

# WATER SUPPLY OUTLOOK



## CALIFORNIA AND NORTHERN NEVADA

**JANUARY  
2003**



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> snow pack 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 snow pack at a point.

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

# General Outlook

January 1, 2003

The water year began with a storm system in November that favored the southern Sierra basins and two major systems in December that brought copious precipitation primarily to the northern California basins. Although snow pack accumulation got off to a good start, most of the substantial gain in reservoir storage has been in northern California. With most of the wet season yet to come, water managers remain cautiously optimistic that prospects will continue to improve for the remainder of the water supply season.

December rainfall amounts were 245 percent in the Sacramento basin, 170 percent in the San Joaquin, and 120 percent in the Tulare Lake basin. The Truckee basin received 205 percent, the Walker 215 percent and the Carson 180 percent. About 90 percent of the monthly average fell in the Humboldt basin and about 130 percent in the upper Klamath basin.

For the second year in a row, the Sierra snow pack is showing some impressive monthly averages and a good start to the April 1<sup>st</sup> average. The monthly averages range from 195 percent in the northern Sierra basin to 145 percent in the southern Sierras. The April 1<sup>st</sup> average ranges from 72 percent in the northern Sierra to 47 percent in the southern Sierra. Snow packs in the upper Klamath basin are at 100 percent of the average-to-date, the Carson-Walker at 185 percent, the Tahoe-Truckee at 170 percent and the Humboldt at 95 percent.

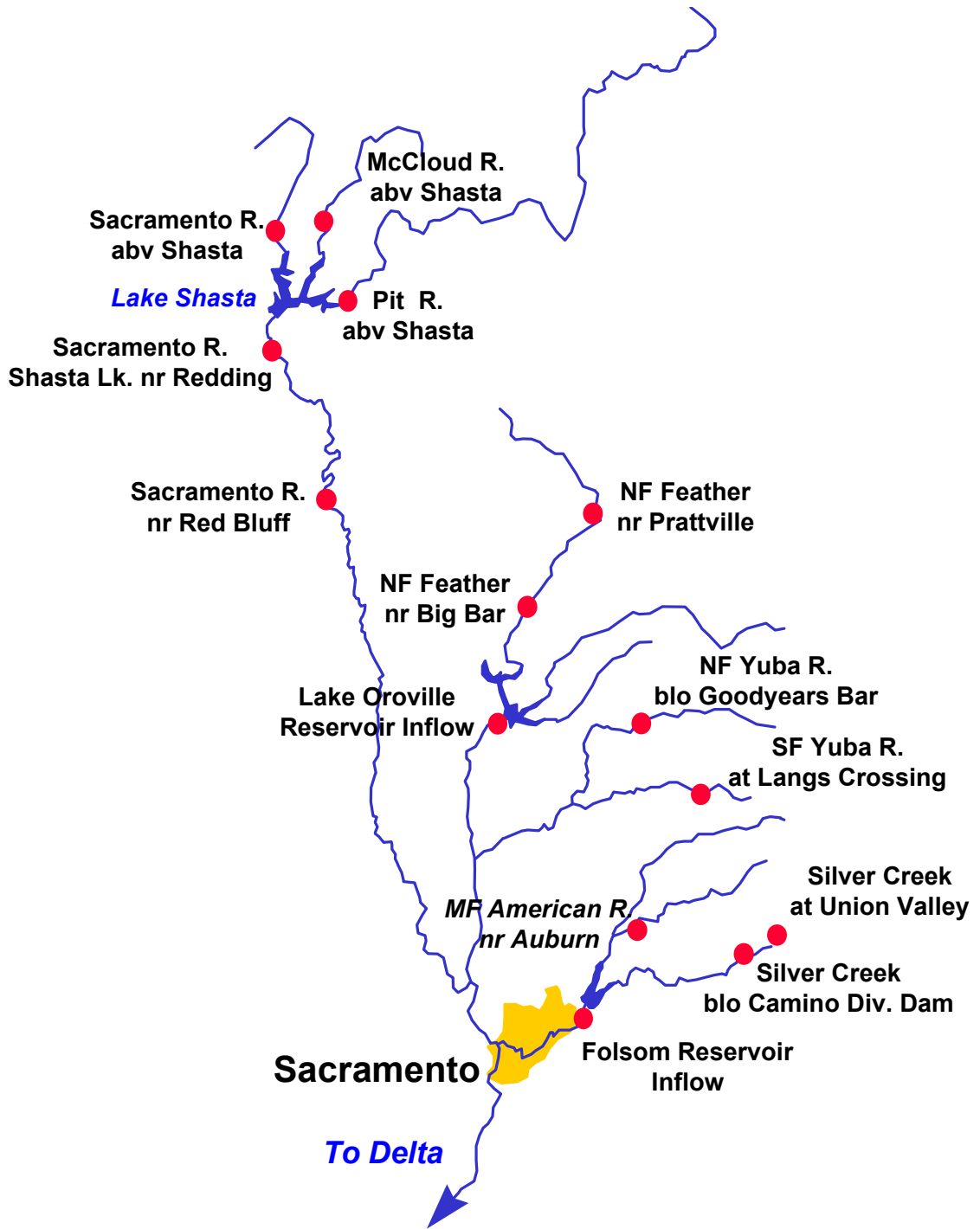
Runoff varied in December, ranging from 187 percent for the Shasta inflow, followed by 181 percent for the Trinity and tapering down to 56 percent in the Mokelumne basin. The San Joaquin, Tulare and east side basins received much below average runoff in December. However, the Tulare basin received much above average runoff in November.

Reservoir storage in the Sacramento basin was at 93 percent of average, the San Joaquin at 94 percent, and the Tulare Lake basin at 72 percent. East side reservoirs were at 41 percent of average.

