

# WATER SUPPLY OUTLOOK



## CALIFORNIA AND NORTHERN NEVADA

**MAY  
2007**



California Nevada River Forecast Center  
NOAA - National Weather Service  
Sacramento, California

## DEFINITIONS:

**Acre-Feet:** The volume equal to one acre covered one foot deep (43,560 cubic feet).

**Forecast Period:** Generally, April 1<sup>st</sup> through July 31<sup>st</sup>, unless otherwise noted.

**April-High Forecast Period:** For the Lake Tahoe Stage Rise, the period from April 1<sup>st</sup> to the highest recorded lake stage level.

**April 1st Average:** The April 1<sup>st</sup> snowpack average is used as a reference point because it is normally the end of the winter snowfall season and the beginning of the spring runoff season.

**Residual Period:** The forecast period from the first of the current month through September 30<sup>th</sup>.

**Probability Forecasts:** Precipitation and snowfall accumulation of known probability as determined by analysis of past records are utilized in the preparation of probability runoff forecasts. The forecasts include an evaluation of the standard error of the prediction model. The forecasts are presented at three levels of probability as follows:

- **Most Probable Volume:** Given the current hydrometeorological conditions to date, this is the best estimate of what the actual runoff volume will be this season.
- **Most Probable Volume (% Normal):** Most probable volume in percent of the 1961-1990 average.
- **Reasonable Maximum Volume:** Given current hydrometeorological conditions, the seasonal runoff that has a 10 percent chance of being exceeded.
- **Reasonable Minimum Volume:** Given current hydrometeorological conditions, the seasonal runoff that has a 90 percent chance of being exceeded.

**SNOTEL:** Acronym for SNOW TELemetry. This is a automated snow measurement system operated by the USDA - Natural Resources Conservation Service. These sites use meteor burst communications technology to transmit hydrometeorological information such as snow water equivalent from snow pillows, accumulated precipitation and maximum, minimum and average air temperature.

**Water equivalent:** The depth of water that would result from melting the snowpack at a point.

**Water Year:** The period from October 1<sup>st</sup> through September 30<sup>th</sup>.

# General Outlook

May 1, 2007

The first week of April was warm followed by about two weeks of cooler weather that brought modest amounts of snow water equivalent to the higher elevation snowpack. Warmer temperatures returned during the last week of the month melting off much of the newly accumulated snow. Although the Yuba and American basin runoff forecasts increased slightly over last April 1<sup>st</sup>, the general trend was for small decreases from last month's forecasts as the additional precipitation was not enough to make up for the deficit in the snowpack. The water supply outlook remains well below average for most snow basins this spring. Reservoir storage continues to be above average which will help meet some of the water demand this year for local agency users; others without adequate storage may face the prospect of reduced supplies this summer.

Precipitation received during April was generally below normal, with the best averages recorded in the Yuba, Mokelumne, Trinity and Humboldt basins. Monthly averages varied from 50 to 105 percent for watersheds in the west side Sierra Nevada. However, the seasonal percentage so far is much below average except for the Klamath and Humboldt basins. The Walker River basin received 100 percent of the April average, the Carson 68 percent and the Truckee 76 percent. About 93 percent of the monthly average fell in the upper Humboldt basin and 92 percent in the lower Humboldt. The Upper Klamath Lake basin received 80 percent of the April average.

Snowpacks in California are about 25 percent of the May 1<sup>st</sup> average according to the California Cooperative Snow Surveys. It was 185 percent at this time last year. The May 1<sup>st</sup> average snowpack ranges from 28 percent for the Sacramento region, 30 percent for the San Joaquin, and 18 percent for the Tulare Lake region. East side Sierra snowpacks range from 15 to 40 percent of the average-to-date. The Humboldt basin is at about 29 percent of the average-to-date while the Upper Klamath Lake basin stands at 67 percent.

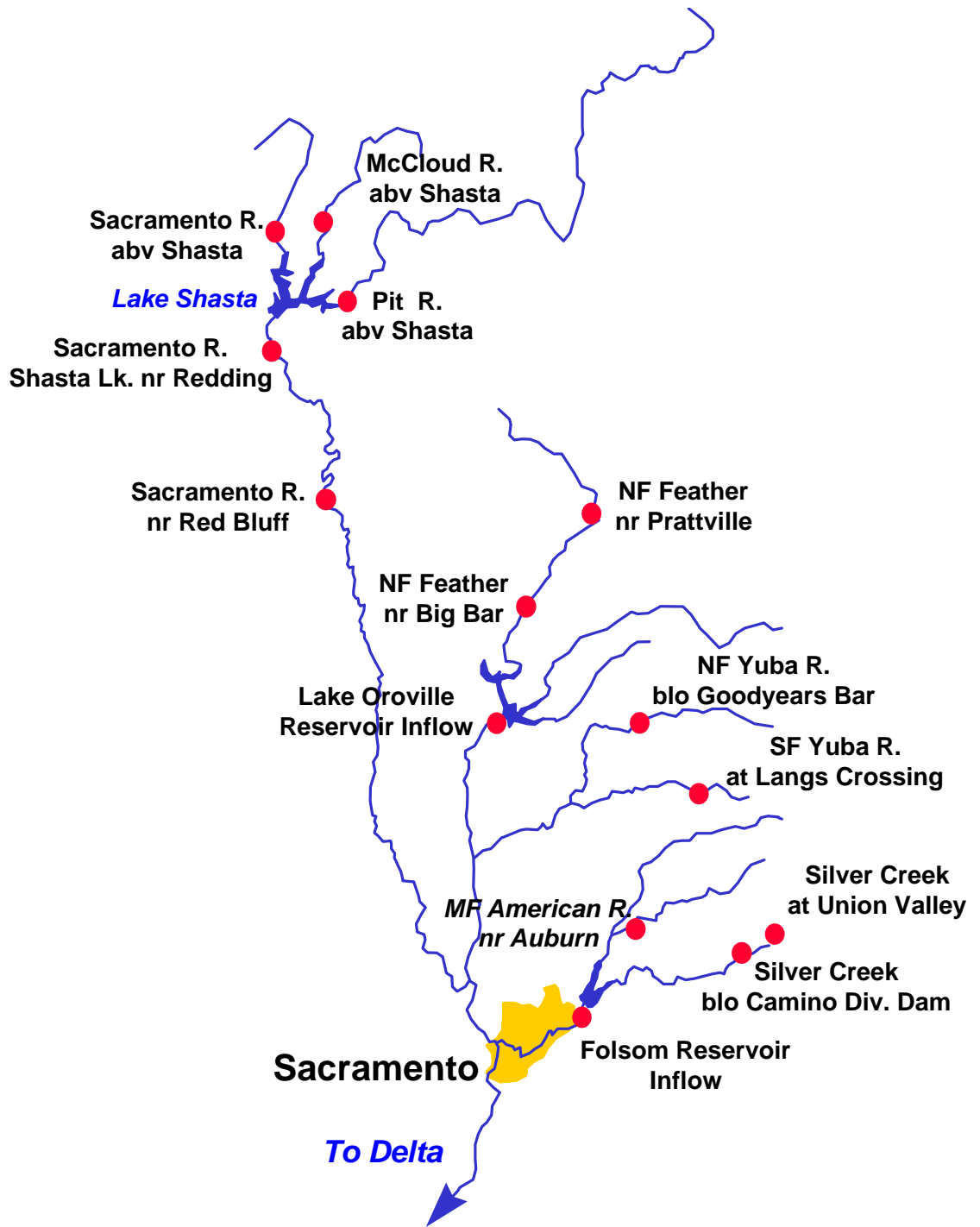
Runoff was much below average during April, some of it diminished by the periods of cooler weather during the month. Monthly runoff averaged 54 percent for the Trinity-Sacramento region, 64 percent for the San Joaquin and 55 percent for the Tulare Lake region. April runoff for the east-side Sierra averaged 60 percent. The Humboldt River at Palisade received 41 percent of the April average while the Upper Klamath Lake basin recorded 67 percent. Seasonal averages are much below average for all basins in the region.

Reservoir storage is running just above average. With the late season snowmelt expected to be below average, downstream interests will be tapping into this reserve early to meet their needs. Stored water in the Sacramento drainage was at 104 percent of average for the date, the San Joaquin at 110 percent and the Tulare Lake drainage at 103 percent. East-side Sierra reservoirs are about 109 percent of average. The lake level at Lake Tahoe stood at 6227.43 feet on April 30th and usable storage was 539,500 acre feet or 134 percent of the average-to-date. It was 137 percent at this time last year. Storage at Lahontan Reservoir in Nevada is at 104 percent while Rye Patch Reservoir stands at 128 percent of the average-to-date. The Upper Klamath Lake is at 100 percent of the average-to-date.

