

FACT SHEET

## NO LONGER WORKING AGAINST THE STREAM

# FIVE POLICY PATHWAYS TO RESTORING HEALTHY RIVERSCAPES IN THE WEST

Healthy riverscapes are critical natural infrastructure; they filter pollution from our water, support fish and other wildlife, form natural firebreaks, and buffer communities from the impacts of flooding and drought. These benefits are especially beneficial in the semiarid and arid West where communities and wildlife are already confronting water insecurity, wildfires, and persistent drought. Unfortunately, most riverscapes in the West are a tiny remnant of their former footprints and no longer provide meaningful habitat or regulate the filtering and flow of water as we need them to do.

This fact sheet outlines five strategies to restore riverscapes, which will reestablish the nature-based services that have been lost over time and increase resilience to drought and climate change.

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A healthy riverscape in Colorado.

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## DEFINITIONS

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**Riverscapes** are streams, rivers, or wet meadows and their associated floodplains, wetlands, and riparian vegetation.

A **healthy riverscape** is defined by three principles. A healthy riverscape needs space; is physically complex and often cluttered with vegetation and wood; and slows the flow of water, allowing it to sink and spread.

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### 1. RESTORE RIVERSCAPES ON PUBLIC LANDS

Public lands are particularly well positioned for rebuilding riverscape health because they are relatively free of development, roads, and other infrastructure compared with private lands or urban settings.<sup>1</sup> In addition, because public lands are protected and managed for public benefit, they offer greater opportunity for lasting and durable riverscape restoration. In the West, more than half of all acreage is public land managed by states or the federal government.<sup>2</sup>

The Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service as well as some state land management agencies have begun restoring the riverscapes under their purview. Additional state and federal investment in riverscape health can increase the pace and scale at which land managers are doing this work, to meet the urgency of this moment and the scope of degradation. Public lands already provide clean drinking water, wildlife habitat, and recreation—as well as natural resources that support a variety of uses, such as livestock grazing and timber harvesting. By strategically investing to revitalize our riverscapes, public lands can also help us adapt to and mitigate climate change.

### 2. PARTNER WITH PRIVATE LANDOWNERS TO RESTORE RIVERSCAPES

Many riverscapes are on private lands, which makes the voluntary protection, maintenance, and restoration of riverscapes on these lands another critical part of the equation. The U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) has long worked with landowners to increase the health of their water resources. Through relationships, trusted partnerships, and on-the-ground technical and funding support, NRCS has demonstrated the value of riverscape restoration.<sup>3</sup> NRCS funding can also be allocated to restore public lands for the benefit of grazing lease permittees and downstream producers. Now, with funding from the Inflation Reduction Act and the Investment in Infrastructure and Jobs Act, NRCS has increased its financial investment in programs to support landowners interested in voluntarily restoring their riverscapes.<sup>4</sup> Given the high demand and support for these voluntary conservation programs from private landowners, NRCS programs deserve sustained investment to finance the acceleration and scaling up of riverscape restoration as a nature-based solution to climate change.<sup>5</sup>

### 3. UTILIZE STATE WILDLIFE ACTION PLANS AND OTHER STATE AND MUNICIPAL MANAGEMENT PLANS TO SUPPORT RIVERSCAPE RESTORATION

States and municipalities have a bevy of tools they can use to integrate riverscape restoration into wildlife management priorities, risk-reduction plans, and drinking water delivery programs. Multiple pathways exist for states to prioritize riverscape restoration work including state wildlife action plans (SWAP), state-based beaver plans, and Federal Emergency Management Agency (FEMA) hazard mitigation plans.

Every 10 years, all states are required to update their SWAP, which guides fish and wildlife conservation; the next updates are due in 2025. A SWAP also makes a state eligible to participate in the State Wildlife Grants program, which has distributed more than \$1 billion since 2000.<sup>6</sup> Beaver restoration can be included in SWAPs because the wetlands and ponds that beavers create provide essential habitat for many species of greatest conservation need.

Beaver management plans are another tool that state wildlife agencies can use to invest in the animals' natural ability to improve riverscape and ecosystem health. To provide the most benefit, beaver management plans must include riverscape restoration work to improve their habitat, population management programs that can support the restoration of beaver populations in priority areas, strategies to manage potential infrastructure and other conflicts, and beaver translocation protocols to support relocating beavers to unoccupied habitat where their presence would be valuable. Utah and Oregon have completed beaver plans, and a California plan is under development.<sup>7</sup>

Finally, state and local governments can prioritize riverscape protection and restoration as a flood risk mitigation strategy in the hazard mitigation plans required to secure grants from FEMA.