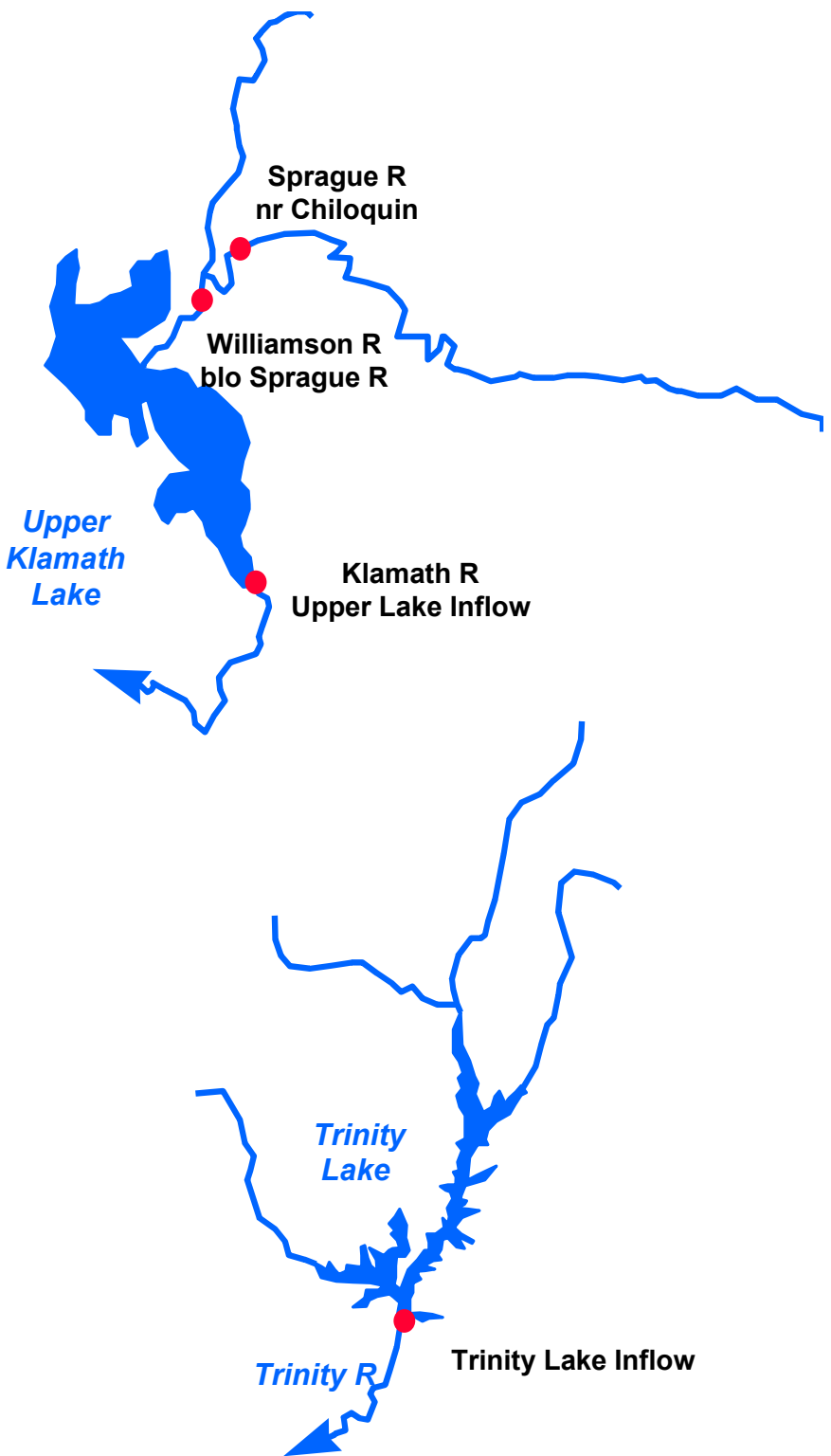
The April through July runoff forecasts range from 120 percent in the Trinity to about 95 percent in the Kern river basin. Forecasts range from 104 to 122 percent for the east-side Sierra basins, and 69 to 85 percent in the Humboldt basin of northern Nevada. The March through September forecast for the upper Klamath basin is 87 percent.

**Please note: The Water Supply Outlook is available on the World Wide Web at <http://www.wrh.noaa.gov/cnrfc>.**

# Sacramento River Basin



# Upper Klamath and Trinity River Basins



# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>COASTAL BASINS</b>						
Williamson River Sprague, blo	Mar-Sep	455	90	660	370	505
Sprague River Chiloquin, nr	Mar-Sep	230	75	400	160	305
Upper Klamath Falls River Inflow	Mar-Sep	620	87	950	545	715
Lost River Gerber Reservoir Inflow	Feb-Jul	28	60	160	32	47
Clear Lake Reservoir Inflow	Feb-Jul	79	75	165	35	105
Trinity River Trinity Lake Inflow	Apr-Jul	760	120	1240	480	635
<b>SACRAMENTO RIVER BASIN</b>						
<b>SACRAMENTO RIVER ABOVE BEND BRIDGE</b>						
Pit River Montgomery Ck, nr	Apr-Jul	960	90	1930	750	1070
Mccloud River Shasta Lk, abv	Apr-Jul	435	118	630	320	370
Sacramento River Delta	Apr-Jul	335	116	550	200	290
Shasta Lake, Redding, nr	Apr-Jul	1750	98	2900	1500	1790
Bend Bridge, abv, Red Bluff, n	Apr-Jul	2300	94	4090	2000	2440
<b>FEATHER RIVER ABOVE OROVILLE RESERVOIR</b>						
NF Feather River Prattville, nr	Apr-Jul	320	96	580	210	333*
Big Bar	Apr-Jul	1030	107	1730	675	962*
Feather River Oroville Reservoir Inflow	Apr-Jul	1850	105	3250	1100	1760

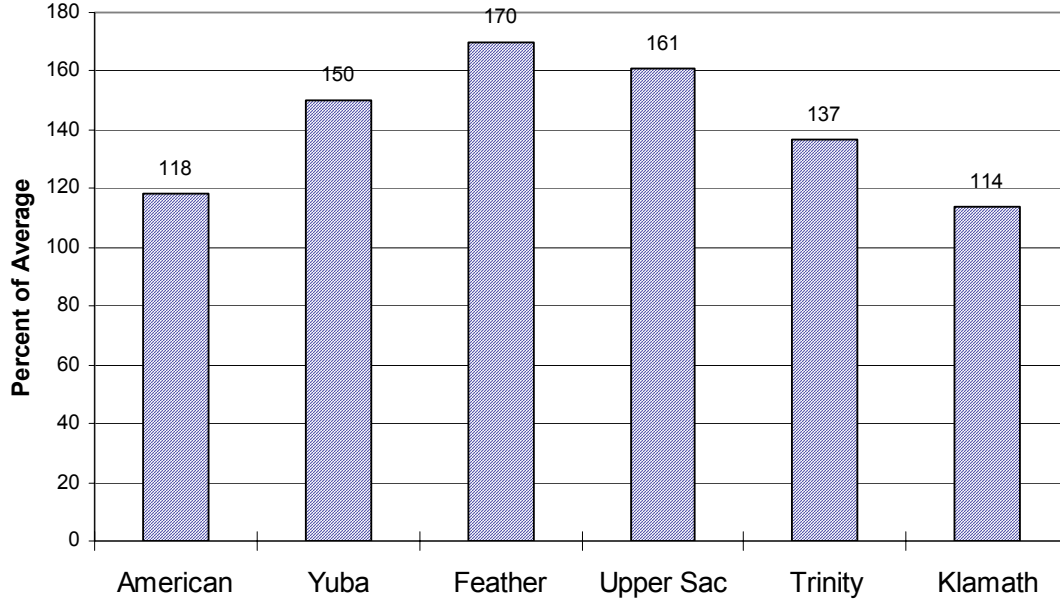
# Water Supply Forecasts

			Most Prob Vol KAF	Most Prob Vol %Nrml	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	290	106	475	172	273*	
South Yuba River							
Langs Crossing	Apr-Jul	230	102	400	142	225*	
Yuba River							
Smartville, nr	Apr-Jul	1040	105	1790	675	995	
<b>American River above Folsom Reservoir</b>							
MF American River							
Auburn, nr	Apr-Jul	495	101	830	295	490*	
Silver Ck							
Union Valley	Apr-Jul	88	90	157	58	98*	
Camino Dam, blo	Apr-Jul	145	92	255	95	158*	
American River							
Folsom Reservoir Inflow	Apr-Jul	1180	96	2200	660	1230	

