



Shasta Dam Raising Project would heighten dam 18.5-feet. (Photo: U.S. Bureau of Reclamation) See article on page 4

California Water and Infrastructure Report

For April 11, 2024

(With expanded coverage of all the Western States)
by Patrick Ruckert

Published weekly since July, 2014

An archive of all these weekly reports can be found at both links below:

<http://www.californiadroughtupdate.org>

<https://www.facebook.com/CaliforniaDroughtUpdate>

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A Note to Readers

The discussion of drought this week gives a larger national and North American picture of drought and the lack of it. As the U.S. Drought Monitor's discussion of the national picture states, "Following the El Nino winter and an active early spring pattern, drought coverage is at its lowest since the spring 2020."

The western states last winter did receive about 50 atmospheric rivers, and virtually wiped out the drought in California and some isolated areas of the western states, yet parts of Oregon, Idaho, Washington and Montana missed out on the bounty.

Meanwhile in Canada, the Prairie Providence remain in serious drought conditions, and the record acreage of fires in Canada last year may be surpassed this year.

Edward Ring once again presents an article on how California can produce and distribute abundant water for all users in the state. His articles are always “outside the box” of the accepted narrative of the California State Water Board, the governor, and most of the political class that runs the state. As he writes in his article, “*How Much Water Will \$30 Billion Buy?*”

“Specifically, there is potential for water agencies and water users in California’s rural, agricultural San Joaquin Valley, to stand alongside water agencies and water users in Southern California’s megacities to promote a shared list of water supply projects that will eliminate water scarcity in the state forever. An incentive for this unity, and its urgency, may be found in what is about to be the greatest waste of money in California water history, the construction of the Delta Tunnel. A realistic, if not wildly optimistic cost estimate for that mega-project is \$30 billion. That money could be used instead to help fund massive regional water projects. Split it 50/50: \$15 billion for the farms, and \$15 billion for the cities.”

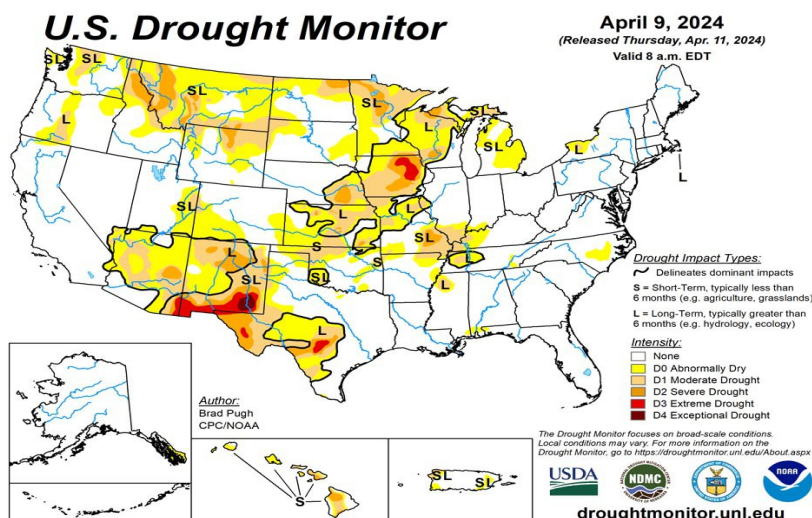
Following a report on the Colorado River and Rocky Mountain snowpack, we have a report of a major problem at the Glen Canyon Dam. “Key backup tubes inside the Glen Canyon Dam might be damaged, potentially threatening the delivery of water to Lake Mead in the future if water levels ever dip too low in Lake Powell, according to a Bureau of Reclamation memo.”

Highlighting the weakness and non-maintenance of U.S. Infrastructure, is an article on “*Water pouring out of rural Utah dam,*”

The news reports conclude with this article: “*Federal officials moved to cancel commercial and recreational salmon fishing off California as the fish still aren’t thriving.*”

This week’s **Feature** is an article by my associate Brian Lantz: “America’s Labor Force & the Immigration Crisis.” What I include here from the article is just its first section. While the immigration crisis is presented later in the article, the primary intent of the article is a discussion of the nation’s labor force. How and what is required to make the U.S. once again a manufacturing superpower.

National Drought Summary for April 9, 2024 from the U.S. Drought Monitor



Summary

April 11, 2024 - Following the El Nino winter and an active early spring pattern, drought coverage is at its lowest since the spring 2020.

