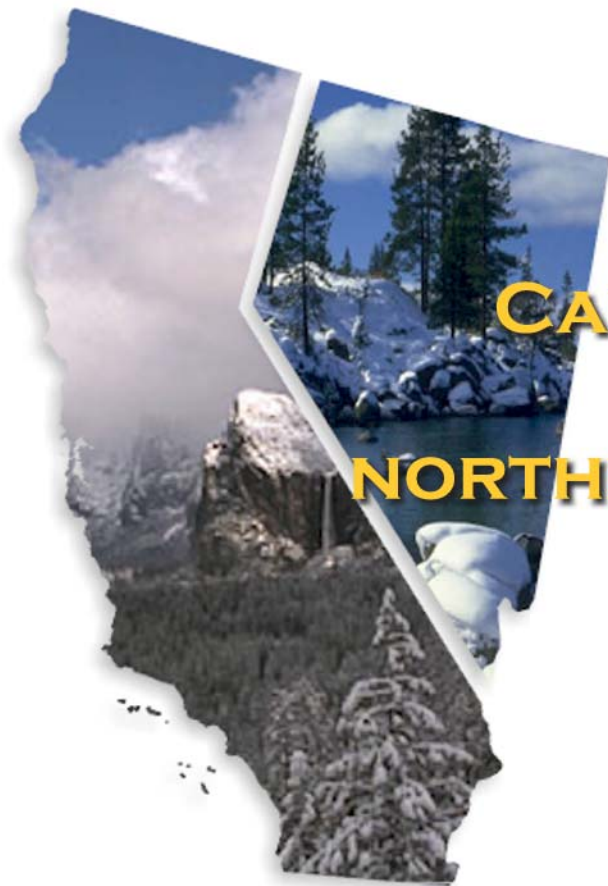


# WATER SUPPLY OUTLOOK



## CALIFORNIA AND NORTHERN NEVADA

**APRIL  
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

**April 1, 2007**

After a promising February, March turned out to be very dry. Much of the low elevation snowpack melted during the month due to the warm and dry weather conditions. This has caused a reduction in the water supply forecasts and most snow basins in the region are expected to have much below average runoff this spring. Good carryover reservoir storage from last year should help meet some of the water demand this year.

Precipitation over the region was much below average during March, almost similar to the dry pattern occurring in January. The best amounts were received in the eastern Nevada basin and portions of the Upper Klamath basin. March precipitation varied from 15 to 50 percent of average in the Sierra Nevada with basin wide averages around 20 to 25 percent for the northern and central Sierras. The Upper Klamath Lake basin received about 45 percent of the March average. East side Sierra watersheds recorded 10 to 25 percent of the monthly average. The Upper Humboldt River basin received about 90 percent of the March average, the lower Humboldt, 45 percent. Seasonal precipitation is below average for the Klamath and Humboldt watersheds and much below average for the other snow basins in the region.

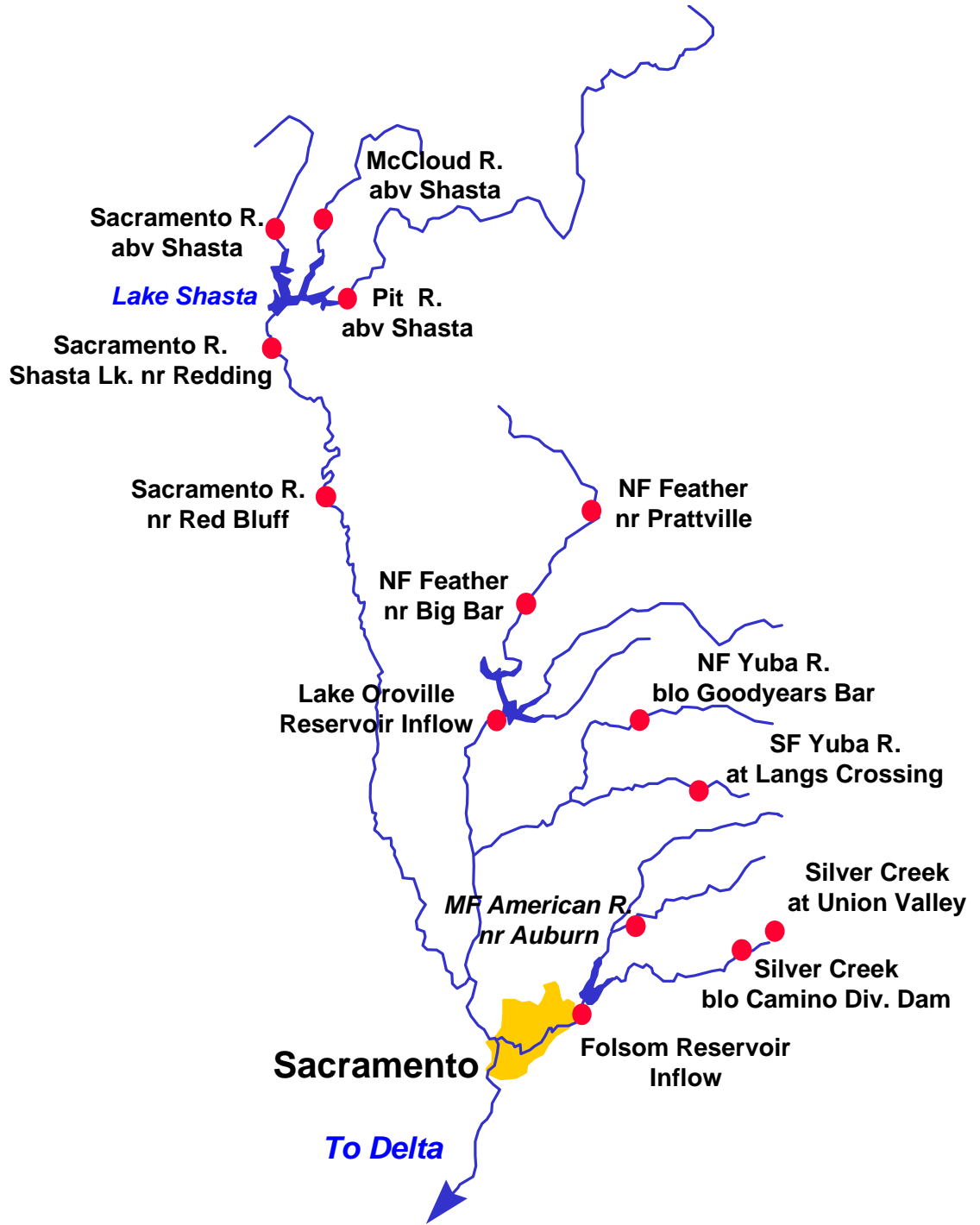
The high elevation snowpack conditions in the Sierra Nevada are reminiscent of the recent low snow years of 1988, 1990 and 1994. Measurements reported by the California Cooperative Snow Surveys indicate that the April 1st average is about 37 percent for the Sacramento River region, 43 percent for the San Joaquin and 33 percent for the Tulare Lake region. East side Sierra snowpacks range from 39 to 45 percent of the average-to-date. The Humboldt basin stands at about 49 percent of the average-to-date while the Upper Klamath Lake basin is at 74 percent.

Much of the runoff during March was due to snowmelt. Monthly runoff averaged 56 percent for the Trinity-Sacramento region, 64 percent for the San Joaquin and 55 percent for the Tulare Lake region. March runoff for the east side Sierra basins averaged 68 percent. The Humboldt River at Palisade received 46 percent of the March average while the Upper Klamath Lake basin recorded 84 percent. Seasonal averages remain below to much below average for watersheds in the region.

