



USDA NORTHWEST CLIMATE HUB

Fiscal Year 2024 Accomplishments



An Introduction from USDA Northwest Climate Hub Director, Dr. Jessica Halofsky

Fiscal Year 2024 (October 2023–September 2024) was a busy and productive year for the Northwest Climate Hub. The Northwest Climate Hub team reached more than 3,100 people through presentations and partner engagements, 2,200 people through our monthly newsletter, and an additional 266,000 people through our website. Our communications team developed more than 24 new web articles on various climate change topics.

This year marked the 10-year anniversary of the USDA Climate Hubs. We celebrated this occasion through a new website, a StoryMap, and several social media “take-overs” of USDA and Forest Service sites, resulting in more than 20,000 engagements.

This year was also marked by a record-setting fire year in Oregon, and record-setting flooding caused by a glacial outburst in Juneau, Alaska. As we face these challenges, the Northwest Climate Hub remains committed to helping natural resource managers, tribes, and communities mitigate and prepare for the continued effects of climate change in the region. This report highlights some of our key accomplishments for the year, and we look forward to building on this work in the years to come.

MISSION

Our goal is to provide information and technology to guide climate-informed decision making by farmers, ranchers, forest landowners, Native American tribes, Alaska Natives, natural resource managers and technology transfer specialists to generate sustainable and productive working landscapes in the Northwest.

METHODS FOR ACCOMPLISHING OUR MISSION



Research and Science Synthesis



Tools, Technology Exchange, and Assistance



Outreach, Education, and Engagement*

*look for these symbols throughout the report to determine project type





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All Lands

Adapting Riparian Areas and Wetlands to Climate Change in the Northwest

Climate change is likely to affect riparian areas and wetlands in the Northwest through warming temperatures, altered snowpack and streamflow, and more frequent and severe extreme events. However, the services these habitats provide, such as water filtration, flood control, and wildlife habitat, will become even more crucial as the region faces the effects of climate change. The Northwest Climate Hub and partners collaborated on a climate change adaptation technical guide for riparian areas and wetlands in the Northwest. This resource is designed to support technical transfer specialists in planning for climate resilience. Products from this effort include the detailed technical guide, an abbreviated fact sheet, and a website focused on addressing the effects of climate change on Northwest riparian areas and wetlands.

Partners: Natural Resources Conservation Service, Forest Service Pacific Northwest Research Station



Highlighting Climate Adaptation Efforts in the Northwest

The Northwest Climate Hub “Adaptation in Action” web profiles highlight the work of Northwest farmers, ranchers, foresters, land managers, and scientists who are adapting to climate change on the ground. The profiles include project details, useful tools, funding sources, and lessons learned from climate adaptation projects. These profiles are designed to empower others to implement climate-informed practices in their operations. In Fiscal Year 2024, the Climate Hub released five new Adaptation in Action profiles. The new profiles center around restoring watersheds on the Mt. Baker-Snoqualmie National Forest in Washington, improving water availability for farms and fish in southern Idaho, building soil health with no-till farming in Oregon, reducing spruce beetle damage on the Chugach National Forest in Alaska, and protecting communities from erosion on the Kuskokwim River in Alaska.

Partners: Mt. Baker-Snoqualmie National Forest, Henry’s Fork Foundation, Amy Kaser, Chugach National Forest, Alaska Natural Resources Conservation Service

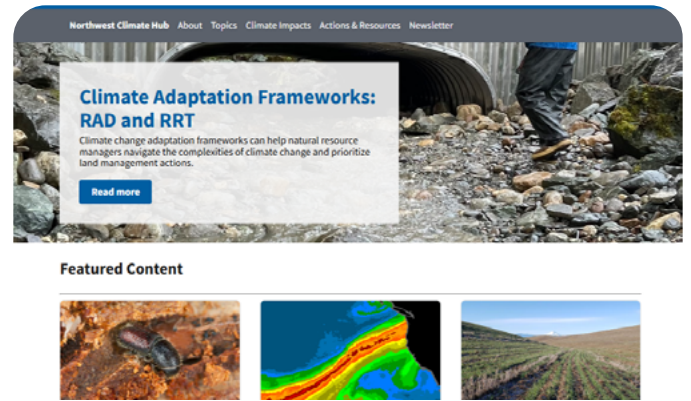




Assessing Drought in a Changing Climate

Variable precipitation patterns and rising temperatures associated with climate change can intensify droughts, reduce snowpack, and escalate heavy rainfall events. Water availability and quality across the nation can be affected by these changes, leading to increased risks and costs for various sectors, including agriculture and forestry. To address these challenges, the Northwest Climate Hub contributed to Drought Assessment in a Changing Climate. This report highlights critical research and actions to enhance understanding and management of drought in the United States. The report is designed to help guide researchers and practitioners to improve the characterization, communication, and reduction of evolving drought risks.

