impacts."[13] Specifically, the Forest Service is required to identify "watershed(s) that are [or should be] a priority for maintenance or restoration[14]," help maintain or protect soils, water quality, and water resources[15], protect riparian areas[16], and to "ensure implementation of [best management] practices" to protect water quality[17]. Given their high value, the Forest Service could manage source water areas as a special "designated area" under the Planning Rule, "[a]n area or feature identified and managed to maintain its unique special character or purpose[18]. The upshot is that National Forests are now required to identify high value areas and maintain water quality and public water supplies.

2. Continue to Maintain and Improve Watershed Health Through Use of the Aquatic Conservation Strategy and the Watershed Condition Framework

The Aquatic Conservation Strategy (ACS) has been the most successful landscape scale aquatic conservation management strategy, maintaining and enhancing watershed health even in the face of climate change and catastrophic wildfire. According to USFS analyses the ACS has been effective in achieving its objective across the plan area— to prevented further degradation of aquatic ecosystems from the impacts of forest management activities and restore and maintain fish and wildlife habitat and water quality. We recommend the Amendment retains the ACS framework and adopts more rigorous and frequently reported forest-level metrics to measure its progress.

We also recommend that the Amendment includes watershed protection and restoration metrics at the Resource Management Plan scale using the Watershed Condition Framework (WCF) consistent with the ACS. This concept is wholly consistent with and builds on existing guidance to maintain or meet desired conditions on the landscape. The Forest Service currently requires individual National Forests or management unit to identify desired conditions in the Forest's resource management plan[26] and establishes that plan direction must result in maintaining or restoring ecological integrity including for watersheds.[27]

The USFS established the WCF in 2011 to create a comparable and credible process for improving the health of watersheds on national forests and grasslands. The USFS WCF was developed in response to a 2006 Office of Management and Budget review of USFS programming that found that the agency lacked a nationally consistent approach to prioritize watersheds for improvement. To address these issues, the USFS formed the National Watershed Condition Team and tasked it with developing a nationally consistent, science-based approach to classify the condition of all National Forest System watersheds and to develop outcome-based performance measures for watershed restoration which resulted in the creation of the WCF.

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12 https://www.fs.usda.gov/detail/planningrule/faqs#18
13 Ibid.
14 36 C.F.R. § 219.7(f)(1)
15 36 C.F.R. § 219.8(a)(2)(ii), (iii), (iv)
16 36 C.F.R. § 219.8(a)(3)
17 36 C.F.R. § 219.8(a)(4)
18 36 C.F.R. § 219.19
19 Water, Climate Change and Forests. Pacific Northwest Research Station, US Forest Service. June 2010.
20 Ten Strategies for Climate Resilience in the Colorado River Basin. Martin and McCoy, et. al. 2021, page 22

The USFS WCF provides a consistent way to evaluate watershed conditions at both the national and forest levels. The USFS WCF consists of reconnaissance-level assessments by individual national forests, implementation of integrated improvement activities within priority watersheds, validation and monitoring of watershed condition class changes, and aggregation of program performance data for national reporting. The primary benefit of the USFS WCF is that it provides an agency-wide, consistent framework for conducting watershed condition assessments that should be used to guide management of watersheds to maintain the condition of high-functioning streams and improve the condition of streams needing restoration.

Overall, when implemented as intended, the USFS WCF has provided a consistent process for evaluating conditions and informing strategies to improve land and water health, which in regions with adequate capacity and support has enabled the USFS to invest agency and partner resources more strategically in projects that enhance the conditions of priority watersheds and understand the conditions of its watersheds nationwide.

3. Integrate Watershed Health Strategies into Wildfire Preparedness

Rivers are often forgotten in land management practices for wildfire. Integrating river smart wildfire management into both policy and practice is paramount to ensuring rivers, watersheds and forests and their dependent communities are resilient to the impacts of wildfire. In the West, supporting healthy watersheds must include wildfire resilience, which will look different in every ecosystem. There are many options, including restoring floodplain functionality/connectivity, thinning forest canopies to lessen fire intensity, bringing beneficial fire back into forests and riparian areas, or planting native plants. One of the primary solutions the Forest Service should prioritize is significantly reducing fuel loads by thinning forests on unreserved lands. Doing so will reduce carbon emissions from uncharacteristic wildfires, while maintaining healthier watersheds and wildlife habitats.

