



UC Berkeley's Blodgett Forest Research Station is the home of an ongoing, 20-year study investigating the impacts of prescribed fire and restoration thinning on forest health and wildfire risk in the Sierra Nevada. Scroll through the slideshow to show how these treatments have transformed different corners of the forest over the past two decades.

Credit: Ariel Roughton/UC Berkeley

California Water and Infrastructure Report For December 28, 2023

(With expanded coverage of all the Western States)

by Patrick Ruckert

Published weekly since July, 2014

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A Note to Readers

I hope everyone had a Merry Christmas, and that the New Year will be more than happy.

With two celebrations back to back, the report will be brief this week.

As one can see from the cover photo this week, actual serious forest management is effective in not only limiting the damage from wild fires, but also protecting trees from bark beetles and at least the worst effects of drought. The article, “*Twenty-year study confirms California forests are healthier when burned, or thinned*”, can be found on page 4.

For the second week in a row, water managers and the media are fretting about the low snowpack accumulated thus far this winter. The snowpack throughout the western states is at best 60 to 70% of normal for this time of the year.

On the subject of water supplies, Edward Ring, in an excellent and brief article, tears the idea of conservation of water as California's policy to pieces. The article is titled, “*Ringside: The Price of Scarcity*.”

And since most of the water that flows in the Colorado River comes from the Rocky Mountain snowpack, the worries about the coming summer and the Glenn Canyon and Lake Mead Reservoirs are warranted.

The last item this week is a report from the “*North American Electric Reliability Corporation (NERC) – an international regulatory authority overseeing the North American power grid – projected that a majority of regions in the US and Canada will have insufficient... electricity supply to reliably meet demand during [extreme weather conditions](#). A few may even see interruptions under normal weather conditions.*”

A 'snow drought' is leaving the West's mountains high and dry

KUNC | By [Alex Hager](#)

Published December 27, 2023 at 1:19 PM MST

<https://www.kunc.org/news/2023-12-27/a-snow-drought-is-leaving-the-west-s-mountains-high-and-dry>

Low precipitation has left much of the region in a "snow drought," which could have big implications for Colorado River water supply, but isn't expected to deal a financial blow to many ski resorts.

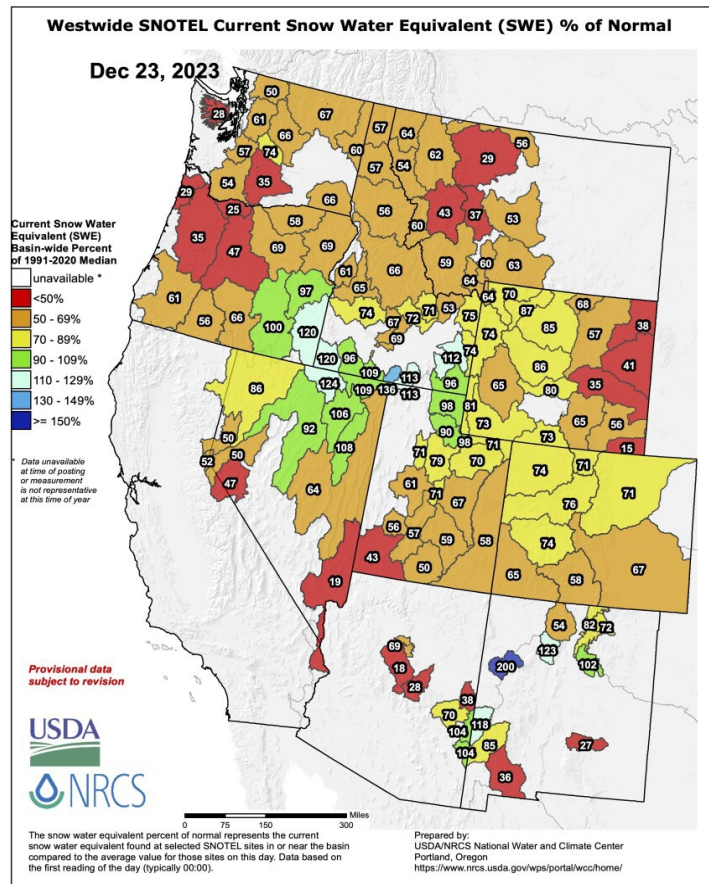
Across the West, the winter is off to a dry start. Wide swaths of the Rocky Mountains have lower-than-average snow totals for this time of year, but scientists say there's still plenty of time to end the "snow drought" and close the gap.

High-altitude snowpack has big implications for the region's water supply. Two-thirds of the Colorado River's water [starts as snow](#) in Colorado's mountains before melting and flowing to about 40 million people across seven states.

Nearly every part of Colorado, Utah and Wyoming has significantly less snow than usual for late December. The [latest data](#) from a region-wide network of snow sensors shows snow in many areas with snow totals around 60 or 70% of normal.

“It’s really going to be dependent on what we see in January and February,” said Becky Bolinger, Colorado’s assistant state climatologist. “We’re really going to need an active January and February to make up these deficits and be okay.”

