State of California
The Natural Resources Agency

Department of
Water Resources

Water Conditions in California

Report 2 March 1, 2019

Gavin Newsom
Governor
State of California

Wade Crowfoot
Secretary for Natural Resources
The Natural Resources Agency

Karla Nemeth
Director
Department of Water Resources

STATE OF CALIFORNIA
Gavin Newsom, Governor

CALIFORNIA NATURAL RESOURCES AGENCY
Wade Crowfoot, Secretary for Natural Resources

Department of Water Resources
Karla Nemeth
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COOPERATING AGENCIES

Public Agencies
Buena Vista Water Storage District
East Bay Municipal Utility District
Eldorado Irrigation District
Friant Water Users Association
Kaweah Delta Water Conservation District
Kern Delta Water District
Kings River Conservation District
Lower Tule River Irrigation District
Merced Irrigation District
Modesto Irrigation District
Nevada Irrigation District
North Kern Water Storage District
Northern California Power Agency
Oakdale Irrigation District
Omochumne-Hartnell Water District
Placer County Water Agency
Sacramento Municipal Utility District
San Joaquin River Exchange Contractors Water Authority
South Feather Water and Power Agency
South San Joaquin Irrigation District
Tri-Dam Project
Truckee River Basin Water Commission
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency
Private Organizations
J.G. Boswell Company
Kaweah and St. Johns River Association
Kings River Water Association
Tule River Association
State Water Project Contractors
Municipalities
City of Bakersfield Water Department
City of Los Angeles Department of Water and Power
City and County of San Francisco Hetch Hetchy Water and Power
State Agencies
University of California
  Central Sierra Snow Laboratory
  Scripps Institution of Oceanography
California Department of Forestry & Fire Protection
California Department of Water Resources
Public Utilities
Pacific Gas and Electric Company
Southern California Edison Company
Federal Agencies
U.S. Department of Agriculture
  Forest Service (14 National Forests)
  Natural Resource Conservation Service
U.S. Department of Commerce
  National Weather Service
U.S. Department of Interior
  Bureau of Reclamation
  Geological Survey, Water Resources
  National Park Service (3 National Parks)
U.S. Department of Army
  Corps of Engineers
National Aeronautics and Space Administration
  Jet Propulsion Laboratory
Other Cooperative Programs
Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

Summary of Water Conditions

March 1, 2019

February continued the wet pattern of January with much above average precipitation over the entire State. The storms were cool enough to double snowpack water content during the month. All regions of the State shared in the water supply bounty.

Forecasts of median April through July runoff are for about 140 percent of average runoff compared to last year's forecast of only 40 percent at this time and an eventual 75 percent at the end of the snowmelt season. Water year runoff is projected to be about 130 percent of average; in 2018 total runoff was estimated at 68 percent of average.

Snowpack water content is about 175 percent of average for this date and about 150 percent of the April 1 average, the average peak of the accumulation season. Last year the snowpack was only 20 percent of average at this time but improved to 60 percent on April 1. In 2017, the March snowpack was 185 percent of average.

Precipitation from October through February was about 130 percent of average statewide compared to only 50 percent last year and 190 percent in 2017.

Runoff to date is estimated to be about 105 percent of average statewide; however, February runoff was about 185 percent of its monthly average. Estimated February runoff of the eight major rivers of the Sacramento-San Joaquin River region in February was 5.2 million acre-feet.

Reservoir storage is 115 percent of average compared to about 100 percent last year at this time. The increase during February was about 4.8 million acre-feet, a gain of 15 percent.

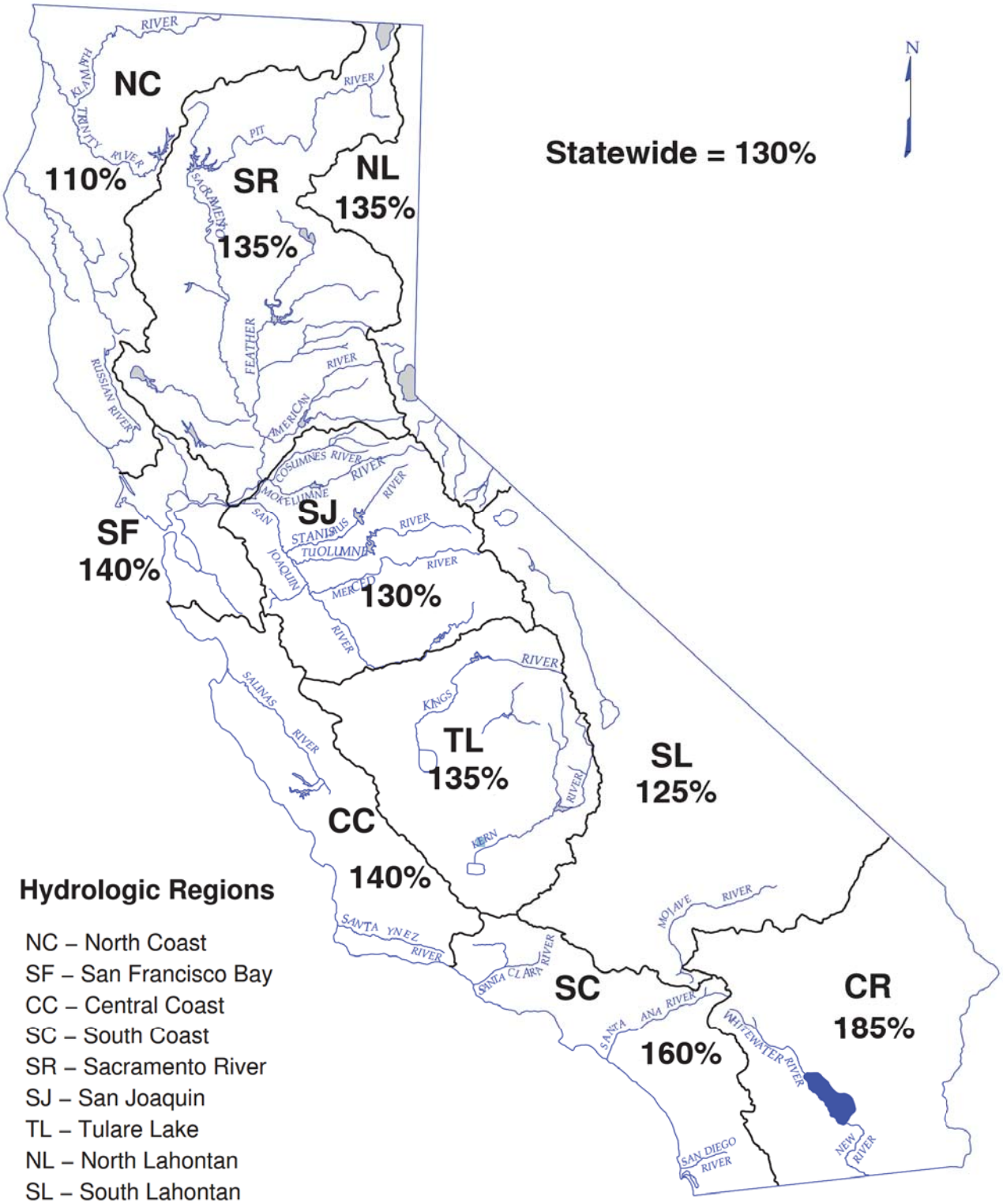
SUMMARY OF WATER CONDITIONS IN PERCENT OF AVERAGE

HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	MARCH 1 SNOW WATER CONTENT	MARCH 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APRIL-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	110	145	105	95	115	100
SAN FRANCISCO BAY	140	--	105	160	--	--
CENTRAL COAST	140	--	85	185	--	--
SOUTH COAST	160	--	95	215	--	--
SACRAMENTO RIVER	135	195	115	105	145	125
SAN JOAQUIN RIVER	130	160	125	120	135	135
TULARE LAKE	135	165	95	100	130	125
NORTH LAHONTAN	135	170	165	80	140	125
SOUTH LAHONTAN	125	165	100	85	145	130
COLORADO RIVER	185	--	--	--	--	--
STATEWIDE	130	175	115	105	140	125

