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WestFAST News

682 East Vine Street / Suite 7 / Murray, UT 84107 / (801) 685-2555/ www.westernstateswater.org/westfast

Chair – Patrick Lambert; Federal Liaison Officer – Deborah Lawler

[New research identifies regions with worsening "snow droughts" around the world. Western United States snowmelt deficit found to be of increasing intensity and length in recent years](#)

NOAA 08/03/20. Snow is used by approximately one sixth of Earth's population for drinking, agriculture, and hydropower, among other uses. Despite its importance, "snow droughts," or deficits in snowmelt which can have serious regional and global consequences, have been fairly unexplored compared to other forms of drought, until now.

Environmental engineers at the University of California, Irvine, with funding from the NOAA Climate Program Office's MAPP Program, have developed a new framework for characterizing snow droughts around the world. Using the framework to analyze conditions from 1980 to 2018, the researchers found a 28-percent increase in the length of intensified snow-water deficits in the western United States during the second half of the study period.

Results and implications for people in impacted regions are covered in a study published today in Proceedings of the National Academy of Sciences.

"Snow is an important global water resource that plays a vital role in natural processes, agriculture, hydropower and basic socioeconomic conditions of

various regions," said lead author Laurie Huning, UCI post-doctoral scholar in civil & environmental engineering. "While other forms of drought are well-studied, variations in snow droughts on a global scale have been examined to a far lesser extent until now."

Huning said the analysis using the new framework shows prolonged snow droughts in California, Oregon, Washington and other Western states, and, to a lesser extent, Eastern Russia and Europe over the nearly four-decade term studied.

Other regions of the world with populations that rely on meltwater from annual snowfall for basic needs – the Hindu Kush, Central Asia and the greater Himalayas in Asia; and the extratropical Andes mountain range and Patagonia in South America – experienced decreases in average snow drought severity and duration during the same time.

This video describes snow droughts as well as the new study's major findings and implications. Video by Amir AghaKouchak / UCI.

The team's framework can be used for different timescales, such as 1-month or 3-month. It incorporates information about the amount and persistence of snow-water equivalent — the amount of water stored in snowpack — on the ground, which can be related to other types of droughts, since precipitation and temperature influence snow accumulation and melt.

According to Huning, the team's framework is the first such tool to allow robust comparisons of drought conditions between different regions with variations in climate and snowfall.

The paper highlights Afghanistan for its extreme vulnerability. Approximately three-quarters or more of the country's snow-covered domain experienced a widespread drought from December 2017 to March 2018. Afghans rely on snowmelt from the Hindu Kush mountain range to irrigate croplands, but they are lacking in dams and other infrastructure to store runoff, leaving them susceptible to both droughts and floods.

Co-author Amir AghaKouchak, UCI professor of civil & environmental engineering, said the drought had an adverse impact on Afghanistan's agricultural season in the spring and summer of 2018, causing food shortages, livestock losses and food-insecurity for more than 10 million people.

"Wealthier populations are not immune to problems associated with snow drought; just look at California's loss of \$2.7 billion and about 21,000 jobs following the 2014-15 dry spell resulting from the combination of a low snowpack, low precipitation and warm temperatures," he said.

"Snowmelt provides freshwater to more than a billion people," Huning said. "Water from melting snow irrigates the crops of farming regions including areas that seldom if ever receive any snow during the winter, such as California's Central Valley— so it's important from an agricultural resources standpoint to have a clear picture of snow drought trends and their impacts."

This work was partially supported by the NOAA Climate Program Office's Modeling, Analysis, Predictions, and Projections (MAPP) Program (grant NA14OAR4310222), the National Science Foundation (Earth Sciences Postdoctoral Fellowship EAR-1725789 and award no. OAC-1931335), and the National Aeronautics and Space Administration (grant NNX16AO56G).

The WESTERN STATES FEDERAL AGENCY SUPPORT TEAM (WestFAST) is a collaboration between 12 Federal agencies with water management responsibilities in the West, including: BLM, DOD, EPA, FWS, NASA, NOAA, NPS, NRCS, Reclamation, USACE, USFS, and USGS. WestFAST was established to support the Western States Water Council and the Western Governors' Association in coordinating Federal efforts regarding water issues.

This story was adapted from a press release written by University of California, Irvine communications. Read their press release here

[Army Corps of Engineers announces proposal to renew and revise nationwide permits](#)

USACE 08/03/20. The U.S. Army Corps of Engineers announced today that it has prepared its proposal to renew and revise 52 nationwide permits for work in wetlands and other waters that are regulated by Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. The proposal includes five new nationwide permits that pertain to authorizing seaweed mariculture activities, finfish mariculture activities, electric utility line and telecommunications activities, utility line activities for water and other substances, and water reclamation and reuse facilities.

