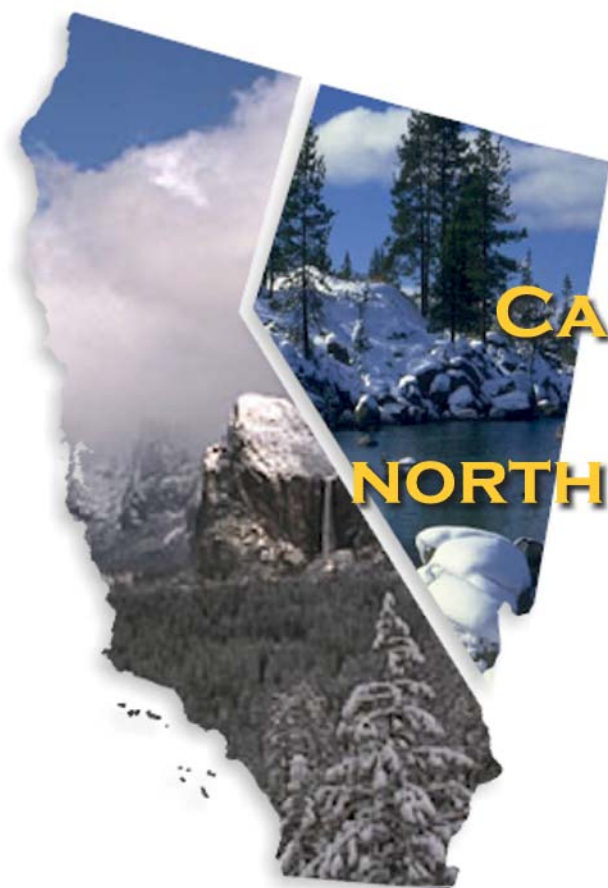


# WATER SUPPLY OUTLOOK



## CALIFORNIA AND NORTHERN NEVADA

**MAY  
2005**



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, 2005

The month of April was generally wet and cool, especially in the Klamath and Humboldt basins and the upper Sacramento River region of California. Because of excellent snow pack conditions and good seasonal precipitation thus far... spring runoff is expected to be near to much above average for most water supply basins in California and Nevada. Notable exceptions include the Upper Klamath Lake, Scott River and Pit River basins.

April precipitation ranged from 72 to 138 percent in the Trinity-Sacramento drainage, 56 to 99 percent in the San Joaquin drainage and 81 to 131 percent in the Tulare Lake drainage. The Upper Klamath Lake basin received 102 percent of the monthly average. The Carson basin received 90 percent of the April average; the Walker, 105 percent and the Truckee, 101 percent. The upper Humboldt basin received 222 percent of the monthly average, the lower Humboldt, 129 percent. Seasonal averages are near to much above average for all basins except the Klamath.

The cool and moist weather kept snowmelt to a minimum at the higher altitude sites although it was noticeable at the lower elevations. The May 1<sup>st</sup> average ranges from 144 percent in the Sacramento region, 150 percent in the San Joaquin, and 182 percent in the Tulare. Snow packs in the Carson-Walker basin are about 167 percent of the average-to-date, the Tahoe-Truckee, 146 percent, the upper Klamath, 50 percent and the Humboldt, 155 percent.

April runoff ranged from 93 to 114 percent in the Trinity-Sacramento drainage, 104 to 116 percent in the San Joaquin drainage, and 98 to 132 percent in the Tulare Lake drainage. Runoff for the east side Sierra varied from 96 to 108 percent. It was 134 percent of the monthly average for the Humboldt River at Palisade due to rainfall and melt of the lower elevation snow pack. It was only 61 percent at this time last year. The Upper Klamath Lake basin recorded only 44 percent of the April average.

Reservoirs in the Sacramento drainage are at 106 percent of average, the San Joaquin at 111 percent and the Tulare Lake at 104 percent. Many reservoirs in California's central valley should fill this spring as flood reservations are removed and abundant snowmelt runoff occurs. Storage in the east side Sierra reservoirs is about 86 percent of average. The elevation at Lake Tahoe stood at 6223.81 feet at the end of April 30<sup>th</sup>. This is 0.81 feet above the natural rim and represents about 30 percent of the average-to-date. Lahontan Reservoir stands at about 68 percent of the average-to-date. Rye Patch Reservoir in the Humboldt basin rose to 55 percent of the average-to-date by the end of April; it was only 26 percent at this time last year.