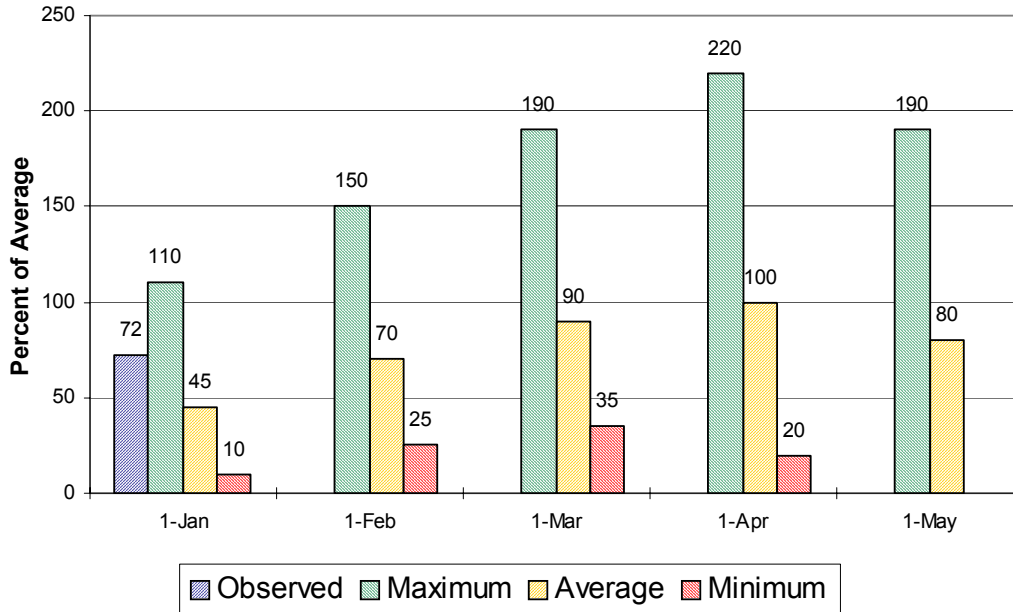
\*30 Year Averages for 1971-2000 are incomplete. Those forecast points with an asterisk have incomplete averages, so 1961-1990 averages are listed. The new averages will be incorporated into this report when the complete data sets become available.

# Sacramento/Trinity/Klamath River Basins

## Seasonal Basin Precipitation October 1 to Date



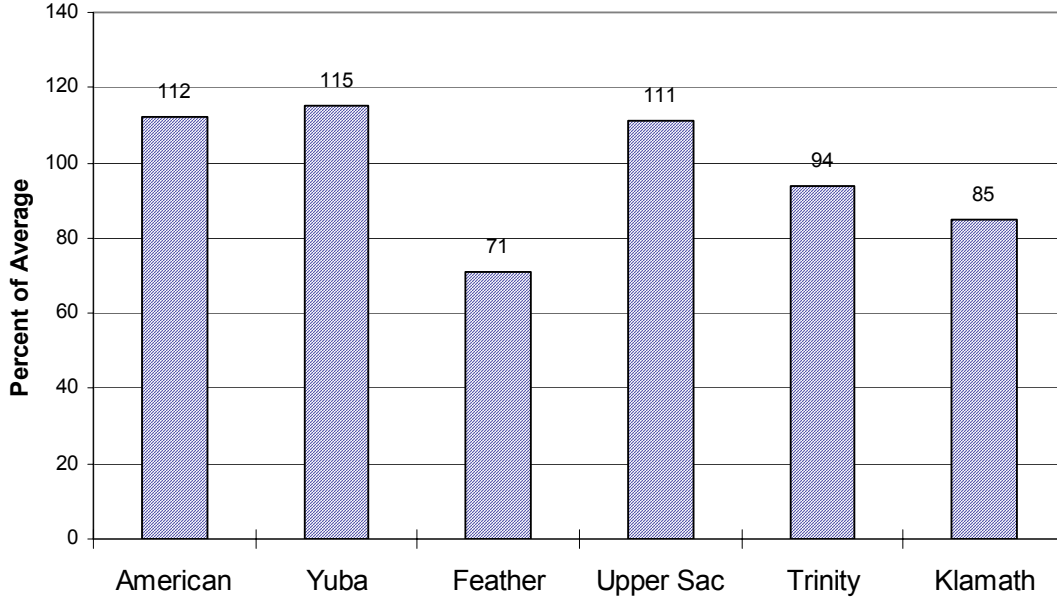
## Seasonal Basin Snowpack Water Content in % of April 1 Average