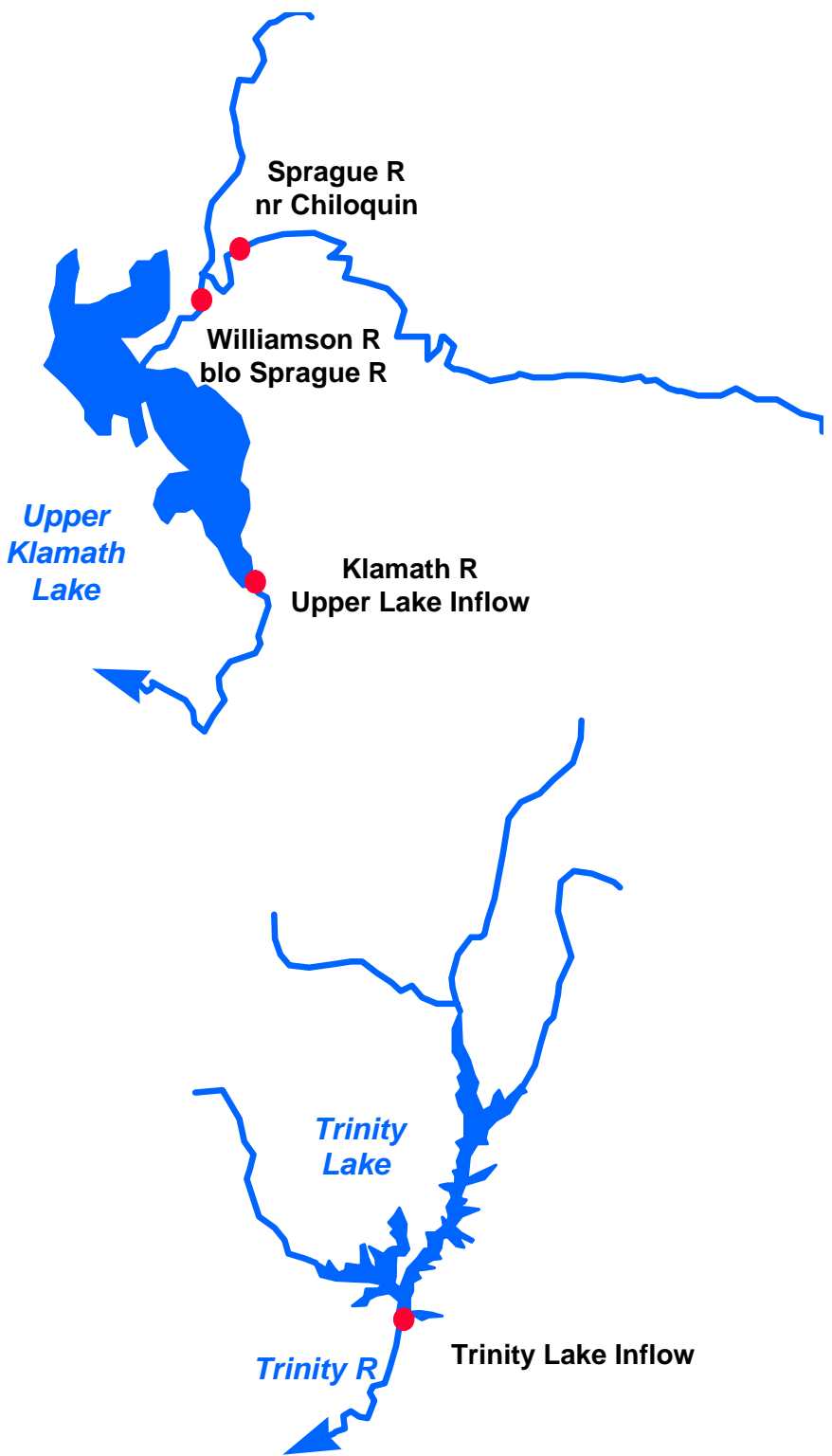
Spring runoff forecasts continue to range from below to much below average for basins that drain into California's Central Valley from the Sierra Nevada. Projections are best for the upper Sacramento River basins and worst for the Kaweah, Tule and Kern. Runoff forecasts for the east side Sierra basins are dismal and vary from 11 to 35 percent of average. The April through July forecasts along the mainstem of the Humboldt River range from 29 to 34 percent. The May through September forecast for the Upper Klamath Lake inflow is 72 percent.

Mid-month updates are scheduled for selected east side Sierra forecast points and the Upper Klamath Lake inflow. These will be posted on the CNRFC web page. This will be the last Water Supply Outlook for Water Year 2007.

# Sacramento River Basin



# Upper Klamath and Trinity River Basins



# Water Supply Forecasts

Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
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## COASTAL BASINS

Williamson River Sprague, blo	Mar-Sep	355	70	405	305	505
Sprague River Chiloquin, nr	Mar-Sep	220	72	260	180	305
Upper Klamath Falls River Inflow	Mar-Sep	520	73	615	425	715
Lost River Gerber Reservoir Inflow	May-Jul	2.3	36	2.9	1.70	6.4
Clear Lake Reservoir Inflow	May-Jul	5.0	26	6.3	3.7	19.3
Scott River Fort Jones, nr	Apr-Jul	80	44	125	65	181
Trinity River Trinity Lake Inflow	Apr-Jul	270	43	420	215	635

### Trinity River - Inflow at Lewiston Lake Distribution (kAF)

Exceedence Probability	Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Apr-Jul	Water Yr
90%	500	115	65	25	10	5	4	215	724
50%	500	115	100	40	15	6	5	270	781
10%	500	115	200	80	25	8	7	420	935

Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
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## SACRAMENTO RIVER BASIN

### SACRAMENTO RIVER ABOVE BEND BRIDGE

Pit River Montgomery Ck, nr	Apr-Jul	660	62	880	530	1070
Mccloud River Shasta Lk, abv	Apr-Jul	250	68	330	200	370
Sacramento River Delta	Apr-Jul	160	55	220	125	290
Shasta Dam	Apr-Jul	1110	62	1460	880	1790
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	1400	57	1910	1110	2440

### FEATHER RIVER ABOVE OROVILLE RESERVOIR

NF Feather River Prattville, nr	Apr-Jul	130	39	200	105	333*
Big Bar	Apr-Jul	370	38	570	280	962*
Feather River Oroville Reservoir Inflow	Apr-Jul	670	38	1030	510	1760

# Water Supply Forecasts

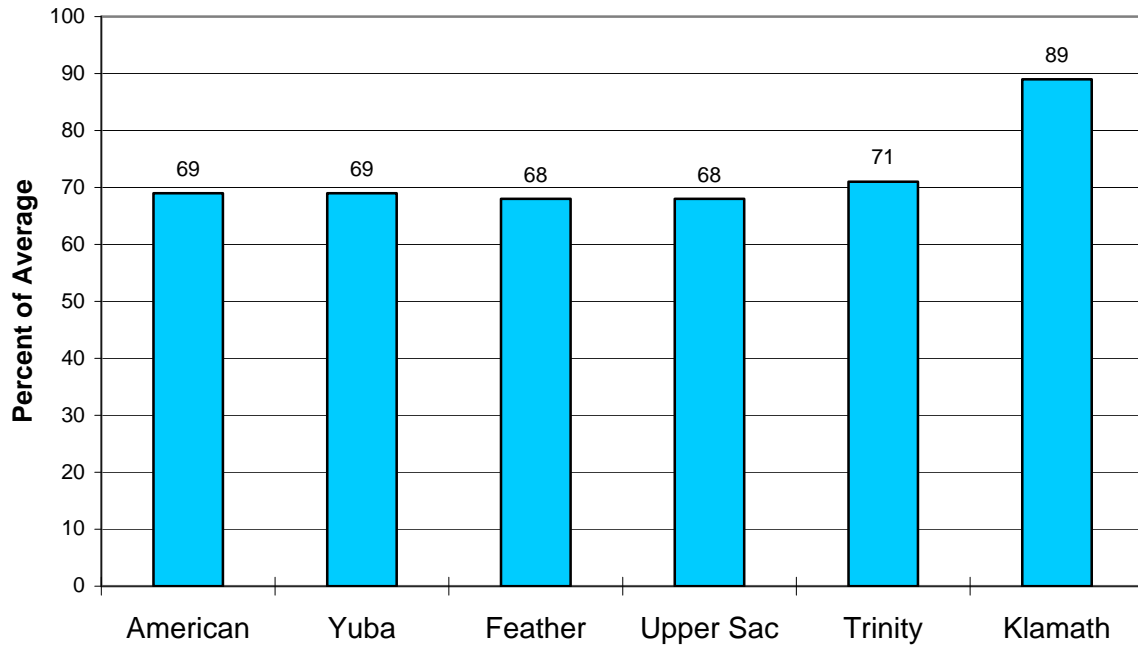
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>YUBA RIVER ABOVE SMARTVILLE</b>						
North Yuba River						
Goodyears Bar, blo	Apr-Jul	125	46	175	100	273*
South Yuba River						
Langs Crossing	Apr-Jul	105	47	145	85	225*
Yuba River						
Smartville, nr	Apr-Jul	450	45	630	360	995
<b>AMERICAN RIVER ABOVE FOLSOM RESERVOIR</b>						
MF American River						
Auburn, nr	Apr-Jul	210	43	300	170	490*
Silver Ck						
Union Valley	Apr-Jul	42	43	60	34	98*
Camino Dam, blo	Apr-Jul	68	43	95	55	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	530	43	720	430	1230