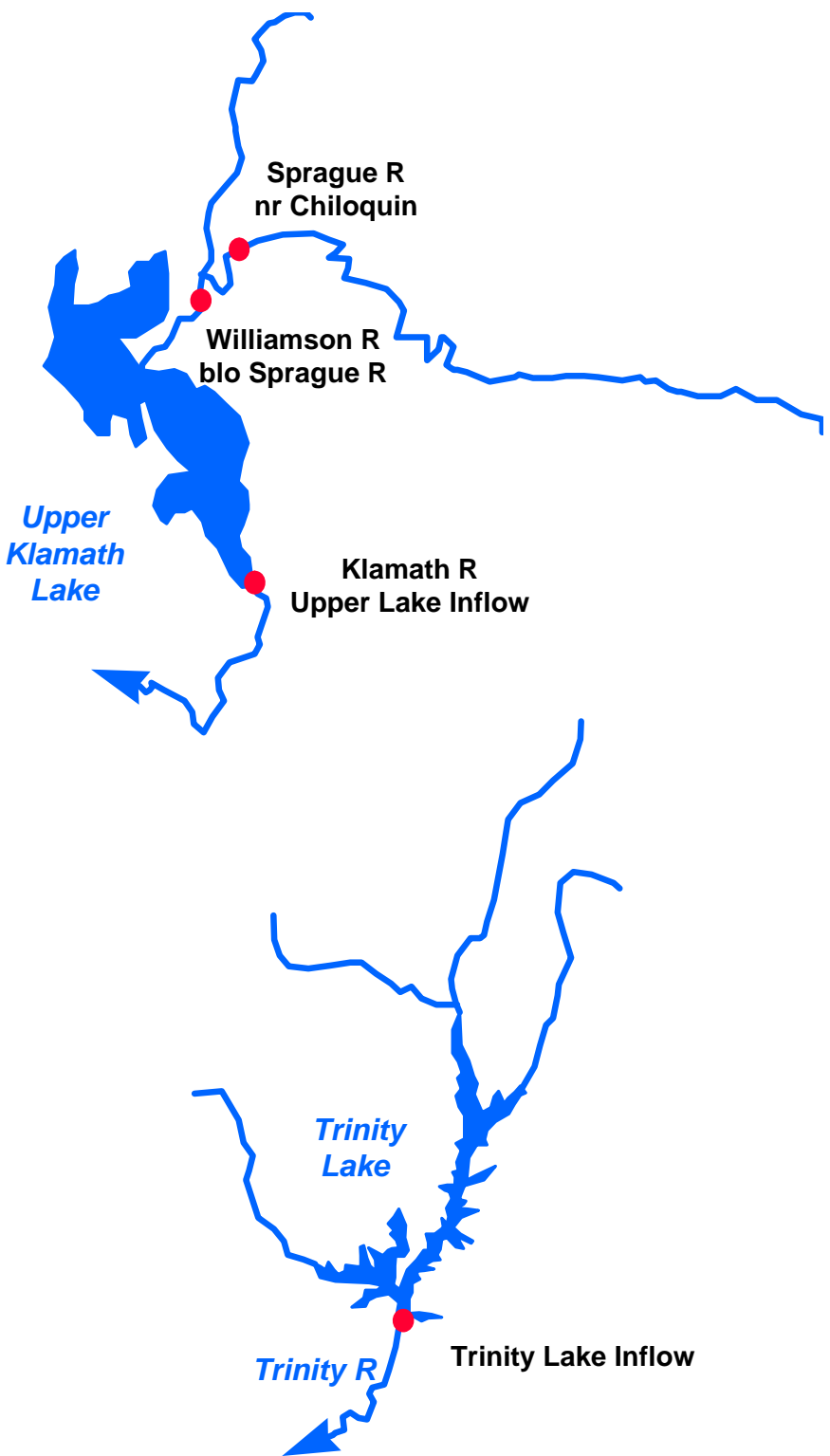
Reservoir storage remains relatively good considering the substandard water supply conditions so far. Storage in the Sacramento River region was at 110 percent of average for the date, the San Joaquin at 114 percent and the Tulare Lake region at 100 percent. East side Sierra reservoirs are about 114 percent of average. The lake level at Lake Tahoe stood at 6227.25 feet on March 31<sup>st</sup> and usable storage was 517,400 acre feet or 133 percent of average. Storage at Lahontan Reservoir in Nevada stands at 105 percent while Rye Patch Reservoir is at 144 percent of the average-to-date. Upper Klamath Lake is at 100 percent of the average-to-date.

Spring runoff forecasts have decreased as much as 10 to 25 percent from a month ago, and are expected to range from below to much below average in California's Central Valley. Projections are best for the upper Sacramento River basins and worst in the Tulare Lake region. Forecasts are in the 40 to 50 percent range from the Feather basin to the Upper San Joaquin. Streamflow forecasts for the east side Sierra basins vary from 11 percent to 38 percent. The April through July forecasts along the mainstem of the Humboldt River range from 29 to 34 percent. The March through September forecast for the Upper Klamath Lake inflow is 74 percent.

# Sacramento River Basin



# Upper Klamath and Trinity River Basins



# Water Supply Forecasts

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

## COASTAL BASINS

Williamson River								
Sprague, blo	Mar-Sep	365	72	450	280	505		
Sprague River								
Chiloquin, nr	Mar-Sep	220	72	300	140	305		
Upper Klamath Falls River								
Inflow	Mar-Sep	530	74	685	370	715		
Lost River								
Gerber Reservoir Inflow	Apr-Jul	6.0	36	8.5	3.5	16.9		
Clear Lake Reservoir Inflow	Apr-Jul	16.0	39	23	9.0	41		
Scott River								
Fort Jones, nr	Apr-Jul	90	50	145	65	181		
Trinity River								
Trinity Lake Inflow	Apr-Jul	310	49	500	220	635		

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

Exceedence										
<u>Probability</u>	<u>Oct-Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Apr-Jul</u>	<u>Water</u>	<u>Yr</u>
90%	500	90	70	40	20	13	9	220	742	
50%	500	125	105	55	25	15	10	310	835	
10%	500	200	180	90	30	20	15	500	1035	

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

## SACRAMENTO RIVER BASIN

### SACRAMENTO RIVER ABOVE BEND BRIDGE

Pit River								
Montgomery Ck, nr	Apr-Jul	700	65	1030	520	1070		
Mccloud River								
Shasta Lk, abv	Apr-Jul	260	70	390	185	370		
Sacramento River								
Delta	Apr-Jul	180	62	270	130	290		
Shasta Dam	Apr-Jul	1140	64	1700	820	1790		
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	1520	62	2260	1110	2440		

### FEATHER RIVER ABOVE OROVILLE RESERVOIR

NF Feather River								
Prattville, nr	Apr-Jul	140	42	240	105	333*		
Big Bar	Apr-Jul	380	40	680	275	962*		
Feather River								
Oroville Reservoir Inflow	Apr-Jul	690	39	1240	500	1760		

# Water Supply Forecasts

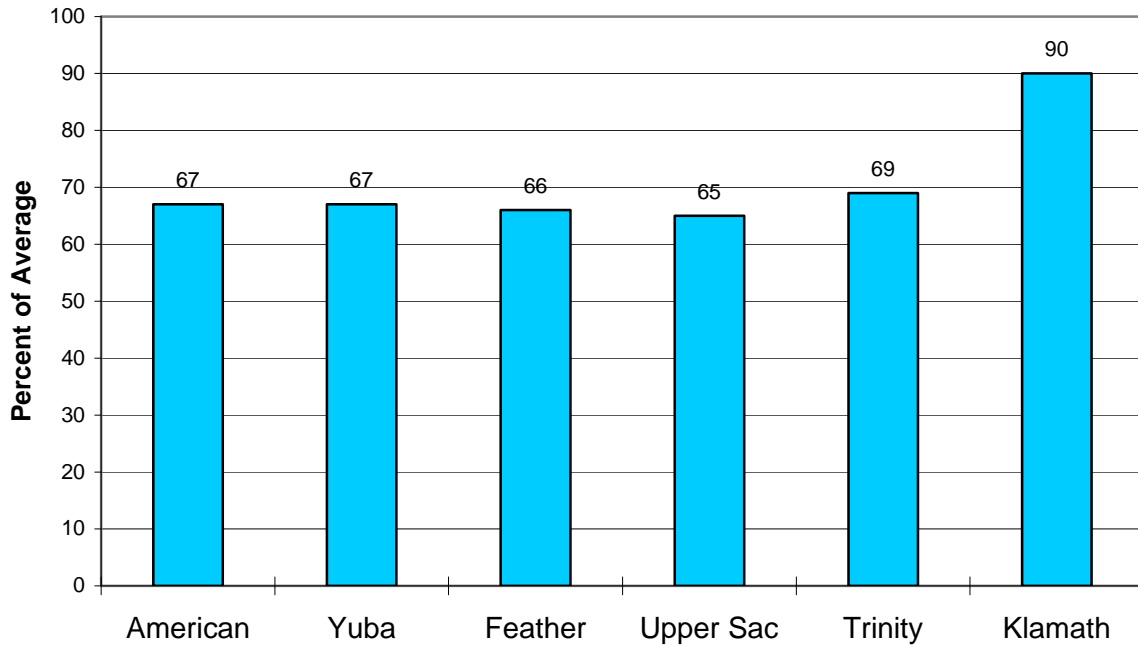
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>YUBA RIVER ABOVE SMARTVILLE</b>						
North Yuba River						
Goodyears Bar, blo	Apr-Jul	120	44	205	90	273*
South Yuba River						
Langs Crossing	Apr-Jul	100	44	170	75	225*
Yuba River						
Smartville, nr	Apr-Jul	440	44	740	320	995
<b>AMERICAN RIVER ABOVE FOLSOM RESERVOIR</b>						
MF American River						
Auburn, nr	Apr-Jul	205	42	355	140	490*
Silver Ck						
Union Valley	Apr-Jul	40	41	69	26	98*
Camino Dam, blo	Apr-Jul	63	40	110	43	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	520	42	880	380	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

