



We have finished the April 16, 2024 Bulletin 120 (B120) forecast update. The forecast includes observed conditions through the morning of Tuesday, April 16. The forecasts are posted at:

B120 Update: <https://cdec.water.ca.gov/reportapp/javareports?name=B120UP>
B120 Update WY Distribution: <https://cdec.water.ca.gov/reportapp/javareports?name=B120DIST>

The B120 forecasts now consider the 6-day forecasted precipitation from the California Nevada River Forecast Center. After the 6-day forecasted precipitation period, forecasts assume median climatology for the remainder of the forecast period.

Forecast Summary:

The projected median April-July (AJ) runoff from the major Sacramento River Valley basins ranges from 88% of average for the Sacramento River at Bend Bridge to 102% of average for the Feather River; the major San Joaquin River Valley basins ranges from 99% of average for the Merced River to 105% of average for the Mokelumne River; and the major Tulare Lake basins ranges from 101% of average for the Kaweah River to 106% of average for the Tule River. The statewide seasonal AJ median forecast is 14.0 million acre-feet (MAF) which is 99% of the historic average. This is a decrease of 1 TAF compared to the April 1, 2024, Bulletin 120 forecast.

Compared to the April 1, 2024 Bulletin 120 forecast, the AJ forecasts have moved in both directions with slight decreases in Shasta Inflow, the Sacramento River at Bend Bridge, the American, Mokelumne and Merced Rivers. The largest decreases were to the Shasta Total Inflow and Sacramento at Bend Bridge with decreases of 3% of the April 1 forecast. All the other basins saw forecast increases with the largest of those being the Yuba and Kaweah rivers which saw 3% forecast gains.

Runoff:

April flows are above average for the Inflows to Shasta, Sacramento, Feather, Cosumnes, and Tule rivers, average for the Stanislaus River but below average for the rest of the Sacramento Valley, San Joaquin Valley, and Tulare Lake basin rivers. However, flow rates for almost all basins have increased since last week and with increased sun exposure and temperatures forecasted runoff will continue to increase across the state. For April-to-date flows in the Sacramento River Valley, the Yuba River has the lowest flow rate at 83% of average while the Feather River has the highest flow rate at 120% of average. Of the major rivers in the San Joaquin River Valley, the Mokelumne River has the lowest flow rate at 84% of average and the Cosumnes River has the highest flow rate at 127% of average. The four Tulare Lake Basin rivers have flow rates that range from 71% of average for the Kings River to 134% of average for the Tule River.

Unimpaired flows in Percent of Average for Water Year 2024 are as follows:

River	Oct	Nov	Dec	Jan	Feb	Mar	Oct-Mar	Apr (Month to Date)
Trinity	81	63	98	169	180	101	132	110
Shasta Inflow	84	75	58	103	152	115	107	100
Sacramento at Bend Bridge	80	79	58	104	157	116	110	104
Feather	112	101	61	93	137	116	107	120
Yuba	106	77	31	61	100	87	75	83
American	108	72	41	58	95	102	80	95
Sacramento Valley Region	90	83	53	90	137	110	101	
Cosumnes	273	137	37	56	122	148	107	127
Mokelumne	92	83	48	50	96	95	79	84
Stanislaus	94	61	37	44	94	99	76	100
Tuolumne	87	57	25	44	108	100	78	93
Merced	188	82	38	34	98	94	76	94
San Joaquin	175	125	69	49	122	101	95	96
San Joaquin Valley Region	132	84	41	45	106	104	84	
Kings	208	105	66	46	109	82	86	71
Kaweah	191	117	67	46	105	94	88	84
Tule	526	189	75	47	110	113	103	134
Kern	226	198	151	87	124	113	131	93
Tulare Lake Region	223	143	89	55	112	94	99	

Precipitation:

The state received more precipitation over the last week but with drier conditions ahead it is looking likely that the trend of above average precipitation for the state will end. Currently the Northern Sierra 8-Station Index is below 50% of its monthly average with the other two indices short of their average as well. The Northern Sierra 8-Station Index, the San Joaquin 5-Station Index, and the Tulare Basin 6-Station Index stand at 30%, 77%, and 64%, respectively, of their April precipitation averages. The Northern Sierra 8-Station Index, the San Joaquin 5-Station Index, and the Tulare Basin 6-Station Index are registering 94%, 88%, and 85% of average for Water Year to Date, respectively.