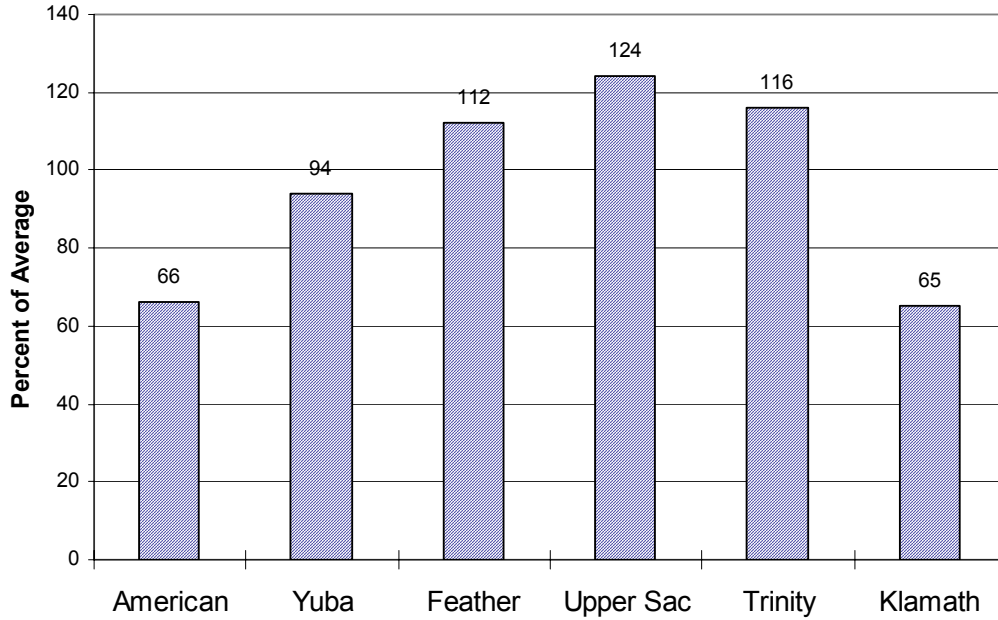


# Sacramento/Trinity/Klamath River Basins

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



## Seasonal Basin Runoff October 1 to Date



# San Joaquin Basin



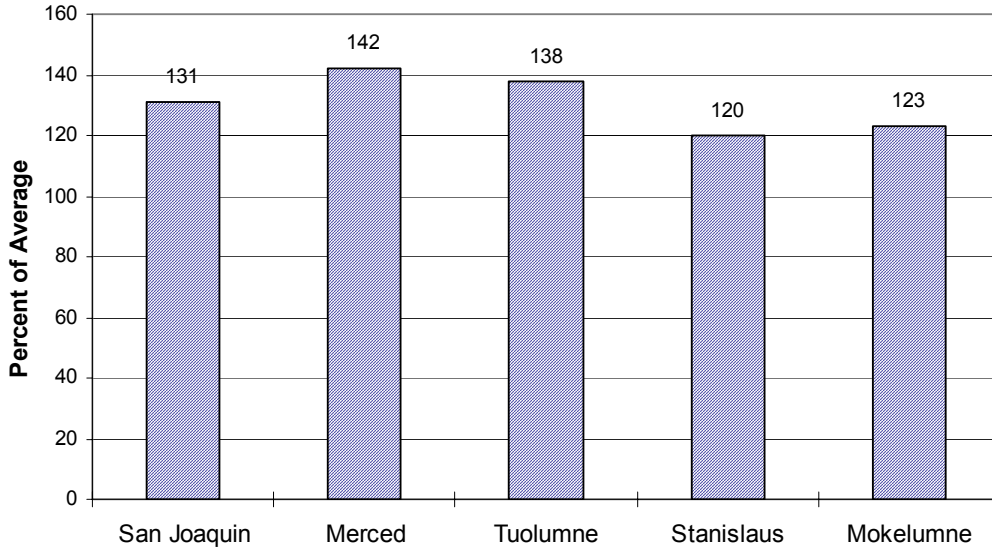
# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>SF San Joaquin River</b>						
Hooper Ck, blo, Florence Lk, n	Apr-Jul	190	99	315	64	192*
<b>San Joaquin River</b>						
Millerton Lk	Apr-Jul	1270	100	2180	365	1270
<b>Merced River</b>						
Pohono Bridge, at, Yosemite, n	Apr-Jul	405	112	645	166	360*
Merced Falls, blo	Apr-Jul	690	107	1170	215	645
<b>Tuolumne River</b>						
Hetch Hetchy, nr	Apr-Jul	665	112	990	340	596*
La Grange, nr	Apr-Jul	1370	111	2130	615	1230
<b>MF Stanislaus River</b>						
Beardsley Dam, blo	Apr-Jul	360	112	600	154	320*
<b>Stanislaus River</b>						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	770	111	1280	310	695
<b>NF Mokelumne River</b>						
West Point	Apr-Jul	420	101	755	150	416*
<b>Mokelumne River</b>						
Mokelumne Hill	Apr-Jul	450	98	850	165	460
<b>Cosumnes River</b>						
Michigan Bar	Apr-Jul	120	98	245	35	123

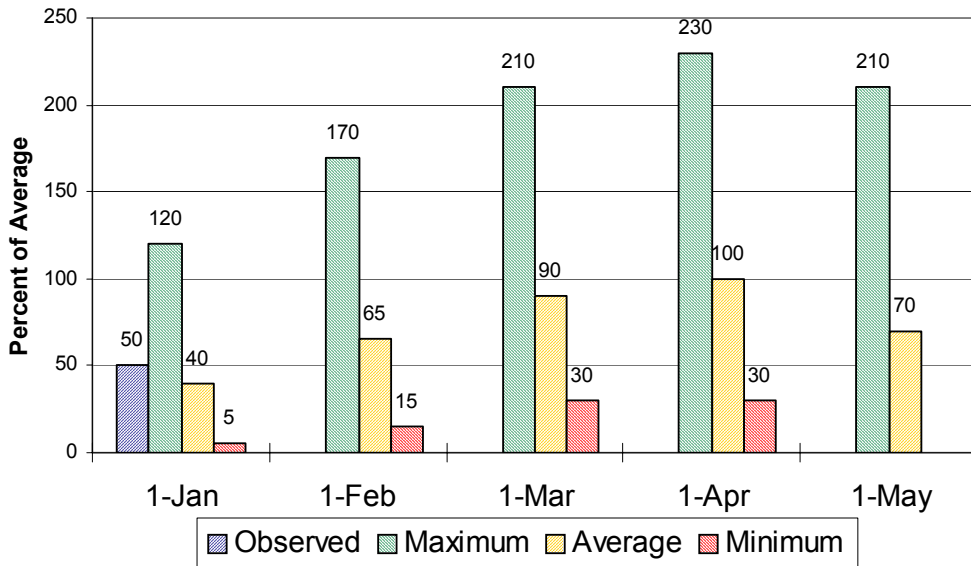
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# San Joaquin Basin