**\*30 Year Averages for 1971-2000 are incomplete. Those forecast points with an asterisk have incomplete averages, so 1961-1990 averages are listed. The new averages will be incorporated into this report when the complete data sets become available.**

# Sacramento/Trinity/Klamath River Basins

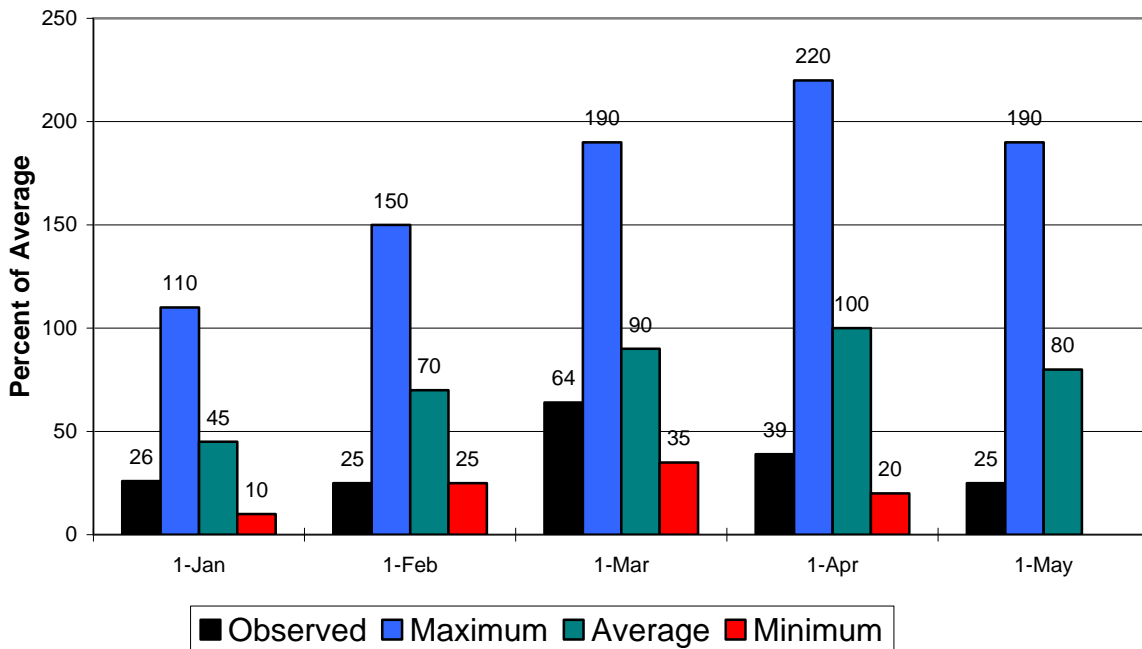
## Seasonal Basin Precipitation

October 1 to Date



## Seasonal Basin Snowpack

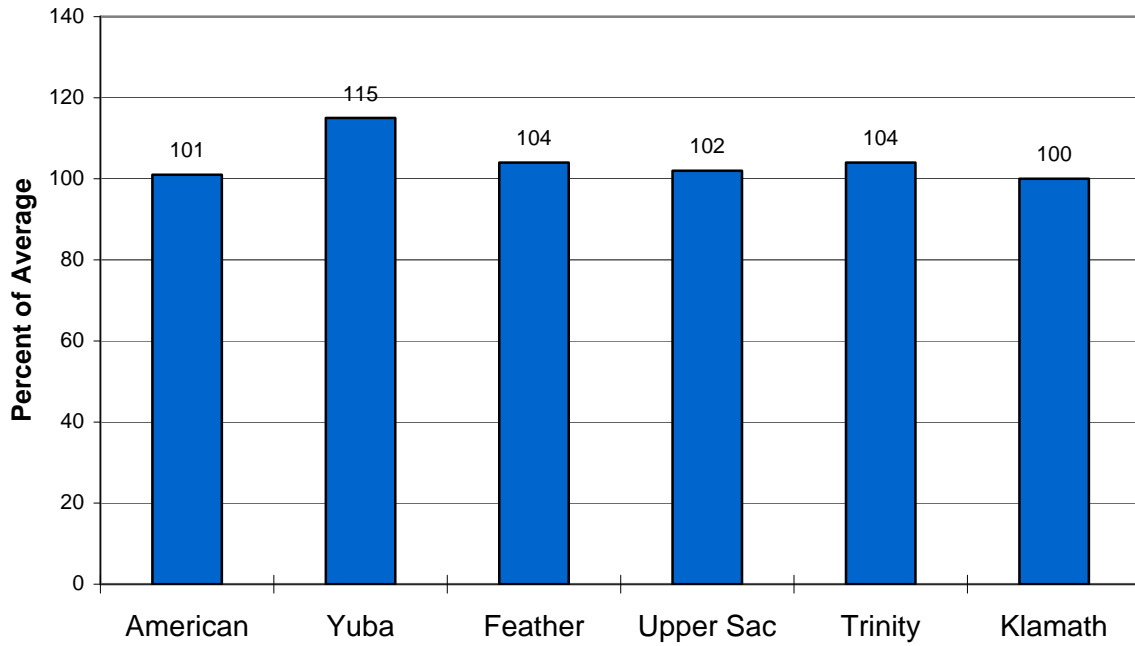
Water Content in % of April 1 Average



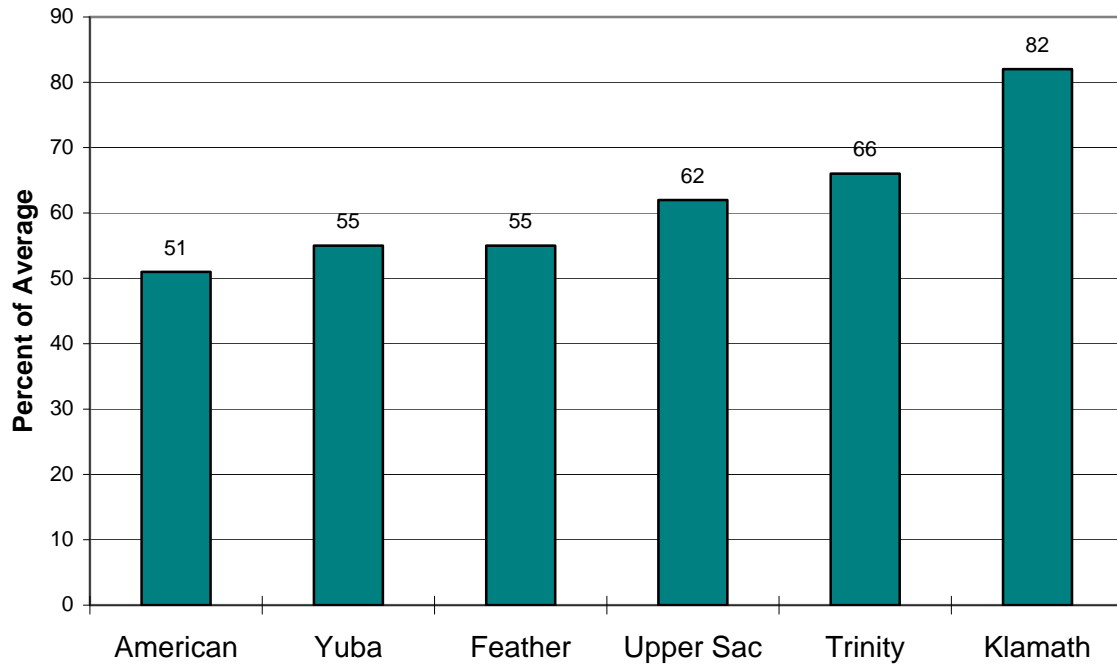


# Sacramento/Trinity/Klamath River Basins

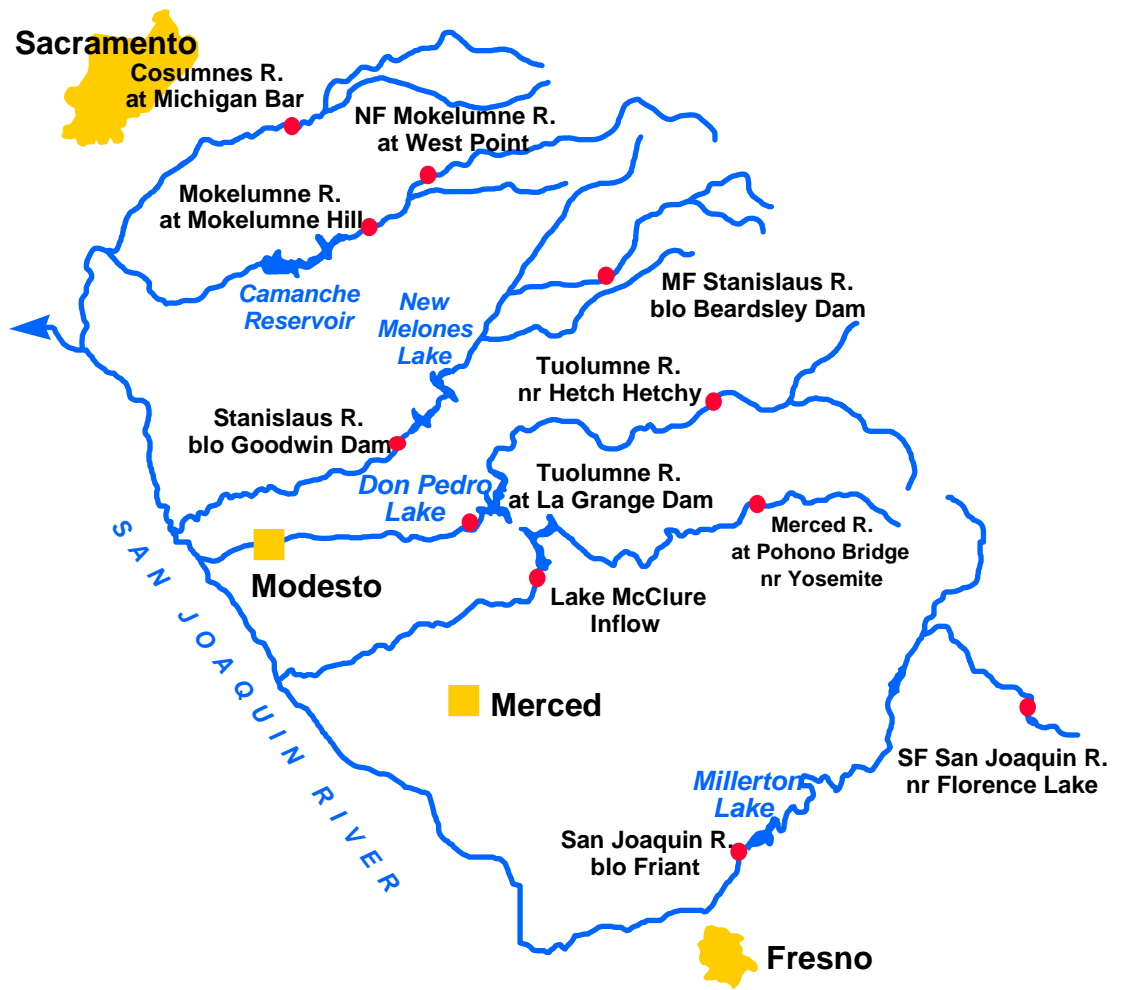
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Seasonal Basin Runoff October 1 to Date



# San Joaquin Basin



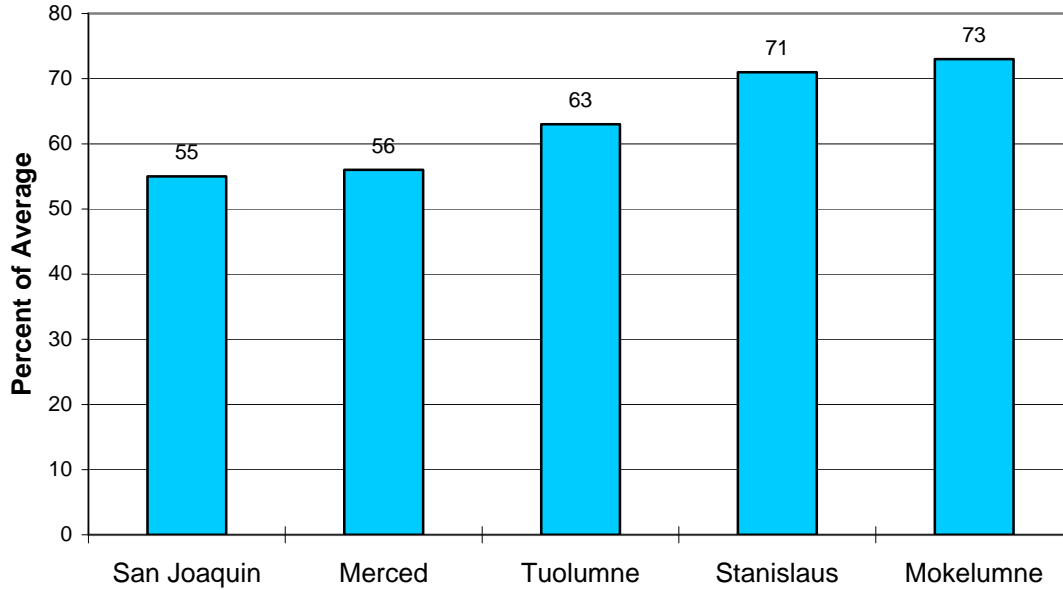
# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