A strengthening low pressure system and trailing cold front progressed east from the Mississippi Valley to the East Coast at the beginning of April. This storm brought heavy snow (6 to 18 inches, locally more than 2 feet) to the Upper Peninsula of Michigan, Wisconsin, and northern New England.

The recent precipitation (rain and snow) during the past few weeks continued to ease drought conditions across the Upper Midwest. From April 5 to 7, a strong storm system tracked east from the Rockies to the Great Plains. Heavy snowfall (6 to 12 inches, locally more) occurred across parts of Idaho, Montana, and Wyoming. Total precipitation amounts of 1 to 2 inches, liquid equivalent, resulted in drought improvement from the north-central Rockies to western South Dakota.

Drought continued to develop or intensify across parts of the southern Great Plains and lower Ohio Valley along with Hawaii. Please note that heavy rainfall across the South, occurring after April 9th at 8am EDT, will be considered in next week's U.S. Drought Monitor.

The West

As a low pressure system shifted inland, widespread precipitation (rain and high-elevation snow) overspread the West from April 3 to 6. Heavy precipitation (more than 1.5 inches, liquid equivalent) along with snow water equivalent (SWE) amounts near average supported a 1-category improvement to western Idaho and northeastern Oregon.

Parts of western Montana also had a 1-category improvement due to a wet week and considerations such as SWE and SPIs at various time scales.

The current depiction of moderate to severe drought across Idaho and western Montana lines up well with the 6 to 9-month SPI.

On April 5 and 6, a major storm developed across the northern Rockies and high Plains with precipitation amounts exceeding 1.5 inches (liquid equivalent) across southern Montana. Based on this heavy precipitation and lack of support from SPIs at various time scales, a 1-category improvement was made to this region. Neutral to positive SPIs at multiple time scales and SWE near to slightly above normal supported the removal of D0 (abnormal dryness) from western Nevada and adjacent areas of California.

Farther to the north, low snowpack resulted in a second week of D0 and D1 expansion across north-central and northeastern Washington. Although it was a mostly dry week for the Southwest, a reassessment of SPIs at various time scales led to targeted improvements for parts of New Mexico.

The Atmospheric Rivers of Water Year 2024: April Summary

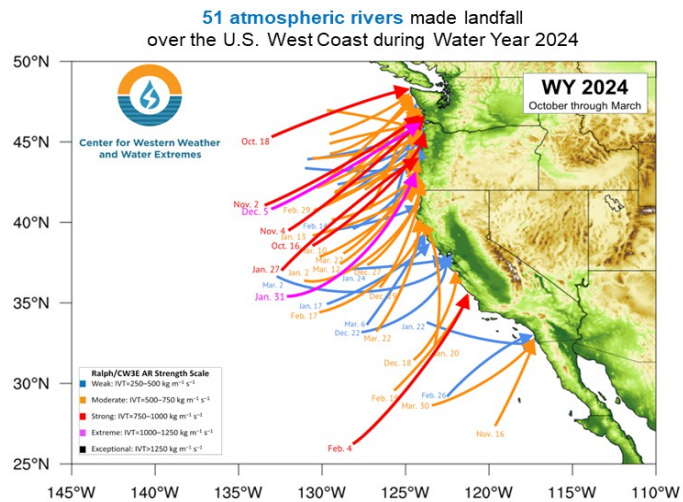
April 9, 2024

<https://cw3e.ucsd.edu/the-atmospheric-rivers-of-water-year-2024-april-summary/>

The Landfalling Atmospheric Rivers of Water Year (WY) 2024

AR Strength	AR Count
Weak	15
Moderate	28
Strong	6
Extreme	2
Exceptional	0

Regions Impacted by Each AR	
State/Region	ARs
Washington	41
Oregon	46
Northern CA	43
Central CA	25
Southern CA	16



*Arrows are placed on the map where each AR was strongest over the coast

And in Canada

Drought, heat raise the risk of a repeat of Canada's record-breaking wildfires last year

April 10, 2024

<https://www.sfgate.com/news/world/article/drought-heat-raise-the-risk-of-a-repeat-of-19396291.php>

OTTAWA, Ontario (AP) — Canada's emergency preparedness minister warned Wednesday the country's wildfire season could be more explosive than last year when it led to unprecedented smoke conditions across much of the country and into the United States.

Persistent drought and months of above-average temperatures have raised the risk of a repeat of last year's record-breaking wildfires, prompting federal ministers to wave a red warning flag about the desperate need to address climate change.

"We can expect that the wildfire season will start sooner, end later and potentially be more explosive," Emergency Preparedness Minister Harjit Sajjan told a news conference.