## Seasonal Basin Precipitation October 1 to Date

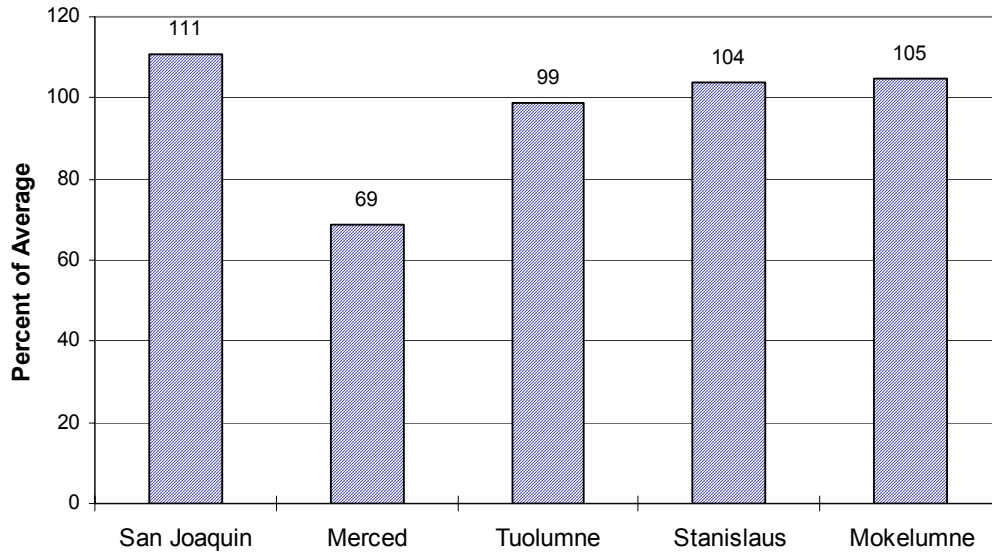


## Seasonal Basin Snowpack Water Content in % of April 1 Average

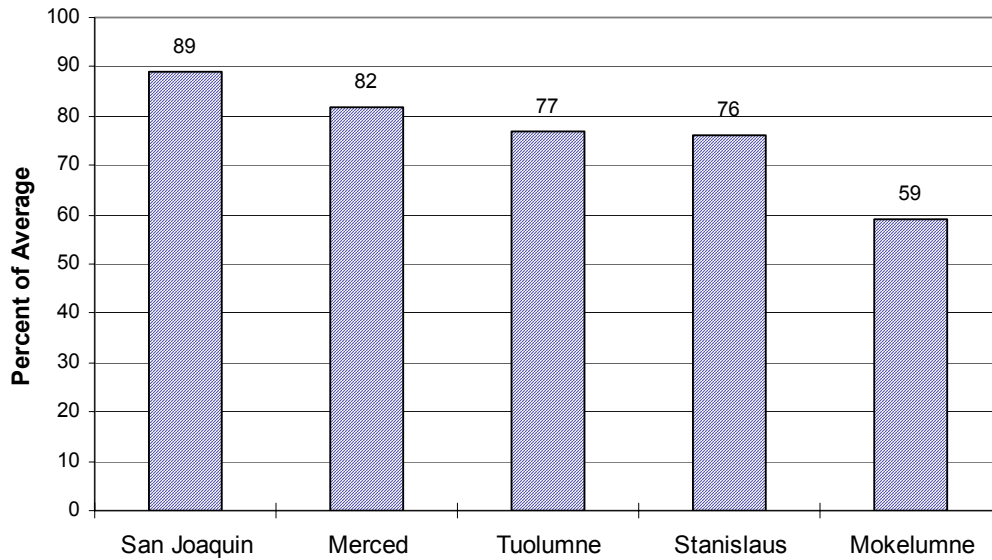


# San Joaquin Basin

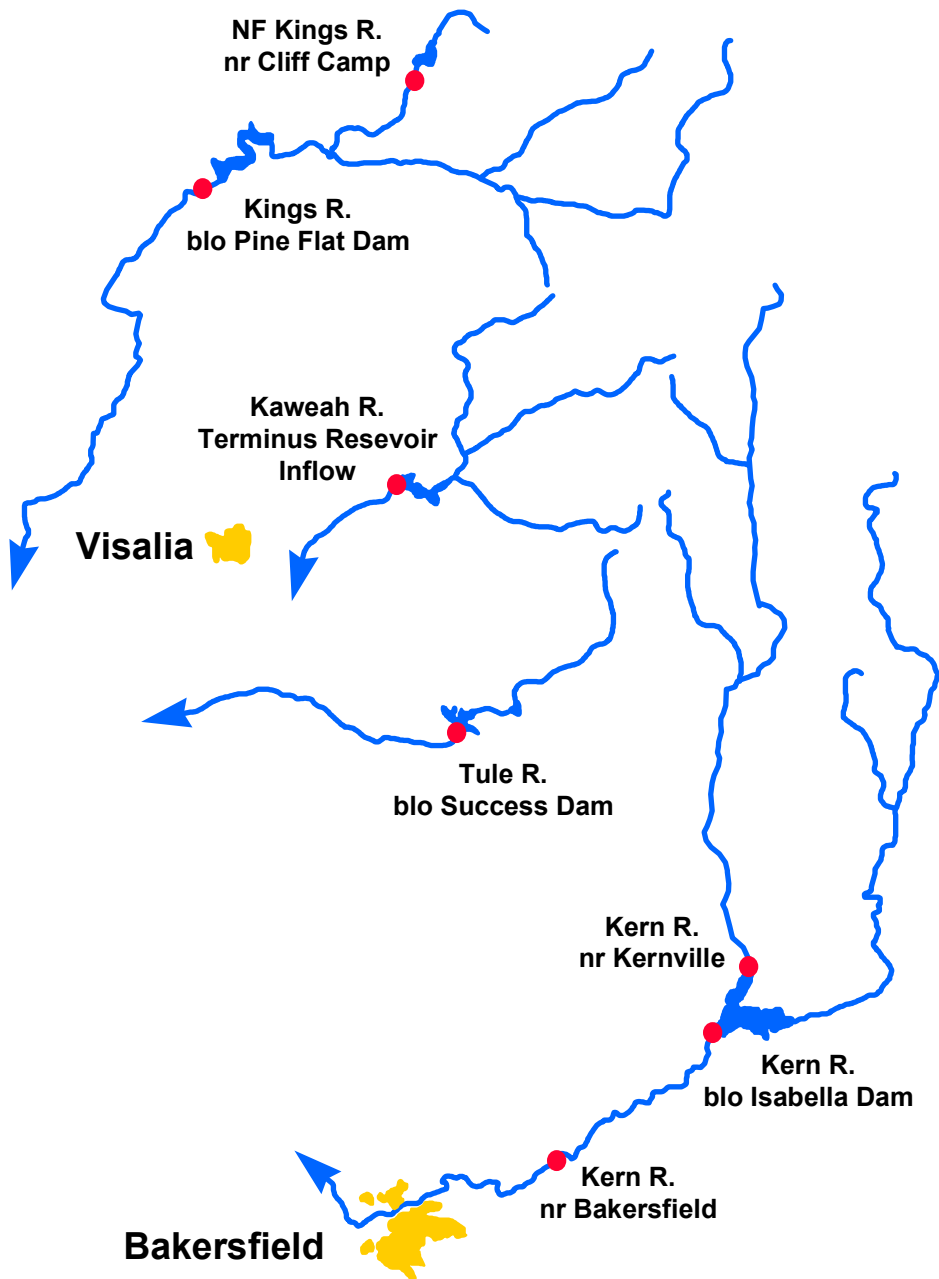
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Season Basin Runoff October 1 to Date



# Tulare Basin



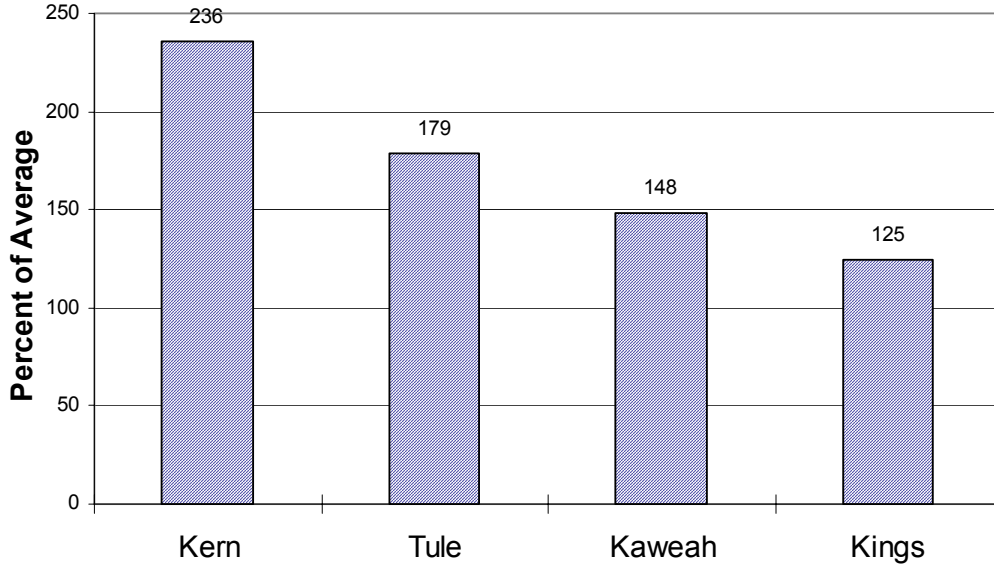
# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>Kern River</b>						
Kernville, nr	Apr-Jul	360	90	730	150	398*
Isabella Dam, blo	Apr-Jul	450	94	955	150	480
Bakersfield, nr	Apr-Jul	465	95	995	160	490
<b>Tule River</b>						
Success Dam	Apr-Jul	65	98	140	15	66
<b>Kaweah River</b>						
Terminus Dam	Apr-Jul	290	100	535	125	290
<b>NF Kings River</b>						
Cliff Camp, nr	Apr-Jul	240	100	415	65	240*
<b>Kings River</b>						
Pine Flat Dam, blo	Apr-Jul	1250	100	2180	320	1250

