We've finished the March 1, 2016 Water Supply Index (WSI) and Bulletin 120 (B120) forecasts. The forecasts include observed conditions through the end of February.

The forecasts are posted at:

WSI: http://cdec.water.ca.gov/cgi-progs/iodir/wsi
B120: http://cdec.water.ca.gov/cgi-progs/iodir?s=b120

Forecast Summary:

February was a rather warm and dry month, with minimal precipitation and snowfall and some decent melting of the snowpack at the lower elevations.

The projected median April-July runoff in the major Sierra river basins ranges from 65 percent on the Kern River to 92 percent on the Stanislaus River. Forecasted median water year runoff in the Sierra ranges from 59 percent on the Kern River to 91 percent on the Tuolumne River.

The dry, warm conditions during February resulted in some big drops in the April-July forecasts. Forecast changes since the February 1 forecast range from a drop of 10 percent (Kern River) to 25 percent (Mokelumne River). While the general lack of precipitation and below average runoff play their part in impacting the April-July forecasts, the major influence on the forecast drop has to do with the snowpack. According to the snow sensors, the snow pack on March 1 was equal to the snow pack on February 1. February historically is one of the three wettest months in the Sierra Nevada and is also historically a significant contributor to the Sierra Nevada snowpack. Given this, zero accumulation in the snowpack over the month was the major driving force in lowering the forecasts as much as they did between the February 1 forecast and this forecast. This trend is also evident in the following water year forecasts.

The WSI forecast is based on hydrologic conditions observed through February 2016 and can be summarized as follows:

Sacramento River Unimpaired Runoff Water Year Forecast (50 percent exceedance)	**15.4 MAF** **(84 percent of average)**
Sacramento Valley Index (SVI) (50 percent exceedance)	**6.1** **(Dry)**
San Joaquin Valley Index (75 percent exceedance)	**2.1** **(Critical)**

Runoff:

Since October 1, the flows in all regions have been below average. This trend continued in February.

Unimpaired flows for the 2015-2016 water year:

Region	October-February Runoff (%)	February Runoff (%)
Sacramento Valley Index (4 rivers)	82	69
San Joaquin Valley Index (6 rivers)	79	82
Tulare Lake Basin (4 rivers)	58	63

Precipitation:

February brought warm and dry weather to the State. Precipitation fell at less than 50 percent of average in each region of the State. Significant precipitation returned to the state in the first week of March. This precipitation, while not captured in this forecast, will be included in the forecast update to be issued later this week.

Precipitation for the 2015-2016 water year accumulated at the following rates of average:

Region/Index	WY accumulated precipitation (%) through February 29, 2016	Precipitation (%) for February 2016
Sacramento River	104	37
San Joaquin River	100	19

Tulare Lake	114	38
Statewide	98	36
Northern Sierra 8-Station Index	102 (35.5 inches)	34 (2.7 inches)
San Joaquin 5-Station Index	99 (27.2 inches)	20 (1.4 inches)
Tulare Basin 6-Station Index	101 (19.6 inches)	21 (1.1 inches)

Snowpack:

Snowpack is monitored using two complementary methods: automatic snow sensor (or "pillow") readings and manual snow course measurements. The snow sensors give us a daily snapshot of snow conditions while the manual snow course measurements provide a monthly verification of snow conditions in locations where snow has been measured in the same manner as far back as 100 years.

The results of the March 2016 statewide snow surveys are as follows:

Region	No. Courses Measured	Avg WC	% Average April 1	% Average March 1
North Coast	11	26.1"	86%	95%
Sacramento	68	22.6"	74%	84%
San Joaquin Valley	63	26.0"	83%	96%
Tulare Lake	37	19.5"	78%	88%
North Lahontan	12	21.2"	76%	87%
South Lahontan	17	15.4"	69%	81%
Statewide Average (weighted)			79%	89%

On March 1, the snow sensor network showed similar numbers, though slightly lower, to the March snow survey results. As mentioned prior, the March 1 snowpack showed no gain in the water content according to the sensors in any region since February 1. The snowpack as of the morning of March 1, 2016 stands at the following (based on snow sensors):

Region	Snow Water Equivalent (inches)	% of Average (Apr 1)	% of Average (Mar 1)
Northern	23.1	80	89
Central	21.7	75	85
Southern	17.0	64	75
Statewide	20.7	73	83

Weather and Climate Outlooks:

The 6-day weather forecast indicates another series of storms bringing more precipitation to the state. The heaviest precipitation is expected on the north coast and northern and central Sierra starting Thursday and going through the end of the 6-day window. These precipitation totals range from 8 to 10 inches. Freezing levels are expected to rise over the next couple of days and then fall back to around 5,000 feet in the northern Sierra and around 6,000 feet in the central and southern Sierra by this weekend.

The NWS Climate Prediction Center (CPC) one-month outlook for March, issued February 29, indicates increased chances of above normal temperatures and precipitation statewide.

The CPC three-month (March-April-May) outlook, issued February 18, indicates increased chances of above normal precipitation statewide except for the northern third of the state where equal chances of above or below normal precipitation are expected. The three month forecast also predicts increased chances of above normal temperatures statewide.

El Niño conditions are present. Positive equatorial seat surface temperature (SST) anomalies continue across most of the Pacific Ocean. A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with a possible transition to La Nina conditions during the fall.

Next Update:

A Bulletin 120 update for conditions as of March 8 will be available, Thursday, March 10. The April 1, 2016 Bulletin 120 and Water Supply Index forecasts will be available on Friday, April 8, 2016. If you have any questions regarding this forecast, please contact a member of the Snow Surveys staff.