The Canadian wildfire season runs from May through October.

The 2023 fire season was Canada's worst on record, burning more than 15 million hectares and forcing more than 230,000 people from their homes.

Ringside: How Much Water Will \$30 Billion Buy?

If raised, Shasta Dam could have been filled to capacity this year, and last year

Shasta Dam Raising Project would heighten dam 18.5-feet. (Photo: U.S. Bureau of Reclamation)

By [Edward Ring](#), April 10, 2024 2:20 pm

<https://californiaglobe.com/fr/ringside-how-much-water-will-30-billion-buy/>



Shasta Dam Raising Project would heighten dam 18.5-feet. (Photo: U.S. Bureau of Reclamation)

Specifically, there is potential for water agencies and water users in California's rural, agricultural San Joaquin Valley, to stand alongside water agencies and water users in Southern California's megacities to promote a shared list of water supply projects that will eliminate water scarcity in the state forever. An incentive for this unity, and its urgency, may be found in what is about to be the greatest waste of money in California water history, the construction of the Delta Tunnel. A realistic, if not wildly optimistic cost estimate for that mega-project is \$30 billion. That money could be used instead to help fund massive regional water projects. Split it 50/50: \$15 billion for the farms, and \$15 billion for the cities.

Compared to other water supply project options, the Delta Tunnel does not make financial sense. Spending \$30 billion to build something that will move 500,000 acre feet of water per year equates to \$60,000 of capital cost per acre foot of annual yield. This is a terrible ratio.

Consider the proposed Shasta Dam raise, for which engineering studies are already complete. Raising the height of the dam a mere 18 feet would increase storage in that vast lake by [over 600,000 acre feet](#). And it, too, could have been filled to capacity this year, and last year.

It is likely that if desalination plants were constructed at a larger scale, starting for example at 100,000 acre feet of annual capacity which is roughly twice the size of California's existing plant in Carlsbad, the capital cost per acre foot of annual yield would be less. But as it is, referencing the inflation adjusted actual [cost to build Carlsbad](#), and the more recent cost projections for the proposed [plant in Huntington Beach](#), ocean desalination costs around \$27,000 of capital cost per acre foot of annual yield.

More to the point is the fact that desalination, combined with upgraded wastewater treatment and urban runoff harvesting, all have the potential to significantly reduce the need for California's big coastal cities to import water from the Central Valley. A \$15 billion dollar investment in desalination would yield 550,000 acre feet per year, at a capital cost to annual yield ratio that is at least twice as favorable as that of the proposed Delta Tunnel. Putting that money into wastewater recycling instead would yield

a comparable return. There is no serious water supply project option available to Californians that does not beat the Delta Tunnel in terms of return on investment.

The Colorado River

Late-winter storms lift Upper Colorado Basin out of drought, Lower Basin not so fortunate

By [Lisa Sturgis](#)

Published: Apr. 5, 2024 at 4:45 PM PDT

<https://www.fox5vegas.com/2024/04/05/late-winter-storms-lift-upper-colorado-basin-out-drought-lower-basin-not-so-fortunate/>

LAS VEGAS, Nev. (FOX5) - Winter storms arrived late in the Rocky Mountains this season.

But the final snowpack measurement of the year showed March brought enough precipitation to the Upper Basin of the Colorado River to lift it from drought status. But down here in the Lower Basin, it's a different story.

“When we look at the health of our water system, and what’s coming into the reservoir for the year, it’s really the snowpack in what we call the Upper Basin, Colorado, and Wyoming primarily, that we monitor to see what the upcoming year is looking like, says Colby Pellegrino, Deputy General Manager of Resources for the Southern Nevada Water Authority.

And this year, the snow arrived late.

Officials brace for ‘uncertainty’ in water transfers to Lake Mead

By [Alan Halaly](#) Las Vegas Review-Journal

April 10, 2024 - 4:23 pm

Updated April 11, 2024 - 10:47 am

<https://www.reviewjournal.com/local/local-nevada/officials-brace-for-uncertainty-in-water-transfers-to-lake-mead-3031822/>

Key backup tubes inside the Glen Canyon Dam might be damaged, potentially threatening the delivery of water to Lake Mead in the future if water levels ever dip too low in Lake Powell, according to a Bureau of Reclamation memo.

Below 3,490 feet, water releases from Lake Powell are wholly dependent on “river outlet works,” which water managers now feel are not functional and could threaten the water supply downstream.

Currently, the reservoir sits at 3,558 feet, and the latest two-year projection places water levels above 3,560 feet until at least February 2026.