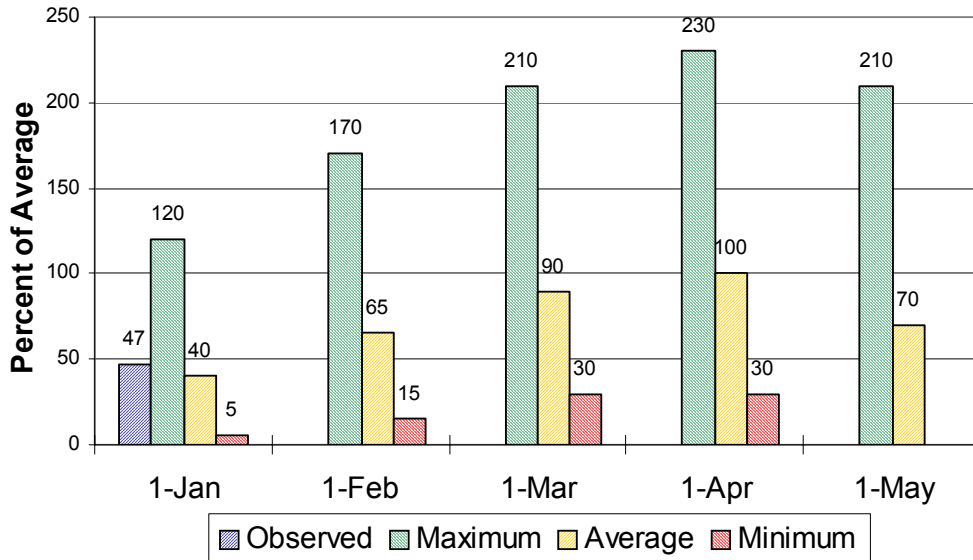
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# Tulare Lake Basin

## Seasonal Precipitation October 1 to Date



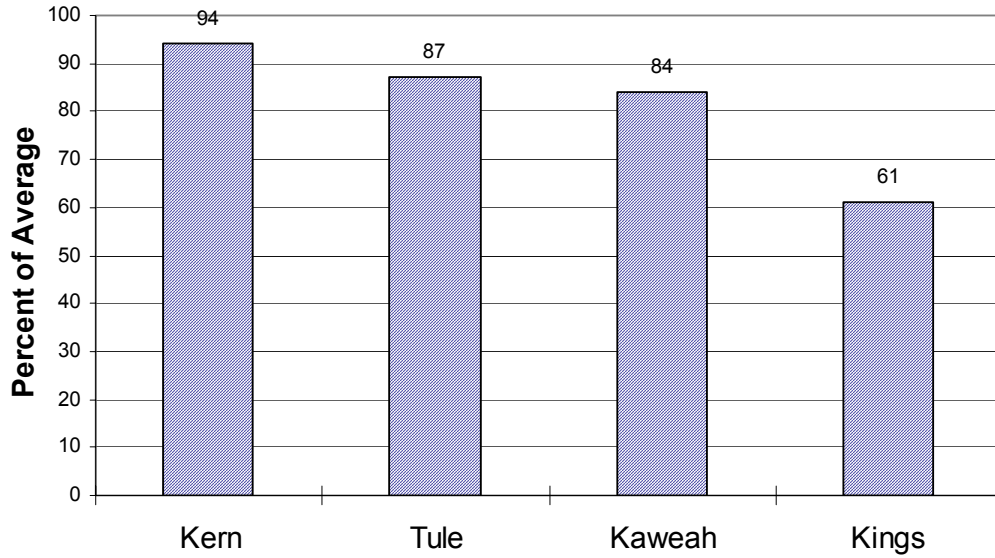
## Seasonal Basin Snowpack Water Content in % of April 1 Average