SF San Joaquin River						
Hooper Ck, blo, Florence Lk, nr	Apr-Jul	100	52	150	60	192*
San Joaquin River						
Millerton Lk	Apr-Jul	470	37	570	390	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	150	42	190	110	360*
Merced Falls, blo	Apr-Jul	240	37	310	170	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	270	45	325	215	596*
La Grange, nr	Apr-Jul	520	42	620	420	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	135	42	185	85	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferr	Apr-Jul	290	42	370	210	695
NF Mokelumne River						
West Point	Apr-Jul	190	46	240	145	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	210	46	270	150	460
Cosumnes River						
Michigan Bar	Apr-Jul	40	33	60	20	123

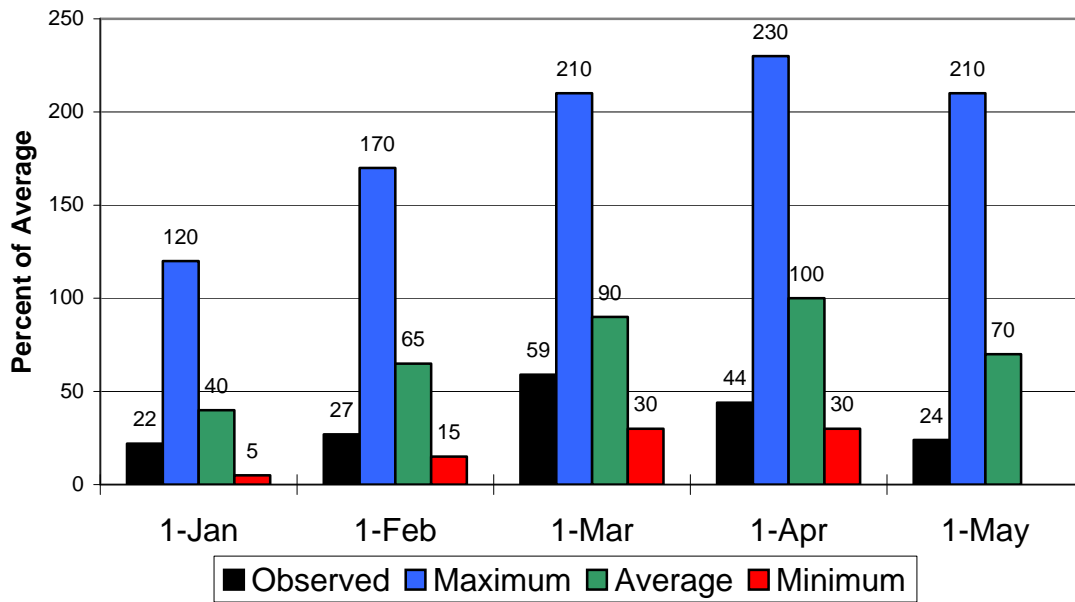
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# San Joaquin Basin