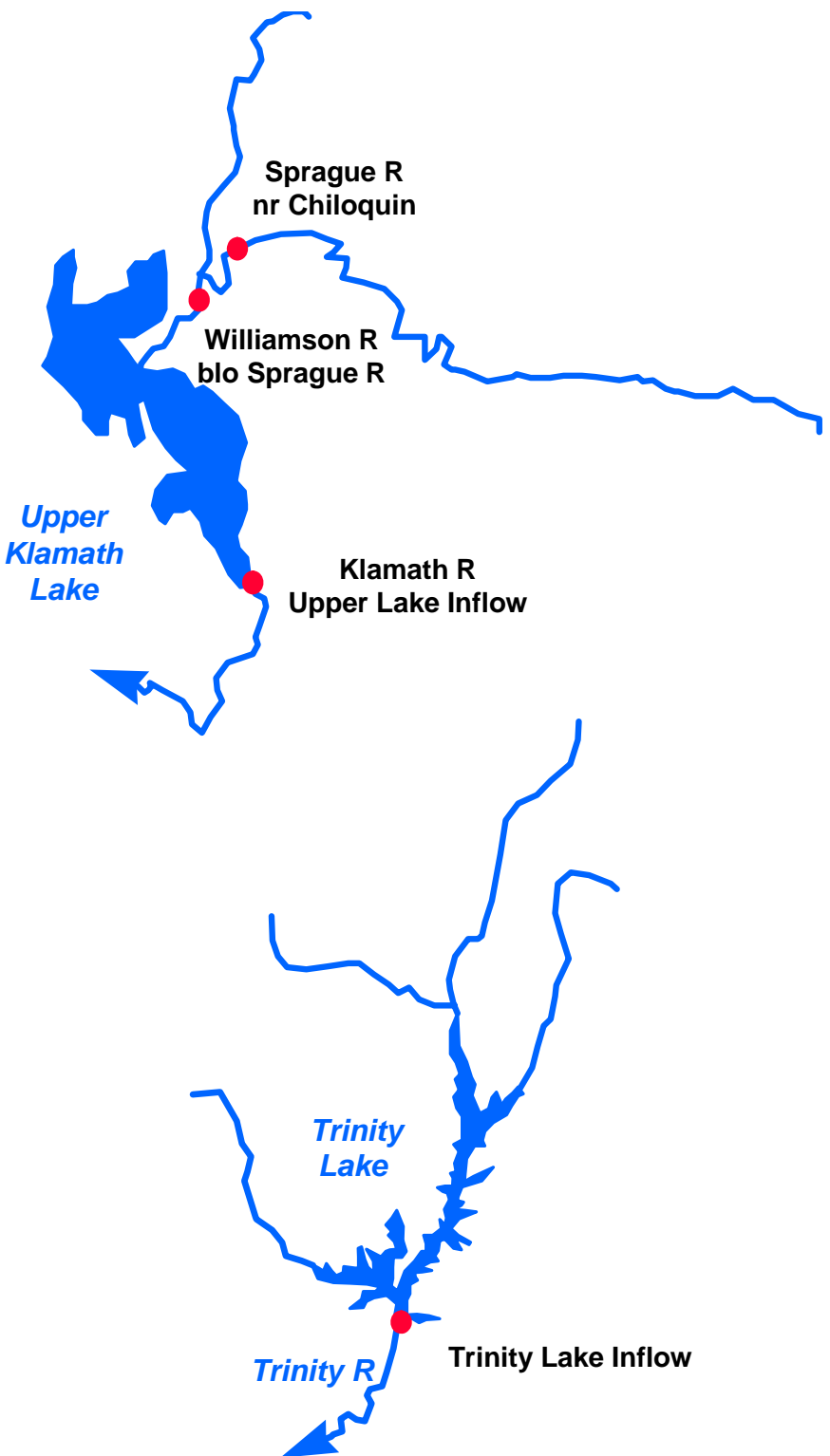
The April through July runoff forecasts range from 83 percent for the Pit River basin to 150 percent for the Merced. Forecasts are above average from the Yuba River basin to the Kern. Spring runoff forecasts vary from 119 to 164 percent for the east-side Sierra basins and 96 to 132 percent for the Humboldt basin. Lake Tahoe is forecast to rise 1.70 feet from April 1st to its high elevation. The May through September forecast for the Upper Klamath Lake is 48 percent. Watersheds in the Humboldt, San Joaquin, Tulare Lake and some basins in the east side Sierra drainage are expected to experience above average spring runoff for the first time in several years.

This will be the last Water Supply Outlook for Water Year 2005. Updates are scheduled for selected east side Sierra forecast points and the upper Klamath inflow. These will be posted on the CNRFC web page.

