

Summary of Water Conditions

(Bulletin 120)

May 1, 2005 (issued May 9)

(See below for updates)

This forecast includes precipitation up to May 1. During April, the median Sacramento (4 River) Water Year Runoff forecast rose slightly from 15.6 to 15.7 MAF (82% of the 1951-2000 average). The median Sacramento Valley Water Year Type remained at "Below Normal" and the San Joaquin Valley Water Year Type remained "Wet". As of May 1, the projected mean April-July basin runoff ranged from 148% of average in the Merced River basin to 83% of average in the Pit River basin. Continuing a trend from last month, the Colorado River (25%) and South Lahontan (40%) basins had a very dry April. The overall cool conditions in the Sierra Nevada helped maintain the April 1 snowpack in the higher elevations while much of the lower elevation snow began to run off as expected. Melting was retarded below what was expected during the month for the Northern and Central Sierra. As a result, May begins with generally good snow conditions for this time of year, especially considering the dry periods earlier in the season. Anticipated streamflow peaks are late May to early June for most streams.

In contrast to last year, April 2005 experienced, in general, below normal temperatures with just under median precipitation in the Sacramento River and Tulare Lake basins but only 70% of normal precipitation in the San Joaquin river basin. April precipitation ranged from about 160% of average along the North Coast to about 40% of average in the South Lahontan region for areas with forecasted basins. For the Sierra Nevada, the Sacramento River basin had an average April (100%), while the San Joaquin River (69%) and Tulare Lake Basins (92%) were below normal. The cumulative total since October 1 is around 110% of average in the Sacramento River region, 140% in the San Joaquin River region, and 133% in the Tulare Lake Basin. The Northern Sierra 8-station precipitation index gained 3.4 inches during April, which is 87% of an average April. This raised the 8-station water year total to 46.0 inches, 101% of the seasonal average on May 1 and 92% of an average water year (October 1 - September 30).

April unimpaired runoff in the Sacramento River region was 92% of average (continuing the trend of consecutive below normal runoff since last October in that region), while the San Joaquin region was 111% of average. The cumulative Sacramento River region runoff since October 1 is 76% of average, compared to 92% a year ago. Meanwhile, the cumulative San Joaquin River region runoff since October 1 is 123% of average, compared to 78% a year ago.

Drought remains a major concern from the Cascades into the western Dakotas and western Nebraska, as mountain snow pack remains near record lows in some areas. In Washington, Oregon, and western parts of Idaho and Montana, drought conditions are expected to persist or intensify over the next several months. In the Southwest, where drought has been significantly reduced following near-record snowfalls this past season, snowmelt will increase water supplies, and may even threaten major flooding, while benefiting those reservoirs that remain low. However, some large reservoirs on the Colorado River, such as Mead and Powell, will likely take a long time, perhaps several years with normal precipitation, before storage returns to normal.

May 10, 2005 (available 5/12)

This update includes the observed precipitation from May 1st through the 9th. The projected median April-July runoff now ranges from 158% (Merced River) to 93% (Feather River). This forecast is up an average of about 11% since the May 1 forecast. The Northern Sierra 8-Station Index gained 4.2" during the first 11 days of May. This value is 200% of the average May total. The May 1 through May 10 unimpaired daily runoff is at least 90% of average in all Sierra basins. Some basins are over 150% of average. The averages are enhanced by significant rain since May 1.

May 17, 2005 (available 5/19)

This update includes the observed precipitation from May 10th through the 16th. The projected median April-July runoff now ranges from 164% (Merced River) to 106% (Feather River). This forecast is up an average of about 5% since the May 10 update. As of May 19, the Northern Sierra 8-Station Index gained 8 inches (381% of May's normal) during the month, making this the wettest May on record for the 8-Stations. The seasonal total for the 8-Stations is 52.2 inches, which is 116% of average to date and 108% of an average Water Year. The May 1 through May 17 unimpaired daily runoff indicates that all major Sierra rivers are flowing over the May average rate. The Cosumnes and Sacramento (at Bend Bridge) rivers are flowing over 200% of the average May rate.