### 4. INVEST IN INDIGENOUS-LED BEAVER AND RIVERSCAPE RESTORATION PROGRAMS

Indigenous communities have long recognized the value of maintaining beavers in the landscape. They deeply understand what is possible when beavers are returned to freshwater ecosystems, particularly how this benefits salmon and other wildlife. Federal agencies and nongovernmental organizations can learn from Indigenous Knowledge and partner with tribes and their agency staff to deploy resilient and time-tested approaches to protect and



restore our shared natural resources; support new federal investments in tribal climate and wildlife programs; and work together to remove technical, funding, and capacity barriers to doing this work on tribally managed lands.

## 5. LAUNCH A NATIONAL HEALTHY RIVERSCAPES INITIATIVE

To accomplish restoration on both public and private lands, federal agencies should work with states and tribal governments to establish and implement a National Healthy Riverscapes Initiative to 1) focus capacity and resources; 2) prioritize the watersheds where restoration work will have the most impact; and 3) create efficiencies by aligning restoration efforts at scale to improve riverscape health.

This initiative should include all land-managing agencies within the U.S. Department of Interior, Department of Agriculture, and Department of Defense. It should also

include federal programs that support voluntary freshwater restoration on private and tribal lands managed by the NRCS, National Oceanic and Atmospheric Administration, Environmental Protection Agency, and FEMA. To achieve widespread and durable improvements in riverscape health, the initiative must also include funding for state and tribal restoration and habitat programs.

To address the severity and scale of climate change and biodiversity loss, it is essential that federal land managers, tribes, states, and private landowners work together—sometimes called the “all hands, all lands” approach—to restore healthy riverscapes. Federal land managers and other federal program managers should prioritize restoration capacity and investment and partner with private landowners, states, and tribes to accelerate restoration activities for degraded riverscapes. In doing so, we can build resilience for our lands, rivers, wildlife, and communities—and our collective future.

## LEARNING FROM INDIGENOUS PEOPLES

Across the West, tribal nations are leading the way in partnering with beavers to restore riverscapes on their ancestral lands. For example, the Tulalip Beaver Project in Washington’s upper Snohomish Watershed relocates “nuisance” beavers from suburban areas to hydrologically impaired tributaries to improve fish-rearing habitat and retain more freshwater in the watershed for longer periods.<sup>9</sup> Also in Washington, the Cowlitz Indian Tribe is partnering with the U.S. Forest Service and Wildlife Services’ Nonlethal Initiative, relocating beavers to headwater streams in the Gifford Pinchot National Forest to improve water quality and reinstate Indigenous land management practices.<sup>9</sup> In Montana, the Blackfeet Nation’s *Ksik Stakii Beaver Mimicry Guidebook* focuses on mimicking beaver habitat to restore streams and naturally store water.<sup>10</sup> In California, the Yurok Tribe has built beaver mimicry structures to encourage beavers to return and build and maintain wetland habitat that slows the spread of wildfires.<sup>11</sup> Also in California, the California Indian Environmental Alliance is advocating for policies that support beaver restoration to benefit salmon conservation and contribute to holistic land restoration and water sovereignty.<sup>12</sup>



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The Tulalip Beaver Project moves a “nuisance” beaver to a relocation site that will benefit from its presence.





© Methow Beaver Project

The Methow Beaver Project, Washington Department of Public Works, Okanogan County Public Works, and Beaver Solutions partner to install a culvert flow management device designed to prevent beavers from clogging a stream culvert.