DEPARTMENT OF WATER RESOURCES
CALIFORNIA COOPERATIVE SNOW SURVEYS
SEASONAL PRECIPITATION

IN PERCENT OF AVERAGE TO DATE

October 1, 2018 through February 28, 2019

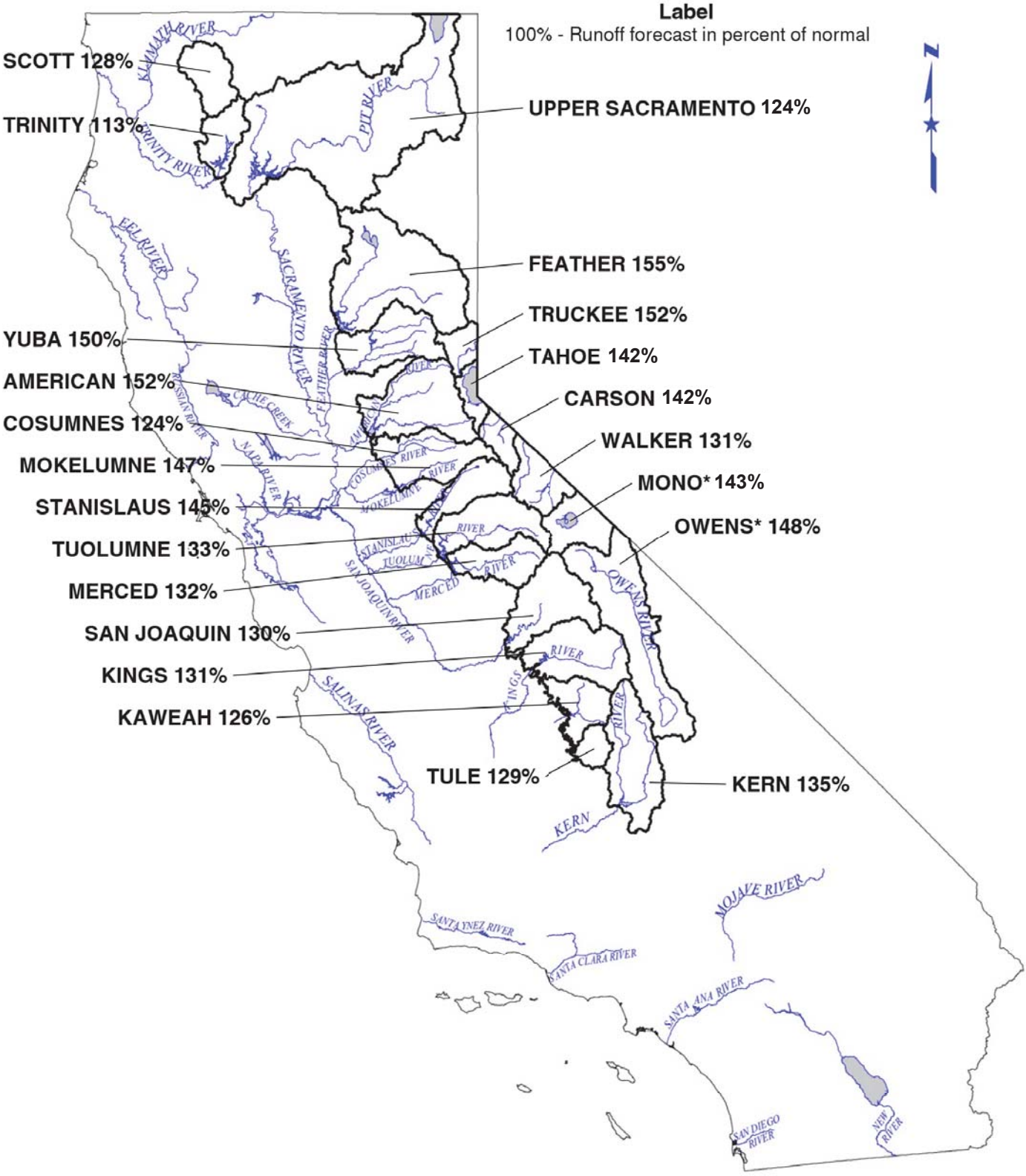


Hydrologic Regions

NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SR – Sacramento River
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CR – Colorado River–Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

DEPARTMENT OF WATER RESOURCES
CALIFORNIA COOPERATIVE SNOW SURVEYS
FORECAST OF APRIL-JULY
UNIMPAIRED SNOWMELT RUNOFF
March 1, 2019



* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

March 1, 2019 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

HYDROLOGIC REGION and Watershed	Apr-Jul Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL 50 Yr Avg (2)	Max of Record (10)	Min of Record (10)	FORECAST Apr-Jul Forecast	Pct of Avg	80% Probability Range (1)
North Coast						
Trinity River at Lewiston Lake	639	1,593	80	**720**	113%	510 - 870
SACRAMENTO RIVER						
Upper Sacramento River						
Sacramento River at Delta above Shasta Lake	295	751	39	350	119%	
McCloud River above Shasta Lake	385	850	185	460	119%	
Pit River near Montgomery Creek + Squaw Creek	1,020	2,098	480	1,260	124%	
Total Inflow to Shasta Lake	1,756	3,525	711	**2,180**	124%	1,730 - 2,680
Sacramento River above Bend Bridge, near Red Bluff	2,421	5,117	943	**3,140**	130%	2,500 - 3,850
Feather River						
Feather River at Lake Almanor near Prattville (3)	333	675	120	510	153%	
North Fork at Pulga (3)	1,028	2,416	243	1,590	155%	
Middle Fork near Clio (4)	86	518	4	135	157%	
South Fork at Ponderosa Dam (3)	110	267	13	170	155%	
Feather River at Oroville	1,704	4,676	378	**2,640**	155%	1,890 - 3,390
Yuba River						
North Yuba below Goodyears Bar	279	647	51	420	151%	
Inflow to Jackson Mdws and Bowman Reservoirs (3)	112	236	25	170	152%	
South Yuba at Langs Crossing (3)	233	481	57	350	150%	
Yuba River near Smartsville plus Deer Creek	968	2,424	151	**1,450**	150%	970 - 1,950
American River						
North Fork at North Fork Dam (3)	262	716	43	400	153%	
Middle Fork near Auburn (3)	522	1,406	100	790	151%	
Silver Creek below Camino Diversion Dam (3)	173	386	37	260	150%	
American River below Folsom Lake	1,199	3,074	185	**1,820**	152%	1,310 - 2,490
SAN JOAQUIN RIVER						
Cosumnes River at Michigan Bar	125	446	8	**155**	124%	90 - 240
Mokelumne River						
North Fork near West Point (5)	437	829	104	640	146%	
Total Inflow to Pardee Reservoir	457	1,076	75	**670**	147%	460 - 870
Stanislaus River						
Middle Fork below Beardsley Dam (3)	334	702	64	480	144%	
North Fork Inflow to McKays Point Dam (3)	224	503	34	320	143%	
Stanislaus River below Goodwin Reservoir (9)	682	1,710	116	**990**	145%	740 - 1,300
Tuolumne River						
Cherry Creek & Eleanor Creek near Hetch Hetchy	315	727	97	420	133%	
Tuolumne River near Hetch Hetchy	604	1,392	153	800	132%	
Tuolumne River below La Grange Reservoir (9)	1,193	2,682	301	**1,590**	133%	1,180 - 2,060
Merced River						
Merced River at Pohono Bridge	372	888	80	490	132%	
Merced River below Merced Falls (9)	623	1,588	104	**820**	132%	600 - 1,050
San Joaquin River						
San Joaquin River at Mammoth Pool (7)	1,026	2,279	235	1,330	130%	
Big Creek below Huntington Lake (8)	91	264	11	120	132%	
South Fork near Florence Lake (7)	201	511	58	260	129%	
San Joaquin River inflow to Millerton Lake	1,228	3,355	193	**1,600**	130%	1,160 - 2,100
TULARE LAKE						
Kings River						
North Fork Kings River near Cliff Camp (3)	239	565	50	320	134%	
Kings River below Pine Flat Reservoir	1,210	3,113	208	**1,590**	131%	1,170 - 2,070
Kaweah River below Terminus Reservoir	285	814	42	**360**	126%	250 - 480
Tule River below Lake Success	63	259	1	**81**	129%	40 - 125
Kern River						
Kern River near Kernville	384	1,203	83	520	135%	
Kern River inflow to Lake Isabella	458	1,657	57	**620**	135%	420 - 830

(1) See inside the back cover for definition.
(2) All 50 year averages are based on years 1966-2015 unless otherwise noted.
(3) 50 year average based on years 1941-90.
(4) 44 year average based on years 1936-79.
(5) 36 year average based on years 1936-72.
(6) 45 year average based on years 1936-81.
(7) 50 year average based on years 1953-2002.
(8) 50 year average based on years 1946-1995.