May 24, 2005 (available 5/26)

This update includes the observed precipitation from May 17th through the 23rd. The projected median April-July runoff now ranges from 163% (Merced River) to 119% (Feather River). This forecast is up an average of about 12.5% for rivers north of the Mokelumne and down an average of about 2% for all other rivers since the May 17 update. However, overall, this forecast is up an average of about 28.5% since the May 1 forecast for rivers north of the Mokelumne, and up an average of about 14% for all other rivers. As of May 31, the Northern Sierra 8-Station Index gained 8.1 inches (386% of May's normal) during the month, continuing to make this the wettest May on record for the 8-Stations. The seasonal total for the 8-Stations is 54.3 inches, which is 114% of average to date and 109% of an average Water Year. The May 1 through May 24 unimpaired daily runoff indicates that all major Sierra rivers are flowing over the May average rate. The Cosumnes and Sacramento (at Bend Bridge) rivers are flowing over 200% of the average May rate.

May 31, 2005 (available 6/2)

This update includes the observed precipitation from May 25th through the 31st. The projected median April-July runoff now ranges from 163% (Merced River) to 116% (Feather River). This forecast is down an average of about 2% statewide since the May 24 update, but is up an average of about 28% since the May 1 forecast for rivers in the Sacramento Basin, about 18% in the San Joaquin Basin, and about 12% in the Tulare Lake Basin. The Northern Sierra 8-Station Index had almost no precipitation from May 20-31. Nonetheless, the May rainfall in the Northern Sierra was the most on record (see discussion for the May 24 update). The May 1 through May 31 unimpaired daily runoff indicates that all major Sierra rivers flowed at a rate that was at least 150% of the average May rate. Specifically, the Cosumnes and Sacramento (at Bend Bridge) rivers had flows in excess of twice of the average May rate. Most Sierra streams experienced snowmelt peaks during the last week of May. A continual recession is expected in all rivers as the existing snow packs slowly melt with the seasonal rise in temperatures.

Thanks to the unseasonably wet weather that has also affected the Pacific Northwest this April and May; a short-term improvement of the drought in some areas of this region is expected. Basin average precipitation has now increased to approximately 70-75% of normal across the Northwest, up from 60-65% back in early March, and the latest June-August precipitation outlook from the Climate Prediction Center shows the odds favoring above-normal rainfall from the Dakotas to the Pacific Northwest. Across the drought region, recent storms have significantly increased soil moisture and stream flows in some areas, delaying the onset of the wildfire season and irrigation. It is generally too late in the season to eliminate the hydrological drought that is expected to affect water supplies this summer, but this additional moisture should benefit grasslands, pastures, and crops. The May 1 spring and summer streamflow forecasts are still between 25-49% of normal in many areas of Oregon, Washington, and Idaho; most likely due to a near-record low snowpack in portions of those states. Some areas of the Cascades that are less than 50% of normal and other areas of the Cascades are less than 25% of normal. The main Columbia River Forecast is better with 79% of average for April – September runoff at Grand Coulee Dam.

The remnants of the long-term drought affecting parts of Arizona and New Mexico is expected to persist despite near-record winter mountain snow packs in some parts of those states. Some large reservoirs on the Colorado River, such as Mead and Powell, will likely take a long time, perhaps several years with normal precipitation, before storage returns to normal. Unseasonably cool and relatively dry spring conditions have slowed snowmelt, delaying the onset of potential downstream flooding in these areas of the Southwest. As of May 1, forecasted April – July runoff into Lake Powell was at 108% of average.

Statewide reservoir on storage on May 1 was close to or above normal in Arizona, California (see first table), and Washington; but still less than 75% of normal in Nevada, New Mexico, and Oregon.

The latest NWS Climate Prediction Center long-range weather forecast maps at http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.html suggest for June, above normal temperatures in the Pacific Northwest, and the American Southwest, extending into southeastern California. Above normal precipitation is expected in the northeastern part of California and extending into much of the Pacific Northwest. Normal rainfall is forecast for the rest of the State.

The next Bulletin 120 forecast update, for conditions on June 7, will be available by June 9.