## INTERESTED IN LEARNING MORE ABOUT RIVERSCAPE RESTORATION?

### TAKE A LOOK AT OUR FULL SUITE OF *NO LONGER WORKING AGAINST THE STREAM* FACT SHEETS:

*[An Overview of Riverscape Restoration—How We Got Here and Where We Need to Go](#)*

*[The Benefits of Healthy Riverscapes for Climate Resilience and Ecosystems in the West](#)*

*[How the Bureau of Land Management Can Restore Healthy Riverscapes in the West](#)*

## ENDNOTES

- 1 Peter Skidmore and Joseph Wheaton, “Riverscapes as Natural Infrastructure: Meeting Challenges of Climate Adaptation and Ecosystem Restoration,” *Anthropocene* 38 (June 2022), <https://doi.org/10.1016/j.ancene.2022.100334>.
- 2 Headwaters Economics, Economic Profile System, accessed April 5, 2024, <https://headwaterseconomics.org/apps/economic-profile-system/>. Searched AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, and WY and viewed the Land Use Report.
- 3 Working Lands for Wildlife, “Thinking Like Water: Working Lands for Wildlife Leads Low-Tech Mesic Restoration Efforts in Sagebrush Country,” August 26, 2021, <https://www.wlwf.org/thinking-like-water-working-lands-for-wildlife-leads-low-tech-mesic-restoration-efforts-in-sagebrush-country/>; U.S. Department of Agriculture, “Mesic Habitat Planning Guide,” April 2017, [https://www.nrcs.usda.gov/sites/default/files/2022-12/Mesic\\_Habitat\\_Conservation\\_Planning\\_Guide1.pdf](https://www.nrcs.usda.gov/sites/default/files/2022-12/Mesic_Habitat_Conservation_Planning_Guide1.pdf).
- 4 U.S. Department of Agriculture, Natural Resources Conservation Service, “Additional Planning Guidance for FY24 Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities with Specified Implementations,” October 2023, [https://www.nrcs.usda.gov/sites/default/files/2023-10/NRCS\\_CLIMATE\\_AdditionalPlannerGuidance\\_Factsheet\\_24.pdf](https://www.nrcs.usda.gov/sites/default/files/2023-10/NRCS_CLIMATE_AdditionalPlannerGuidance_Factsheet_24.pdf). Low-tech, process-based restoration is covered under U.S. Department of Agriculture, Conservation Stewardship Program, “Conservation Practice 643: Restoration of Rare or Declining Natural Communities,” April 2023, [https://www.nrcs.usda.gov/sites/default/files/2023-10/E643D-Apri\\_2023-fy24-new.pdf](https://www.nrcs.usda.gov/sites/default/files/2023-10/E643D-Apri_2023-fy24-new.pdf).
- 5 Nature-based solutions use or mimic natural features or processes to improve biodiversity, strengthen resilience for disaster and hazard risk management, support climate adaptation, and store carbon to mitigate climate change. International Union for the Conservation of Nature, “Ensuring Effective Nature-Based Solutions,” July 2020, [https://iucn.org/sites/default/files/2022-02/iucn\\_issues\\_brief\\_-\\_nbs\\_standard\\_eng.pdf](https://iucn.org/sites/default/files/2022-02/iucn_issues_brief_-_nbs_standard_eng.pdf).
- 6 U.S. Fish and Wildlife Service, “State Wildlife Grants,” accessed April 10, 2024, <https://www.fws.gov/program/state-wildlife-grants>.
- 7 Utah Division of Wildlife Resources, “Utah Beaver Management Plan,” adopted January 6, 2010, revised May 2017, [https://wildlife.utah.gov/pdf/furbearer/beaver\\_plan\\_2010-2020.pdf](https://wildlife.utah.gov/pdf/furbearer/beaver_plan_2010-2020.pdf); Oregon Department of Fish and Wildlife, “ODFW’s 3-Year Action Plan for Beaver-Modified Landscapes: August 2022–2025,” June 16, 2023, [https://www.dfw.state.or.us/wildlife/living\\_with/docs/ODFW\\_3YBeaverModLandscapesActionPlan\\_Final\\_20230616.pdf](https://www.dfw.state.or.us/wildlife/living_with/docs/ODFW_3YBeaverModLandscapesActionPlan_Final_20230616.pdf).
- 8 Tulalip Tribes Natural Resources, “Beaver,” accessed on May 2, 2024, <https://nr.tulaliptribes.com/Programs/Wildlife/Beaver>.
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- 11 Sherriff, “Beaver Believers.”
- 12 Carly Nairn, “How Indigenous and Environmental Coalitions Pushed for Beaver Restoration in California’s Budget,” *Nonprofit Quarterly*, June 8, 2023, <https://nonprofitquarterly.org/how-indigenous-and-environmental-coalitions-pushed-for-beaver-restoration-in-californias-budget/>.