March 1, 2019 FORECASTS
WATER YEAR UNIMPAIRED RUNOFF

Water Year Unimpaired Runoff in 1,000 Acre-Feet (1)

HISTORICAL			DISTRIBUTION									FORECAST			
50 Yr Avg (2)	Max of Record (10)	Min of Record (10)	Oct Thru Jan	Feb *	Mar	Apr	May	Jun	Jul	Aug	Sep	Water Year Forecast	Pct of Avg	80% Probability Range (1)	
1,348	2,990	200	224	177	190	245	280	155	40	14	10	**1,335**	99%	1,060 -	1,530
860	1,966	165													
1,183	2,353	557													
3,002	5,150	1,484													
5,831	10,796	2,479	1,492	1,163	1,300	880	665	375	260	230	226	**6,590**	113%	5,770 -	7,500
8,544	17,180	3,294	2,405	2,047	2,150	1,320	915	540	365	305	304	**10,350**	121%	9,140 -	11,690
780	1,269	366													
2,417	4,400	666													
219	637	24													
291	562	32													
4,407	10,178	995	904	955	1,050	955	960	515	210	126	105	**5,780**	131%	4,700 -	6,900
564	1,056	102													
181	292	30													
379	565	98													
2,268	5,604	369	381	496	510	490	555	325	80	30	24	**2,890**	127%	2,220 -	3,590
616	1,234	66													
1,070	2,575	144													
318	705	59													
2,626	7,391	349	425	702	720	595	690	430	105	26	18	**3,710**	141%	2,980 -	4,670
379	1,253	20	63	165	165	81	50	19	5	1	1	**550**	145%	415 -	730
626	1,009	197													
748	1,901	129	70	128	170	160	259	205	46	7	5	**1,050**	140%	780 -	1,305
471	929	88													
-	-	-													
1,149	3,078	155	144	217	245	255	380	270	85	20	9	**1,625**	141%	1,305 -	2,025
461	1,147	123													
770	1,661	258													
1,909	4,631	383	199	344	390	335	545	530	180	32	15	**2,570**	135%	2,045 -	3,170
461	1,020	92													
992	2,787	150	95	226	195	175	310	260	75	17	7	**1,360**	137%	1,080 -	1,655
1,337	2,964	308													
112	298	14													
248	653	71													
1,793	4,642	327	144	211	240	280	540	540	240	67	32	**2,295**	128%	1,760 -	2,905
284	607	58													
1,702	4,287	359	130	186	235	260	555	550	225	64	26	**2,230**	131%	1,720 -	2,810
451	1,402	89	33	58	92	80	135	110	35	8	4	**555**	123%	410 -	710
147	615	10	17	28	61	33	29	15	4	2	1	**190**	129%	115 -	270
558	1,577	163													
728	2,318	130	69	56	122	135	215	175	95	38	20	**925**	127%	665 -	1,200

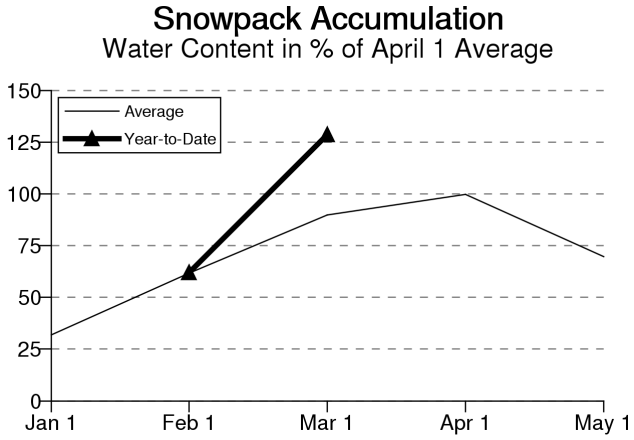
(9) Forecast point names based on USGS gage names. Stanislaus below Goodwin also known as inflow to New Melones, Tuolumne River below La Grange also known as inflow to Don Pedro, Merced River below Merced Falls also known as inflow to McClure.
(10) For the tributaries, the period of record over which the minimum and maximum values are found does not include years after water year 2011.
* Unimpaired runoff in months prior to forecast date are based on measured flows.

March 1, 2019 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

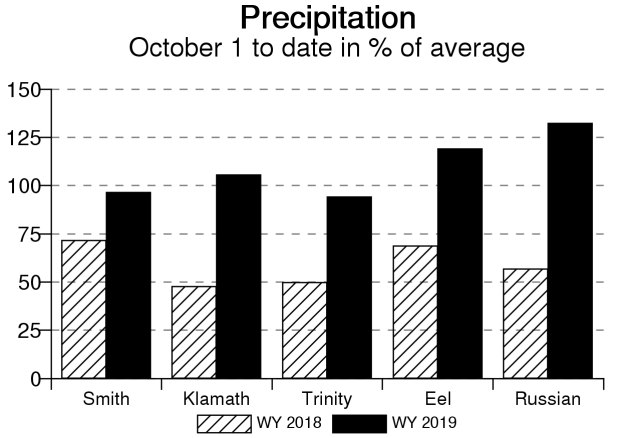
HYDROLOGIC REGION and Watershed	Apr-Jul Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL			FORECAST	
	50 Yr Avg (2)	Max of Record (6)	Min of Record (6)	Apr-Jul Forecast	Pct of Avg
NORTH COAST					
Scott River					
Scott River nr Ft Jones (3)	173	398	22	**221**	128%
Klamath River					
Total inflow to Upper Klamath Lake (4)	475	1,150	149	**475**	100%
NORTH LAHONTAN					
Truckee River					
Lake Tahoe to Farad accretions	250	713	48	**380**	152%
Lake Tahoe Rise (assuming gates closed, ft)	1.3	5.4	0.2	**1.9**	142%
Carson River					
West Fork Carson River at Woodfords	52	135	10	**73**	140%
East Fork Carson River near Gardnerville	182	480	43	**260**	143%
Walker River					
West Walker River below Little Walker, near Coleville	153	410	35	**195**	127%
East Walker River near Bridgeport	61	209	7	**85**	139%
SOUTH LAHONTAN					
Owens River					
Total tributary flow to Owens River (5)	231	579	84	**341**	148%

(1) See inside the back cover for definition.
(2) All 50 year averages are based on years 1966-2015 unless otherwise noted.
(3) Forecast by National Weather Service California-Nevada River Forecast Center. 30 yr average (1981-2010).
(4) Forecast by U.S. Natural Resources Conservation Service and National Weather Service California-Nevada River Forecast Center, April through September forecast, 30 year average based on years 1981-2010.
(5) Forecast by Department of Water and Power, City of Los Angeles, average based on years 1961-2010.
(6) For the tributaries, the period of record over which the minimum values are found does not include years after water year 2011.

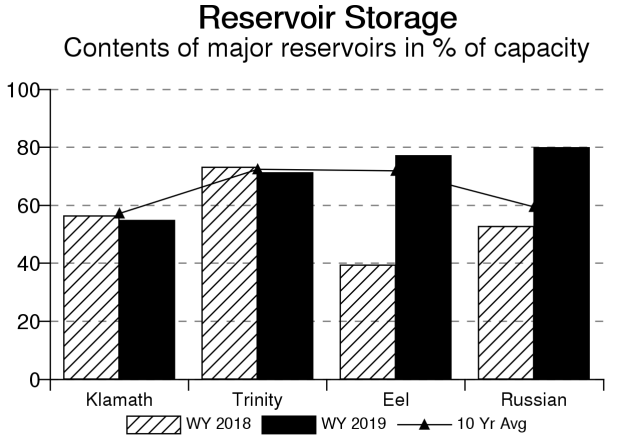
NORTH COAST REGION



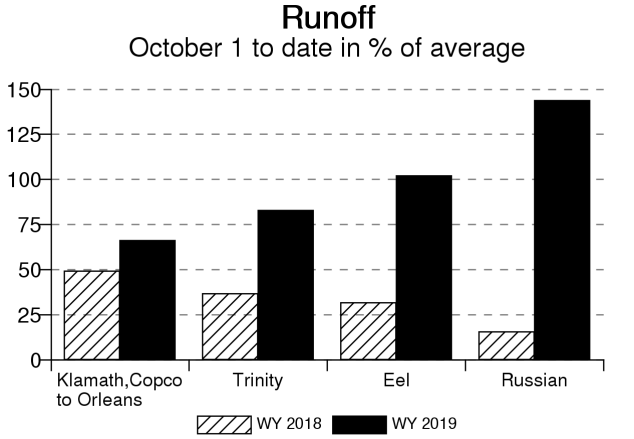
SNOWPACK - First of the month measurements made at 8 snow courses indicate an area wide snow water equivalent of 36.9 inches. This is 130 percent of the seasonal April 1 average and 145 percent of the March 1 average. Last year this time the pack was holding 4.9 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on this area was 110 percent of normal. Precipitation last month was about 220 percent of the monthly average. Season precipitation at this time last year stood at 60 percent of normal.

