

Drought in the NW Climate Hub Region

Despite recent winter precipitation across the Northwest in the past month, there are still parts of the region that are experiencing drought. In Interior Alaska, abnormal dryness (D0-yellow) expanded, and abnormal dryness remains in portions of the northwestern though Seward Peninsula is now drought free.

Severe (D2-orange), moderate (D1-tan), and abnormally dry conditions (D0-yellow) receded in the north-central and southwestern regions of Washington.

Consistent precipitation throughout western Oregon led to improvements. Central and southeastern Oregon also saw a reduction of the area affected by extreme (D3-red) and severe (D2-orange) drought. Extreme drought (D3-red) developed and moderate drought (D1-tan) expanded in the northeast corner of the state.

In Idaho, almost 25% of the state is experiencing some level of drought conditions with over 80% experiencing abnormally dry conditions (D0-yellow). The panhandle has had a return of abnormally dry conditions (D0-yellow). Moderate (D1-tan) and severe (D2-orange) drought conditions worsened in west-central and across southern parts of the state.

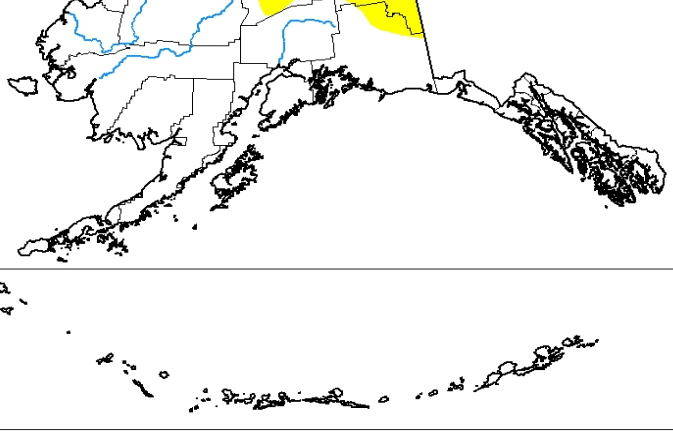
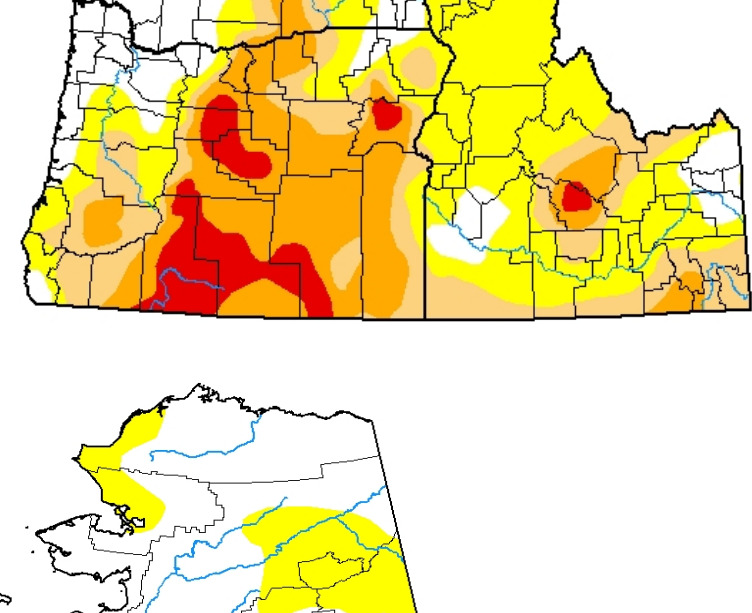


U.S. Drought Monitor

February 23, 2021
(Released Thursday, Feb. 25, 2021)
Valid 7 a.m. EST

USDA Northwest Climate Hub

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	66.66	33.34	11.70	6.87	1.75	0.00
Last Week 02-16-2021	66.50	33.50	12.05	7.43	2.34	0.00
3 Months Ago 11-24-2020	70.83	29.17	13.27	9.27	4.29	0.00
Start of Calendar Year 12-29-2020	73.72	26.28	13.40	9.17	3.53	0.00
Start of Water Year 09-29-2020	61.33	38.67	15.70	9.48	4.51	0.00
One Year Ago 02-25-2020	79.70	20.30	6.19	0.16	0.00	0.00



Intensity

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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Alaska Drought Webinar Series

What does drought look like in Alaska? We want to HEAR FROM YOU in regional listening sessions to learn what you have seen or experienced during unusually dry times in Alaska. During previous droughts or dry times, were stream flows so low fish could not pass? Did you need to haul drinking water? Were trees stressed or did they die due to dryness? Was there not enough water for hydropower?

