



## Featured Article



### Agricultural Biomass for Biofuel

Agricultural biofuels can come from many sources. In the Northwest, farmers and scientists are exploring different types of biofuels, including poplar trees, and converting food waste into energy. These fuels can be sustainable and take advantage of resources that may not be otherwise used.

## Drought Update

Another round of storms brought beneficial late-season snowfall and rain to the region. As a result, improvements to drought conditions occurred in Idaho, Oregon, and Washington. Snow water equivalent levels for most basins are at or above normal. However, the wet and cool April was not nearly enough to overcome long-term precipitation deficits, and low snowpack and early rapid melt-out in several areas, which continue to drive persistent drought conditions throughout much of Oregon and Idaho. Statewide reservoir storage levels remained below normal across Idaho and Oregon. Washington maintains normal levels of reservoir storage.

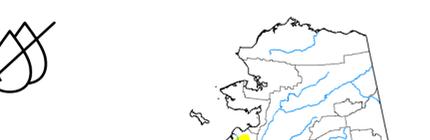
A portion of western Alaska is abnormally dry (D0-yellow), but the majority of Alaska is free of dry conditions.

National Integrated Drought Information System
 CoCoRHS Community Rain Hail Snow Network
 Snow Drought Conditions
 Pacific Northwest Drought Impacts Survey

### U.S. Drought Monitor

## USDA Northwest Climate Hub

**May 17, 2022**  
(Released Thursday, May 19, 2022)  
Valid 8 a.m. EDT



	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	74.37	25.63	21.09	14.50	6.19	1.56
Last Week 05-10-2022	74.34	25.66	21.68	14.88	6.81	1.68
3 Months Ago 02-19-2022	74.26	25.74	23.24	14.57	5.87	1.89
Start of Calendar Year 01-04-2022	74.10	25.90	23.79	15.09	6.81	2.01
Start of Water Year 09-28-2021	70.14	29.86	27.67	24.87	18.54	7.83
One Year Ago 05-18-2021	57.55	42.45	21.21	11.32	3.13	0.42

**Intensity:**  
 None (white), D0 Abnormally Dry (yellow), D1 Moderate Drought (orange), D2 Severe Drought (red), D3 Extreme Drought (dark red), D4 Exceptional Drought (black)

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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USDA, NIDIS, NCEI/NOAA, NOAA logos and [droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

## Information

**How Much Heat and Drought is Too Much for Forests?**  
This article summarizes an analysis of global forest die-off from heat and drought conditions. Models show that in the future, extreme heat and drought will be much more common in forests globally.

**Resilient Landscapes Resources List**  
This resource list is intended to assist Intermountain West land managers in implementing conservation strategies. Resources can be filtered by type, region, and topic.

**Twenty Years of Drought Examined**  
A recent paper that summarizes drought over the past two decades using the U.S. Drought Monitor. The results of the study show significant geographical differences in drought across the United States

**Increased Evaporative Demand Means Less Water Supply and Higher Fire Risk**  
Evaporative demand, or how much water the atmosphere pulls from the land surface, has increased since 1980. Researchers at the Desert Research Institute analyzed the rate of change and its future implications.

**What Can a Moth Teach Us About Adapting to Climate Change?**  
Understanding how two genes have helped the European corn borer moth to respond to changes in climate may assist scientists in helping other species adapt to climate change.

**Timing of Risks and Benefits to Breed Barley for Future Climates**  
Dr. Patrick Hayes discusses why breeding barley for cold temperatures could help to prepare for climate change in the region.

**Breeding Hops for Climate Change**  
Dr. Shaun Townsend, breeder of aroma hops at Oregon State University, discusses how agricultural producers can change practices to adjust to a changing climate.

**Adapting to Climate Change in the Yakima Basin**  
Agriculture in the Yakima basin is dependent on snowmelt and irrigation. This article discusses some of the climate change challenges and mitigation opportunities for agriculture in the region.

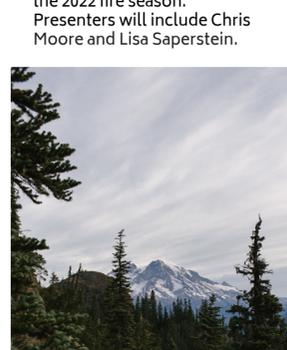
## Webinars

**Risk and Regulation of Invasive Plants in a Changing Climate, 19 May, 1-2 pm PST.**  
This webinar from the Northwest Regional Invasive Species and Climate Change Network will discuss ongoing research to evaluate invasibility and create risk rankings for invasive plants in Washington. Panelists will also discuss the intersection of climate change with invasive species regulatory lists and weed risk assessments in the United States.

**Alaska Fire Modeling and Analysis Committee Spring Refresher 2022, 24 May, 2 pm AKST.** Alaska has several resources available for understanding fire in the state, and this webinar will present a refresher of some of these resources before the start of the 2022 fire season. Presenters will include Chris Moore and Lisa Saperstein.