# 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	295	58	390	199	505
Sprague River Chiloquin, nr	Mar-Sep	190	62	280	98	305
Upper Klamath Falls River Inflow	Mar-Sep	415	58	560	270	715
	May-Sep	162	48	240	82	340
Lost River Gerber Reservoir Inflow	May-Jul	3.0	47	5.2	0.75	6.4
Clear Lake Reservoir Inflow	May-Jul	10.0	52	14.1	6.0	19.3
Scott River Fort Jones, nr	Apr-Jul	150	83	185	125	181
Trinity River Trinity Lake Inflow	Apr-Jul	680	107	810	580	635

Trinity River - Inflow at Lewiston Lake Distribution (kAF)

Exceedence	<u>Probability</u>	<u>Oct-Apr</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 Yr</u>
90%	554	185	240	120	35	15	5	580	1152	
50%	554	185	280	170	45	20	10	680	1262	
10%	554	185	215	190	55	25	15	810	1402	

## SACRAMENTO RIVER BASIN

### SACRAMENTO RIVER ABOVE BEND BRIDGE

Pit River Montgomery Ck, nr	Apr-Jul	890	83	1060	760	1070
Mccloud River Shasta Lk, abv	Apr-Jul	405	109	490	340	370
Sacramento River Delta	Apr-Jul	315	109	380	270	290
Shasta Lake, Redding, nr	Apr-Jul	1700	95	2100	1400	1790
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	2200	90	2640	1900	2440

### FEATHER RIVER ABOVE OROVILLE RESERVOIR

NF Feather River Prattville, nr	Apr-Jul	310	93	375	255	333*
Big Bar	Apr-Jul	910	95	1110	760	962*
Feather River Oroville Reservoir Inflow	Apr-Jul	1670	95	2040	1430	1760

# Water Supply Forecasts

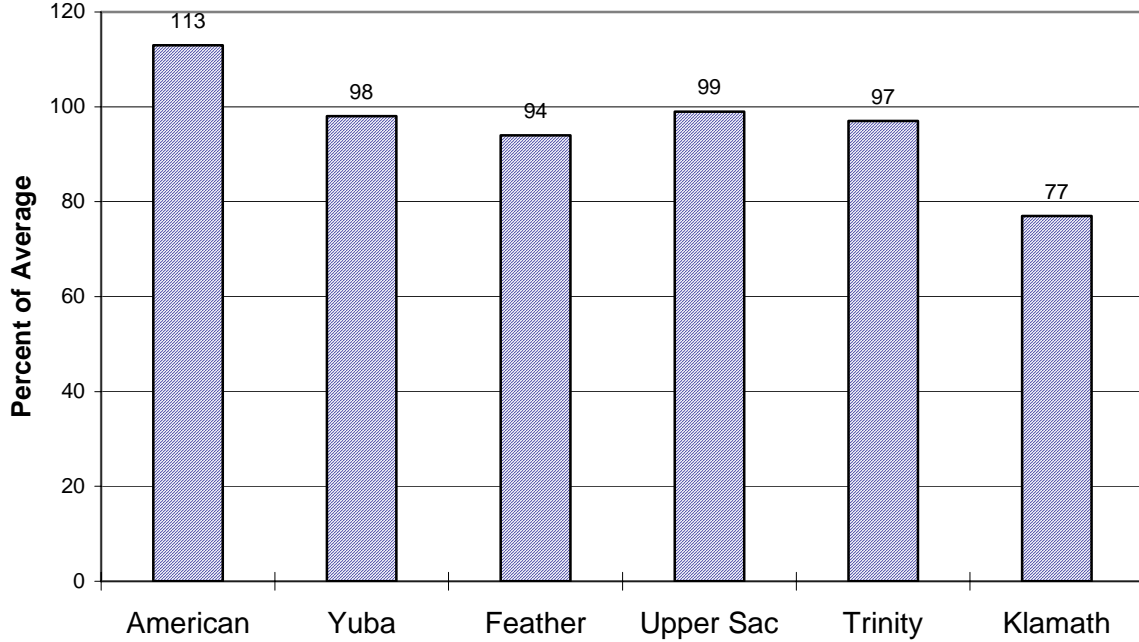
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>YUBA RIVER ABOVE SMARTVILLE</b>						
North Yuba River Goodyears Bar, blo	Apr-Jul	290	106	345	245	273*
South Yuba River Langs Crossing	Apr-Jul	240	107	290	205	225*
Yuba River Smartville, nr	Apr-Jul	1050	106	1200	905	995
<b>AMERICAN RIVER ABOVE FOLSOM RESERVOIR</b>						
MF American River Auburn, nr	Apr-Jul	600	122	725	500	490*
Silver Ck Union Valley	Apr-Jul	128	131	150	115	98*
Camino Dam, blo	Apr-Jul	200	127	235	175	158*
American River Folsom Reservoir Inflow	Apr-Jul	1550	126	1850	1330	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

