

Snowpack

Late-season snows help lagging snowpacks

Storms that blew across the West last week are credited with increasing mountain snowpacks.

While some locations are at normal levels, most areas were recording below-normal snowpacks at the beginning of March.

California

California water officials tromped through long-awaited fresh snowdrifts in the Sierra Nevada mountains Monday, but a welcome late-winter storm still left the state with less than half the usual snow for this late point in the state’s important rain and snow season.

Runoff from snow in the mountains historically provides Californians with nearly a third of their water for the whole year. Monday’s snow surveys in the mountains by state water officials is one of several closely watched gauges of how much water California cities and farms will have.

Plunging a rod into a snow drift, snow-survey chief Frank Gehrke measured 41.1 inches of snow Monday, almost all of it laid down by a heavy winter storm that rolled through the region on Feb. 28.

That same spot had just 7 percent of its usual snow before the storm hit, dropping up to 8 feet of snow. On March 5, the Phillips Station measuring location was up to 39 percent of the historical average for the date, Gehrke said. Across the Sierras, the state was at 37 percent of normal snowfall as of that date.

“Of course we don’t know what the rest of the month is going to bring,” Gehrke said. “But it is a much rosier, happier picture than it was a week ago.”

California had accumulated less than a quarter of its normal snowpack for the year before last week’s storm. By February, most of Southern California was back in drought, owing to a dud of a rain and snow season so far this year.

It would take six more storms to bring the state up to its normal winter precipitation by April. The odds of that happening are about 1-in-50, the National Weather Service cautioned.

March is typically the last month of the rain and snow season in the state.

California emerged only last year from a historic five-year drought that forced mandatory water conservation for cities and towns, dried wells, and caused massive die-offs of trees and some other native



Kelly M. Grow/California Department of Water Resources
Keith Cialino, a science fellow with the Assembly Water, Parks and Wildlife Committee, left, and Dylan Chapple, a science fellow with the Assembly Natural Resources Committee, assist Frank Gehrke, chief of the California Cooperative Snow Surveys Program on March 5 with the third snow survey of the 2018 snow season at Phillips Station in the Sierra Nevada mountains.

species.

California’s rainy season is often this kind of a cliffhanger, Daniel Swain, a climate scientist at the University of California-Los Angeles, said last month.

The state is dependent on a handful of significant storms for its water, so things can turn around quickly, he said.

California’s reservoirs are at 106 percent of their historical average for this point in the year thanks to last year’s rains, said Chris Orrock, a spokesman for the state Department of Water Resources.

While the heavy snows in the Sierra Nevada are the main gift from the latest storm, it helps that arid Southern California got doused as well, Orrock said.

Rain in Southern California means reservoirs get filled and vital below-ground natural reservoirs that were depleted during the drought are replenished.

Idaho

Snowpack across Idaho ranges from 120 percent of normal in the Clearwater Basin to 40 percent of normal in the Owyhee Basin.

With only a month of winter remaining, some areas could use more precipitation, said Ron Abramovich, water supply specialist with the Natural Resources Conservation Service in Boise.

Fortunately, a return to

winter weather at the end of February brought low temperatures and storms, and conditions are changing, he said.

A warm, dry spell in January bled into February, leaving central and southern Idaho drier than normal, he said.

“A lot of the moisture fell after the first of March,” he said.

But above-average carryover and good reservoir storage across southern Idaho should be adequate for irrigation supplies, he said.

Snowpack in the Upper Snake Basin is 100 percent to 120 percent of normal, and there will be plenty of water to fill reservoirs and numerous other needs, he said.

But water supplies could be marginal in the Big Wood, Little Wood, Big Lost and Little Lost basins, he said.

A good storm visited those areas last weekend, dumping up to 2 feet of snow in some mountain locations. But those basins need another storm or two to ensure adequate irrigation supplies, Abramovich said.

And if snow doesn’t fall in the Owyhee and Bruneau basins yet this winter, those areas could use rain this spring, he said.

Abramovich and NRCS water specialists are working on their latest water supply outlook report, which will be available by week’s end.



Kelly M. Grow/California Department of Water Resources
A path was created within the deep snow from the media and surveyors who attended the third snow survey of the 2018 snow season at Phillips Station in the Sierra Nevada Mountains.

Oregon

February was a tale of two seasons for Oregon’s snow-starved mountains and river basins.

The first half of the month saw warm and dry weather carry over from December and January, with total snowpack languishing around 40 percent of normal levels statewide. But winter has come roaring back over the last few weeks, doubling the amount of snow on the ground across some areas, especially in the northern Oregon Cascades.

Julie Koeberle, snow survey hydrologist for the USDA Natural Resources Conservation Service in Portland, said the amount of snow at Mount Hood rose from 53 inches on Feb. 11 to 118 inches, showing an impressive turnaround.

“It’s been really interesting,” Koeberle said. “What we waited all season to get, we pretty much got in the last two weeks.”

While conditions are much improved, Koeberle cautions snowfall is still lagging behind on average.

“We still need quite a bit more if we’re going to catch up to normal,” she said.

Portions of southern Oregon are in particularly dire straits, with the Klamath and Owyhee basins still registering below 50 percent of normal snowpack. Klamath County commissioners have already declared a drought emergency, and farmers are bracing for a painful year.