## Seasonal Basin Precipitation October 1 to Date

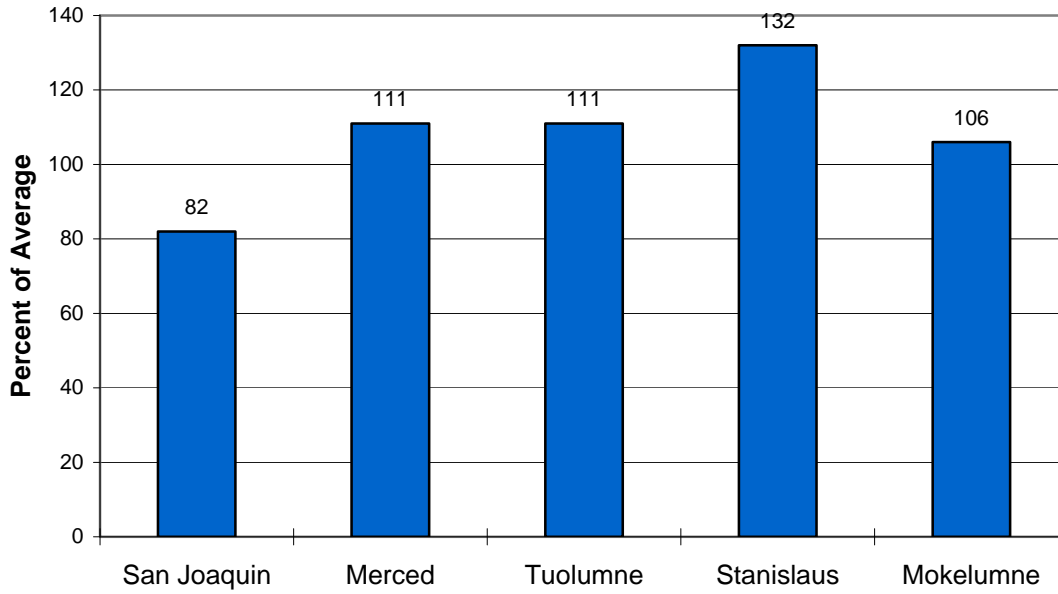


## Seasonal Basin Snowpack Water Content in % of April 1 Average

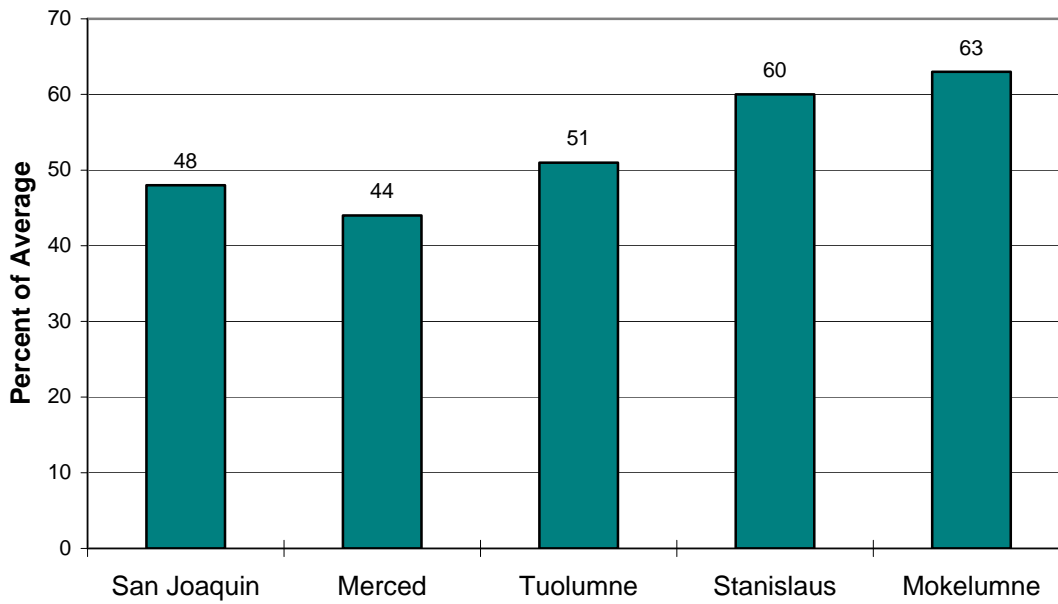


# San Joaquin Basin

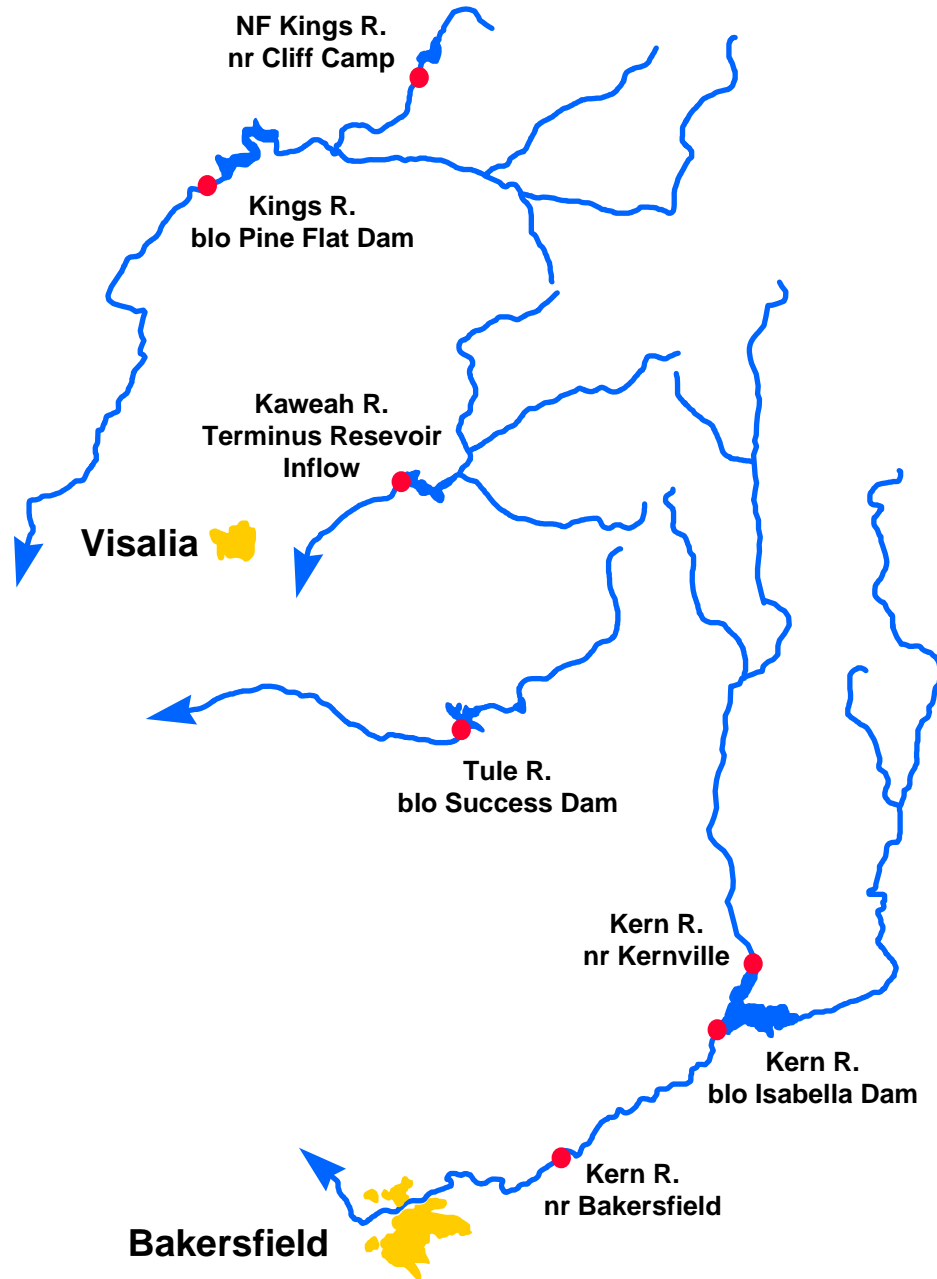
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Season Basin Runoff October 1 to Date