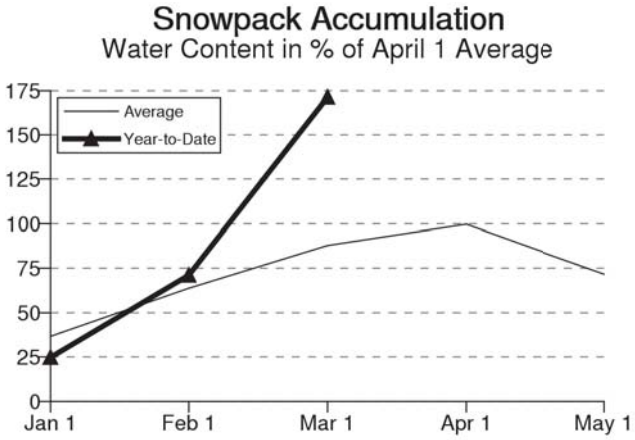


RESERVOIR STORAGE - First of the month storage at 6 reservoirs was 2.24 million acre-feet which is 105 percent of average. About 70 percent of available capacity was being used. Storage in these reservoirs at this time last year was 95 percent of average.

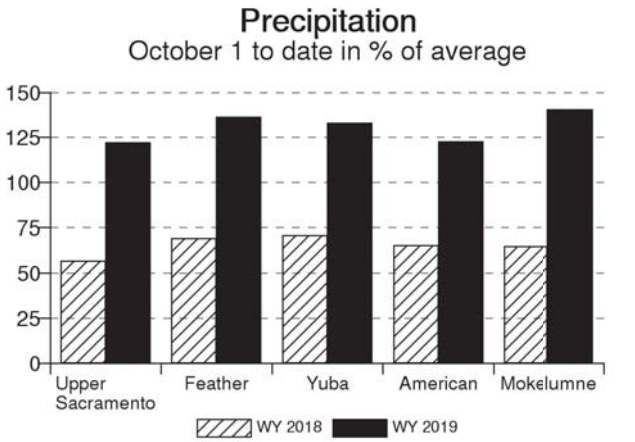


RUNOFF - Seasonal runoff of streams draining this area totaled 6.49 million acre-feet which is 95 percent of average. Last year, runoff for the same period was 35 percent of average.

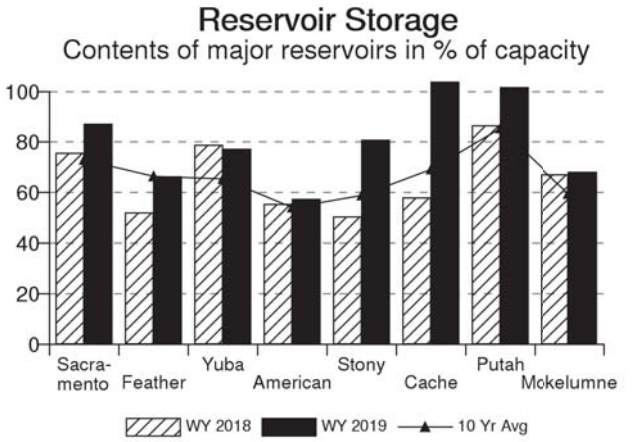
SACRAMENTO RIVER REGION



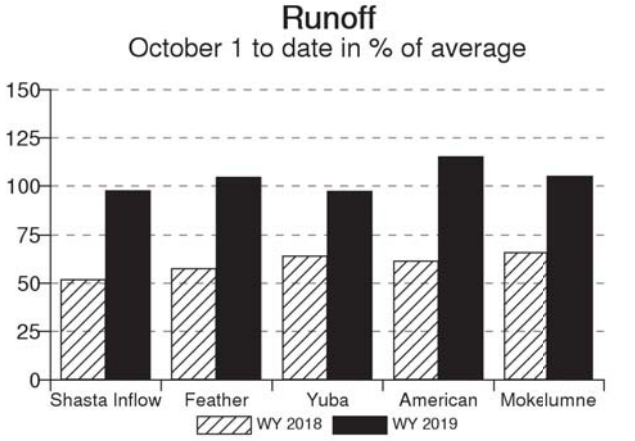
SNOWPACK - First of the month measurements made at 58 snow courses indicate an area wide snow water equivalent of 37.8 inches. This is 170 percent of the seasonal April 1 average and 195 percent of the March 1 average. Last year this time the pack was holding 4.8 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on this area was 135 percent of normal. Precipitation last month was about 265 percent of the monthly average. Season precipitation at this time last year stood at 60 percent of normal.



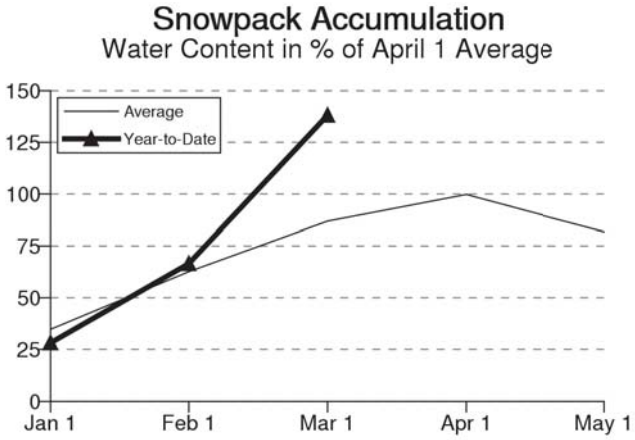
RESERVOIR STORAGE - First of the month storage at 43 reservoirs was 12.56 million acre-feet which is 115 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 95 percent of average.



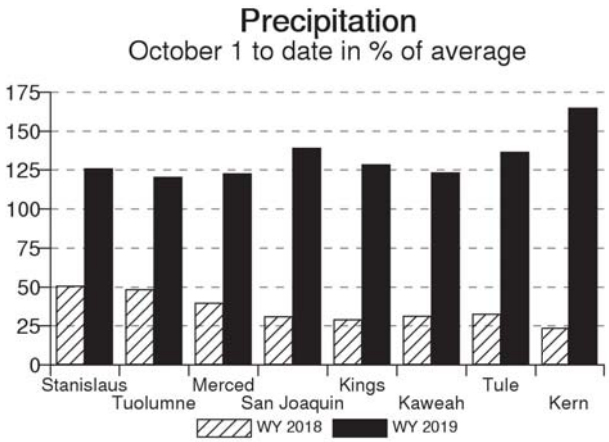
RUNOFF - Seasonal runoff of streams draining this area totaled 8.31 million acre-feet which is 105 percent of average. Last year, runoff for the same period was 50 percent of average.

The **Sacramento Region 40-30-30 Water Supply Index** is forecast to be 9.6 assuming median meteorological conditions for the remainder of the year. This classifies the year as "wet" in the Sacramento Valley according to the State Water Resources Control Board.