- **2 March (12pm AKST) | What does drought look like in Southcentral Alaska?**
- **9 March (12pm AKST) | What does drought look like in the Aleutian islands & Southwest Alaska?**
- **16 March (12pm AKT) | What does drought look like in Interior Alaska?**
- **23 March (12pm AKT) | What does drought look like in Northwest Alaska?**

Website Update for the National Integrated Drought Information System (NIDIS)

The updated website improves access to interactive data and maps, works with mobile devices, and includes a new focus on drought and economic sectors, such as agriculture, tourism, and recreation.

Funding Opportunities

Call for Statements of Interest: FY22 Northwest Climate Adaptation Science Center (CASC) Research Funding Opportunity. The Northwest CASC is currently accepting statements of interest for projects focused on developing scientific information and products with direct application to one of the following resource management priorities in Idaho, Oregon, Washington, or western Montana: 1) management of invasive species and diseases under future climate scenarios, 2) management of shrubland ecosystems under future climate scenarios, 3) managing climate-driven, post-fire ecological transformation. **Statements due 19 March by 2:00 pm PT.**

Infrastructure for Rebuilding America Grants. Funding is available for regional and national projects that explicitly address climate change and racial equity, promote employment, improve safety, and apply transformative technology. Proposals should include a comprehensive strategy to address climate change, or address strategies to reduce greenhouse gas emissions. Consideration of racial equity is also a selection criterion. **Application due date extended to 19 March.**

Supplemental and Alternative Crops (SAC) Competitive Grants Program. This opportunity supports research or technology projects that expand adaptation and increase acres in canola grown for oil and industrial hemp. Funds support enhancing variety performance and production practices that improve production systems. Proposals should include outreach and engagement strategies to transfer results to producers and other users. **Applications due 30 March 2021.**

Bureau of Indian Affairs Tribal Climate Resilience Awards Program 2021. All federally recognized Tribes and authorized Tribal Organizations are eligible to apply for funds to support adaptation planning in the following categories: 1) ocean & coastal management planning, capacity building; 2) relocation, managed retreat, or protect-in-place planning; and 3) internships, and youth engagement. **Applications due 23 April by 5 pm AKT.**

Rural Health and Safety Education Competitive Grants Program. Proposals for this program should focus on community-based outreach education programs, including extension outreach. Applications can address rural environmental issues that directly impact human health, information about and access to health promotion and educational activities, training for volunteers and health services providers, and more. **Applications are due 29 April 2021.**

Agriculture and Food Research Initiative - Sustainable Agricultural Systems. This opportunity is focused on: (1) sustainable agricultural intensification; (2) agricultural climate adaptation; (3) value-added innovation; and/or (4) food and nutrition translation. Proposed work should result in societal benefits, such as rural prosperity and enhancement of quality of life, for all those involved in food and agricultural value chains. **Applications due 1 July 2021.**

Agriculture and Food Research Initiative - Foundational and Applied Science Program. Grant funds are available in priority areas, which include plant or animal health, production, and products; food safety, nutrition, and health; bioenergy, natural resources, and environment; agriculture systems and technology; and agriculture economics and rural communities. Research-only, extension-only, and integrated research, education and/or extension projects are eligible. **Applications due 29 July 2021.**

A Review of Climate Change Research in the Columbia River Basin: Missing the Mark on Agriculture

A recently published review of regional climate change research found limited attention to agriculture, including studies focused on adaptation, climate impacts, and mitigation. Read this summary article by Paris Edwards at the NW Climate Hub to learn about why this lack of information could put the agricultural sector at a disadvantage when it comes to preparing for and coping with climate change.

Information

Resist-Accept-Direct (RAD) Framework Helps Managers Make Strategic Decisions Under a Changing Climate. The National Park Service and partners have developed the Resist-Accept-Direct (RAD) framework, a decision-making tool for resource managers responding to climate change. The framework helps managers look to the future when considering climate impacts on valuable resources and informs strategies to meet new priorities.

Land Use Planning Approaches in the Wildland-Urban Interface. The Community Wildfire Planning Center led an analysis of Washington and three other western states that considers the collaborative roles that land managers play in addressing the threat of wildfire in populated wildland areas. Find planning highlights and future policy and management strategies for Washington, Montana, California, and Colorado.

Climate Justice Resilience Fund's Five Recommendations to Advance a Climate-Safe Future. The recommendations for researchers, funders, and practitioners to improve climate justice include recognizing and embracing complexity in local systems, collaboratively identifying climate challenges, and addressing power dynamics.

Pathways to Progress in Tackling Stormwater Runoff in Near-Urban Agricultural Areas. Stormwater pollution is a concern to agricultural lands and is expected to increase as the climate changes and surrounding lands continue to be developed. Read this AgClimateNetwork article to learn about mitigation strategies aimed at reducing risk of soil and crop contamination.