Rivers that are connected to their adjacent floodplains and from their headwaters to their river mouth have intact natural processes that move and exchange water, sediment, organic material, and life through the landscape. These are characteristics of an adaptable and resilient watershed; and adaptable, resilient watersheds (and communities) are the definitive means of maintaining healthy rivers as wildfires expand in extent, intensity, frequency, and number across the West.

Building fire resilience across entire landscapes requires considering and protecting the rivers folded into them. This requires public and cross-institutional acceptance of the role fire can play in making the landscape more resilient to fire and other stresses.
Improving fire resilience requires an integrated approach of river and watershed restoration and ecological fuels management. Ensuring our river corridors, meadows and riparian areas are healthy and robust provides a key source of resilience. Periodic and strategic prescribed fire that aligns with the fire regime best suited to the vegetation of an area given current conditions and

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25 Beaver Dams Help Wildfire-Ravaged Ecosystems Recover Long after Flames Subside. Isobel Whitcomb. February 2022.

26 The US Forest Service establishes the concept of desired conditions as "a description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed… "36 CFR 219.7(e)(1)(i).

27 36 CFR 219.8(a)(1).

climate change projections also can be critical for building fire resilience in the watershed. However, establishing conditions where prescribed fire is safe and effective can require pairing prescribed fire with other types of ecologically-based fuel reduction, including hand and mechanical thinning. In addition to more traditional ecological fuel reduction, watershed restoration and improved connectivity can also increase overall landscape resilience to wildfire. Land managers should focus on restoring degraded meadows, wetlands and other riparian areas that help buffer against potential wildfire impacts while providing landscape connectivity, as well as improved water quality, resilience to drought, enhanced wildlife habitat, and carbon sequestration, among other benefits.

Recognizing that wildfires will continue to impact communities, property, water supplies and the natural environment, there are important steps to be taken – in terms of on the ground projects and policy solutions – to build fire resilience for our rivers and watersheds across the West. When developing on-the-ground management strategies and policy actions to support wildfire risk reduction, it is essential that rivers and their surrounding lands are considered in the equation. Below are recommendations to ensure rivers and watershed health are protected and thoughtfully considered in wildfire management.

Specific Resilience Recommendations:

- *Earmark federal resources to repair wildfire damage to infrastructure, drinking water quality, and watershed restoration.* One of the greatest post- wildfire challenges communities face is impacts to infrastructure, particularly drinking water infrastructure. It is essential that funding is earmarked and available to local communities to support necessary repairs and improvements to infrastructure after a fire. Post-fire recovery funding must be available to support interim water supply needs as well as larger drinking water infrastructure improvements. Funding should support communities and Tribes impacted by wildfires and provide resources to mitigate sedimentation and erosion challenges, address hazards, and support plans for recovery.

- *Direct New Federal Funding to Improve Resiliency of Forest and Source Watersheds.* To further advance ecologically smart fuels management and integrate watershed health and restoration and forest management efforts, funding and support for science, research and demonstration projects is needed. We need to improve the understanding of where and how forest management activities, including stream and watershed restoration, can enhance the resilience of watersheds while maximizing co-benefits and reduce the risk of high-severity wildfires. The IIJA and the IRA have unlocked an unprecedented amount of federal funding for wildfire mitigation and resilience. The USFS should direct this funding towards ongoing monitoring, data collection, and research is essential. These funds can and should be used to support research and demonstration projects around the wildfire mitigation and adaptation benefits of nature-based restoration such as meadow, beaver, and floodplain restoration in addition to traditional ecological fuels management research.