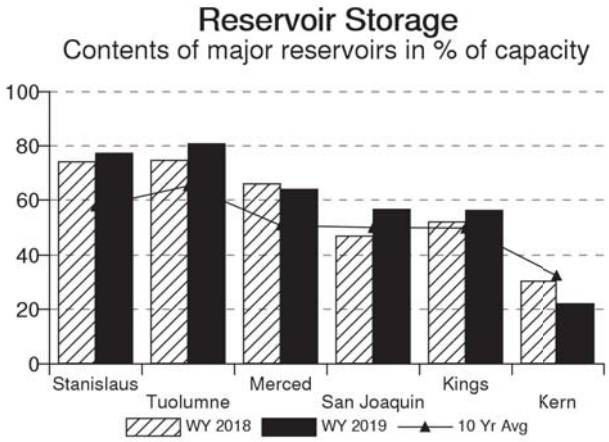
SAN JOAQUIN RIVER AND TULARE LAKE REGIONS



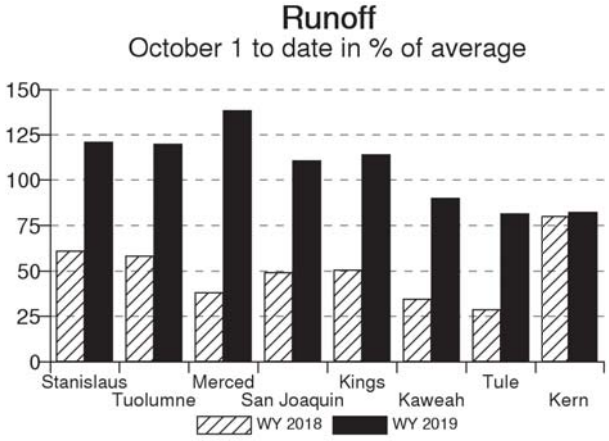
SNOWPACK - First of the month measurements made at 54 **San Joaquin Region** snow courses indicate an area wide snow water equivalent of 41.5 inches. This is 140 percent of the seasonal April 1 average and 160 percent of the March 1 average. Last year this time the pack was holding 5.7 inches of water. At the same time 34 **Tulare Lake** snow courses indicate a basin-wide snow water equivalent of 34.1 inches. This is 150 percent of the seasonal April 1 average and 165 percent of the March 1 average. Last year this time the pack was holding 3.9 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on the **San Joaquin Region** was 130 percent of normal. Precipitation last month was about 240 percent of the monthly average. Season precipitation at this time last year stood at 45 percent of normal. Seasonal precipitation (October 1 through to the end of February) on the **Tulare Lake Region** was 135 percent of normal. Precipitation last month was about 220 percent of the monthly average. Season precipitation at this time last year stood at 30 percent of normal.



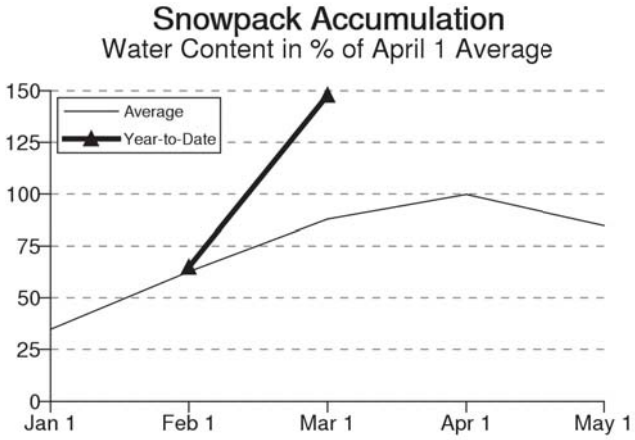
RESERVOIR STORAGE - First of the month storage in 34 **San Joaquin Region** reservoirs was 8.84 million acre-feet which is 125 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 110 percent of average. First of the month storage in 6 **Tulare Lake Region** reservoirs was 814 thousand acre-feet which is 95 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 100 percent of average.



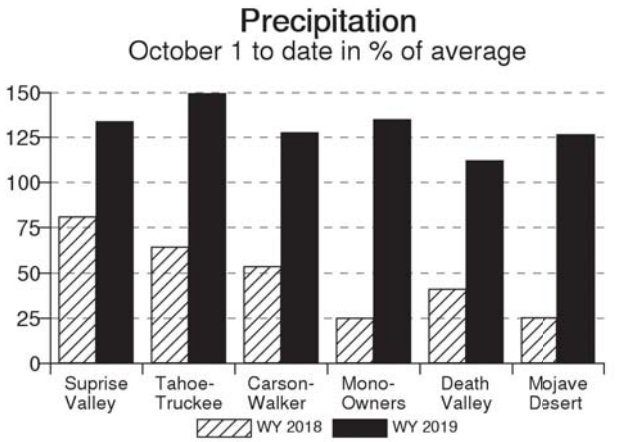
RUNOFF - Seasonal runoff of streams draining the **San Joaquin Region** totaled 2.01 million acre-feet which is 120 percent of average. Last year, runoff for the same period was 50 percent of average. Seasonal runoff of streams draining the **Tulare Lake Region** area totaled 576 thousand acre-feet which is 100 percent of average. Last year, runoff for the same period was 50 percent of average.

The **San Joaquin Region 60-20-20 Water Supply Index** is forecast to be 3.7 at the 75 percent exceedance level assuming median future meteorological conditions. This classifies the year as "above normal" in the San Joaquin according to the State Water Resources Control Board.

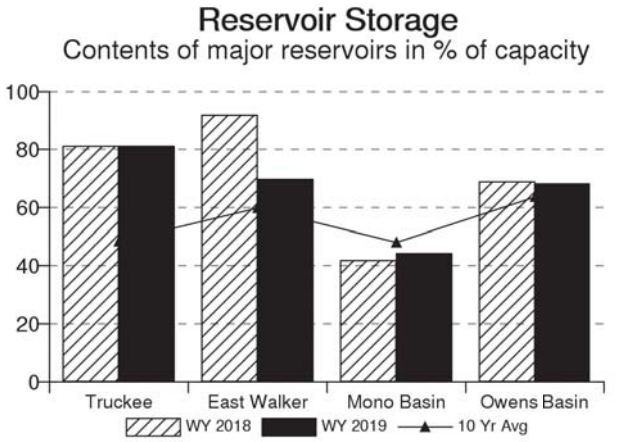
NORTH AND SOUTH LAHONTAN REGIONS



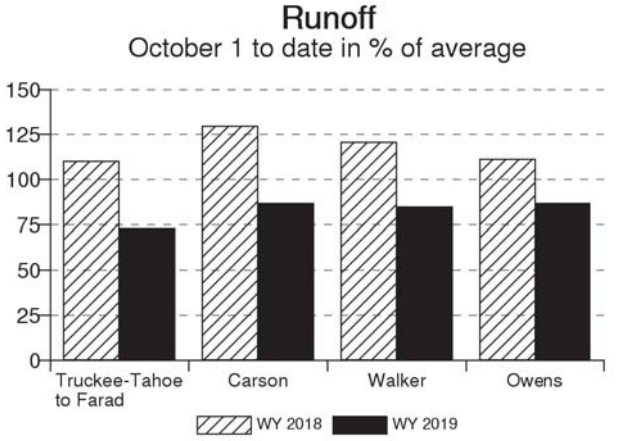
SNOWPACK - First of the month measurements made at 9 **North Lahontan Region** snow courses indicate an area wide snow water equivalent of 33.9 inches. This is 150 percent of the seasonal April 1 average and 170 percent of the March 1 average. Last year this time the pack was holding 7.2 inches of water. At the same time 17 **South Lahontan Region** snow courses indicate a basin-wide snow water equivalent of 29.6 inches. This is 140 percent of the seasonal April 1 average and 165 percent of the March 1 average. Last year this time the pack was holding 7.9 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on the **North Lahontan Region** was 135 percent of normal. Precipitation last month was about 275 percent of the monthly average. Season precipitation at this time last year stood at 65 percent of normal. Seasonal precipitation (October 1 through to the end of February) on the **South Lahontan Region** was 125 percent of normal. Precipitation last month was about 200 percent of the monthly average. Season precipitation at this time last year stood at 30 percent of normal.