The U.S. Drought Monitor shows virtually all of central and Eastern Oregon in some type of drought designation, from “abnormally dry” to “moderate drought.” Koeberle said she would not be surprised to see more drought declarations as summer nears.

“In a perfect world, we will continue to get snow, but we can’t count on that,” she said.

According to the National Oceanic and Atmospheric

Administration’s Climate Prediction Center, the next three months should bring colder weather to northern Oregon and an equal chance of normal precipitation throughout the state. The lower temperatures should at least bode well for sustaining the current snowpack, which in turn will help sustain streams longer into the season, Koeberle said.

The NRCS will soon release its monthly streamflow forecast for March, which Koeberle said will reflect the latest gains in snowpack.

“Luckily, we’ve had some improvement in snow. Hopefully that continues,” she said. “We still do have time for some improvement, but we just don’t know how much we’re going to get.”

A silver lining for farmers and ranchers continues to be reservoir levels, which continue to hover around normal, Koeberle said. But for those without access to reservoir rights, she said it would be wise to plan for lower water supplies this summer.

Washington

Warm weather worries about Washington’s mountain snowpack in early February were buried by ample snowfall in the second half of the month.

Statewide snowpack was 109 percent of normal on March 2 compared to 100 percent of normal on Feb. 5, according to Scott Pattee, state water supply specialist for the USDA Natural Resources Conservation Service in Mount Vernon.

“La Nina years typically start out not that great in snowfall, warm and wet, and ‘winter’ comes at the end of winter,” Pattee said.

Cooler weather since mid-February brought mountain snow and more is likely to make a higher percent of normal snowpack on April 1 than on Jan. 1, he said.

“Cooler than normal temperatures is the key. We’re getting into the season where snow will be more in the mountains than the valleys. Soil moisture is good everywhere at 100 percent of capacity,” he said.

It all bodes well for summer irrigation of farmland in the Yakima Valley and around the state.

A 12-day warm streak started in late January and ran through Feb. 8 with most midnight temperatures above freezing at 3,950-foot Stevens Pass. The mountains were not getting a lot of snow.

But a Feb. 16-20 storm brought 6 inches of accumulated (settled) snow to the agency’s Stevens Pass SNOTEL (snow telemetry) site and a Feb. 23-26 storm brought 22 inches, Pattee said.

Parts of the North Cascades received more than 24 inches of accumulated snow and Fish Lake above Cle Elum received 34 inches, helping feed the farm-rich Yakima Basin.

Five mountain reservoirs, providing irrigation water to 464,000 acres of Yakima Basin farmland, were at 74 percent of their 1,065,400-acre-foot capacity and 135 percent of their average on March 2. Precipitation at the reservoirs, Oct. 1 through March 2, was 186 inches, or 115 percent of average, according to the U.S. Bureau of Reclamation.

Oct. 1 to March 2 SNOTEL snow depth accumulation totals were 110 inches at Stevens Pass, 92 inches at Fish Lake above Cle Elum, 151 inches at Lyman Lake above Lake Chelan and 153 inches at Brown Top ridge west of Ross Lake, Pattee said.

“Those are all pretty normal readings, nothing extreme,” he said.

Snow water equivalent snowpack in the Spokane Basin was 114 percent of normal on March 2. The upper Columbia (Okanogan and Methow rivers) was 136 percent. The central Columbia (Chelan, Entiat and Wenatchee) was 105 percent, the upper Yakima was 99 percent and the lower Yakima 101 percent. Walla Walla was 85 percent, the lower Snake River was 113 percent, the lower Columbia was 101 percent, south Puget Sound (from Cascade Crest to lowlands) was 96 percent, central Puget Sound 106 percent, north Puget Sound 122 percent and the Olympics 124 percent.

Reporters Carol Dumas, George Plaven and Dan Wheat, along with The Associated Press, contributed to this report.

Study: Snowpack has declined dramatically across West

By GILLIAN FLACCUS
Associated Press

PORTLAND, Ore. — Scientists in Oregon and Califor-

nia have found dramatically declining snowpacks across the American West over the past six decades, according to a study published March 2.

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percent in a little more than a century, he said, and that modeling paralleled the actual findings based on existing measurements.

That means the region’s average snowpack has lost the equivalent volume of water that it would take to fill Lake Mead, the West’s largest man-made reservoir, Mote said.

The study appeared in NPJ Climate and Atmospheric Science and was a follow-up study to one completed in 2005. This analysis found the loss of snowpack has accelerated, Mote said.

“It’s a bigger decline than we expected,” he said. “In many lower-elevation sites, what used to fall as snow is now rain. Upper elevations have not been affected nearly as much, but most states don’t have that much area at 7,000-plus feet.”

The study found California had the most gains in snowpack since 1955, but recent droughts erased those gains and caused the snowpack to fall in many locations.

Eastern Oregon and northern Nevada saw the worst decreases in snowpack over the span of the study.

Individual sites in California, Montana, Idaho, Washington and Arizona saw snowpack declines of more than 70 percent, the study found.

Mote said it’s not snowing less, but that the snow is melting sooner in the season at higher elevations, leading to low levels in river and reservoir levels during the driest days of summer and early fall.

The study focused on data from 1,766 snowpack monitoring sites across the western U.S., most of them tracked by the U.S. Department of Agriculture and the California Department of Water Resources.

Researchers looked at snow measurements taken April 1, which is typically at the height of the snowpack, but also looked at measurements taken in January, February, March and May.

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