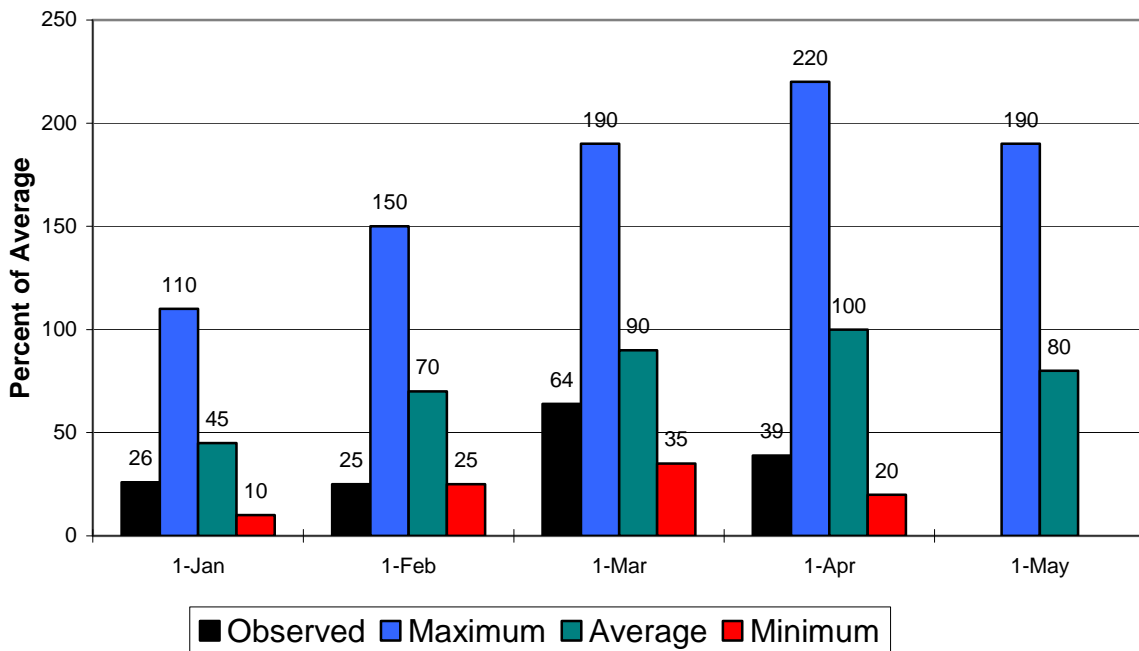
## Seasonal Basin Precipitation

October 1 to Date



## Seasonal Basin Snowpack

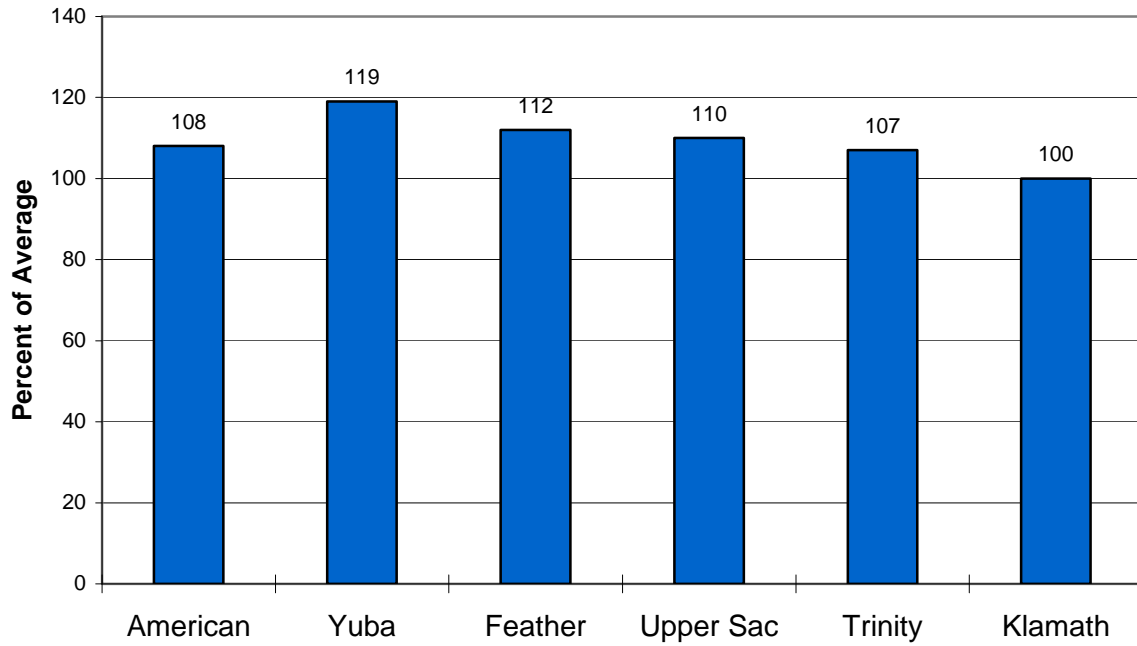
Water Content in % of April 1 Average



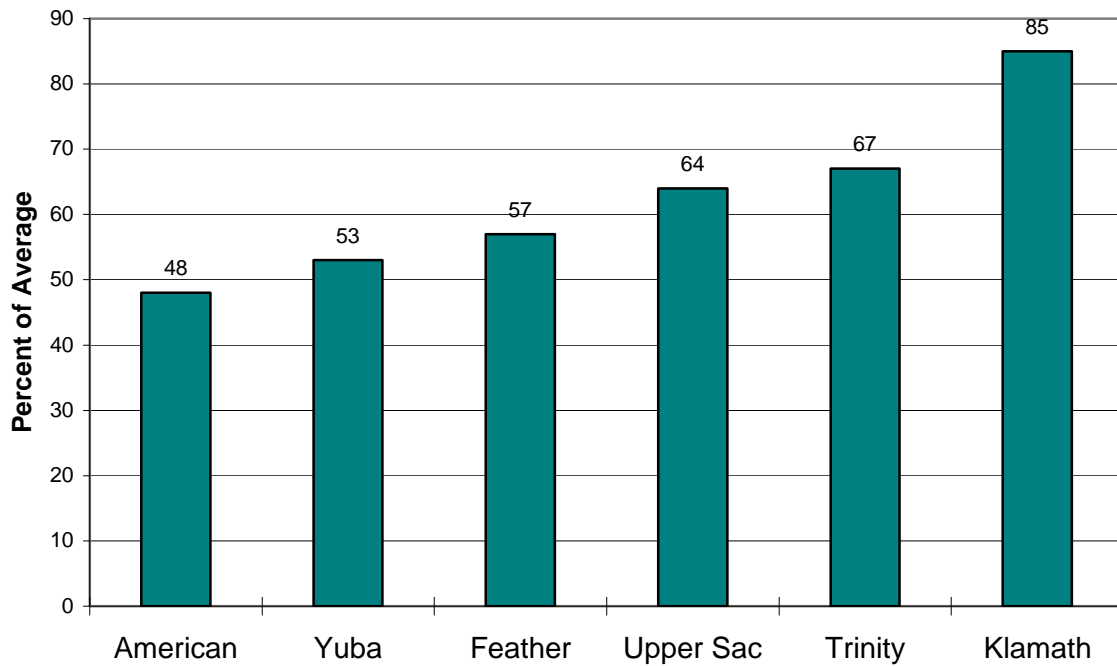


# Sacramento/Trinity/Klamath River Basins

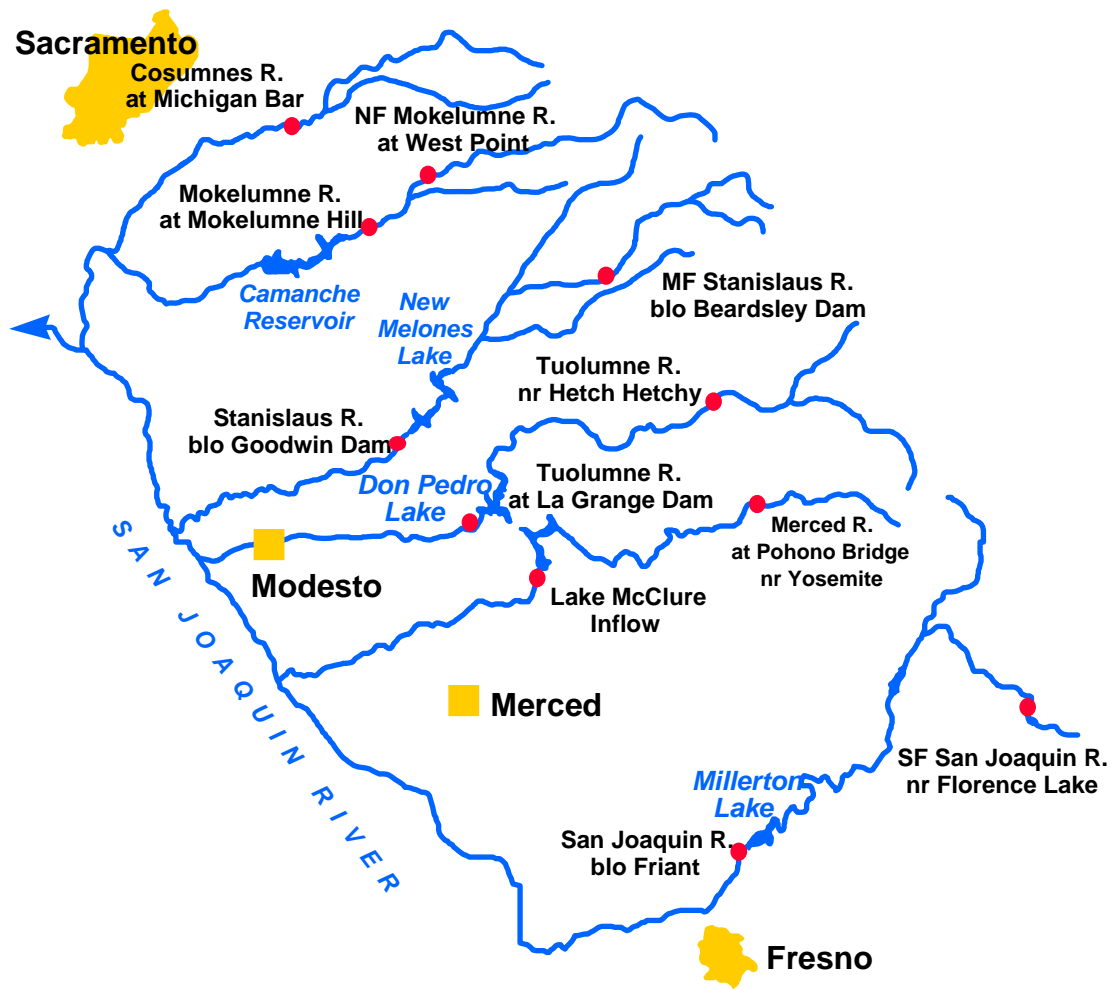
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Seasonal Basin Runoff October 1 to Date



# San Joaquin Basin



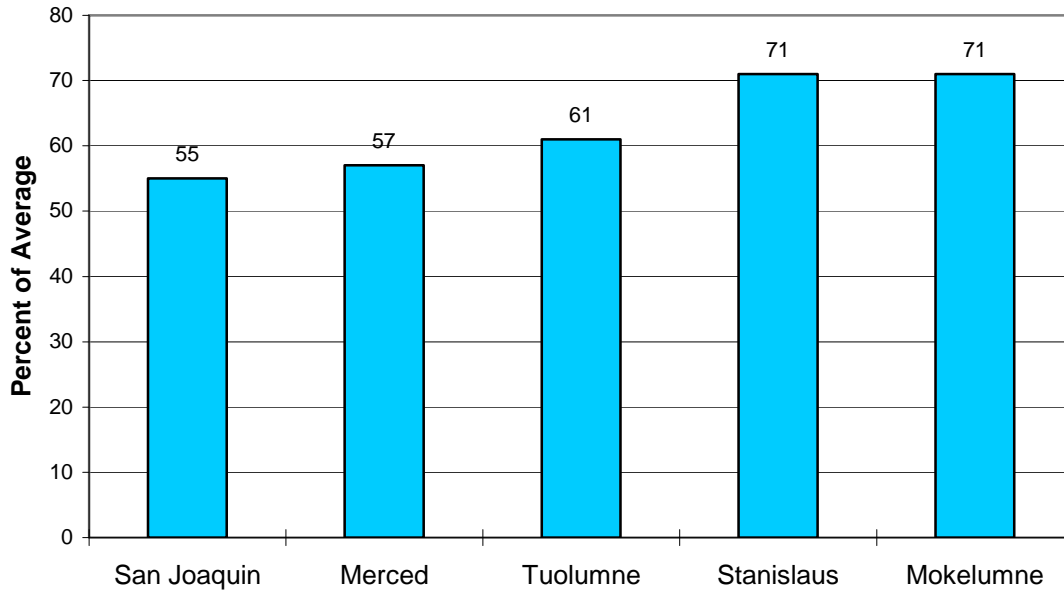
# Water Supply Forecasts

		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	95	49	150	60	192*
San Joaquin River						