Precipitation summary for Water Year 2024 as of April 18, 2024:

Region	% of Average	Precipitation Index (inches)									
		O ct	N ov	D ec	Ja n	Fe b	M ar	Apr to Dat e	WY to Dat e	Apr to Dat e	WY to Dat e
Northern Sierra 8-Station Index		28	58	70	108	134	125	30	94	1.3	44.3
San Joaquin 5-Station Index		9	50	35	72	142	134	77	88	2.7	31.0
Tulare Basin 6-Station Index		16	38	32	60	162	124	64	85	1.6	21.4

Snowpack:

The statewide snowpack, as measured by the snow water equivalent (SWE) from the State’s network of automated snow sensors, is 26.3 inches which corresponds to 101% of the April 1 average and 110% of average for the date. Since

April 1st, the statewide snowpack has lost 2.2 inches of SWE which looks to be increasing this week with the dry warmer weather across the Sierras.

The regional snowpack levels as of the morning of April 18, 2024 stand at the following (based on snow sensors):

Region	No. of Stations	Avg. SWC (in)	Percent of April 1	Percent of Normal
Northern	26	31.5	111	122
Central	48	25.9	97	104
Southern	25	21.5	96	106
Statewide	99	26.3	101	110

Weather and Climate Outlooks:

The six-day weather forecast for April 18 shows almost no precipitation over the first five days of the forecast. On the sixth day the north Coast and North and Central Sierras will see a small amount of precipitation, but most areas will see less than a tenth of an inch. The freezing levels are currently quite high, at least 10,000 feet in almost all locations, and will continue to rise in the coming days. The event moving into the state on the sixth day will lower freezing levels but it is not believed that they will fall below current levels.

The NWS Climate Prediction Center (CPC) one-month outlook issued on April 18, 2024, valid for the month of May, suggests equal chances of above or below normal temperatures for most of the state with the northern quarter of the state seeing increased chances of above normal temperatures and the inland deserts area seeing near normal temperatures. The same outlook shows the entire state with equal chances of above or below normal precipitation.

The CPC three-month (May-Jun-Jul) outlook, issued on April 18, 2024, suggests increased chances of above normal temperatures for most of the state with exception of the South Coast which is seeing equal chances of above or below normal temperature. The same outlook shows the entire state with equal chances of above or below normal precipitation.

According to the latest El Niño/Southern Oscillation (ENSO) discussion issued by the Climate Prediction Center on April 15, 2024, El Niño conditions are observed. Equatorial sea surface temperatures (SSTs) are above average across the central and east-central Pacific Ocean. The tropical Pacific atmospheric anomalies are weakening. A transition from El Niño to ENSO-neutral is likely by April-June 2024 (85% chance), with increasing odds of La Niña developing by June-August 2024 (60% chance).

Next Update:

A Bulletin 120 forecast update for conditions as of April 23, 2024 will be available by Thursday, April 25. If you have any questions regarding this forecast, please contact a member of Snow Surveys and Water Supply Forecasting team below.

Interpreting Bulletin 120 Water Supply Forecasts:

All forecasts have uncertainty. For water supply forecasts, the sources of uncertainty include unknown future weather, model simplifications, and data limitations. To express this uncertainty, the forecast is presented not as a single value but as a range of values, each with a specific probability of occurrence. The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts generally become more accurate, tightening the spread among these values.

The Bulletin 120 provides a range of possible volumes of water that might show up in the April through July period. It uses three points to characterize this range of outcomes: a 50% exceedance (median), a 10% exceedance, and a 90% exceedance. The median forecast is a value that represents where half the outcomes are expected to be above, and half are expected to be below. The 10% exceedance represents a higher end of the range where only 1 in 10 events would be expected to be higher. The 90% exceedance is a low mark where only 1 in 10 events would be expected to be lower. The space between these points represents 80% of the expected outcomes and is often referred to as the 80% confidence interval. These three points provide a guide for water resources planning covering the range of possible outcomes that

may still transpire as the wet season winds down and the snowmelt season begins. There is still a 20% chance that the actual streamflow volume will fall either below the 90% exceedance forecast or above the 10% exceedance forecast.