Last year, big snows in the Rockies helped boost the Colorado River’s major reservoirs. Policymakers said the snowy winter lifted some pressure off of tense negotiations about sharing the river’s water in the future.



This map shows snow totals as a percent of normal, and nearly every part of the Colorado River Basin has below-average snowpack data. NRCS

Ringside: The Price of Scarcity

The California Aqueduct. (Photo: CA State Water Project)

How much water does \$7 billion buy?

By [Edward Ring](#), December 27, 2023 6:00 pm

<https://californiaglobe.com/fr/ringside-the-price-of-scarcity/>

How much water does \$7 billion buy?

In so many ways that it almost defies description, California's lawmakers have relied on flawed logic to justify recently passed laws that will impose punitive urban water rationing. Rather than undertake the Sisyphean task of enumerating them, let's just focus on one critical factor: the opportunity cost.

California's urban water consumption is already down from over 9 Million Acre-Feet/year in the 1990s to only around [7.5 MAF/year today](#) despite [adding 8 million people](#) to the state's population over the past 30 years. Practical conservation measures have already been taken, so now the state Legislature wants us to kill "nonfunctional" lawns (and the trees that depend on lawn irrigation), and limit indoor water use to 42 gallons per day. The cost to implement these destructive, draconian edicts is [estimated at over \\$7 billion](#). The benefit? An estimated savings of around 400,000 acre feet per year (this Dept. of Water Resources study estimates total savings of [340,515 acre feet per year](#) – ref. page 61).

This is ridiculous. Not because Californians don't face water scarcity. They do. The big reservoirs on the Colorado River, Lake Power and Lake Mead, stored over 50 MAF behind the dams 20 years ago, and now [they're nearly empty](#). As a result, California is likely to lose at least a million acre feet a year, maybe more, from its Colorado River allocation, because the water's not there. In the San Joaquin Valley, groundwater pumping has long exceeded natural recharge [by 2 MAF/year](#), and to restore those aquifers before they collapse, at least another 2 MAF/year has to stay underground. And then there's the ever present threat of multi-year droughts.

So if we're looking for 3 MAF/year or more just to eliminate acute water scarcity in California, isn't there a better way to spend \$7 billion than merely to squeeze another 400,000 acre feet out of our urban residents? Let us count the ways.

Twenty-year study confirms California forests are healthier when burned, or thinned

by Kara Manke, [University of California - Berkeley](#)

<https://phys.org/news/2023-12-twenty-year-california-forests-healthier-thinned.html>

by Kara Manke, [University of California - Berkeley](#)

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A 20-year experiment in the Sierra Nevada confirms that different forest management techniques—prescribed burning, restoration thinning or a combination of both—are effective at reducing the risk of catastrophic wildfire in California.

*These treatments also improve forest health, making trees more resilient to stressors like drought and bark beetles, and they do not negatively impact plant or wildlife biodiversity within individual tree stands, the research found. The findings of the experiment, called the [Fire Surrogate Study](#), were [published](#) in the journal *Ecological Applications*.*

"The research is pretty darn clear that these treatments are effective—very effective," said study lead author Scott Stephens, a professor of fire science at the University of California, Berkeley. "I hope this lets people know that there is great hope in doing these treatments at scale, without any negative consequences."

Last year, [California announced a strategic plan for expanding the use of prescribed fire to 400,000 acres annually by 2025](#). However, the use of beneficial fire continues to be hindered by multiple factors, including the lack of a trained workforce, the need for specific weather conditions for burning, and fears about potential risks.



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Much of North America may face electricity shortages starting in 2024

Over the next several years, many regions of the US and Canada may struggle to ensure a reliable electricity supply amidst soaring energy demand from the tech industry and electrification of buildings and vehicles

By [Jeremy Hsu](#)

[New Scientist](#)

23 December 2023

<https://archive.ph/65iBt#selection-655.0-672.0>

More than 300 million people in the US and Canada face the growing possibility of electricity shortages beginning as early as 2024 and continuing to 2028.

In a recent [report](#), the North American Electric Reliability Corporation (NERC) – an international regulatory authority overseeing the North American power grid – projected that a majority of regions in the US and Canada will have insufficient... electricity supply to reliably meet demand during [extreme weather conditions](#). A few may even see interruptions under normal weather conditions.

“I think it is striking that the majority of regions are at an elevated or high level of risk,” says [Johan Cavert](#) at the Niskanen Center, an environmental think tank based in Washington DC. “This should not be the norm and is quite a frightening assessment heading into the unknowns of another winter.” The report found that North America’s peak demand – the highest amount of electricity needed in a given period – is rising faster than at any time in the past five years. The sharp increase also represents a reversal of a decades-long trend involving falling or flat demand growth rates.

New York, New England and the entire western US along with some of the most populous Canadian regions such as Ontario and British Columbia are at “elevated risk” of experiencing electricity shortfalls during summer heatwaves or winter storms.