“Given the current uncertainty associated with long-term performance ... it is recommended that Reclamation not rely on the river outlet works as the sole means for releasing water from Glen Canyon Dam,” the memo reads.

More than 30 million people in Nevada, California and Arizona depend on flows from Lake Powell to fill Lake Mead, meaning the need to address engineering flaws at the dam is pressing. While water managers investigate the damage, they will temporarily reduce flows out of these four tubes, according

to the memo.

Solutions in short supply

At a hearing explaining the Lower Basin states' proposal for river distribution in early March, former Reclamation Commissioner Brenda Burman said the agency would work to find engineering solutions to the dam's problems. Burman now works for the Central Arizona Project, which helps manage water resources across the state.

Memo reveals damage to pipes inside Glen Canyon Dam, a threat to Colorado River water supply

by: [Greg Haas](#)

Posted: Apr 10, 2024 / 07:15 PM PDT

<https://www.8newsnow.com/news/local-news/memo-reveals-damage-to-pipes-inside-glen-canyon-dam-a-threat-to-colorado-river-water-supply/>

“In summary, at reservoir levels below the minimum power pool (elevation 3,490 ft), there are concerns with relying on the river outlet works as the sole means of sustained water releases from Glen Canyon Dam,” the memo said.

The “river outlet works” is a backup system at Glen Canyon, used infrequently because Reclamation needs to generate as much electricity as possible by sending water through the hydropower penstocks, a much larger set of tubes higher up.



April 24, 2023 – Glen Canyon Dam High-Flow Release. The pipes shown are part of the river outlet Works. (U.S. Bureau of Reclamation)

A special inspection that happened around last year's High Flow Experiment found erosion within the four 8-foot pipes of the river outlet works. The evidence of “cavitation” is being described by

conservation groups as a new part of the “spectacular water crisis” that demonstrates the magnitude of problems with the dam.

Reclamation’s report indicates that using the river outlet works as an everyday part of moving water through the dam is problematic.

The Reclamation report on how to proceed appears below:

[20240326-EstablishmentInterimOperatingGuidanceGlenCanyonDamLowReservoirLevels-TechnicalDecisionMemo-508-TSCDownload](#)

Water pouring out of rural Utah dam through 60-foot crack, putting nearby town at risk



In this photo provided by the Utah Division of Water Rights, crews use heavy machinery to place boulders downstream of the cracked Panguitch Lake Dam to reinforce the wall, Wednesday, April 10, 2024, in Panguitch, Utah. (Matt Call/Utah Division of Water Rights via AP)

By BRITTANY PETERSON and [HANNAH SCHOENBAUM](#)
Updated 10:05 PM PDT, April 10, 2024

<https://apnews.com/article/dam-crack-flooding-utah-230d25194b967f3b2bcd1e1c050517b8>

SALT LAKE CITY (AP) — Workers hurriedly tried to shore up a rural Utah dam after a 60-foot (18-meter) crack sent water pouring into a creek and endangering the 1,800 residents of a downstream town.

State and local leaders don’t think the Panguitch Lake Dam is in imminent danger of breaking open but have told residents to be prepared to evacuate if conditions worsen. Emergency management officials passed out a list of evacuation procedures to worried residents at a Wednesday evening town meeting meant to mitigate panic.

Lowering the reservoir to below the affected area will take several days, he said. About 2 feet (61 centimeters) of water remained above the crack as of Wednesday evening, and workers had covered

nearly 45 feet (nearly 14-meters) of the crack with boulders.

An ice sheet on the reservoir had pushed up against the dam, causing the top to crack and tilt downstream, with water gushing through the opening, Taylor explained. His staff was able to relieve some of the pressure against the dam by making large cuts across the ice sheet. The ice has now pulled away, and the top of the dam has tilted back, he said.

CAL MATTERS: California salmon fishing banned for second year in row

[Maven](#)

[News](#)

[April 10, 2024](#)

<https://mavensnotebook.com/2024/04/10/cal-matters-california-salmon-fishing-banned-for-second-year-in-row/>

Federal officials moved to cancel commercial and recreational salmon fishing off California as the fish still aren't thriving.

By Rachel Becker, Cal Matters

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In a [devastating blow to California's fishing industry](#), federal fishery managers unanimously voted today to cancel all commercial and recreational salmon fishing off the coast of California [for the second year in a row](#).

The decision is designed to protect California's dwindling salmon populations after drought and [water diversions](#) left river [flows too warm and sluggish](#) for the state's iconic Chinook salmon to thrive.