# Tulare Basin



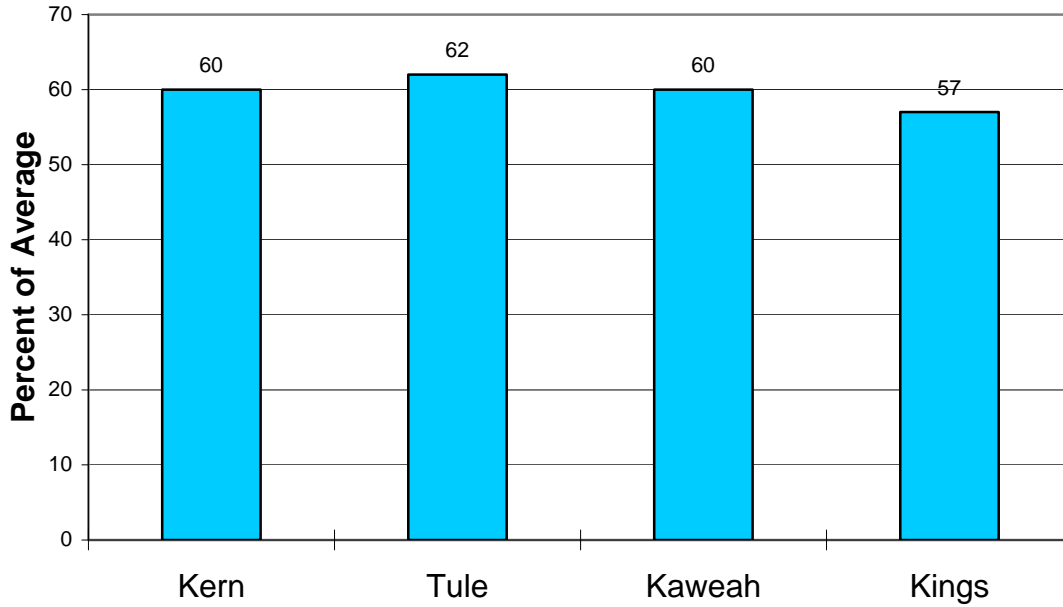
# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>Kern River</b>						
Kernville, nr	Apr-Jul	110	28	180	85	398*
Isabella Dam, blo	Apr-Jul	135	28	200	100	480
Bakersfield, nr	Apr-Jul	140	29	210	100	490
<b>Tule River</b>						
Success Dam	Apr-Jul	17.0	26	32	10.0	66
<b>Kaweah River</b>						
Terminus Dam	Apr-Jul	90	31	125	70	290
<b>NF Kings River</b>						
Cliff Camp, nr	Apr-Jul	100	42	130	70	240*
<b>Kings River</b>						
Pine Flat Dam, blo	Apr-Jul	510	41	610	410	1250

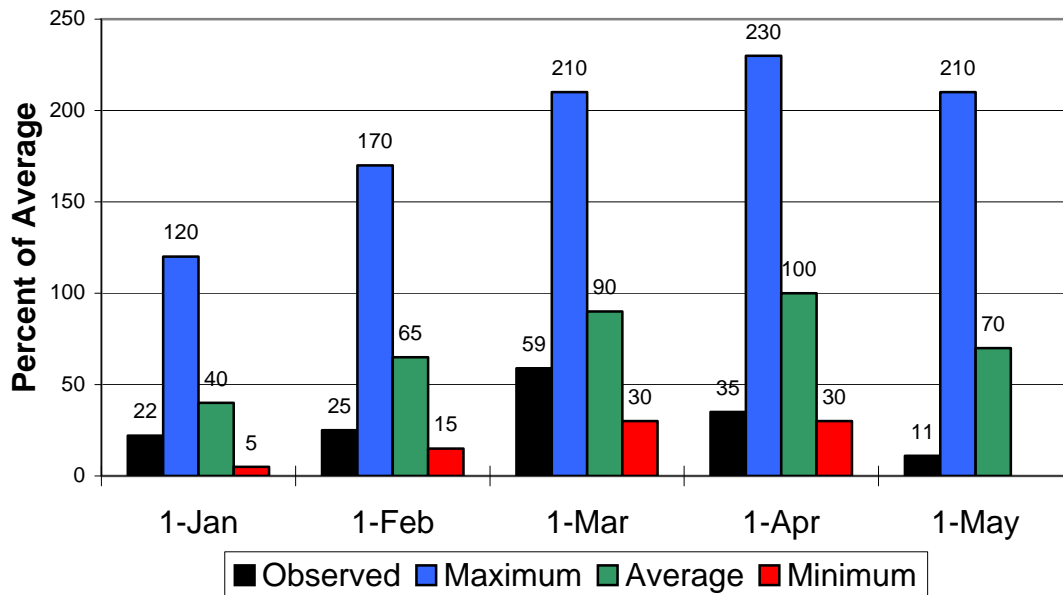
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# Tulare Lake Basin

## Seasonal Precipitation October 1 to Date



## Seasonal Basin Snowpack Water Content in % of April 1 Average

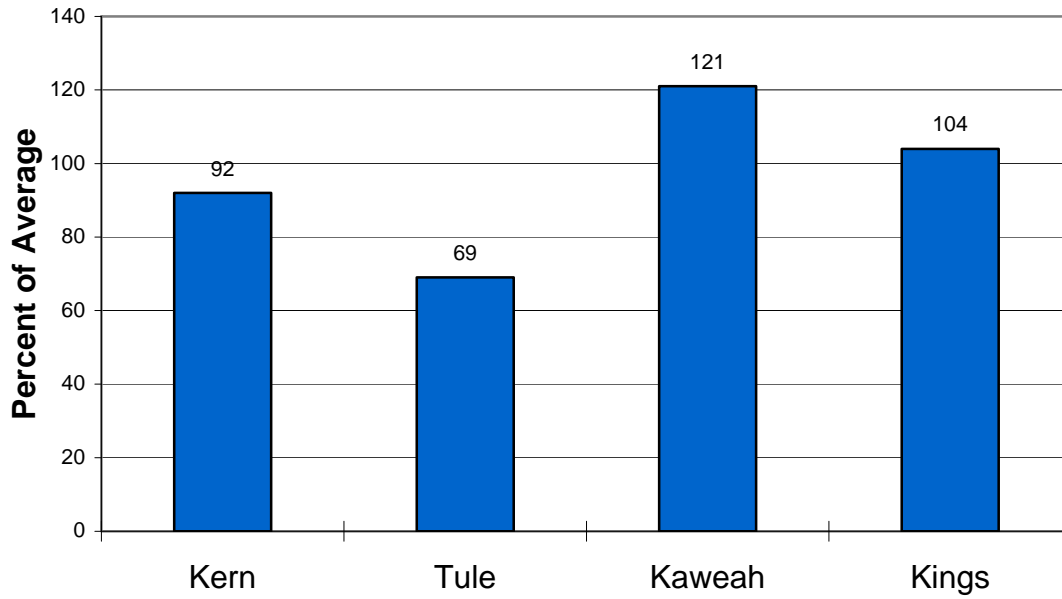




# Tulare Lake Basin

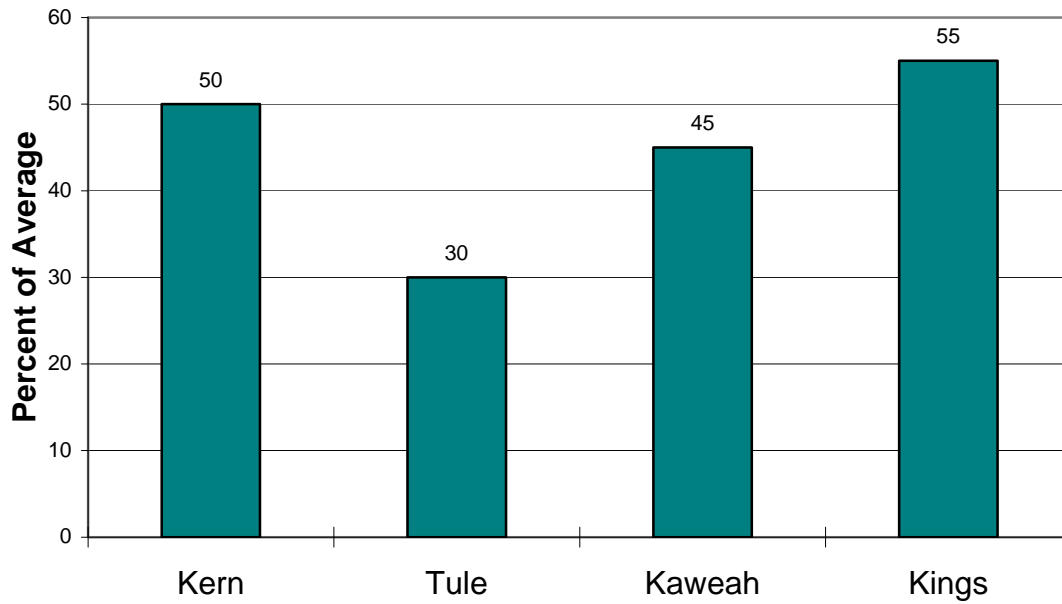
## Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