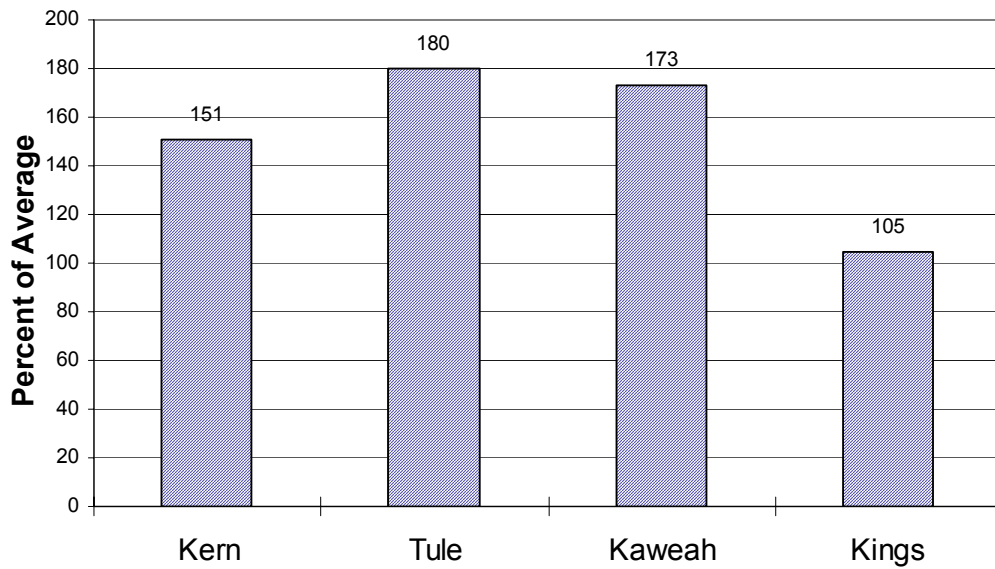


# Tulare Lake Basin

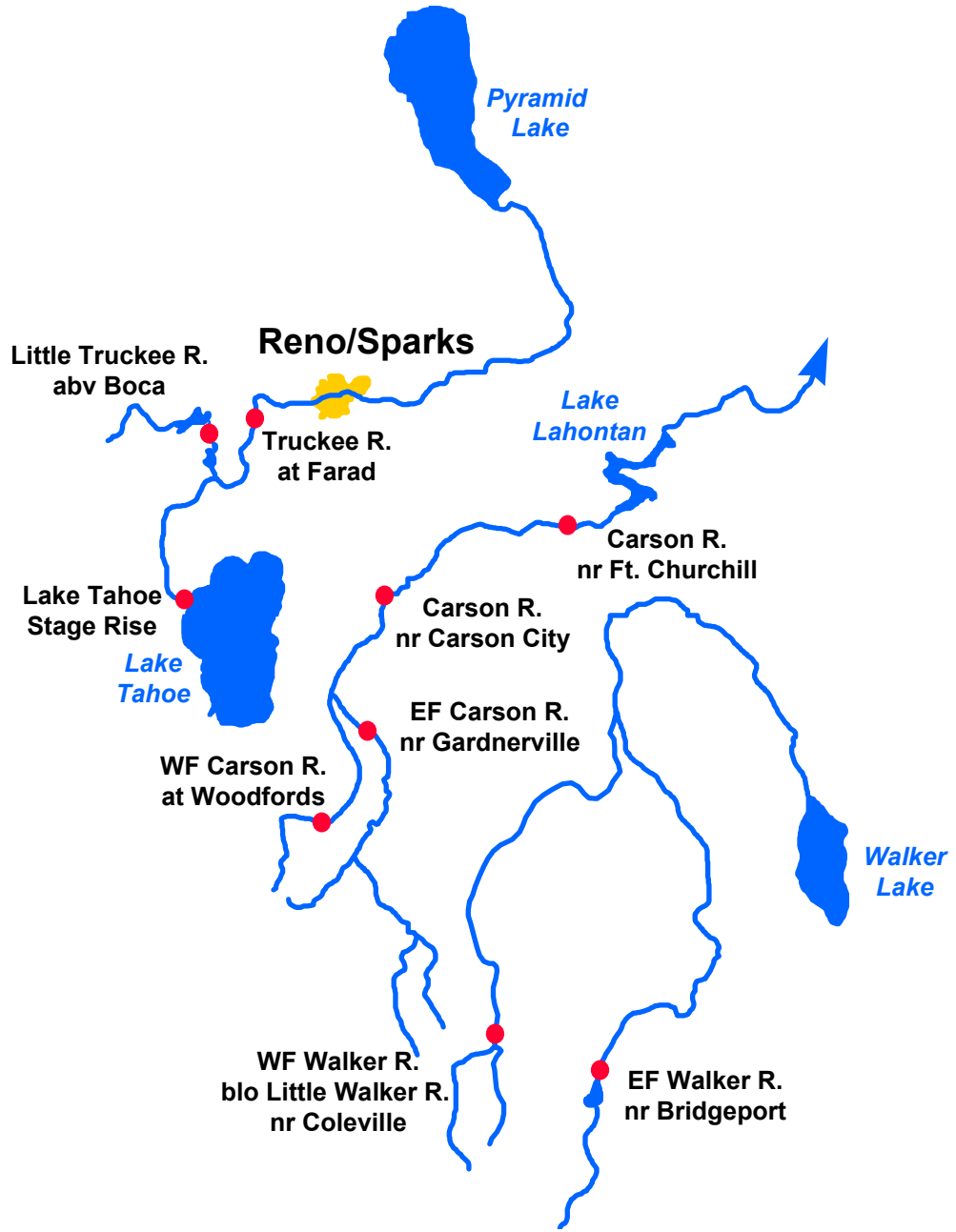
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Seasonal Basin Runoff October 1 to Date



# East Side Sierra Nevada Basins

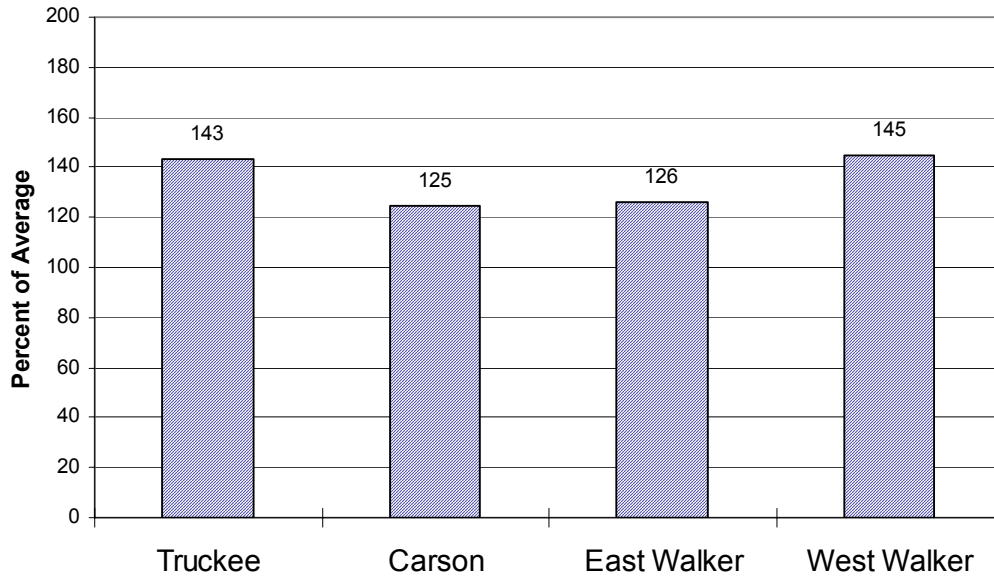


# Water Supply Forecasts

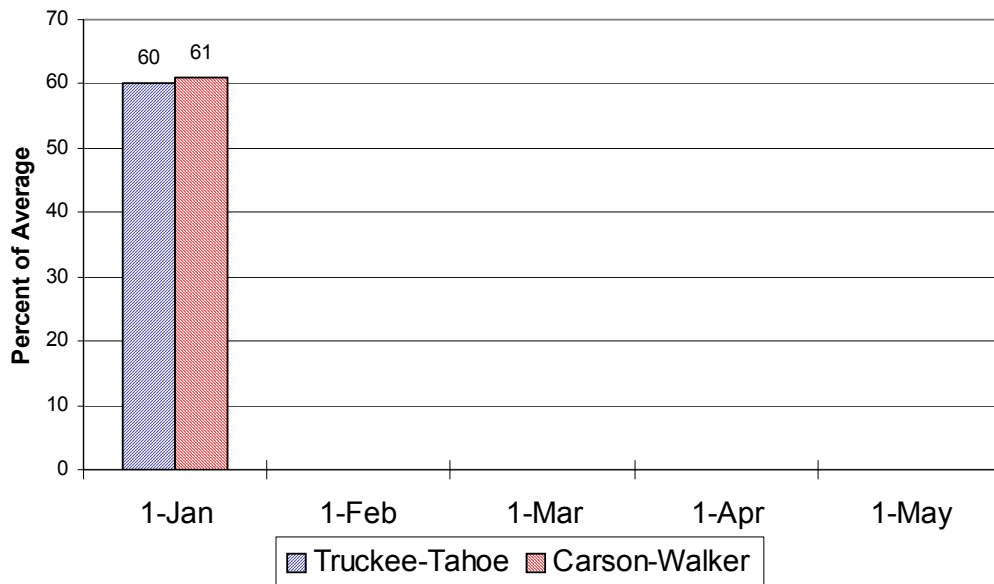
		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>Truckee River</b>						
Truckee River						
Lake Tahoe Stage Rise	Apr-High	1.5	109	2.6	0.8	1.4
Farad	Apr-Jul	285	110	500	156	260
Little Truckee River						
Boca Res, abv, Truckee, nr	Apr-Jul	89	111	160	48	80
<b>Carson River</b>						
EF Carson River						
Gardnerville, nr	Apr-Jul	210	111	350	130	189
WF Carson River						
Woodfords	Apr-Jul	62	111	105	40	56
Carson River						
Carson City, nr	Apr-Jul	200	106	345	130	188
Fort Churchill, nr	Apr-Jul	185	104	330	115	178
<b>Walker River</b>						
East Walker River						
Bridgeport, nr	Apr-Aug	72	107	117	35	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	190	122	275	107	156