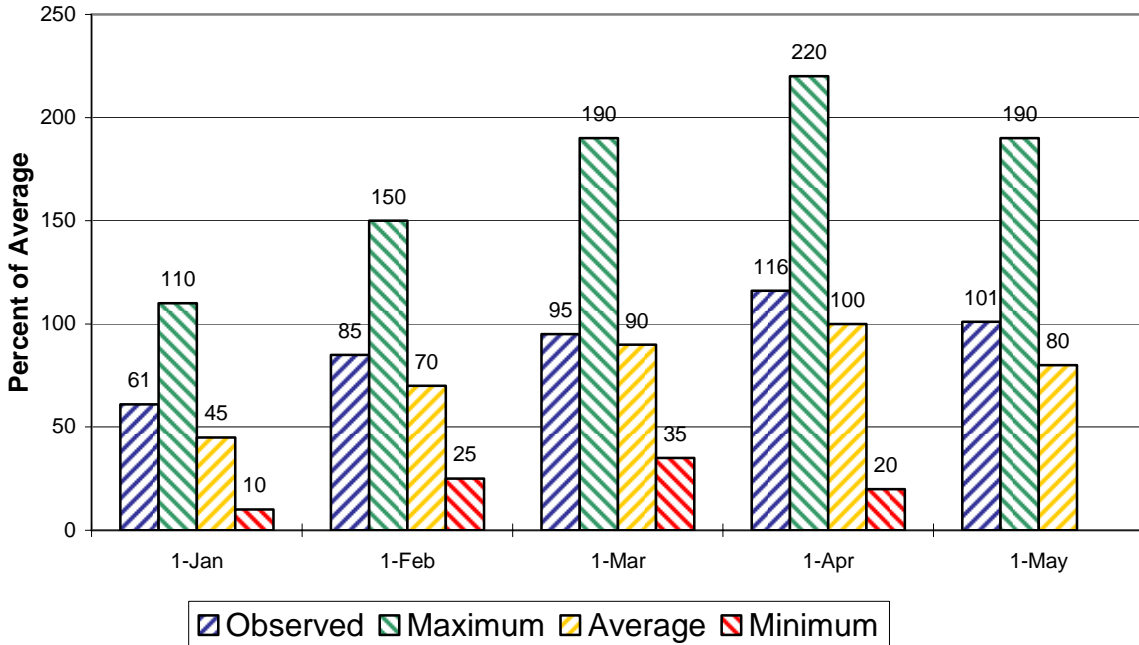
## Seasonal Basin Precipitation

October 1 to Date



## Seasonal Basin Snowpack

Water Content in % of April 1 Average

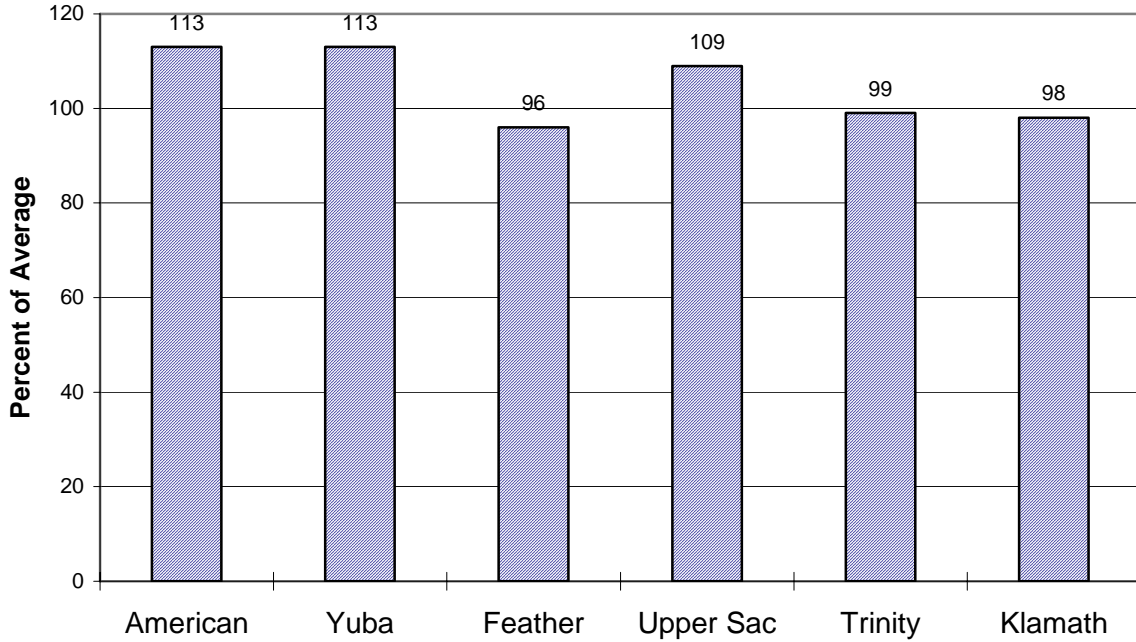




# Sacramento/Trinity/Klamath River Basins

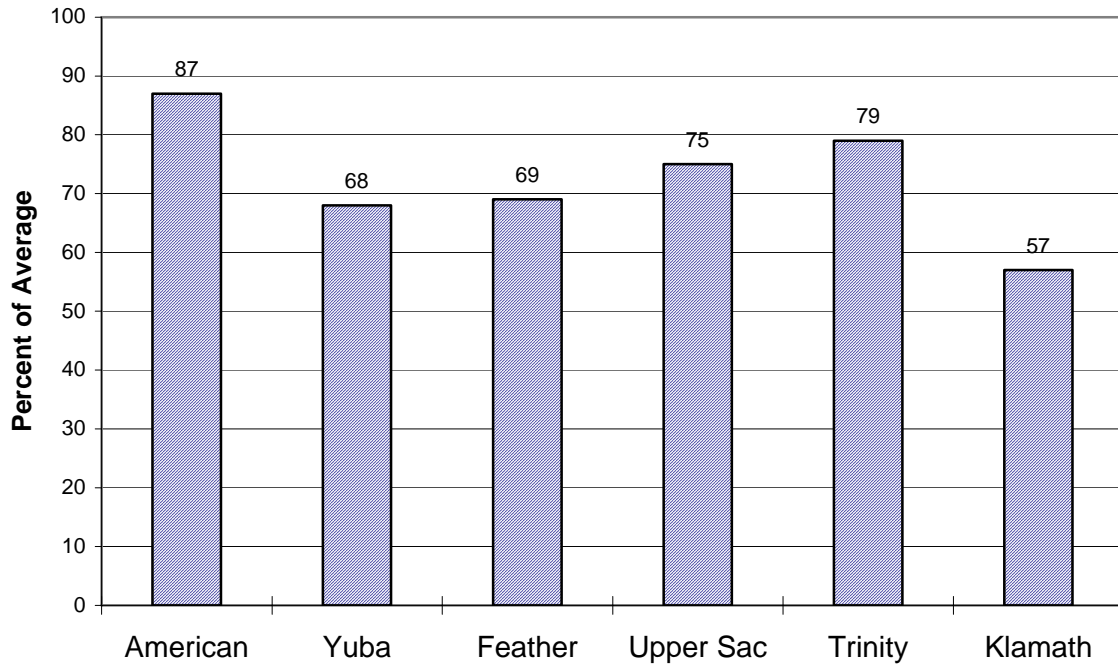
## Basin Reservoir Storage

Contents of Major Reservoirs in % of Average



## Seasonal Basin Runoff

October 1 to Date



# San Joaquin Basin



# Water Supply Forecasts

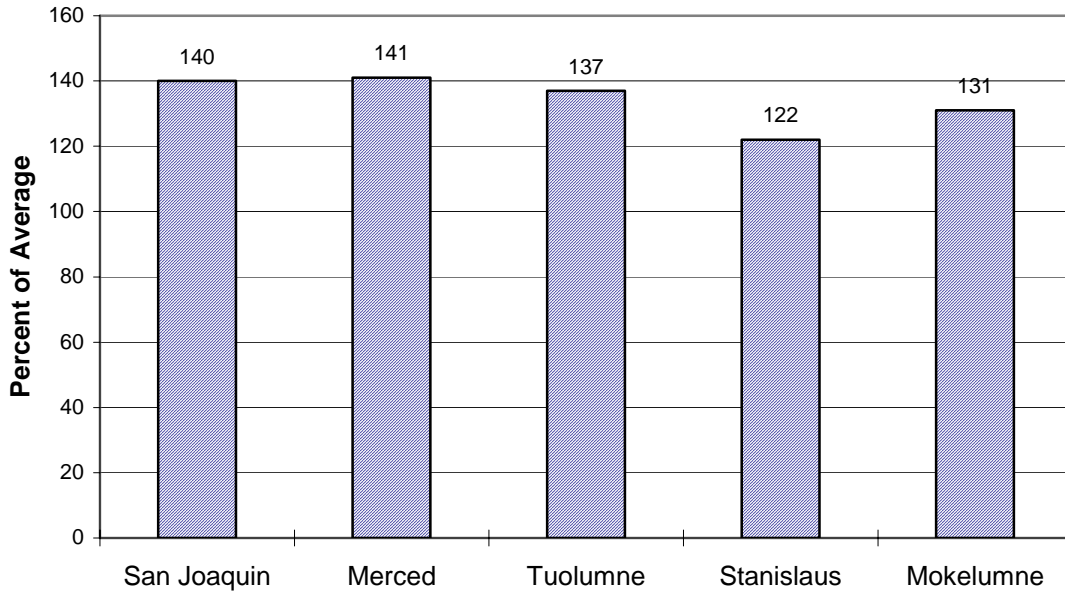
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<hr/>						
SF San Joaquin River						
Hooper Ck, blo, Florence Lk, nr	Apr-Jul	270	141	335	205	192*
San Joaquin River						
Millerton Lk	Apr-Jul	1870	147	2050	1700	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	560	156	605	515	360*
Merced Falls, blo	Apr-Jul	970	150	1070	875	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	850	143	905	790	596*
La Grange, nr	Apr-Jul	1800	146	1920	1680	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	450	141	505	395	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	980	141	1080	880	695
NF Mokelumne River						
West Point	Apr-Jul	530	127	590	470	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	590	128	650	530	460
Cosumnes River						
Michigan Bar	Apr-Jul	150	122	190	110	123