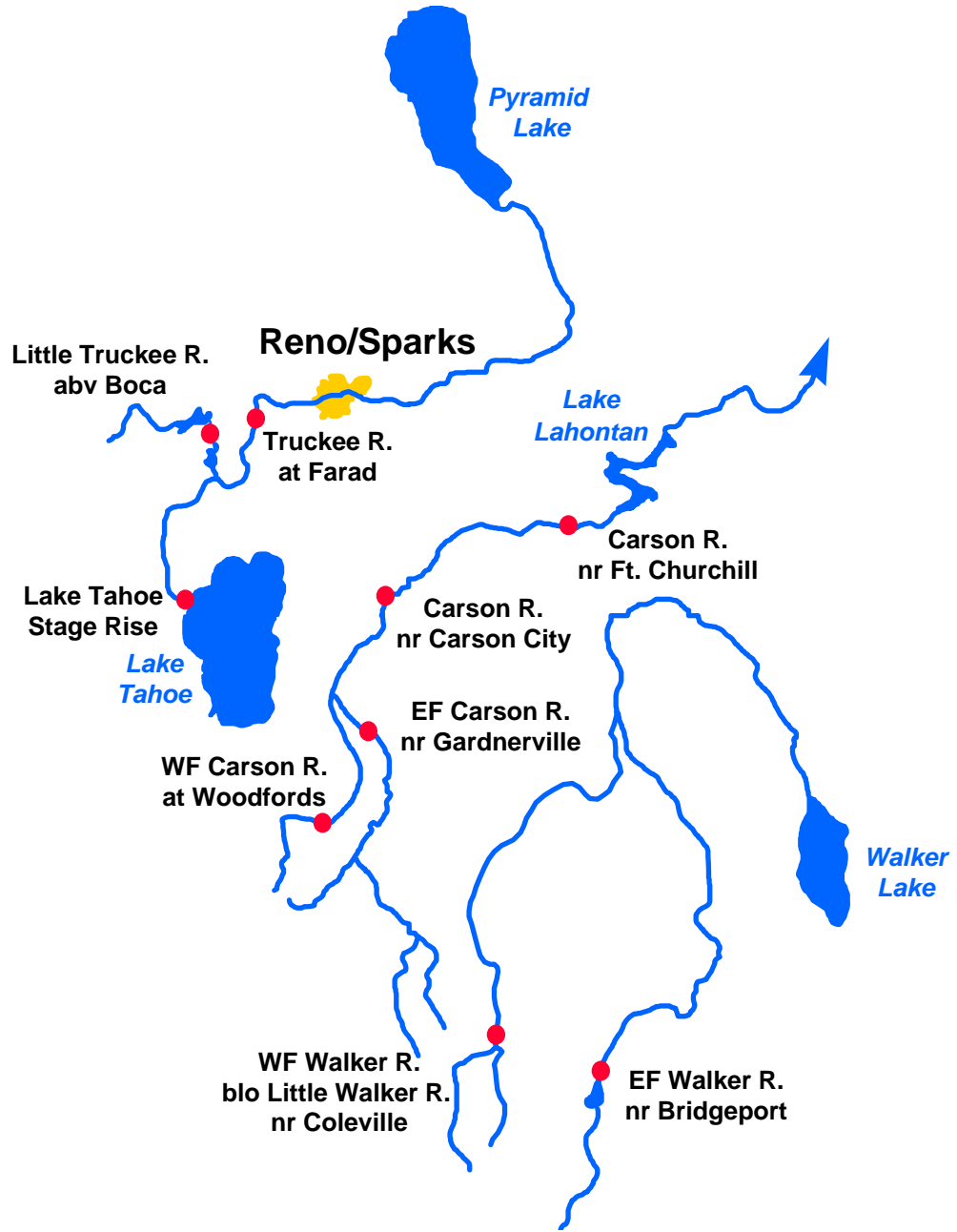


## Seasonal Basin Runoff

October 1 to Date



# East Side Sierra Nevada Basins



# Water Supply Forecasts

Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
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## Truckee River

Truckee River Lake Tahoe Stage Rise	Apr-High	0.35	25	0.60	0.21	1.38
Ltl Truckee River Boca Res, abv, Truckee, nr	Apr-Jul	23	29	40	17.0	80
Truckee River Farad	Apr-Jul	90	35	145	65	260

## Carson River

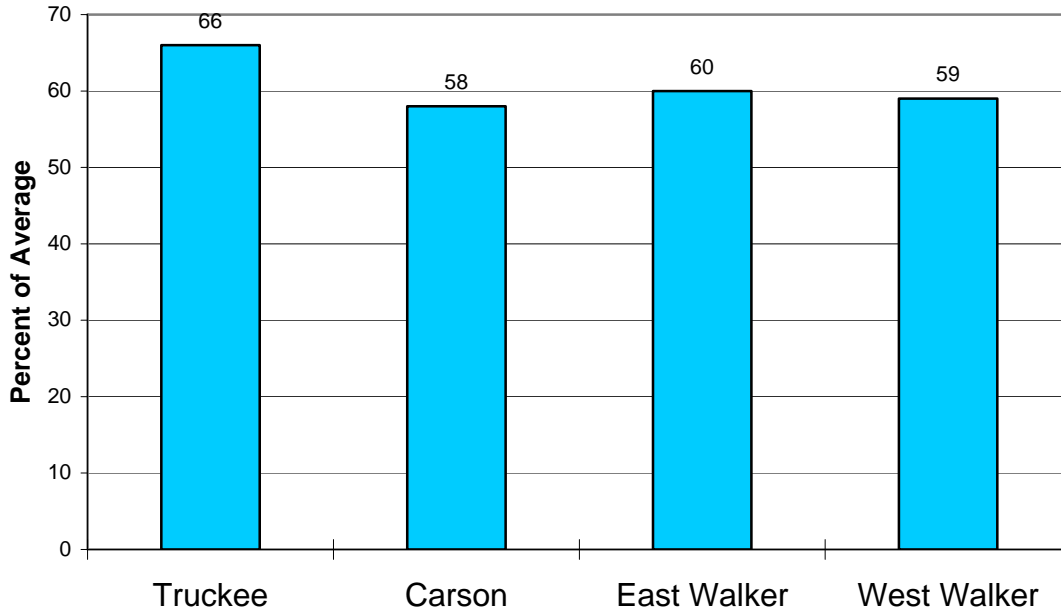
EF Carson River Gardnerville, nr	Apr-Jul	55	29	90	40	189
WF Carson River Woodfords	Apr-Jul	15.0	27	25	11.0	56
Carson River Carson City, nr	Apr-Jul	30	16	60	19.0	188
Fort Churchill, nr	Apr-Jul	20	11	45	10.0	178

## Walker River

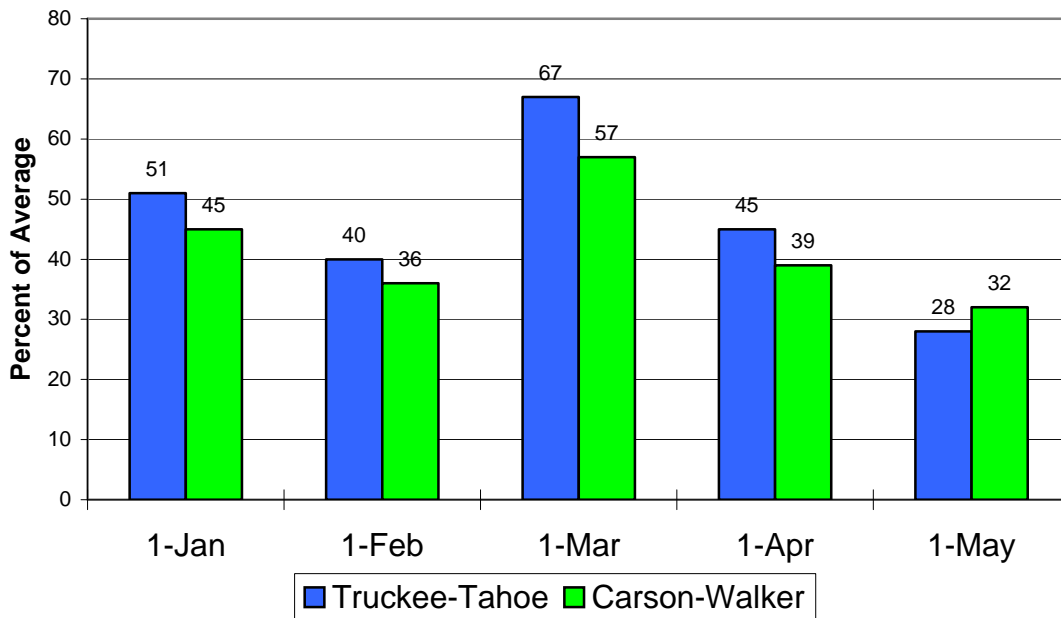
East Walker River Bridgeport, nr	Apr-Aug	15.0	22	27	10.0	67
West Walker River Ltl Walker, blo, Coleville, nr	Apr-Jul	50	32	80	38	156