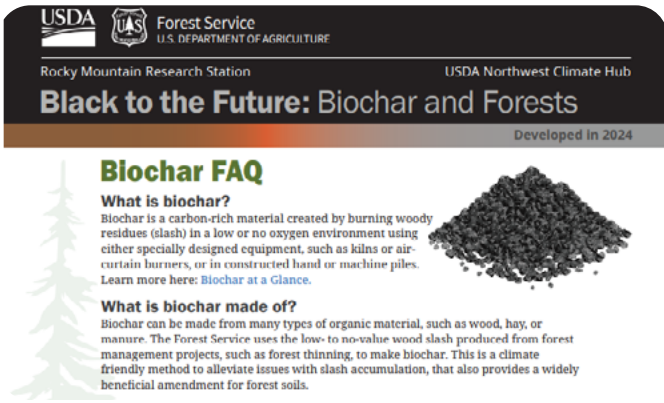
Partners: USDA Climate Hubs, NOAA – National Integrated Drought Information System



Providing Climate-Informed Web Resources for Forestry, Agriculture, and Rangelands

In FY 2024, the Northwest Climate Hub developed 21 new webpages that translate complex climate science into accessible information for forestry, agriculture, and rangeland professionals, as well as the public. These user-centered pages, informed by partner needs, cover topics including agroforestry, spruce beetle outbreaks, salmon and climate change, and rangeland wildfire. By prioritizing accessibility and engaging visuals, the Climate Hub has seen a significant increase in website views, from 126,000 views in Fiscal Year 2023 to 273,105 views in Fiscal Year 2024. These webpages empower users to make informed management decisions, and can help increase adoption of climate-resilient practices and improved resource management in the Northwest.





Communicating the Benefits of Biochar

The USDA Forest Service is reducing fuels in the forest to confront the wildfire crisis. One promising solution is making biochar from woody debris (or fuels). Biochar is a carbon-rich product that is produced by burning woody materials under controlled conditions. Biochar can be used to amend soils and improve soil health. The Northwest Climate Hub partnered with the Forest Service Rocky Mountain Research Station to develop science communication materials to help forest managers understand, create, and use biochar. In Fiscal Year 2024, this partnership resulted in the publication of factsheets on biochar and climate mitigation, making biochar with hand-built piles, using biochar for mine remediation, restoring soil with biochar, and a biochar FAQ. In addition, a social media campaign highlighted these communication tools.

Partners: Forest Service Rocky Mountain Research Station



Representing the Climate Hubs at the National Tribal and Indigenous Climate Conference

The Northwest Climate Hub joined the National Climate Hub Lead, Alaska Natural Resources Conservation Service (NRCS), and the NRCS National Tribal Liaison at the National Tribal and Indigenous Climate Conference convened by the Institute for Tribal Environmental Professionals. The conference brought 600+ in-person attendees and 200+ virtual attendees to symposia, plenary, and workshops in Anchorage, Alaska. Each day started with Knowledge Holders sharing their stories from around the country on how climate has impacted their homes and villages. Climate Hub representatives networked with other organizations, tribes, and the public from around the country showcasing the work of the Climate Hubs and how they can support a diversity of climate work.

Partners: Natural Resources Conservation Service





Climate Adaptation Frameworks: RAD and RRT

Climate adaptation frameworks can help land managers navigate the complexities of climate change and prioritize land management actions. This Northwest Climate Hub article examines two climate adaptation frameworks: Resist-Accept-Direct (RAD) and Resistance-Resilience-Transition (RRT). Developed by climate scientists and land managers, these frameworks provide a structured approach to climate adaptation decision-



Providing Climate Change News and Information through a Monthly Newsletter

Producers and natural resource managers in the Northwest are navigating a rapidly changing climate and market landscape. To support these professionals, the Northwest Climate Hub provides a monthly newsletter. This digital resource features new webpages, products, and projects from the Northwest Climate Hub; regional drought information; upcoming climate-related webinars and workshops; and climate-related funding opportunities for agricultural producers and natural resource managers. By consolidating essential information into a single, accessible source, the newsletter helps professionals make informed decisions and adapt to the evolving climate.