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# San Joaquin Basin

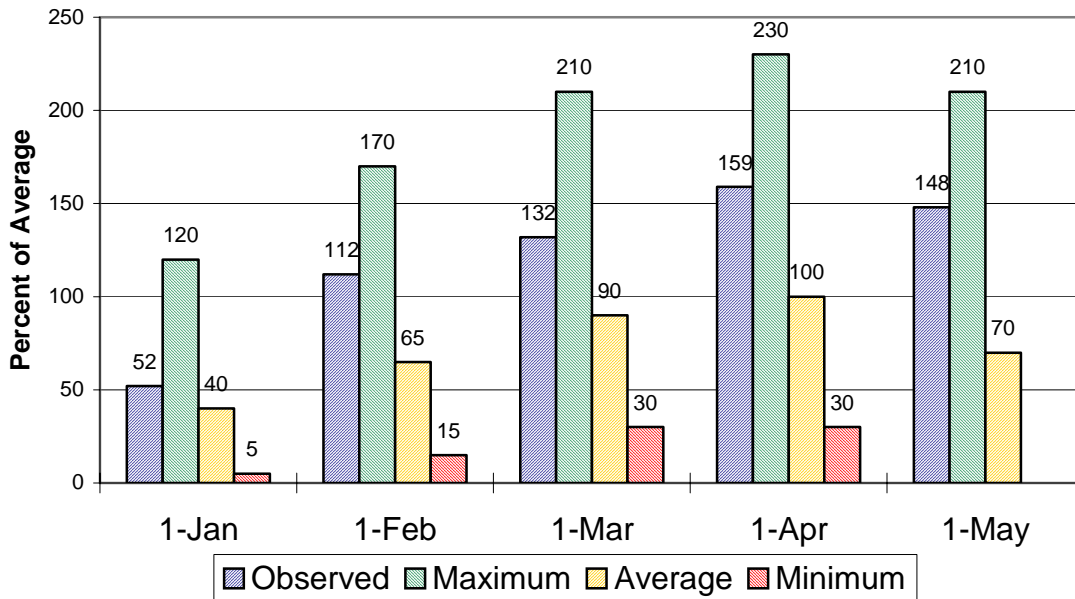
## Seasonal Basin Precipitation

October 1 to Date



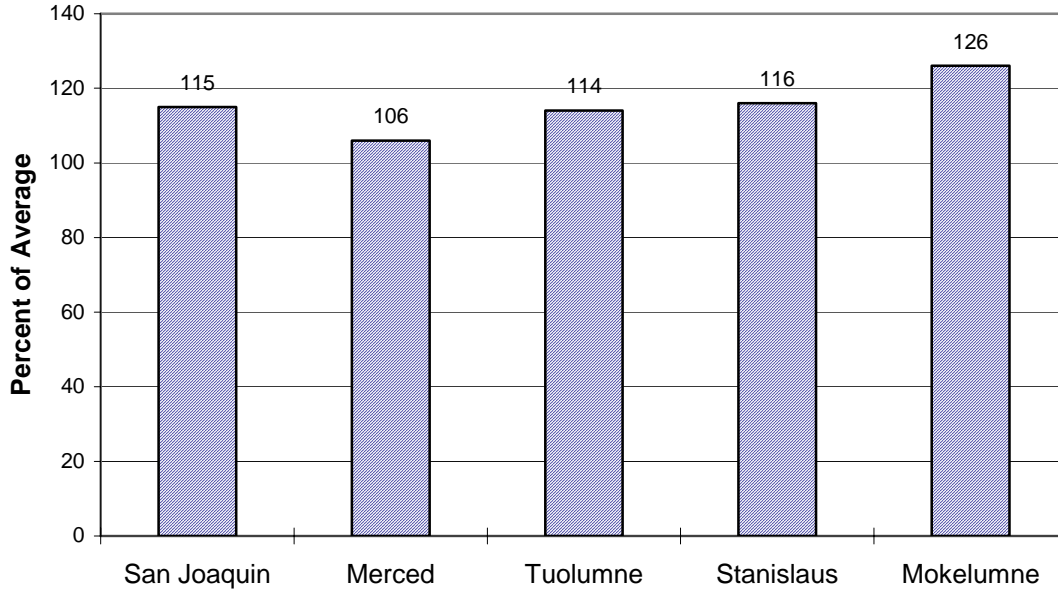