Banner Photo:

The banner photo is of Caples Lake and was found on the post of the current conditions of lake on the Caples Lake Resort website. The photo was taken on April 14 likely by Mike or Gwen Niccoli, the new owners of the Caples Lake Resort.

Bulletin 120 and Water Supply Index Forecast Schedule - Water Year 2024:

Forecast Type	Forecast Date	Issue Date	Issue Day of Week	Notes
WSI	12/1/2023	12/8/2023	Friday	
WSI	1/1/2024	1/9/2024	Tuesday	
Bul 120 & WSI	2/1/2024	2/8/2024	Thursday	
Bul 120 update	2/13/2024	2/15/2024	Thursday	
Bul 120 update	2/20/2024	2/22/2024	Thursday	Presidents' Day 2/19
Bul 120 update	2/27/2024	2/29/2024	Thursday	
Bul 120 & WSI	3/1/2024	3/8/2024	Friday	
Bul 120 update	3/12/2024	3/14/2024	Thursday	
Bul 120 update	3/19/2024	3/21/2024	Thursday	
Bul 120 update	3/26/2024	3/28/2024	Thursday	
Bul 120 & WSI	4/1/2024	4/9/2024	Tuesday	Cesar Chavez Day observed 4/1
Bul 120 update	4/9/2024	4/11/2024	Thursday	
Bul 120 update	4/16/2024	4/18/2024	Thursday	
Bul 120 update	4/23/2024	4/25/2024	Thursday	
Bul 120 & WSI	5/1/2024	5/8/2024	Wednesday	
Bul 120 update	5/14/2024	5/16/2024	Thursday	
Bul 120 update	5/21/2024	5/23/2024	Thursday	
Bul 120 update	5/28/2024	5/30/2024	Thursday	Memorial Day 5/27
Bul 120 update	6/4/2024	6/6/2024	Thursday	
Bul 120 update	6/11/2024	6/13/2024	Thursday	
Bul 120 update	6/18/2024	6/20/2024	Thursday	
Bul 120 update	6/25/2024	6/27/2024	Thursday	

Important Links:

CCSS Website

[SnowTrax](#) *** NEW ***

Full Natural Flow Data:

[Daily FNF](#)

[Monthly FNF](#)

[Seasonal FNF](#)

Precipitation Data:

[Latest Northern Sierra 8-Station Precipitation Index Tabular Data](#)

[Latest San Joaquin 5-Station Precipitation Index Tabular Data](#)

[Latest Tulare Basin 6-Station Precipitation Index Tabular Data](#)

[Latest Northern Sierra 8-Station Precipitation Index Plot](#)

[Latest San Joaquin 5-Station Precipitation Index Plot](#)

[Latest Tulare Basin 6-Station Precipitation Index Plot](#)

Snow Data:

[Latest Snow Sensor Report](#)

[Latest Statewide Summary of Snow Water Equivalents](#)

[SnowTrax – Snow Pillow Quantile Timeseries Dashboard](#) *** NEW ***

[SnowTrax – SWE 3D Dashboard](#) *** NEW ***

Extended Regional Forecasts:

[California Nevada River Forecast Center 6 Day QPF and Snow Level Forecast](#)

[Climate Prediction Center One-Month Outlook Forecasts](#)

[Climate Prediction Center Three-Month Outlook Forecasts](#)

[U.S. Seasonal Drought Outlook](#)

[Weather Forecast Office California Service Area-Products](#)

[El Niño Southern Oscillation \(ENSO\) Conditions and Weekly Discussion \(including La Niña\)](#)

[Atmospheric River Scale Forecast Products](#)

[CW3E Subseasonal to Seasonal Forecasts](#)

Bulletin 120:

[SnowTrax – Snow Products Comparison Dashboard](#) *** NEW ***

[Historical Forecast Error Plots](#)

Other Useful Links:

[California Water Watch](#)

[U.S. Department of Agriculture California Climate Hub by California State Climatologist](#)

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