Leveraging Social Media to Strengthen Climate Literacy

To commemorate the 10-year anniversary of the Climate Hubs, a communications campaign was launched to engage USDA employees and clients. Through a variety of channels, including social media, StoryMaps, voice memos, and the Climate Hub website, the campaign generated considerable interest, distributed regional and national climate information and adaptation options, and directed users to the Climate Hub website for more information. As part of this campaign, the Northwest Climate Hub ran monthly focus days on the USDA and Forest Service Instagram accounts. Each Forest Service focus day reached ~50,000 users, and USDA days reached ~5,000 users. Both generated website visits. Additionally, the StoryMap collection, released in August 2024, garnered over 2,000 views in a short period. This campaign contributed to the Climate Hub website receiving ~one million more website interactions in 2024 than in 2023.

Partners: USDA, Forest Service, Pacific Northwest Research Station, Natural Resources Conservation Service



Forests

Collaborating on Postfire Research and Monitoring in Oregon

Large wildfires have impacts that transcend land management boundaries. In 2020, western Oregon experienced five megafires (>100,000 acres) that burned over 1.2 million acres, resulted in the loss of human life, and destroyed more than 5,000 homes and businesses. To address the urgent need for coordinated research and monitoring efforts, the Northwest Climate Hub facilitated a collaborative partnership involving state and federal agencies, universities, tribes, and other organizations. This collaborative aims to increase awareness of ongoing research activities and coordinate on post-fire research and monitoring efforts across Oregon. Products released in Fiscal Year 2024 include the Postfire Research and Monitoring Playbook, which is designed to streamline resource allocation and foster collaboration among entities involved in fire prevention, risk reduction, restoration, and scientific investigation.

Partners: Dozens of federal and non-federal partners. See Northwest Climate Hub website for more information.



Supporting Climate Change Vulnerability Assessments for National Forests in Alaska

Temperatures are rising more rapidly in Alaska than any other region in the U.S. Related effects include changes to wildfire patterns and forest composition, insect outbreaks, floods, and altered snowpack. To help land managers adapt, the Northwest Climate Hub contributed to climate change vulnerability assessments for Alaska's national forests. In 2024, the Climate Hub helped develop a vulnerability assessment for recreation and subsistence activities in the Chugach National Forest. This included a Climate Hub-hosted workshop that shared climate science and adaptation strategies, and allotted time for forest employees to consider adapting a specific recreation site to climate change. The Northwest Climate Hub and the Tongass National Forest have also been developing a forest-wide climate change vulnerability assessment and participating in an interdisciplinary team focused on stressors, drivers, and climate change.

Partners: Chugach National Forest, Tongass National Forest, Pacific Northwest Research Station





Supporting the Revision of the Blue Mountains Forest Plan

The Northwest Climate Hub is also supporting the revision of the Blue Mountains Land Management Plan, which encompasses the Malheur, Umatilla, and Wallowa-Whitman National Forests. The Northwest Climate Hub conducted a climate adaptation workshop to guide the plan’s team in understanding how climate change information can be integrated into management decisions for desired conditions. Participants were equipped to incorporate climate change considerations into the revised plan.

Partners: Malheur National Forest, Umatilla National Forest, Wallowa-Whitman National Forest, Forest Service Pacific Planning Services Group and Pacific Northwest Region



Supporting Climate-Informed Tribal Forest Management

The Northwest Climate Hub provides technical assistance to help integrate climate change science and adaptation strategies into tribal forest management plans. Through collaborative efforts, the Climate Hub develops tailored resources that align with each tribe’s unique needs and values. These resources may include vulnerability assessments, adaptation frameworks, decision-support tools, strategy libraries, and climate adaptation workshops. The Climate Hub is currently working with the Nez Perce Tribe, supporting the climate change adaptation capacity of their forestry and fire management program. Regular discussions with the Forestry and Fire Management Division and their team have helped to identify ways to integrate climate change into a revised forest management plan. This ongoing process is crucial for creating the most relevant and practical resources for Nez Perce forest managers and natural resources staff.