2020 Pacific Northwest Water Year Impacts Assessment. The purpose of this assessment is to summarize the water year conditions and sector impacts as a resource for future management of drought and other climate extremes. This report is the first of its kind and feedback is needed to make future improvements. Provide feedback to Washington's Assistant State Climatologist Karin Bumbaco at kbumbaco@uw.edu.

Regional Snow Survey Reports. The first snow survey reports of 2021 provide current snowpack status by basin. Find details about how regional snowpacks developed throughout the fall and winter and compare current and historical conditions.

- Alaska Snow Survey Report
- Oregon Water Conditions Report
- Statewide Water Conditions for Washington
- Idaho Water Supply Outlook Report

Many Reservoir Levels Across Southern and Eastern Oregon are Below Average. Reservoirs, such as Wikiup in central Oregon, and Howard Prairie Lake in the South, are well below average water levels for the second year in a row. These consecutive low-water years could worsen challenges for water resource managers and producers. For details, click here and select a basin to view individual "teacup" reservoir diagrams. Clicking on individual teacups and the linked "water year graph" will provide details that depict and compare past, current, and average statistics.

Newly Appointed Director of USDA's Office of Tribal Relations. Heather Dawn Thompson (Tashunke HinZi Win) is the newly appointed Director of USDA's Office of Tribal Relations and a citizen of the Cheyenne River Sioux Tribe. Thompson will lead efforts to carry out the Biden-Harris administration priorities, including economic recovery, addressing and ending the pandemic, climate change, and racial equity.

Network Connects Indigenous Knowledges in the Arctic and U.S. Southwest. Indigenous Peoples from the Arctic and the U.S. Southwest are sharing stories, foods, and knowledges to address food sovereignty in two environmental extremes. Facing similar challenges to food sovereignty including access, cultivation, and management of traditional foods, these groups work together to find solutions.

Alaska Forest Health Highlights 2020. This story map details forest health monitoring information gathered from ground survey and remote-sensing techniques across 126 million forested acres in Alaska. It also provides details on focal forest pests and pathogens, such as spruce beetle, hemlock sawfly, and aspen runner canker, that impacted the state's forests last year.

Alaska's Changing Wildfire Environment. The Alaska Fire Science Consortium recently published an overview of Alaska's changing wildfire environment. The report is for a general audience and discusses recent wildfire trends and impacts to humans and wildlife. It also highlights efforts between wildfire managers and scientists to improve fire-related decision making.

Forest Infrastructure: Preparing for Future Needs. A recent article from AgClimateNet discusses water quality connections between forest road infrastructure and sedimentation. Author Chris Schnepf addresses the importance of preparing for the future by integrating expected changes (e.g., in fire and streamflow extremes) into decisions on infrastructure at stream crossings.

Planting Trees to Mitigate Climate Change: Policy Incentives Could Lead to Increased Carbon Sequestration. Recent research on forest carbon sequestration from the US Forest Service and partners suggests that planting more trees and protecting existing forested areas would increase the nation's carbon storage capacity and result in co-benefits valued in the billions of dollars.

Feral Swine in the Northwest

Feral swine have recently invaded parts of the Northwest and pose a challenge to agriculture, forests, and rangelands in a changing climate. Feral swine reproduce rapidly, compete with wildlife for food, contaminate water sources, damage trees, vines, and crops, and carry diseases that can spread to people and domestic animals. Visit the Northwest Climate Hub website to find out what you can do to stop their spread and protect your land.

Webinars & Trainings

SCIENCEx Invasive Plants, 26 February 12:30 pm PST. This event, hosted by the US Forest Service, will cover the Venetian invasion risk and cheatgrass impacts and management options in the western U.S. This is the final set of talks in the SCIENCEx series on invasive species.

Ecological Drought National Webinar Series. Sessions will discuss resilience and drought mitigation, drought planning research, management needs for preparedness, and more. The series is co-hosted by National Integrated Drought Information System and the USGS National Climate Adaptation and Science Center, featuring speakers from Tribal Nations and government agencies, as well as researchers. Click on the links below to register.

- 3 March 1 pm PST Ecological Drought: Drought, Wildfire, and Recovery**
- 17 March February 12 pm PST Ecological Drought: Impacts on Coastal Ecosystems**

CIRC Webinar on Climate Change and Future Flooding in the Pacific Northwest, 5 March 11 am PST. This webinar will address future management of current flood risk infrastructure. Recent research suggests that climate change will exacerbate flooding throughout the Columbia River Basin. Hear details and pose questions directly to the researchers at this upcoming event.

Cross Boundary Fire Risk Mitigation Webinar Series. This series of seven webinars explores different aspects of cross-boundary fire risk mitigation. Natural resource managers will learn about how to improve collaborative efforts among different land ownerships and jurisdictions that support and enable successful adaptation to wildfire. The series is held on Wednesdays and extends through May. Find details for upcoming talks below.