Millerton Lk	Apr-Jul	520	41	730	380	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	165	46	270	90	360*
Merced Falls, blo	Apr-Jul	260	40	450	190	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	310	52	400	220	596*
La Grange, nr	Apr-Jul	580	47	850	420	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	135	42	215	85	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	290	42	470	190	695
NF Mokelumne River						
West Point	Apr-Jul	210	50	330	145	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	220	48	325	150	460
Cosumnes River						
Michigan Bar	Apr-Jul	45	37	120	20	123

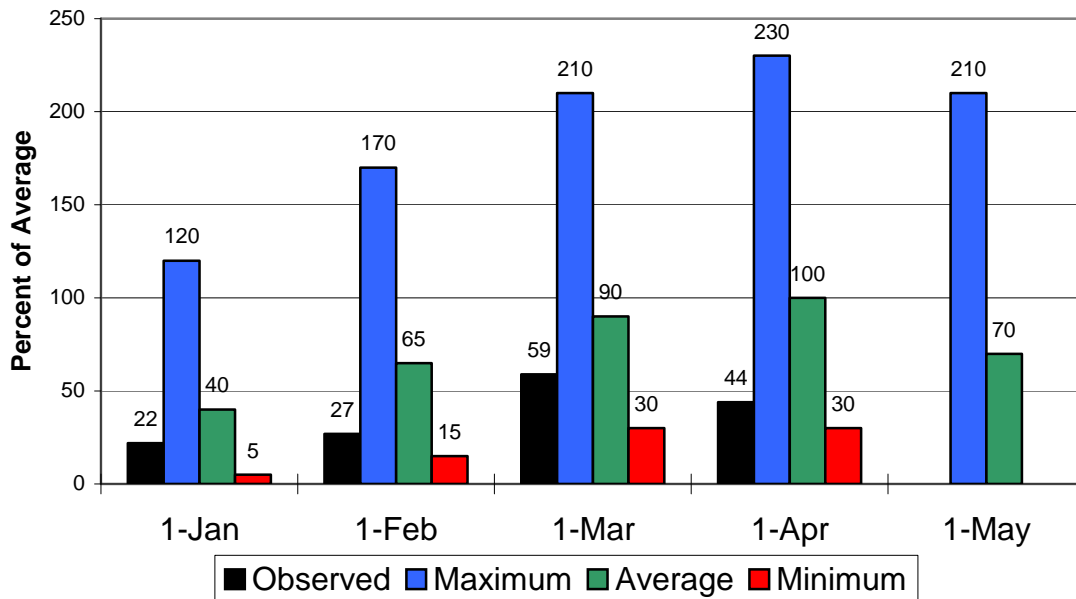
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# San Joaquin Basin