A pre-publication copy of the proposal has been posted on the USACE web site at: <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/National-Notices-and-Program-Initiatives/>.

The proposal is expect to be published in the Federal Register within a few weeks. The public comment period will not begin until the proposal is published in the Federal Register. A separate news release will be issued to announce the publication of the proposal in the Federal Register and how public comments should be submitted.

The nationwide permits authorize activities that are similar in nature and cause only minimal adverse environmental impacts to aquatic resources separately or on a cumulative basis. Activities range from work associated with aids to navigation and utility lines to residential developments and maintenance activities.

Following the public comment period, USACE will review the comments received and prepare final

nationwide permits that will replace the existing set of nationwide permits, which were authorized in 2017.

Additional information about the USACE Regulatory Program can be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>.

Upcoming Meetings

[WSWC Fall \(194th\) Meetings](#)

Virtual via Zoom

Scheduled for October 13 -15, 2020

[Western Governors Association 2020 Winter Meeting](#)

Coronado, CA

December 9-10, 2020

[Western Governors 2021 Annual Meeting](#)

Sunriver, OR

May 14-16, 2021

Upcoming Events

[WestFAST Webinar: The Bureau of Reclamation's WaterSMART Program](#)

Thursday, September 17, 2020, 2:00PM MDT

[WestFAST Webinar: Energy-Water-Emissions Dashboard \(Julian Fulton, PhD, California State University, Sacramento, Department of Environmental Studies\)](#)

Wednesday, September 23, 2020, 10:00AM MDT

[WestFAST Webinar: Open ET \(Forrest Melton, NASA\)](#)

Tuesday, September 29, 2020, 12:30PM MDT

[WestFAST Webinar: The Bureau of Reclamation's Prize Competitions Program](#)

Wednesday, October 21, 2020, at 10:00AM MDT

[WestFAST Webinar: The Bureau of Reclamation's Transportation Program](#)

Wednesday, November 18, 2020, at 10:00AM MST

[WestFAST Webinar: Salinity in the Western United States](#), Tuesday, December 8, 2020, at 1:00PM MST

[Annual Sub-seasonal-to-Seasonal \(S2S\) Workshop](#)

San Diego, CA

POSTPONED UNTIL 2021

Other Federal News

EPA 08/03/20. [EPA issues summary of recent Safe Drinking Water Act orders to protect public health in Wyoming and Region 8 Indian Country](#)

USDA/RURAL DEVELOPMENT 08/03/20.

[Trump Administration Invests \\$462 Million to Modernize Water and Wastewater Infrastructure in Rural Communities](#)

NRCS/UT 08/03/20. [Learn about Popular Conservation Practices through USDA Video Series](#)

NRCS/KS 08/04/20. [Kansas Project Receives Grant to Advance Natural Resources](#)

NOAA 08/03/20. [August 2020 U.S. climate outlook: Tropical wetness to douse the East Coast while dryness likely to continue across Southwest](#)

NRCS 08/06/20. [USDA to Invest up to \\$360 Million in Partner-Driven Conservation](#)

EPA 08/12/20. [EPA awards Oklahoma Corporation Commission over \\$1.2M to protect groundwater](#)

USBR 08/14/20. [Reclamation announces 2021 Colorado River operating conditions](#)

NOAA 08/17/20. [July 2020: Another scorching month in a scorching year](#)

NOAA/NIDIS 08/17/20. [New Report on Drought and Outdoor Recreation](#)

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EPA 08/18/20. [EPA Awards State of New Mexico Nearly \\$400,000 to Protect Wetlands](#)

NOAA 08/19/20. [Atmospheric dynamics drive most interannual U.S. droughts over the last millennium](#)

USACE 08/24/20. [Federal agencies sign hydropower agreement](#)

EPA 08/25/20. [U.S. EPA awards nearly \\$100,000 to address microplastic pollution in Lake Tahoe](#)

NOAA 08/27/20. [Do you know that El Niño has a little brother?](#)

NOAA/NIDIS 08/27/20. [2020 Drought Update: A Look at Drought Across the United States in 15 Maps](#)

NRCS 08/27/20. [USDA Updates Conservation Provisions for Highly Erodible Land and Wetlands](#)

USBR 08/28/20. [Reclamation launches prize competition to improve streamflow forecasting](#)

PEOPLE

USDOJ 08/07/20. [Secretary Bernhardt Designates Margaret Everson to Exercise the Delegable Authority of the Director of the National Park Service](#)

USACE 08/14/20. [Corps welcomes new commander to the Alaska District](#)

BLM 08/17/20. [Robbie McAboy selected as District Manager for the Ely District](#)

WHITE HOUSE 08/24/20. [The Trump Administration Is Advancing Clean, Reliable, and Affordable Hydropower](#)

NPS 08/31/20. [Shawn Bengel Named National Park Service Deputy Director of Operations](#)

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