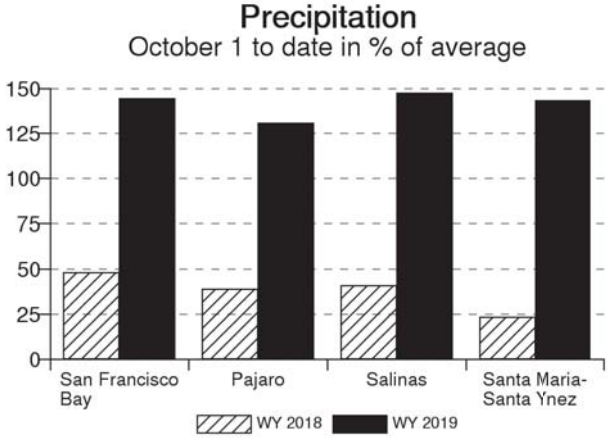


RESERVOIR STORAGE - First of the month storage in 5 **North Lahontan Region** reservoirs was 865 thousand acre-feet which is 165 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 165 percent of average. First of the month storage in 8 **South Lahontan Region** reservoirs was 273 thousand acre-feet which is 100 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 105 percent of average.

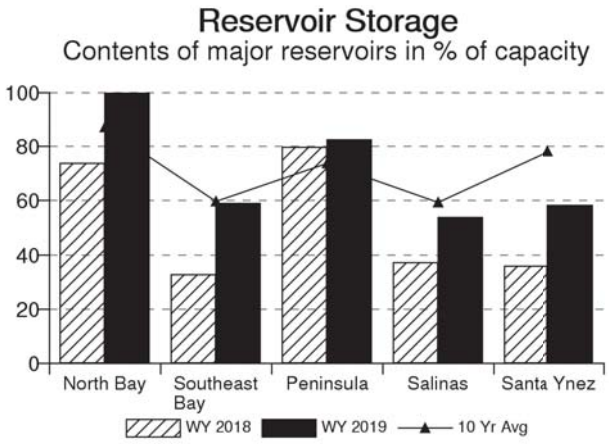


RUNOFF - Seasonal runoff of streams draining the **North Lahontan Region** totaled 155 thousand acre-feet which is 80 percent of average. Last year, runoff for the same period was 120 percent of average. Seasonal runoff of streams draining the **South Lahontan Region** area totaled 47 thousand acre-feet which is 85 percent of average. Last year, runoff for the same period was 110 percent of average.

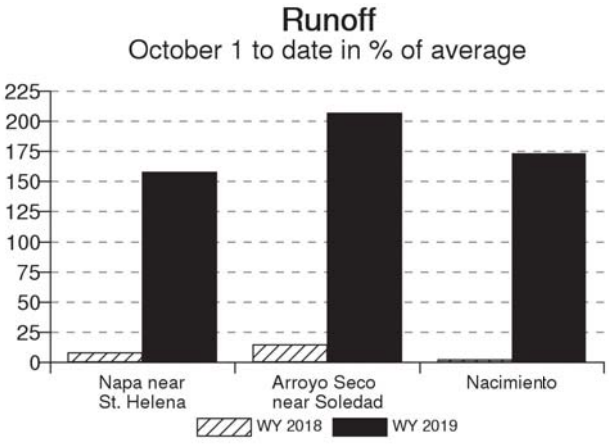
SAN FRANCISCO BAY AND CENTRAL COAST REGIONS



PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on the **San Francisco Bay Region** was 140 percent of normal. Precipitation last month was about 280 percent of the monthly average. Season precipitation at this time last year stood at 50 percent of normal. Seasonal precipitation (October 1 through to the end of February) on the **Central Coast Region** was 140 percent of normal. Precipitation last month was about 250 percent of the monthly average. Season precipitation at this time last year stood at 35 percent of normal.



RESERVOIR STORAGE - First of the month storage in 17 **San Francisco Region** reservoirs was 519 thousand acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 75 percent of average. First of the month storage in 6 **Central Coast Region** reservoirs was 554 thousand acre-feet which is 85 percent of average. About 55 percent of available capacity was being used. Storage in these reservoirs at this time last year was 60 percent of average.



RUNOFF - Seasonal runoff of streams draining the **San Francisco Region** totaled 79 thousand acre-feet which is 160 percent of average. Last year, runoff for the same period was 10 percent of average. Seasonal runoff of streams draining the **Central Coast Region** area totaled 379 thousand acre-feet which is 185 percent of average. Last year, runoff for the same period was 5 percent of average.

SOUTH COAST REGION

PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on the **South Coast Region** was 160 percent of average. Precipitation last month was about 240 percent of the monthly average. Seasonal precipitation at this time last year stood at 25 percent of average.

RESERVOIR STORAGE - First of the month storage at 29 reservoirs was 1.38 million acre-feet which is 95 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 85 percent of average.

RUNOFF - Seasonal runoff of streams draining this area totaled 197 thousand acre-feet which is 215 percent of average. Last year, runoff for the same period was 5 percent of average.

COLORADO RIVER REGION

SNOWPACK - The March 1 snowpack in the Colorado River basin above Lake Powell is 115 percent of average, highest in the South Eastern Utah basin at 140 percent of average and lowest in the Upper Green River basin at 105 percent of average.

PRECIPITATION - Seasonal precipitation (October 1 through to the end of February) on the **Colorado River Region** was 185 percent of average. Precipitation last month was about 330 percent of the monthly average. Seasonal precipitation at this time last year stood at 20 percent of average.

RESERVOIR STORAGE - First of the month storage at 4 reservoirs was 22.2 million acre-feet which is 60 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 70 percent of average.

RUNOFF - The April-July inflow to Lake Powell is forecast to be 7.7 million acre-feet, which is 108 percent of average.

MAJOR WATER DISTRIBUTION PROJECTS
RESERVOIR STORAGE
(AVERAGES BASED ON 1966-2015 OR PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AT END OF February 2018 1,000 AF	2019 1,000 AF	PERCENT AVERAGE	PERCENT CAPACITY
STATE WATER PROJECT						
Lake Oroville	3,538	2,442	1,460	2,188	90%	62%
San Luis Reservoir (SWP)	1,062	914	697	1,062	116%	100%
Lake Del Valle	77	35	26	39	114%	51%
Lake Silverwood	78	67	71	64	96%	82%
Pyramid Lake	180	163	166	156	96%	87%
Castaic Lake	325	277	262	260	94%	80%
Perris Lake	131	105	74	115	110%	87%
CENTRAL VALLEY PROJECT						
Trinity Lake	2,448	1,771	1,787	1,739	98%	71%
Lake Shasta	4,552	3,284	3,414	3,948	120%	87%
Whiskeytown Lake	241	207	206	247	119%	102%
Folsom Lake	977	537	526	598	111%	61%
New Melones Reservoir	2,400	1,456	1,920	2,005	138%	84%
Millerton Lake	521	335	329	366	109%	70%
San Luis Reservoir (CVP)	971	786	841	921	117%	95%
COLORADO RIVER PROJECT						
Lake Mead	26,159	19,321	10,703	10,682	55%	41%
Lake Powell	24,322	16,732	13,346	9,261	55%	38%
Lake Mohave	1,810	1,672	1,704	1,704	102%	94%
Lake Havasu	648	555	590	571	103%	88%
EAST BAY MUNICIPAL UTILITY DISTRICT						
Pardee Res	204	180	186	182	101%	89%
Camanche Reservoir	417	250	303	308	123%	74%
East Bay (4 res.)	159	130	122	128	99%	80%
CITY AND COUNTY OF SAN FRANCISCO						
Hetch-Hetchy Reservoir	360	171	289	298	174%	83%
Cherry Lake	268	155	48	212	136%	79%
Lake Eleanor	29	11	9	18	161%	63%
South Bay/Peninsula (4 res.)	238	166	130	172	104%	72%
CITY OF LOS ANGELES (D.W.P.)						
Lake Crowley	183	126	136	137	109%	75%
Grant Lake	48	28	20	27	96%	56%
Other Aqueduct Storage (6 res.)	83	75	66	65	86%	78%

TELEMETERED SNOW WATER EQUIVALENTS

March 1, 2019

(AVERAGES BASED ON PERIOD RECORD)