## Seasonal Basin Precipitation October 1 to Date



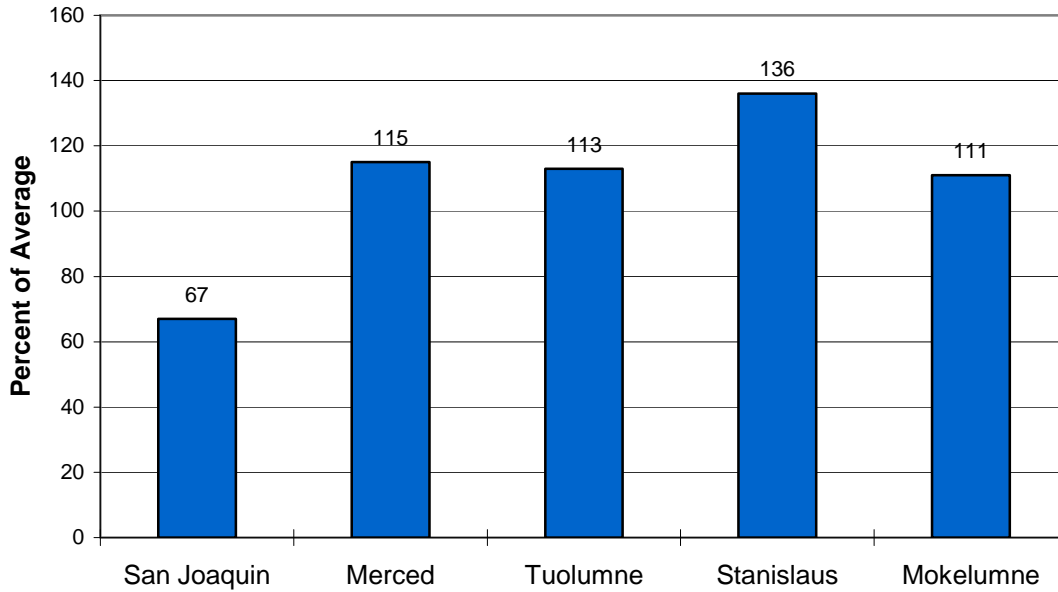
## Seasonal Basin Snowpack Water Content in % of April 1 Average



# San Joaquin Basin

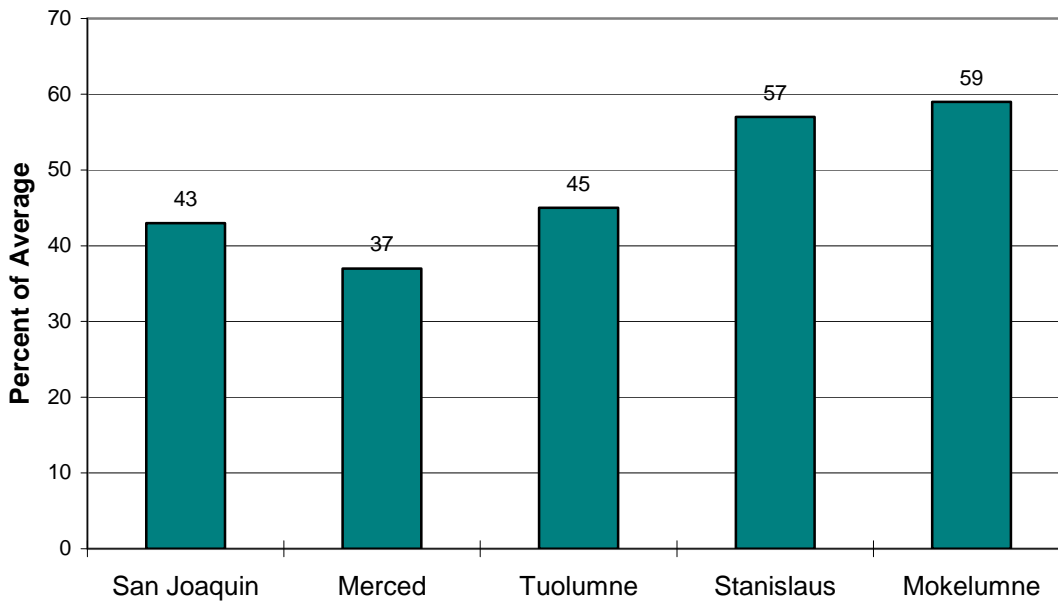
## Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