**Northwest River Forecast Center Water Supply Forecast Monthly Briefing, 2 June, 10-11 am PST.** This monthly webinar will focus on current hydrologic and climatic conditions and water supply forecasts for the Columbia and Snake River basins. The Northwest River Forecast Center holds these water supply briefings from January through late spring on the first Thursday of each month. The briefings are composed of two parts: a telephone conference call and a web-based presentation.

**Pacific Northwest Drought Early Warning System (PNW-DEWS) June Drought and Climate Outlook Webinar, 27 June, 11 am-12 pm PST.**  
These webinars provide timely information on current and developing drought conditions, as well as climatic events such as La Niña. Speakers will also discuss the impacts of these conditions. There will also be two specialty topic speakers who will share information related to drought.



**How Can We Quantify and Reduce Agricultural N2O Emissions at Scale?, 12 July, 12 pm PST.** This webinar will focus on nitrous oxide (N2O), the primary greenhouse gas emitted by agricultural soils. Dr. Allison Eagle will discuss N2O emissions accounting at large spatial scales, and Dr. Mike Castellano will discuss the potential for reducing N2O emissions through improved water management in the U.S. corn belt.

## Workshops & Conferences

**Building Resilience and Adapting to Climate Change Impacts: CREAT Training for the Northwest Climate Region, 24 May, 10am - 12pm PST.** This EPA webinar provides a facilitated discussion of how a utility can apply for specific funding for its resilience and adaptation projects in the Northwest climate region of the U.S. (WA, ID, OR). Attendees will also have the opportunity to ask questions related to the previous CREAT training webinars.

**Rural Voices for Conservation Coalition Annual Meeting.** Three virtual sessions, plus an in-person field tour in Eastern Oregon, will be held in late May and early June. Register below.

**Climate-focused Strategies and Opportunities for All-lands Practitioners, 24 May, 11 am-12:30 pm PST.** This session will explore how conservation and land management agencies are operationalizing climate priorities through new and existing programs, initiatives, and funding sources. Land management practitioners will also learn about incorporating climate considerations into all-lands work at the local scale.

**Accelerating the Use of Prescribed Fire through Policy and Partnerships, 26 May, 10-11:30 am PST.** This session will highlight the findings of two recent prescribed fire projects and key policy opportunities to encourage cooperative burning as an agency implementation tool.

**Economic Development Strategies for Rural Communities, 1 June, 11:30 am-1 pm PST.** This virtual panel will showcase the work of place-based practitioners, researchers, and philanthropists to develop inclusive, durable strategies for rural community development that can help overcome challenges and lead to lasting rural community prosperity.

**In-Person Field Tour:** The virtual economic development session may include an opportunity for people to gather in Enterprise, Oregon to discuss and see some of the strategies and initiatives used by Wallowa Resources to help their community. The field tour will offer an experiential opportunity for participants to renew in-person connections with the work of the coalition. Further details will be provided soon. **Registration TBA**

**Forest Biomass Utilization in the Pacific Northwest, 25-26 May, 10am-2pm PST.** This workshop will provide insights into bridging gaps between forest biomass research, product development, and successful biomass utilization in the Pacific Northwest to enable higher value products. It will align innovation, wildfire risk reduction, and economic development with public land management priorities and Forest Service policies. Meetings are on Microsoft Teams.

**25 May - Research Focus.** Leading Forest Service researchers will share perspectives and findings on cost-effective biomass utilization

**26 May - Business and Practitioner Focus.** Biomass business leaders discuss successful products, processes, and opportunities

**Call for Abstracts - Oregon Conservation Education and Assistance Network (OCEAN) CONNECT+, 6-8 September in Seaside, OR.** The three-day, immersive conference will bring together local, state, and federal decision-makers, professionals from conservation districts, watershed councils, land trusts, and others committed to conserving natural resources. This conference advances Oregon's conservation efforts through diversity, equity, and inclusion of all people across the state. Submitters are encouraged to see how their work enhances conservation within these guidelines. **Submitters by 10 June at 5pm PST**

**Tribal Climate and Health Adaptation Summit, 13-14 July, Pala, CA.** Guided by the theme "Getting to the heart of climate vulnerability," this summit will focus on strengthening Tribal-serving professionals with the knowledge and skills needed to understand and address the unique climate and health vulnerabilities of the Tribes they serve, while also offering space for participants to attend to their own hearts through personal reflection and peer connection.

**2022 Western Regional Cooperative Soil Survey Conference, 26-29 July, Missoula, MT.** This conference will feature presentations from regional and national Natural Resource Conservation Service employees, cooperating agencies, and Montana State University partners. Time will be allotted for research presentations, and posters can be displayed in the evening. In addition to presentations, there will be a full-day field trip to feature soils of the Blackfoot River Valley, regional committee meetings, and a breakout session for state soil scientists.

**Call for abstracts. Please submit by 6 June.**

**2022 for Soil and Water Science Conference, 31 July-3 August, Denver, CO.** This year's conference aims to bring together people from all backgrounds. It will feature the latest research, technologies, and practices and foster a dialogue around water conservation efforts. Through workshops, sessions, symposia, tours, exhibits, and demonstrations, cutting-edge research and practice developments in soil health, water quality, and resource management will be shared. Current policies, practices, and research about climate change and climate-smart agriculture will also be shared.