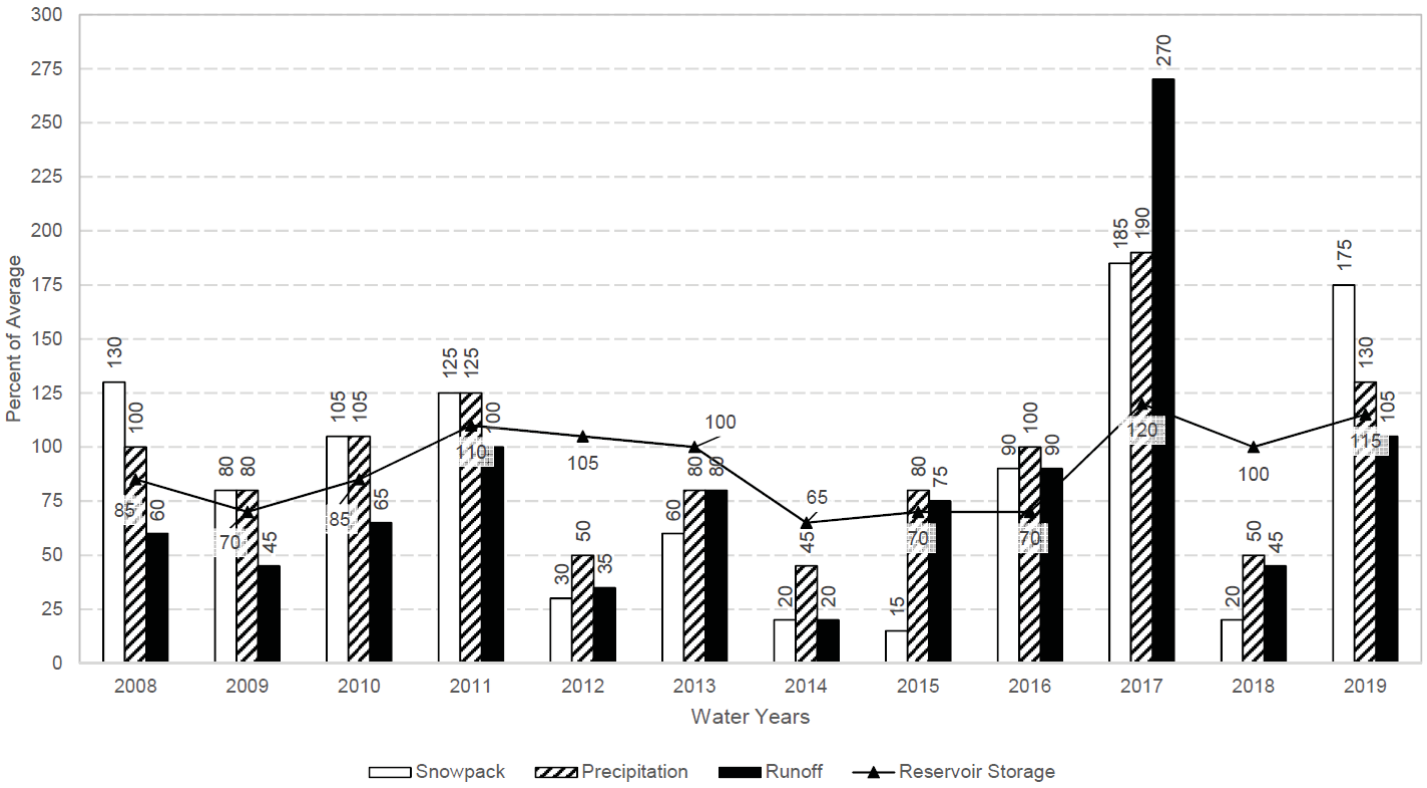
BASIN NAME / STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT Mar 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
TRINITY RIVER						
Shimmy Lake	6400'	40.3	42.5	105.4	42.5	33.1
Crowder Flat	5100'	-	5.3	-	5.4	3.9
Highland Lakes	6030'	29.9	47.0	157.3	46.7	35.0
Mumbo Basin	5650'	22.4	25.6	114.3	25.7	16.4
Bonanza King	6450'	40.5	52.8	130.4	52.2	39.5
Red Rock Mountain	6700'	39.6	65.5	165.5	65.3	52.1
Big Flat	5100'	15.8	27.5	174.1	27.4	19.0
Scott Mountain	5900'	16.0	30.8	192.8	30.6	23.3
Peterson Flat	7150'	29.2	40.4	138.5	40.1	29.8
Middle Boulder 3	6200'	28.3	42.5	150.2	42.5	32.4
SACRAMENTO RIVER						
Blacks Mountain	7050'	12.7	16.2	127.6	16.3	15.2
Cedar Pass	7100'	18.1	19.1	105.5	19.2	17.0
Medicine Lake	6700'	32.6	40.2	123.3	39.8	33.7
Sand Flat	6750'	42.4	43.2	101.9	43.1	34.1
Slate Creek	5700'	29.0	34.2	118.1	34.1	21.0
Adin Mountain	6200'	13.6	19.1	140.4	19.0	17.6
Stouts Meadow	5400'	36.0	40.4	112.2	39.4	27.6
Snow Mountain	5950'	27.0	43.7	161.8	43.0	33.2
FEATHER RIVER						
Kettle Rock	7300'	25.5	42.6	167.1	42.2	33.7
Gold Lake	6750'	36.5	52.8	144.7	52.0	44.4
Bucks Lake	5750'	44.7	46.8	104.7	46.9	35.3
Harkness Flat	6200'	28.5	38.0	133.2	37.9	28.7
Four Trees	5150'	20.0	34.3	171.6	34.2	20.5
Humbug	6500'	28.0	49.1	175.3	48.8	38.9
Grizzly Ridge	6900'	29.7	40.9	137.8	40.8	33.2
Rattlesnake	6100'	14.0	30.4	216.9	30.0	24.8
Lower Lassen Peak	8250'	-	87.9	-	87.4	71.3
Pilot Peak	6800'	52.6	62.0	117.8	61.4	46.6
EEL RIVER						
Noel Spring	5100'	-	13.4	-	14.2	13.9
YUBA & AMERICAN RIVERS						
Carson Pass	8353'	-	41.7	-	41.2	37.6
Lake Lois	8600'	39.5	58.6	148.3	58.4	58.4
Forni Ridge	7600'	37.0	55.7	150.5	55.5	49.9
Silver Lake	7100'	22.7	38.8	171.1	38.5	36.2
Blue Canyon	5280'	9.0	30.4	337.3	30.4	21.5
Schneiders	8750'	34.5	39.1	113.4	38.9	37.4
Meadow Lake	7200'	55.5	-	-	-	-
Robbs Powerhouse	5150'	5.2	19.4	372.3	19.6	16.7
Robinson Cow Camp	6480'	-	62.1	-	61.6	49.2
Cent Sierra Snow Lab	6900'	33.6	56.1	167.0	55.6	46.6
Caples Lake	8000'	30.9	51.3	166.0	50.6	45.3
Alpha	7600'	35.9	46.6	129.9	46.0	42.1
Robbs Saddle	5900'	21.4	26.6	124.4	26.9	24.3
Huysink	6600'	42.6	44.2	103.7	44.0	37.2
Van Vleck	6700'	35.9	57.1	159.1	56.0	49.7
Greek Store	5600'	21.0	34.9	166.3	34.6	29.3
MOKELUMNE & STANISLAUS RIVERS						
Highland Meadow	8700'	47.9	57.8	120.6	57.4	53.5
Gianelli Meadow	8400'	55.5	74.8	134.7	74.7	70.1
Bloods Creek	7200'	35.5	-	-	36.9	38.4
Blue Lakes	8000'	33.1	42.7	129.0	42.1	38.7
Mud Lake	7900'	44.9	-	-	-	-
Black Springs	6500'	32.0	-	-	38.4	36.1
Stanislaus Meadow	7750'	47.5	42.0	88.3	41.7	39.1
Deadman Creek	9250'	37.2	36.1	97.0	36.2	34.8
Lower Relief Valley	8100'	41.2	-	-	-	-
TUOLUMNE & MERCED RIVERS						
Dana Meadows	9800'	27.7	32.4	117.1	32.5	31.9
Horse Meadow	8400'	48.6	67.6	139.1	67.1	63.5
Tuolumne Meadows	8600'	22.6	29.3	129.4	29.3	28.2
Slide Canyon	9200'	41.1	48.4	117.7	48.2	46.0
Ostrander Lake	8200'	34.8	49.4	142.0	49.3	47.8
Gin Flat	7050'	34.2	30.8	90.0	30.6	29.3
Tenaya Lake	8150'	33.1	44.9	135.6	45.8	45.6
White Wolf	7900'	-	44.7	-	44.7	43.7
Lower Kibbie Ridge	6700'	27.4	27.0	98.5	26.9	25.4
Paradise Meadow	7650'	41.3	54.4	131.6	53.9	51.1