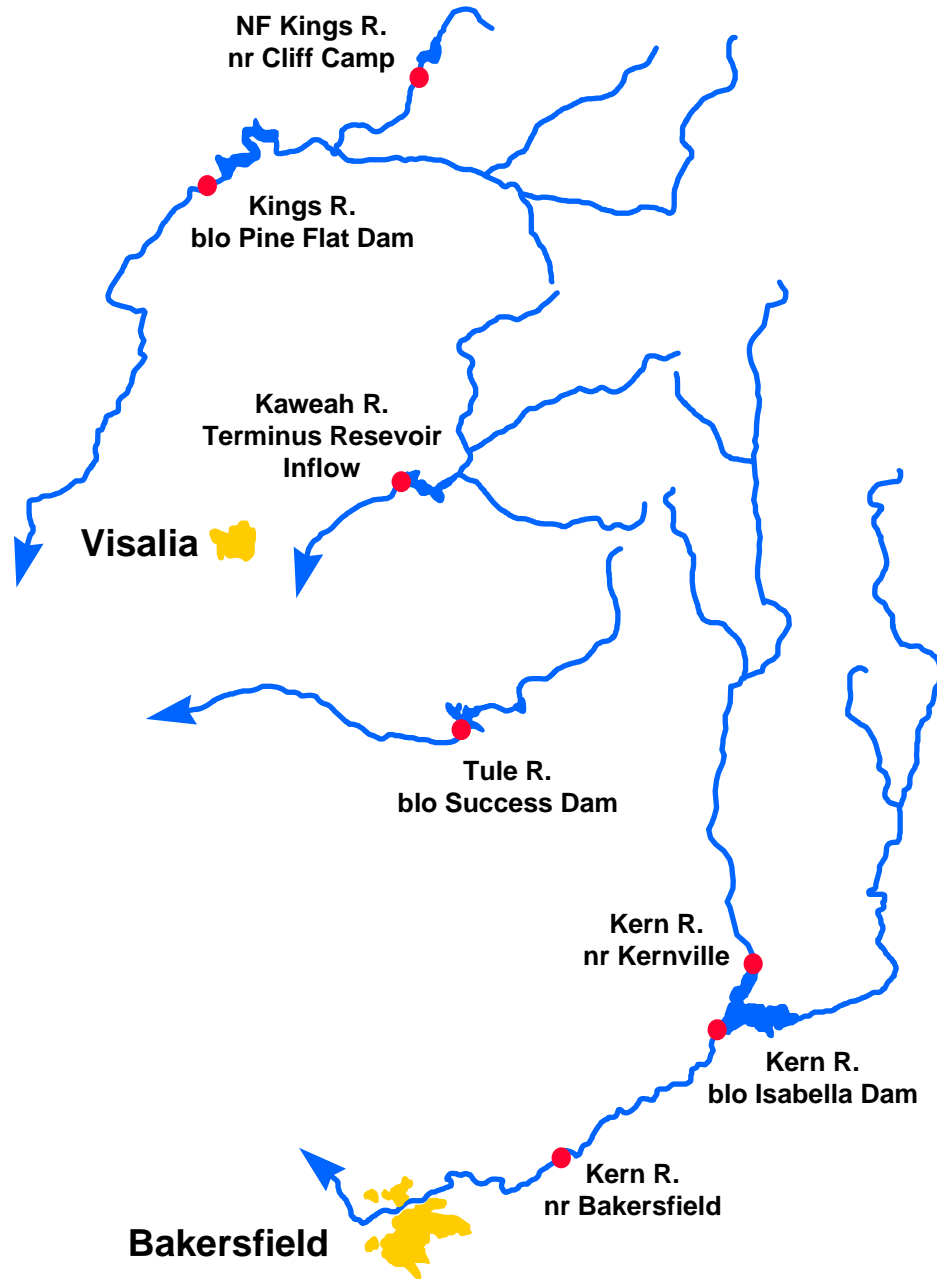


## Season Basin Runoff

October 1 to Date



# Tulare Basin



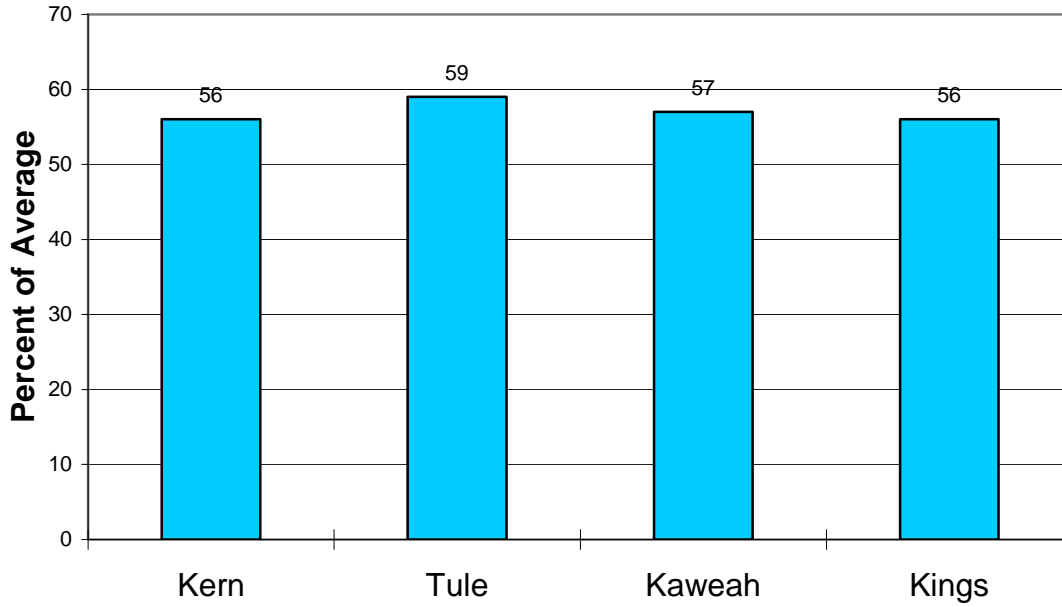
# Water Supply Forecasts

		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	135	34	210	85	398*
Isabella Dam, blo	Apr-Jul	150	31	250	90	480
Bakersfield, nr	Apr-Jul	160	33	260	90	490
<b>Tule River</b>						
Success Dam	Apr-Jul	19.0	29	45	10.0	66
<b>Kaweah River</b>						
Terminus Dam	Apr-Jul	100	34	170	65	290
<b>NF Kings River</b>						
Cliff Camp, nr	Apr-Jul	110	46	157	63	240*
<b>Kings River</b>						
Pine Flat Dam, blo	Apr-Jul	540	43	760	340	1250

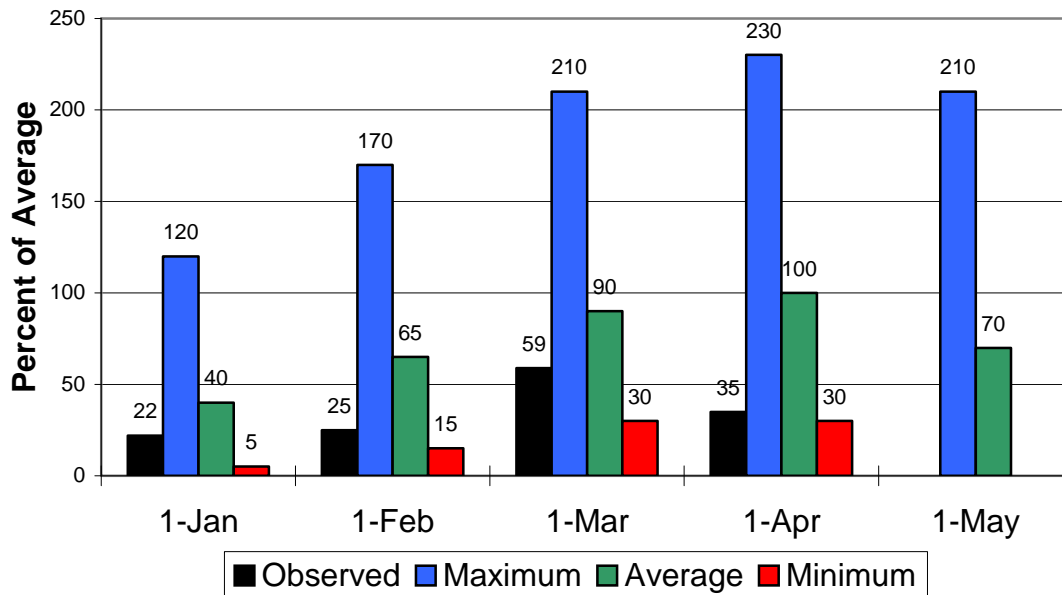
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# Tulare Lake Basin

## Seasonal Precipitation October 1 to Date



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

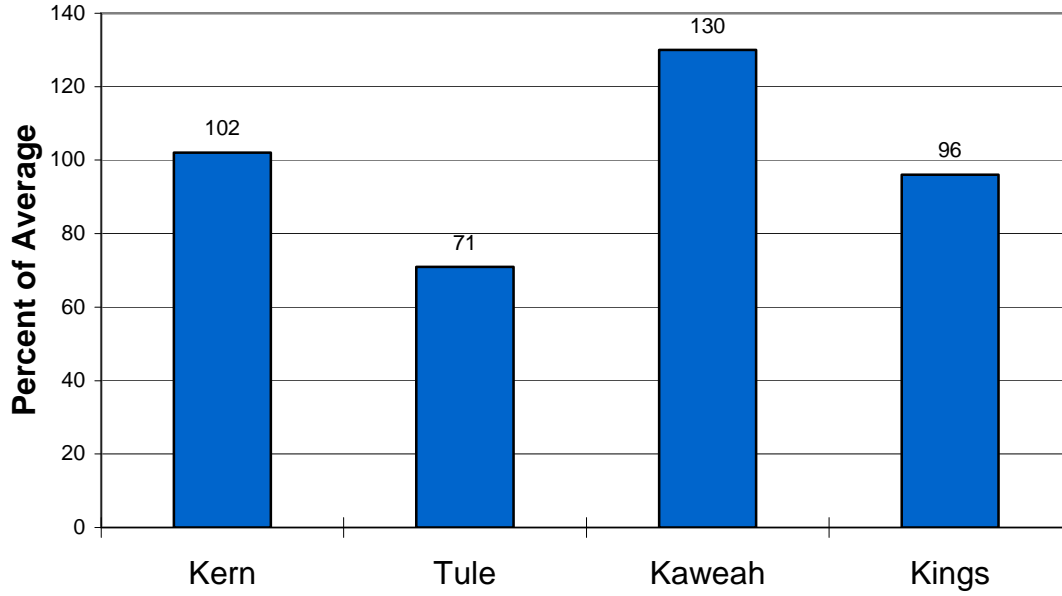




# Tulare Lake Basin

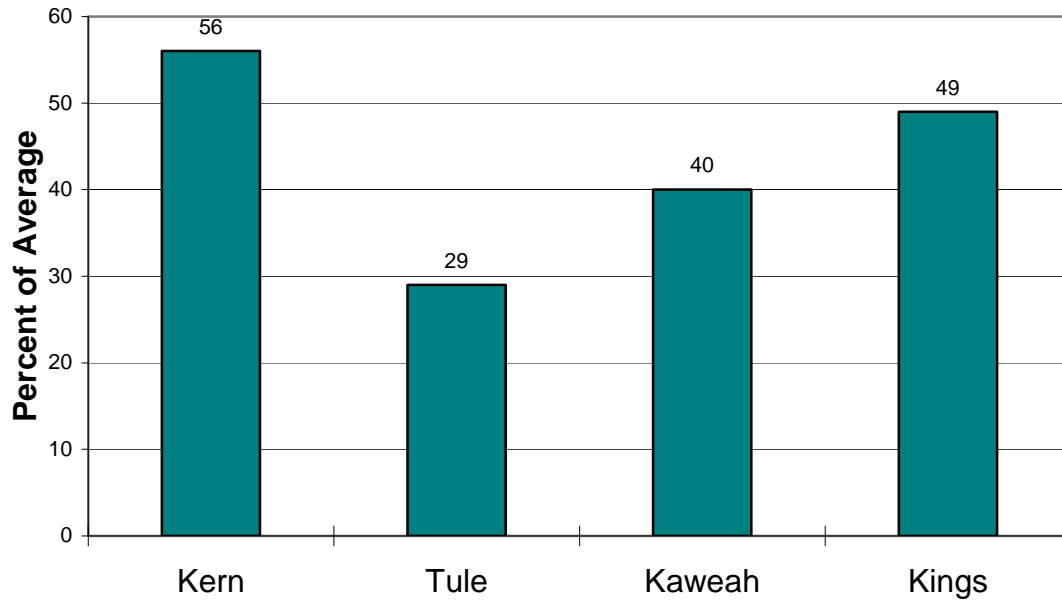
## Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