# East Side Sierra Nevada Basins

## Seasonal Basin Precipitation October 1 to Date



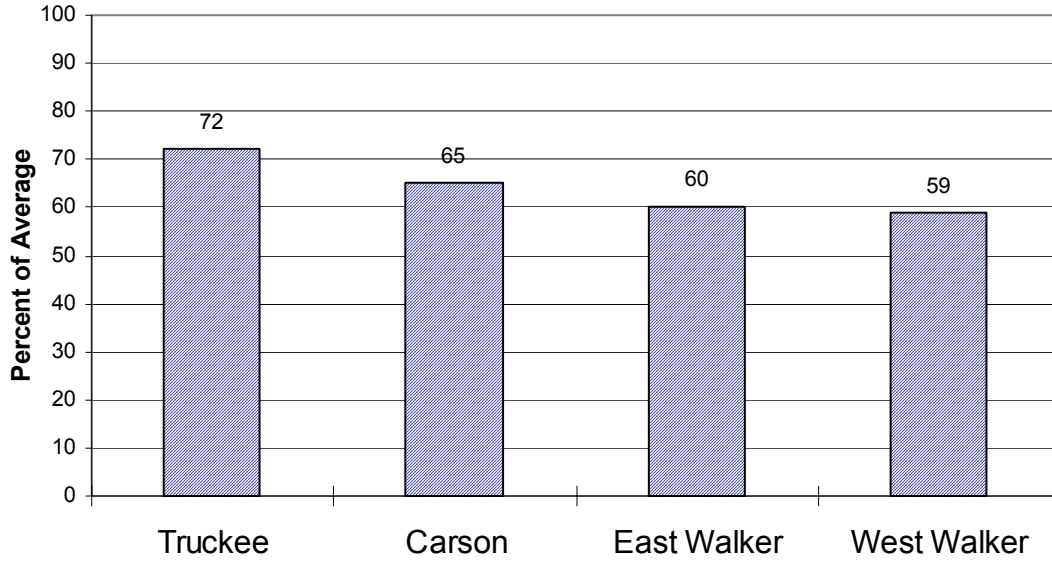
## Basin Snowpack % of Average SWE to Date



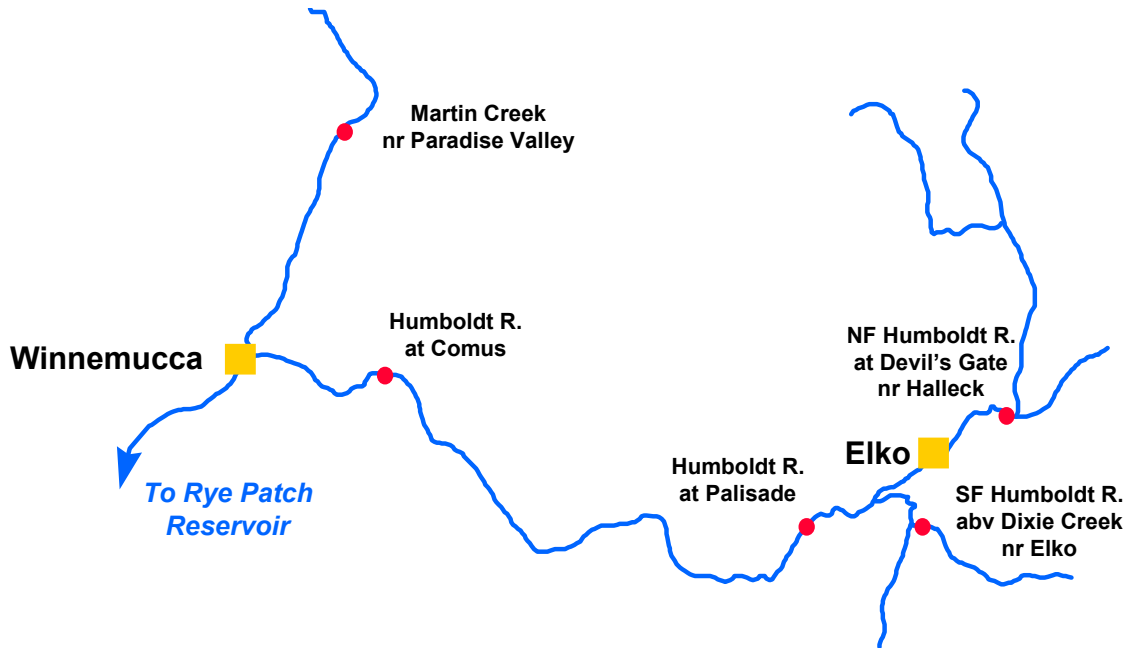
# East Side Sierra Nevada Basins

## Seasonal Basin Runoff

October 1 to Date



# Humboldt River Basin



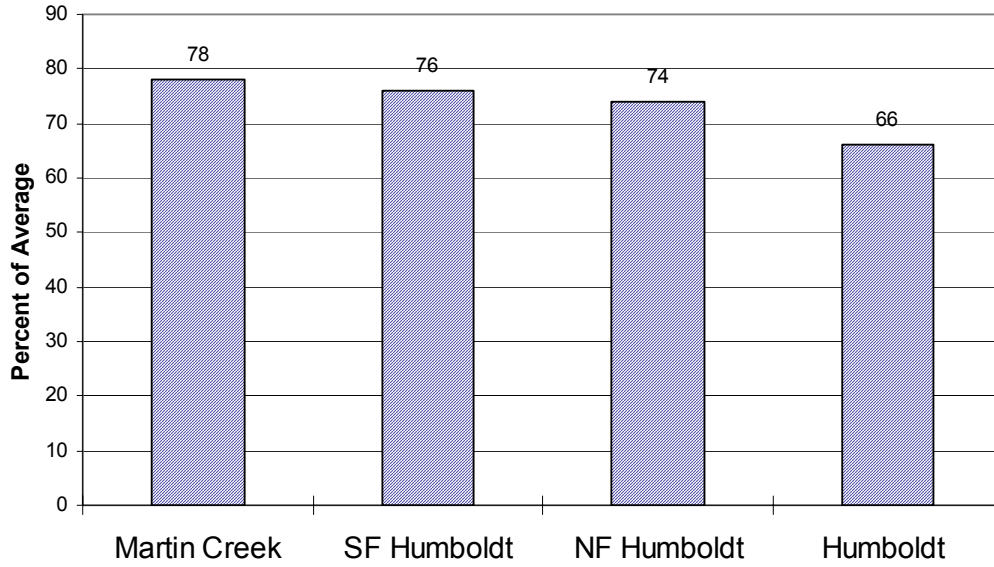
## Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>NF Humboldt River</b>						
Devils Gate, at, Halleck, nr	Apr-Jul	29	85	48	10.2	34*
<b>SF Humboldt River</b>						
Dixie Ck, abv, Elko, nr	Apr-Jul	60	79	108	27	76
<b>Humboldt River</b>						
Palisade	Apr-Jul	190	76	370	80	250
Comus	Apr-Jul	155	69	340	72	225
<b>Martin Ck</b>						
Paradise Valley, nr	Apr-Jul	13.0	70	29	5.6	18.7

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# Humboldt River Basin

## Seasonal Basin Precipitation October 1 to Date



## Basin Snowpack % of Average SWE to Date