## Seasonal Basin Snowpack

Water Content in % of April 1 Average

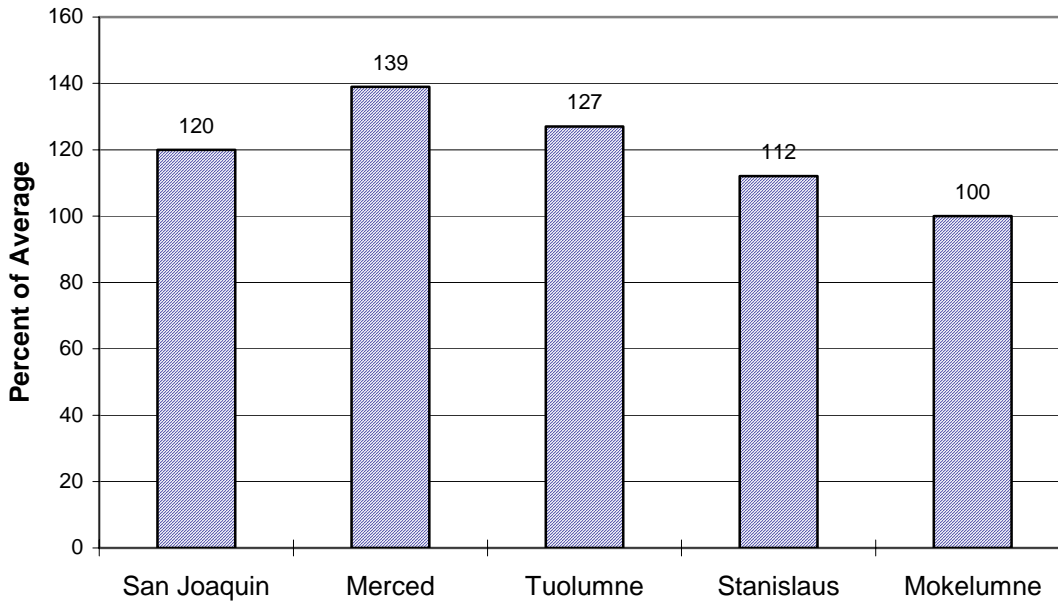


# San Joaquin Basin

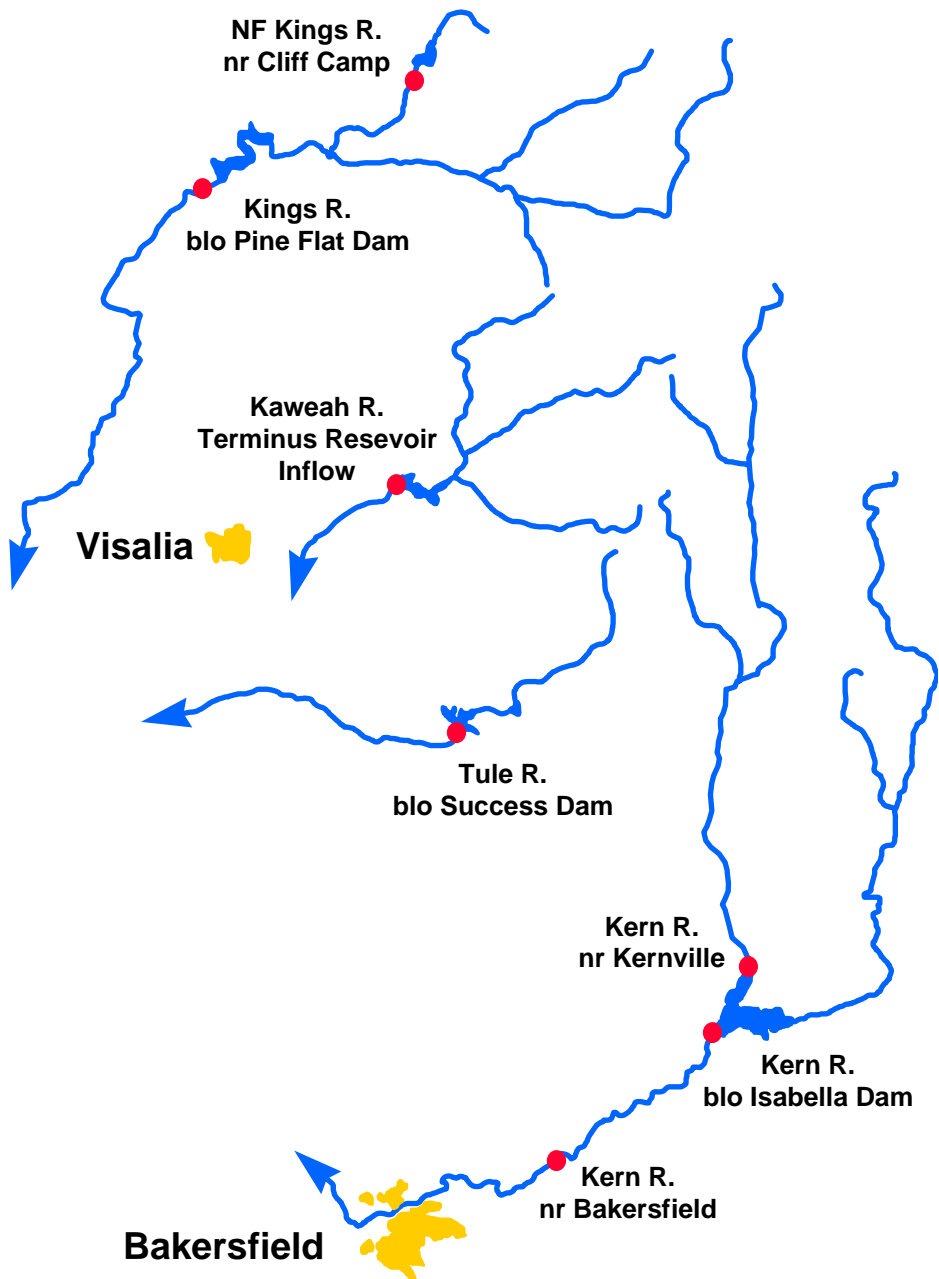