- 10 March, Moving from Parcel Risk Assessments to Building Fire Adapted Communities**
- 24 March, Designing Suitable Pathways to Wildfire Adaptation in and Around Communities: One Size Does Not Fit All**

Fire Severity: Mapping Past Fires and Predicting the Future, 3 March 9 am PST. This webinar will discuss new approaches to mapping historical fire severity using satellite imagery and cloud-based computing, with a focus on recent advancements in predicting near-future burn severity. The new products predict the probability of high-severity fire in the western US.

Climate Impacts Group 25-Year Anniversary Lecture Series on Building Climate Resilience
30 March 5 pm PST, The Next 25 Years: Building a Climate-Resilient Future

Northwest River Forecast Center Monthly Water Supply Briefing, 1 April 10 am PT. The monthly water supply briefings are held on the first Thursday of each month from January through late spring. Registration is required.

When Wildfire Hits: One Community's Journey to Recovery (recorded). The Oregon State University Extension Service Fire Program hosted a webinar highlighting the post-fire recovery experience of Durango, Colorado. The community joined together on several strategies, including creating a wildfire council to aid in fire planning and preparation tactics. Managers and landowners can learn more about this and other successful adaptation approaches and related funding strategies.

What Is Flash Drought? What Can We Do About It? The National Integrated Drought Information System recently convened researchers and on-the-ground experts for a virtual workshop to develop a shared understanding and definition of flash drought. Check out this short summary with key take-aways that address tools needed to improve prediction and monitoring as well as near-term next steps.

Podcast Highlights

Talking Wine, Weather, and Science. The *Come Rain or Shine* podcast discusses climate change and wine in this two-part series. Learn about the importance of grape variety and how temperature and rain play a dominant role in developing wine characteristics. Growers share insights about how a changing climate will play a role in evolving adaptation techniques for wine grape cultivation across the West.

Conservation Ranching, Wildland Fire, and Climate Change--The Wicked Problem. The *Art of Range* podcast interviews experts on hard-to-manage challenges at the nexus of rangeland management, climate change, and fire. The episode touches on how the roles of rangeland and ranching have changed in relation to these challenges in recent decades.

Conferences & Workshops

1st Annual Soil Health Innovations Conference, 8-9 March. Soil health has emerged as a central theme for the future of agriculture. The conference will be online, with live-streamed speakers and panels, as well as virtual halls for exhibitors and student posters. Real-time chats will allow participants to network with people who are at the cutting edge of soil health across the country. Topics will include on-farm practices, soil biology, carbon markets, and public policy.

Online scholarship for registration fee

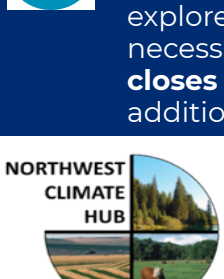
Tribal Forest Partnership and Shared Stewardship Workshop Series, 24 March-1 April 9 am to 12 pm PT. This series of four workshops will discuss new opportunities for shared stewardship on national forests and adjacent tribal lands under the Tribal Forest Protection Act. Discussions will identify opportunities for stewardship through the 2018 Farm Bill, with a focus on creating understanding of USDA FS 638 authority, identifying opportunities to implement 638 focused Shared Stewardship Projects, and initiating and supporting planning for 638 projects between USDA Forest Service and tribes. The series will be held on **24, 25, 30 March and 1 April.**

Northwest Climate Conference, 6-8 April. The Northwest Climate Conference connects a diverse community of practitioners, scientists, tribal communities, and decision-makers to share knowledge, ideas, and best practices related to climate change science, impacts, and adaptation in the Pacific Northwest. Topics include drought, wildfire, extreme events, coastal flooding, human and ecosystem health, and resiliency planning. **Registration is now open.**

Climate Prediction Applications Science Virtual Workshop, 20-22 April. The theme of this year's workshop is "providing services for the cascading effects of intensifying heat in a rapidly growing region," with several sessions dedicated to heat and its impacts. Other topics include environmental changes and impacts, services for resilience, and transboundary issues. Virtual fieldtrips are available and **registration is free.**

Climate Adaptation Science Center (CASC) Network Climate Adaptation Postdoctoral Fellows Program

Two-year post-doctoral appointments are available to take part in a regional-to-national sequence of climate change impacts on fire regimes, fire management, and fire response. This effort will explore future fire effects on fish, wildlife, and ecosystems and provide the scientific research necessary to help managers adapt to these changes. The University of Montana appointment **closes 28 February.** The University of Alaska Fairbanks appointment **closes 22 March.** Two additional opportunities are forthcoming.



The Northwest Climate Hub newsletter is developed by Paris Edwards and edited by Jessica Halofsky and Holly Prendeville. Click here to sign up to our distribution list.
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