**Tribal Lands and Environmental Forum, 8-11 August, Milwaukee, WI and online.** The 12th annual forum for environmental professionals will provide a space for tribes; state, local, federal agencies; community organizations; and other interested parties to meet, share knowledge, and learn from one another how to improve management, protection, and restoration of Tribal lands for us and all our relations. **Registration TBA.**

**National Tribal and Indigenous Climate Conference, 29 August-1 September, St. Paul, MN and online.** This conference focuses on climate change adaptation and resilience efforts by Tribal and Indigenous people and communities. People from all backgrounds, including Tribal and Indigenous resource professionals, federal staff, personnel from universities, nonprofits, and students from academic institutions, including Tribal colleges and universities, are invited to attend.

## Funding Opportunities

**May**  
**Solar Grant Program, Washington State Department of Commerce.** \$1.2 million in funding is available to install solar at public buildings and facilities, such as schools, hospitals, civic buildings, and wastewater treatment plants, in Washington. These grants cut energy costs, reduce pollution, and showcase solar projects in communities across the state. **Applications due by 25 May.**

**June**  
**Agriculture and Food Research Initiative (AFRI) Grants Program.** The USDA National Institute of Food and Agriculture's (NIFA) AFRI program has several research, education, and extension grants to improve rural economies, increase food production, stimulate the bioeconomy, mitigate impacts of climate variability, address water availability issues, ensure food safety and security, enhance human nutrition, and train the next generation of the agricultural workforce. Specifically, USDA NIFA AFRI offers an Extension, Education, and Partnership with USDA Climate Hubs grant to support projects that provide effective, translatable, and scalable approaches to address climate change through regional partnerships including the USDA Climate Hubs and extension. **Letter of intent due by 2 June. Applications due by 6 October.**

**Find Climate Hub priorities here.**

**July**  
**Bureau of Indian Affairs Tribal Climate Resilience Annual Awards Program.** This fiscal year, approximately \$46 million in funding will be released to federally recognized tribes for climate adaptation, ocean and coastal management, relocation, managed retreat, or protect-in-place, and internships and youth engagement. A webinar will be hosted on the funding opportunity on 25 April, 12:30-2 pm PST. **Applications due by 6 July.**

**Partnerships for Climate Smart Commodities Funding Opportunity Extended.** The USDA will finance pilot projects that create market opportunities for U.S. agricultural and forestry products that use climate-smart production practices and include innovative, cost-effective ways to measure and verify greenhouse gas benefits. Successful candidates will implement climate-smart production practices, activities, and systems on working lands, measure/quantify, monitor, and verify the carbon and greenhouse gas benefits associated with those practices, and develop markets and promote the resulting climate-smart commodities. **Apply by 10 June.**

**August**  
**Clean Lakes, Estuaries, and Rivers Initiative.** The USDA Farm Service Agency is offering a nationwide opportunity for landowners and agricultural producers currently implementing water quality practices through the Conservation Reserve Program to enroll in 30-year contracts, extending the lifespan and strengthening the benefits of important water quality practices on their land. To sign up, landowners and producers should contact their local USDA Service Center by 5 August.

**Community Renewable Energy Grant Program, Oregon Department of Energy.** The Community Renewable Energy Grant Program is open to Oregon Tribes, public bodies, and consumer-owned utilities. Up to \$100,000 for planning and \$1M for developing a community renewable energy and/or resilience project is available. **Applications due by 10 June.**

**America the Beautiful Challenge.** This new grant program is focused on locally led ecosystem restoration projects that seek to advance conserving and restoring rivers, coasts, wetlands, watersheds, forests, grasslands, and other important ecosystems that serve as carbon sinks; improving ecosystem and community resilience to coastal flooding, drought, and other climate-related threats; and more. Applicants will be encouraged to prioritize projects that uplift Tribal and Indigenous-led efforts and to consider how proposals build the conservation and resilience workforce of the future. **Applications due by 21 July.**

**Find your local service center by clicking here.**

## Ongoing

**Rapid Response to Extreme Weather: Food and Agricultural Science Enhancement (FASE) Grant.** This program is designed to rapidly deploy strategies and fill knowledge and information gaps to protect the nation's food and agricultural supply chains, from production through consumption, during and after extreme weather and disasters. All applicants must directly address effects associated with an extreme weather event or disaster that has occurred and address agroecosystem resilience, agricultural commodity, and nutrition security, and/or health, well-being, and safety. FASE grants will accept applications continuously, so long as a Letter of Intent is submitted within 14 days of an extreme weather event.

**Opportunity to Join Team in Developing Northwest Climate State of Knowledge Synthesis**  
The University of Washington Climate Impacts Consortium is seeking individuals from Northwest Climate Adaptation Science Center University Consortium members — Boise State University, Oregon State University, University of Montana, University of Washington, Washington State University, Western Washington University — who are interested in being part of a team to develop the Northwest Climate State of Knowledge Synthesis. Time commitment to this project can be as little as one quarter, but the project will be running through December 2023.

## Opportunity

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To unsubscribe email [holly.prendeville@usda.gov](mailto:holly.prendeville@usda.gov)