SAN JOAQUIN RIVER						
Volcanic Knob	10050'	30.1	32.9	109.3	32.9	32.2
Tamarack Summit	7550'	30.5	38.4	125.9	38.2	37.1
Kaiser Point	9200'	37.8	38.7	102.3	38.3	35.8
Huntington Lake	7000'	20.1	29.0	144.4	28.9	27.8
Green Mountain	7900'	30.8	38.2	123.9	37.9	36.8
Poison Ridge	6900'	28.9	35.7	123.6	35.7	35.4
Graveyard Meadow	6900'	18.8	34.2	181.9	34.3	33.2
Agnew Pass	9450'	32.3	-	-	-	-
Devils Postpile	7569'	-	33.5	-	33.1	32.4
Chilkoot Meadow	7150'	38.0	50.0	131.7	49.7	48.4
KINGS RIVER						
Bishop Pass	11200'	34.0	-	-	-	17.9
Blackcap Basin	10300'	34.3	-	-	-	-
Mitchell Meadow	9900'	32.9	42.4	129.0	42.1	40.2
Upper Burnt Corral	9700'	34.6	42.4	122.6	42.3	41.3
State Lakes	10300'	29.0	40.6	140.0	40.3	39.5
West Woodchuck Meadow	9100'	32.8	38.5	117.3	37.9	36.8
Big Meadows	7600'	25.9	-	-	-	-
Charlotte Lake	10400'	27.5	-	-	-	-
KAWEAH & TULE RIVERS						
Farewell Gap	9500'	34.5	-	-	-	-
Giant Forest	6650'	10.0	17.2	171.5	17.1	16.9
Quaking Aspen	7200'	21.0	28.9	137.5	28.9	29.1
KERN RIVER						
Tunnel Guard Station	8900'	15.6	-	-	-	-
Beach Meadows	7650'	11.0	18.4	166.9	18.7	18.0
Upper Tyndall Creek	11400'	27.7	27.2	98.2	27.2	26.5
Casa Vieja Meadows	8300'	20.9	29.4	140.4	29.3	29.8
Pascoes	9150'	24.9	37.4	150.1	37.2	36.8
Wet Meadows	8950'	30.3	37.7	124.6	37.7	37.6
Chagoopa Plateau	10300'	21.8	27.7	127.0	27.7	27.3
Crabtree Meadow	10700'	19.8	19.3	97.7	19.2	18.2
SURPRISE VALLEY AREA						
Dismal Swamp	7050'	29.2	33.8	115.8	33.8	30.4
TRUCKEE RIVER						
Independence Camp	7000'	21.8	36.4	167.0	35.9	29.0
Independence Lake	8450'	41.4	54.4	131.4	53.8	45.3
Squaw Valley Gold Coast	8200'	46.5	51.3	110.3	50.2	50.6
Truckee 2	6400'	14.3	-	-	-	-
Independence Creek	6500'	12.7	20.9	164.6	20.8	17.0
Big Meadows	8700'	25.7	34.6	134.6	34.3	31.5
LAKE TAHOE BASIN						
Rubicon Peak 2	7500'	29.1	34.9	119.9	34.6	30.8
Tahoe City Cross	6750'	16.0	26.7	166.9	26.6	24.0
Echo Peak 5	7800'	39.5	57.1	144.6	56.3	51.4
Hagans Meadow	8000'	16.5	26.1	158.2	26.0	23.9
Fallen Leaf Lake	6250'	7.0	15.8	225.7	15.8	14.3
Ward Creek 3	6750'	39.4	54.9	139.3	54.1	47.4
Mount Rose Ski Area	8900'	38.5	51.9	134.8	51.1	44.6
Heavenly Valley	8800'	28.1	32.5	115.7	32.2	31.3
Marlette Lake	8000'	21.1	34.6	164.0	34.4	32.0
CARSON RIVER						
Spratt Creek	6150'	4.5	12.5	277.8	12.5	11.7
Horse Meadow	8400'	48.6	67.6	139.1	67.1	63.5
Burnside Lake	8129'	-	38.7	-	38.2	35.0
Monitor Pass	8350'	-	22.4	-	22.4	21.5
Poison Flat	7900'	16.2	26.6	164.2	26.4	25.3
Forestdale Creek	8017'	-	49.0	-	48.3	44.8
Ebbetts Pass	8700'	38.8	48.2	124.2	47.6	44.6
WALKER RIVER						
Sonora Pass Bridge	8750'	26.0	34.0	130.8	33.9	31.9
Virginia Lakes Ridge	9300'	20.3	21.4	105.4	21.4	20.7
Lobdell Lake	9200'	17.3	24.6	142.2	24.6	23.7
Summit Meadow	9313'	-	34.9	-	34.9	31.7
Leavitt Meadows	7200'	8.0	24.4	305.0	24.1	22.4
Leavitt Lake	9600'	-	65.7	-	65.3	59.9
OWENS RIVER/MONO LAKE						
Cottonwood Lakes	10150'	11.6	21.3	184.0	21.3	20.6
Gem Pass	10750'	31.7	27.8	87.6	27.6	26.3
Rock Creek Lakes	9700'	14.0	19.0	135.4	19.0	19.5
South Lake	9600'	16.0	19.7	123.1	19.7	19.7
Big Pine Creek	9800'	17.9	29.1	162.3	28.1	24.9
Sawmill	10200'	19.4	21.3	110.0	21.3	21.1

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
Central Valley North	45%	70%	90%	100%	75%
Central Valley South	45%	65%	85%	100%	80%
North Coast	40%	60%	85%	100%	80%

March 1 Statewide Conditions



SNOWLINES

Registration is now open for the **87th annual Western Snow Conference** to be held in Reno, Nevada, April 15-18, 2019. We expect a full agenda of informative and interesting presentations related to snow hydrology, meteorological measurement techniques, and water resource management.

Meeting Information:

https://westernsnowconference.org/meeting/2019

Online Registration:

https://www.regonline.com/registration/Checkin.aspx?EventID=2547864

Depicted on this month's cover is John King, a Water Resources Engineer in the Snow Surveys Section, measuring the Phillips snow course for the March 2019 snow survey. Assisting with the survey are Dr. Michael Anderson, State Climatologist, Erin Mellon, Assistant Director for the Public Affairs Office, and Andrew Reising, another Water Resources Engineer in the Snow Surveys Section.

SNOWPACK – Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1966-2015 (50 years, except for data sites established after 1951).

PRECIPITATION – Averages for stations are based on the source of the data and varies from a 30-year to a 50-year period.

RUNOFF AND FORECASTS – Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedance level value and the 10 percent exceedance level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the period 1966-2015.

Reservoir storage averages are based on the period from 1966 (or beginning of operation) to 2015. For more details contact California Cooperative Snow Surveys, P.O. Box 219000, Sacramento, CA 95821-9000, of the Acting Chief of the Snow Surveys Section Sean de Guzman at (916) 574-2208 or sean.deguzman@water.ca.gov.

INDICES OF WATER AVAILABILITY

The Sacramento River water year unimpaired runoff is the sum of: Sacramento River above Bend Bridge, Feather River Inflow to Lake Oroville, Yuba River near Smartville and American River Inflow to Folsom Lake.

The Sacramento Valley Water Year Hydrologic Classification (40-30-30 Index) The values 40-30-30 represent the percentage weight given to the three variables in the formula for the index. The first variable is the forecasted unimpaired runoff from April through July (40 percent). The second variable is the forecasted unimpaired runoff from October through March (30 Percent). The third variable is the previous year's index with a cap to account for required flood control releases during wet years. The basins used in this computation are those used in the Sacramento River water year unimpaired runoff.

The San Joaquin Valley Water Year Hydrologic Classification (60-20-20 Index) In a similar manner the values 60-20-20 represents the percentage weights on April through July runoff, October through March runoff and previous year's Index. The San Joaquin River unimpaired runoff is the sum of: Stanislaus River Inflow to New Melones Lake, Tuolumne River Inflow to New Don Pedro Reservoir, Merced River Inflow to Lake McClure and San Joaquin River Inflow to Millerton Lake.

Runoff of the eight major rivers of the Sacramento and San Joaquin Regions is the sum of the runoff in the eight major rivers used in the two above indices.

State of California – The Natural Resources Agency
DEPARTMENT OF WATER RESOURCES
P.O. Box 942836
Sacramento, CA 94236-0001

First Class