- *Prioritize and Direct Resources for Agency Staff Capacity and Planning for Wildfire Resilience and Watershed Health Projects.* Many of the existing funding programs that support wildfire resilience and watershed health emphasize on- the-ground results, making it easier to fund implementation, but it is more challenging to fund planning. It is critical to prioritize internal funds to also include planning for future projects on federal land. These funds would help to identify additional projects and leverage implementation-focused funds from other sources like

state and private funding. Additionally, more staff are needed to support both project planning and implementation. Federal agencies should prioritize increasing staff capacity – including hydrologists and biologists – to support these efforts.

Project-level Recommendations:

- *Plan and implement integrated landscape-scale forest and watershed restoration.* Practitioners should work with National Forests, Parks and other public land agencies to support planning for river smart fire management at the watershed and landscape scale, inclusive of both fuel reduction and river and wetland restoration activities. This includes prioritizing critical or sensitive river reaches for restoration and/or fuels management and developing pilot partnerships and funding mechanisms to support these projects. It also includes incorporating river and wetland restoration into large-scale forest health environmental analysis processes. Additionally, state and federal agencies should develop insurance strategies that support integrated management across ownership types.
- *Restore, manage, and protect river corridors for wildfire resilience.* To help understand the best practices for wildfire resilience, implement pilot projects to test and conduct research on different strategies and tactics for wildfire risk reduction and recovery that benefit rivers. Wildfire resilience that incorporates watershed health includes the restoration of degraded meadows and reconnecting river floodplains to elevate groundwater levels and recover wet meadow and native broad-leaved vegetation. To further support healthy landscapes, this includes the use of prescribed burns and managing riparian forest structure and composition to mimic natural processes, including natural fire return interval, to reduce the detrimental impacts of high severity fire to waterways. The use of prescribed fire and cultural burning should be seen as a tool to increase forest resiliency, ecological function and reduce fire risk, and should incorporate traditional ecological knowledge of and input and involvement from indigenous Tribes. Then, where experiments demonstrate effectiveness by vegetation type and topography, such as along riparian corridors with greater fuel and ladder fuel densities than surrounding uplands, implement larger scale projects to reduce fuel loads using thinning and/or controlled burns, as locally appropriate.

- *Create defensible space around homes, communities, property, and rivers by restoring healthy riparian vegetation and floodplain connectivity*. To help protect important community infrastructure, include requirements for stronger wildfire risk assessments and planning in the WUI, especially near homes and businesses near rivers. Agencies and practitioners should prioritize and focus fuel reduction projects near communities and along river corridors where the risks are highest and to establish river corridors that have age and species diversity and natural rather than elevated forest density. Post-fire logging should focus on public safety, near roads, infrastructure and developed areas and not on large, landscape scale logging that will tax ecosystem recovery and degrade watersheds. The creation of new roads, especially near streams and rivers, should be avoided.

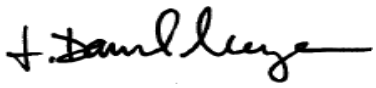
- *Improve planning, coordination, and education with land managers and first responders*. Ensure fire fighters are educated and have the information on hand to avoid unnecessary impacts to rivers and meadows during firefighting operations.

- *Develop Guidelines for Riparian Fuels Management.* One of the key goals of fuel treatments

should be to restore ecological function, helping to make watersheds more resilient to all disturbance events, including fires. Guidelines and best practices are needed to help forest managers determine where ecological function has been compromised and to assign appropriate riparian fuels management that can restore ecological function, helping to make watersheds more resilient to all disturbance events, including fires. Specific guidance on riparian fuels management will help protect the river corridor and ensure fuels management – including prescribed burns and thinning – occur in a way that supports the natural ecosystem function. Public land managers should work with academics to develop consistent and forward-thinking guidelines on when, where, and the type of riparian fuels management needed for different riparian ecosystem types.

Thank you for the opportunity to provide input on how the Forest Service should integrate freshwater and climate adaptation strategies into your upcoming amendment to the Northwest Forest Plan. We appreciate the work the Forest Service is already doing to conserve and restore critical freshwater resources across the Plan area and the United States.

Sincerely,



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