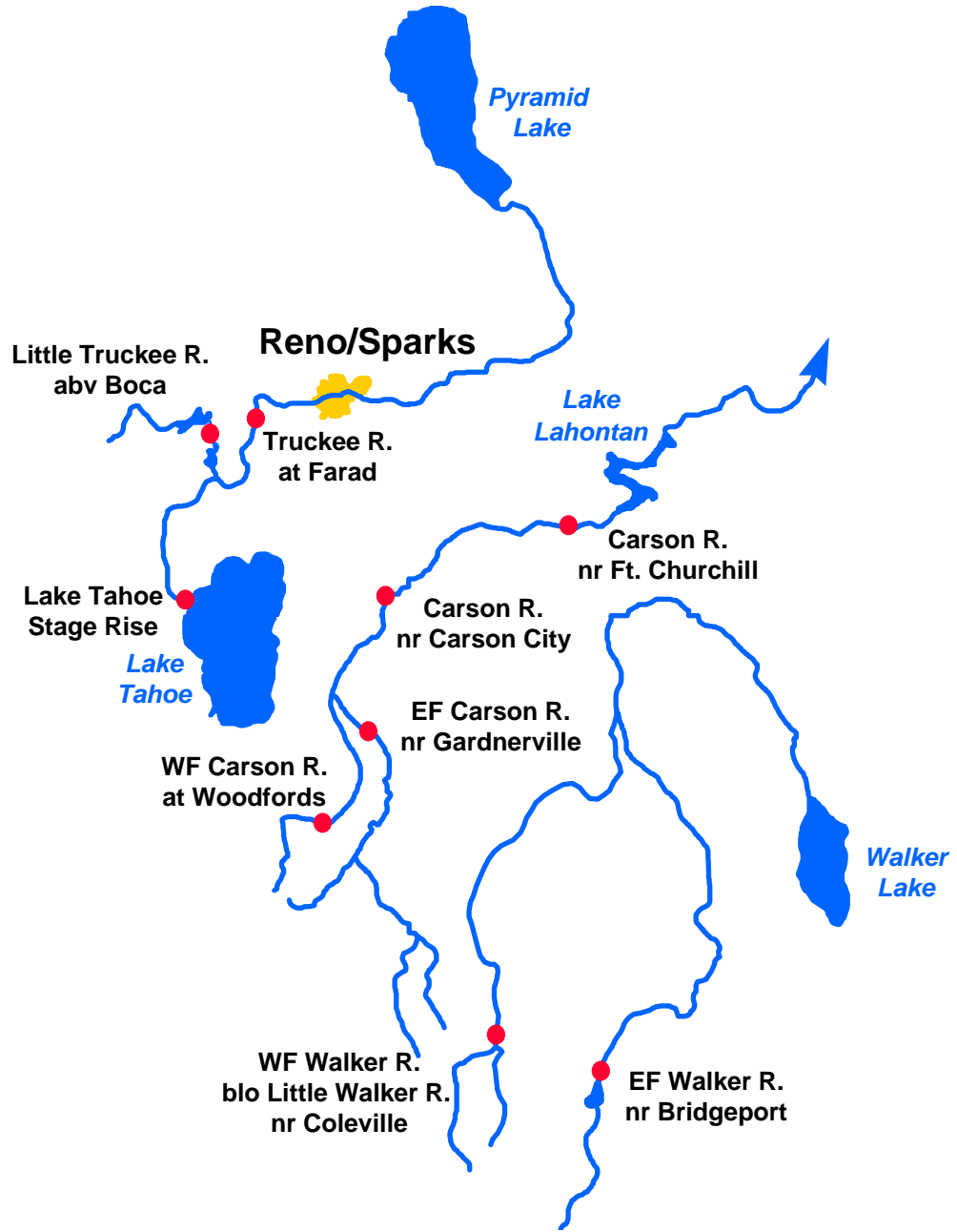


## Seasonal Basin Runoff

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	0.40	29	0.90	0.15	1.38
Ltl Truckee River Boca Res, abv, Truckee, nr	Apr-Jul	26	32	55	18.0	80
Truckee River Farad	Apr-Jul	100	38	190	62	260

## Carson River

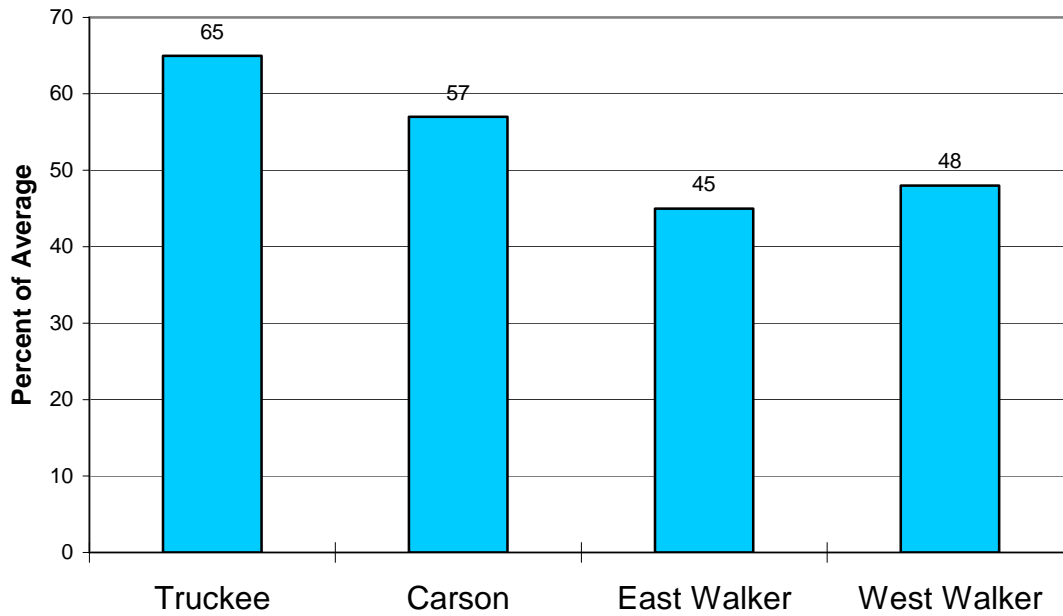
EF Carson River Gardnerville, nr	Apr-Jul	60	32	120	30	189
WF Carson River Woodfords	Apr-Jul	16.0	29	35	8.0	56
Carson River Carson City, nr	Apr-Jul	35	19	90	16.0	188
Fort Churchill, nr	Apr-Jul	20	11	67	6.0	178

## Walker River

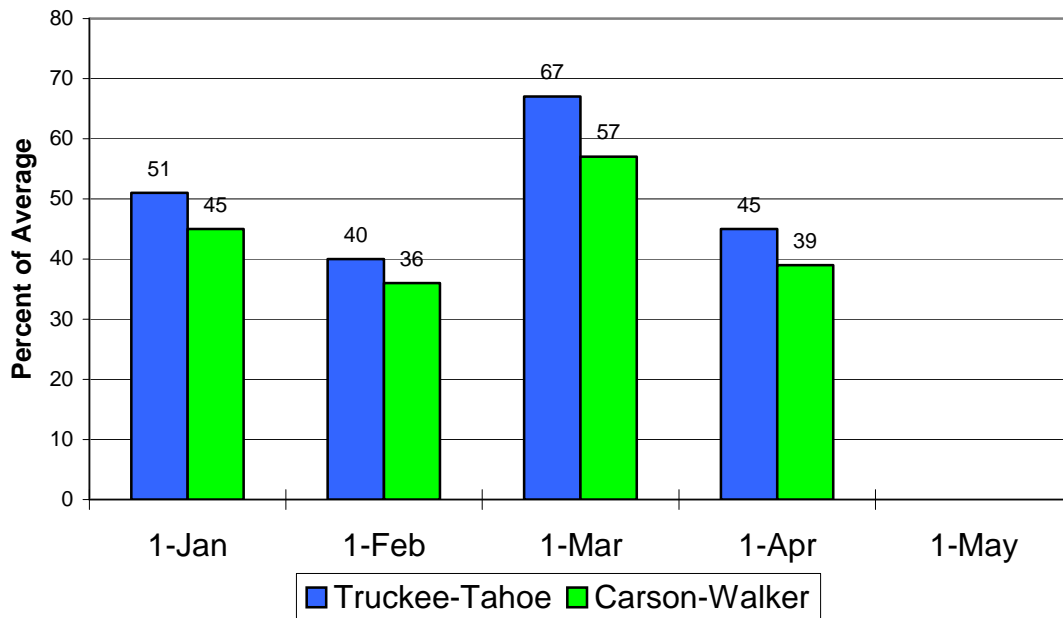
East Walker River Bridgeport, nr	Apr-Aug	15.0	22	39	8.0	67
West Walker River Ltl Walker, blo, Coleville, nr	Apr-Jul	50	32	110	34	156