Partners: The Nez Perce Tribe, Forestry and Fire Mangement Division





Contributing to the 5th National Climate Assessment

The science of climate change is continually advancing. To keep pace, the natural resource community and the public rely on comprehensive scientific syntheses. Every four years, the U.S. National Climate Assessment provides an accessible overview of the latest climate change research. A key chapter on forests in this assessment was co-authored by the director of the Northwest Climate Hub, who also led the development of the adaptation section of the chapter. Halofsky and co-authors presented the findings of the forest chapter during a webinar as part of the U.S. Global Change Research Program’s rollout of the assessment.

Partners: U.S. Global Change Research Program, Forest Service Research and Development, U.S. Environmental Protection Agency, U.S. Geological Survey



Addressing Forest Vulnerability to Climate Change and Drought

Drought and changes in climate are risks to forests and drive compound insect, pathogenic, and wildfire disturbances. Recent drought and insect driven forest mortality events have occurred in the West. The Northwest Climate Hub partnered with Washington Department of Natural Resources to co-host a workshop to share the state of the science on vegetation response to climate change and identify key knowledge gaps to improve quantification of forest drought and climate change vulnerability. Connections were made among climate, forest, and other scientists with forest managers to improve forest management in the face of drought and climate change.

Partners: Washington State Department of Natural Resources, Washington State Department of Natural Resources, University of Washington



Rangelands

Empowering Range Employees with Climate Change Information for NEPA Analysis

The National Environmental Policy Act (NEPA) provides a crucial avenue for the Forest Service to integrate climate change considerations into its management practices. Recent guidance from the Council for Environmental Quality mandates the inclusion of climate change factors in project-level NEPA analyses. In response to this directive and an influx of new employees, the Pacific Northwest Region's range program organized a NEPA training. While range employees recognized the importance of climate change, they felt underprepared to develop a dedicated training module on the topic. To address this gap, the Northwest Climate Hub collaborated with the Pacific Northwest Region to create materials and present on climate change impacts on rangelands, NEPA integration tools, and frameworks. Approximately 40 participants from three Forest Service Regions attended this training.

Partners: Forest Service Pacific Northwest Region



Addressing Climate Change in Northwest Rangelands

Northwest rangelands are facing increasing management pressures due to current and emerging stressors related to climate change. While disturbance is a natural component of these ecosystems, climate change is exacerbating negative effects by increasing the likelihood, severity, and extent of disturbances. In response, the Northwest Climate Hub and USDA collaborators have synthesized the key vulnerabilities of Northwest rangelands to climate change in a scientific publication. Many of these vulnerabilities can result in lasting changes, such as shifts in vegetation composition and diminished ecosystem services. This publication concludes by outlining climate adaptation strategies that can help managers prepare for, respond to, and recover from disturbances.

Partners: Agricultural Research Service, Forest Service Research and Development





Agriculture

Training NRCS Staff to Enhance Climate Mitigation in the Northwest

Staff at the USDA Natural Resources Conservation Service (NRCS) help landowners implement conservation practices. Applying climate-smart practices on working lands can reduce carbon emissions and store carbon. However, NRCS staff need additional information and tools to facilitate implementation of climate-smart practices. Therefore, in 2024, the Northwest Climate Hub gathered input from NRCS staff in Alaska, Idaho, Oregon, and Washington to identify information and tools that could increase landowner implementation of climate-smart practices. By analyzing sectors with the greatest potential for climate change mitigation, the Climate Hub developed a three-part training program. The program focuses on the fundamentals of climate change, past and projected climate change effects on agriculture, rangelands, and forests at regional and state levels and effective strategies to mitigate and adapt to climate change.

Partners: Natural Resources Conservation Service



Cultivating Climate Literacy at the Alaska Food and Farm Festival

Alaska is experiencing the most rapid temperature increase in the U.S. These dramatic shifts in climate are affecting agricultural producers, leading to some negative effects (e.g., extreme weather events and operational challenges) and some positive effects (e.g., longer growing season, expanded crop possibilities). To strengthen climate literacy and share the best available climate science with Alaskan agricultural producers, the Northwest Climate Hub gave three presentations at the Alaska Food and Farm Festival. The presentations highlighted a range of tools, curriculum, and other materials designed to help producers make climate-informed decisions. Presentations focused on North to the Future: An Agriculture and Climate Change Curriculum for Alaska Youth from the USDA Northwest Climate Hub and Alaska FFA; Cultivating Climate Literacy with the USDA Northwest Climate Hub; and the USDA Climate Hub Fellow for Alaska Agriculture.





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