Salmon abundance forecasts for the year "are just too low," Marci Yaremko, the California Department of Fish and Wildlife's appointee to the Pacific Fishery Management Council, said last week. "While the rainfall and the snowpacks have improved, the stocks and their habitats just need another year to recover."

State and federal agencies are now expected to implement the closures for ocean fishing. Had the season not been in question again this year, recreational boats would likely already be fishing off the coast of California, while the commercial season typically runs from May through October.

Feature: America's Labor Force & the Immigration Crisis

The **Feature** this week is the first section of a longer article that, while a discussion of the immigration crisis is presented later in the article, the primary intent of the article is a discussion of the nation's labor force. How and what is required to make the U.S. once again a manufacturing superpower.

By [Brian Lantz](#)

[April 09, 2024](#)

https://www.larouchepac.com/america_s_labor_force_the_immigration_crisis



Migrants illegally enter the U.S. by crossing the Rio Grande in rubber boats near Los Ebanos, Texas, June 15, 2019. Photo by Kris Grogan, CBP Office of Public Affairs

" . . . For having traffic with thyself alone,
Thou of thyself thy sweet self dost deceive . . . "

—William Shakespeare

Where do we get the skilled workforce that we need to build our future? That is the essential, existential issue; not finding cheap labor for "markets" today.

What is most important is that we *fire the imaginations* of our young people, that we create the most human of desires: to go to the frontiers.

Labor Power

Today, a conflation of formal statistics and guess-estimates are circulated. Whether it is [3.3 million illegal immigrants](#) [See Appendix B] who entered the U.S. in 2023, or even eight or ten million over the last few years, we understand it now as an existential threat! It is President Donald Trump and the vast majority of American people who agree: we must close the border to illegal immigration!

At the same time—perhaps the reader is unaware?—a multitude of think tanks, institutes, and legacy media outlets proclaim that expanding legal and illegal immigration actually insured that "the pressure was taken off" of labor shortages and a "soft landing" from high inflation levels is being achieved. All this is horse-feathers. Yet their lobbyists have ruled within the precincts of Washington, DC—until now.

Until now, no side in this mash-up, even the well-meaning, have started from the most fundamental issue: *labor power*. That is, the development of creative, individual cognitive potential. This is, after all, all about the *human capital* essential to creating America's future.

Economist and statesman Lyndon LaRouche refined the concept of *labor power*, starting with his discovery—and its implications—regarding the profound role of individual, human creativity. You can view his concept [here](#). Human creativity is knowable and can be promoted. Prometheus Action will have more to say about this in the near future.

<https://www.youtube.com/watch?v=Ja4KZqt3E88&t=5s>

Consider this: President Trump has rightfully called for the building of "hundreds and hundreds and hundreds of big, beautiful power plants" to fuel the rebuilding of our United States as a "manufacturing

superpower." To do so, we must produce the bill of materials required for those hundreds and hundreds of fossil fuel and nuclear power plants, and the labor force so-required. Where will this skilled workforce and this "supply chain" of production come from? How will it be created? In short, the answer is that it must come from *We the People*.

Now, more than perhaps ever, we are challenged to take a *step back and consider what WE are all here for*. It is reliably reported to us in *Genesis*, the holy scripture of all of the Abrahamic religions:

26: And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

27: So God created man in his own image, in the image of God created he him; male and female created he them.

28: And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

This standpoint here is not merely "ancient," but a timeless expression of the *Christian and Promethean*, and [it was out of our classically informed Renaissance culture that our nation came](#).

<https://www.youtube.com/watch?v=Ja4KZqt3E88&t=5s>

As a young Abraham Lincoln proclaimed,

All creation is a mine, and every man, a miner.

The whole earth, and all within it, upon it, and round about it, including himself, in his physical, moral, and intellectual nature, and his susceptibilities, are the infinitely various ``leads" from which, man, from the first, was to dig out his destiny.

In the beginning, the mine was unopened, and the miner stood naked, and knowledgeless, upon it.

Fishes, birds, beasts, and creeping things, are not miners, but feeders and lodgers, merely. Beavers build houses; but they build them in nowise differently, or better now, than they did, five thousand years ago. Ants, and honey-bees, provide food for winter; but just in the same way they did, when Solomon referred the sluggard to them as patterns of prudence.

Man is not the only animal who labors; but he is the only one who improves his workmanship. This improvement, he effects by [Discoveries, and Inventions](#).

Can one disagree? Would one dare to disagree? Turn now to our troubled labor force.