# East Side Sierra Nevada Basins

## Seasonal Basin Precipitation October 1 to Date



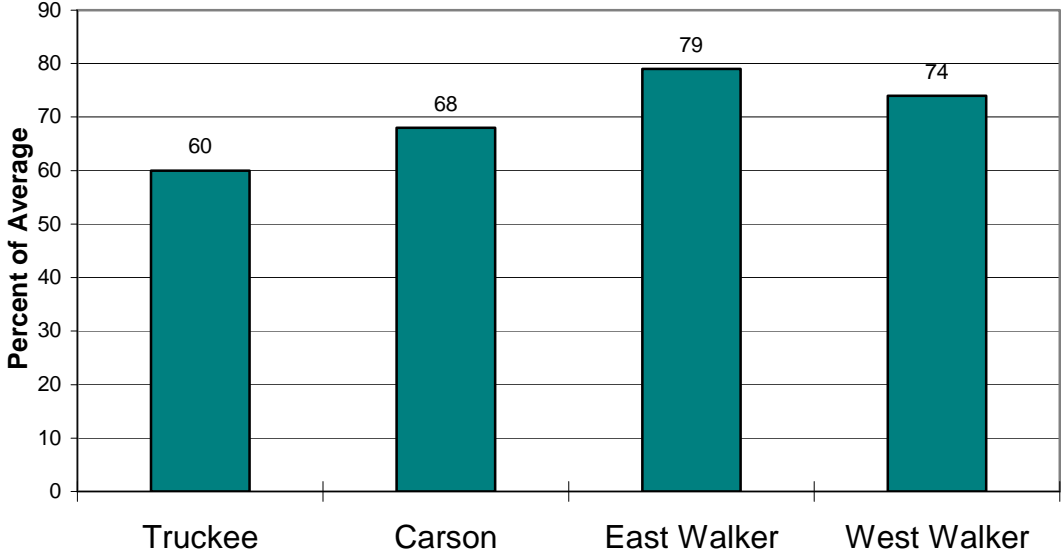
## Basin Snowpack % of Average SWE to Date



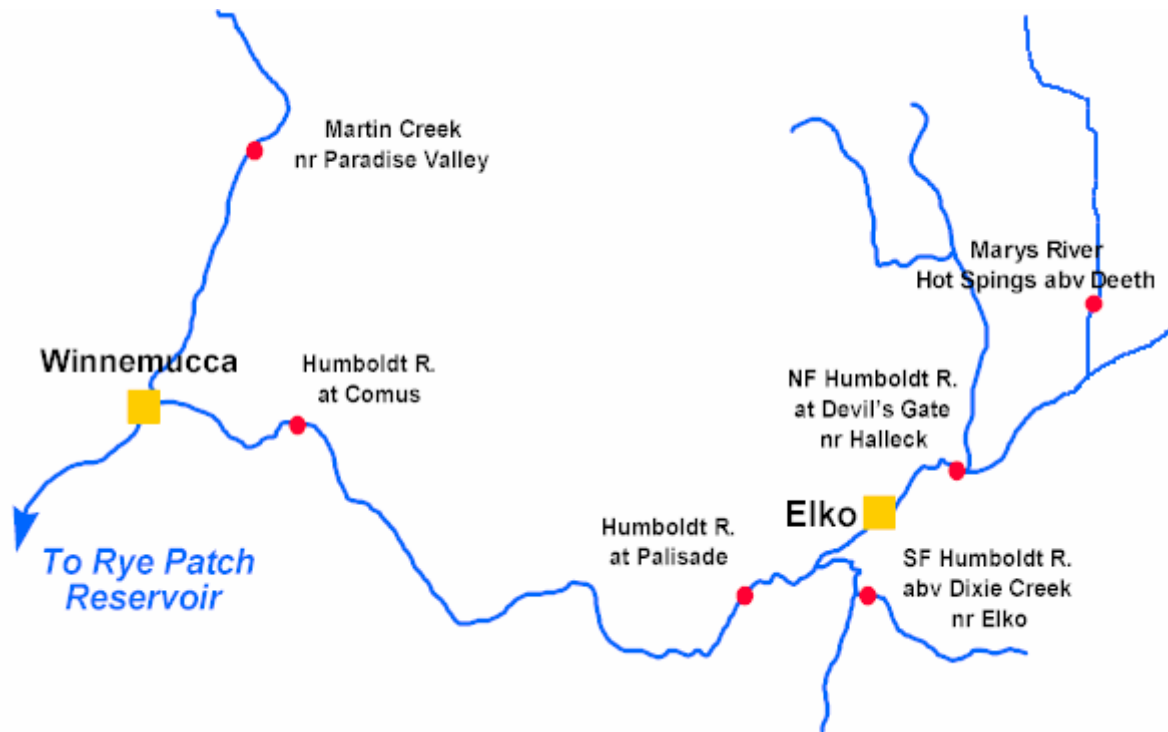
# East Side Sierra Nevada Basins

## Seasonal Basin Runoff

October 1 to Date



# Humboldt River Basin



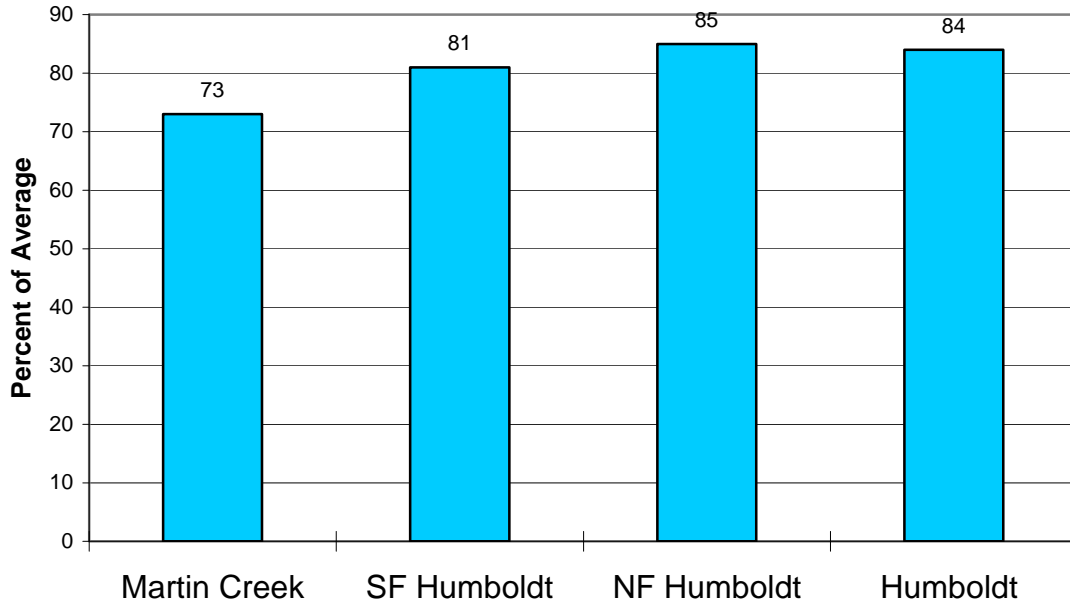
## Water Supply Forecasts

		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>						
Devlis Gate, at, Halleck, nr	Apr-Jul	13.0	38	26	4.0	34*
<b>SF Humboldt River</b>						
Dixie Ck, abv, Elko, nr	Apr-Jul	42	55	79	6.0	76
<b>Marys River</b>						
Hot Springs, abv, Deeth, nr	Apr-Jul	18.0	46	32	5.0	39
<b>Humboldt River</b>						
Elko, nr	Apr-Jul	50	32	120	17.0	154
Palisade	Apr-Jul	85	34	185	21	250
Comus	Apr-Jul	65	29	180	16.0	225
<b>Martin Ck</b>						
Paradise Vly, nr	Apr-Jul	6.0	32	14.0	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