# East Side Sierra Nevada Basins

## Seasonal Basin Precipitation October 1 to Date



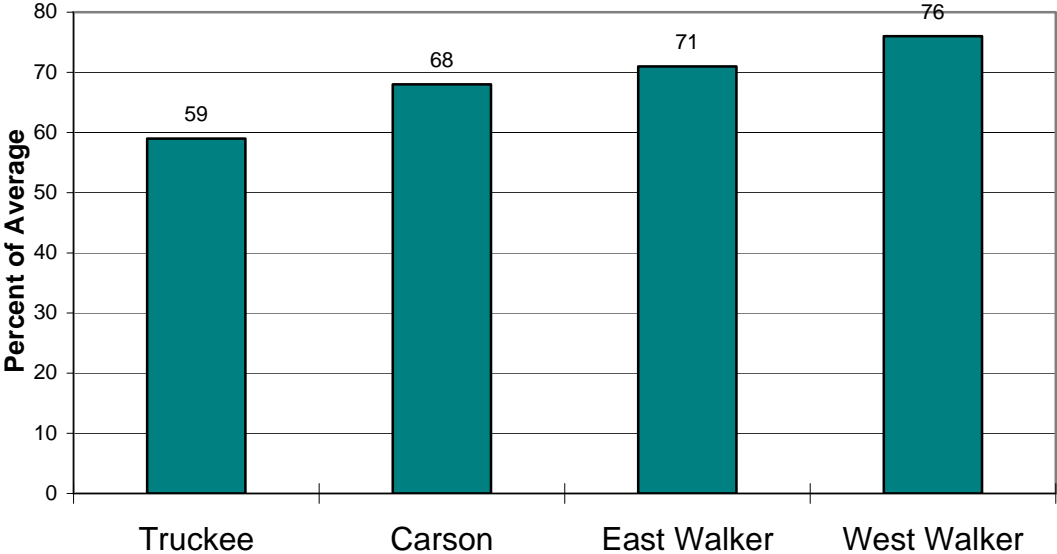
## Basin Snowpack % of Average SWE to Date



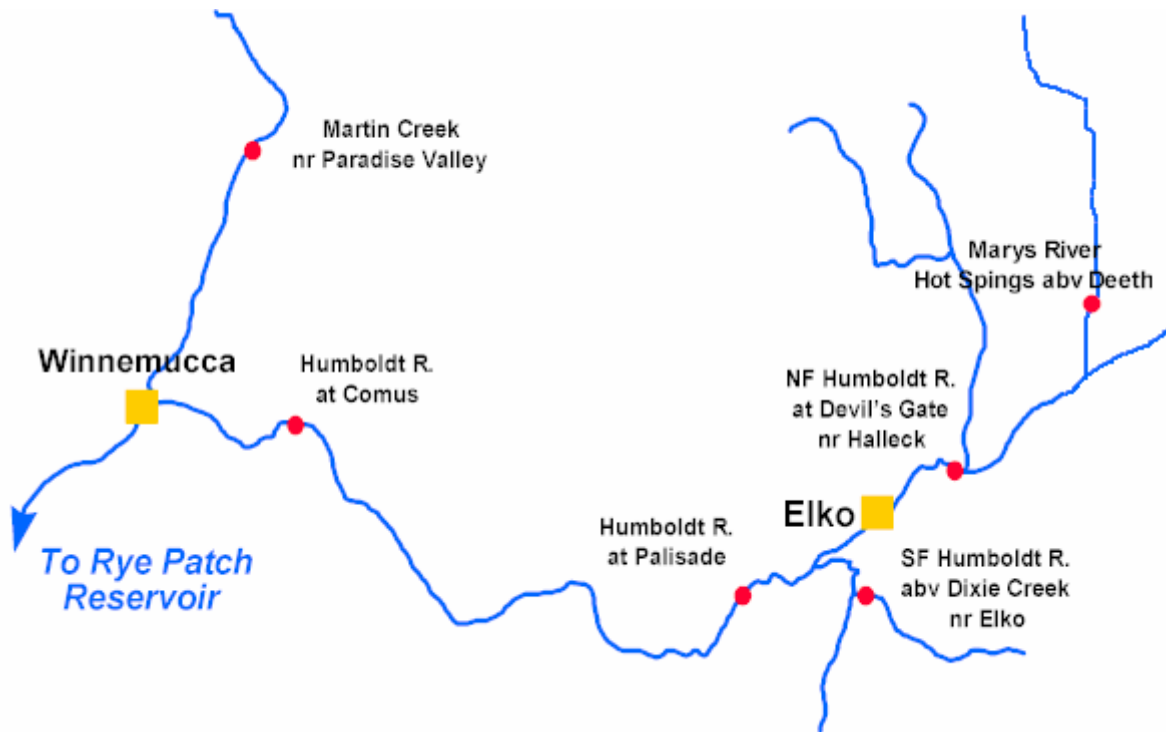
# East Side Sierra Nevada Basins

## Seasonal Basin Runoff

October 1 to Date



# Humboldt River Basin



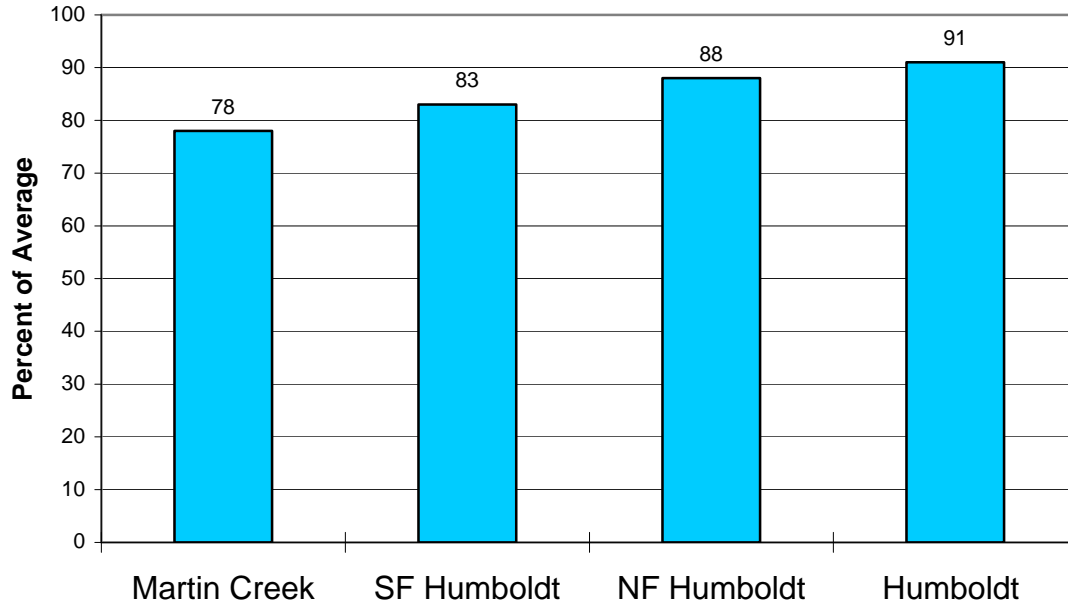
## Water Supply Forecasts

			Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>NF Humboldt River</b>							
Devils Gate, at, Halleck, nr	Apr-Jul	13.0	38	23	4.0	34*	
<b>SF Humboldt River</b>							
Dixie Ck, abv, Elko, nr	Apr-Jul	45	59	70	20	76	
<b>Marys River</b>							
Hot Springs, abv, Deeth, nr	Apr-Jul	18.0	46	28	9.0	39	
<b>Humboldt River</b>							
Elko, nr	Apr-Jul	45	29	75	15.0	154	
Palisade	Apr-Jul	85	34	140	30	250	
Comus	Apr-Jul	65	29	110	20	225	
<b>Martin Ck</b>							
Paradise Vly, nr	Apr-Jul	4.5	24	9.0	2.5	18.7	

\*30 Year Averages for 1971-2000 are incomplete. Those forecast points with an asterisk have incomplete averages, so 1961-1990 averages are listed. The new averages will be incorporated into this report when the complete data sets become available.

# Humboldt River Basin

## Seasonal Basin Precipitation October 1 to Date



## Basin Snowpack % of Average SWE to Date