## Basin Reservoir Storage Contents of Major Reservoirs in % of Average



## Season Basin Runoff October 1 to Date



# Tulare Basin

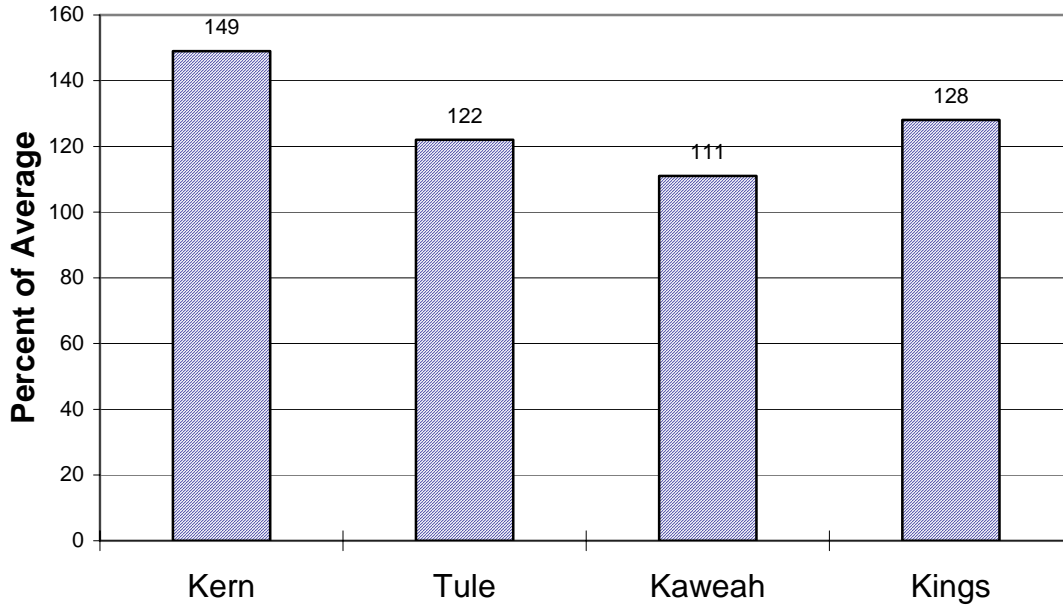


# Water Supply Forecasts

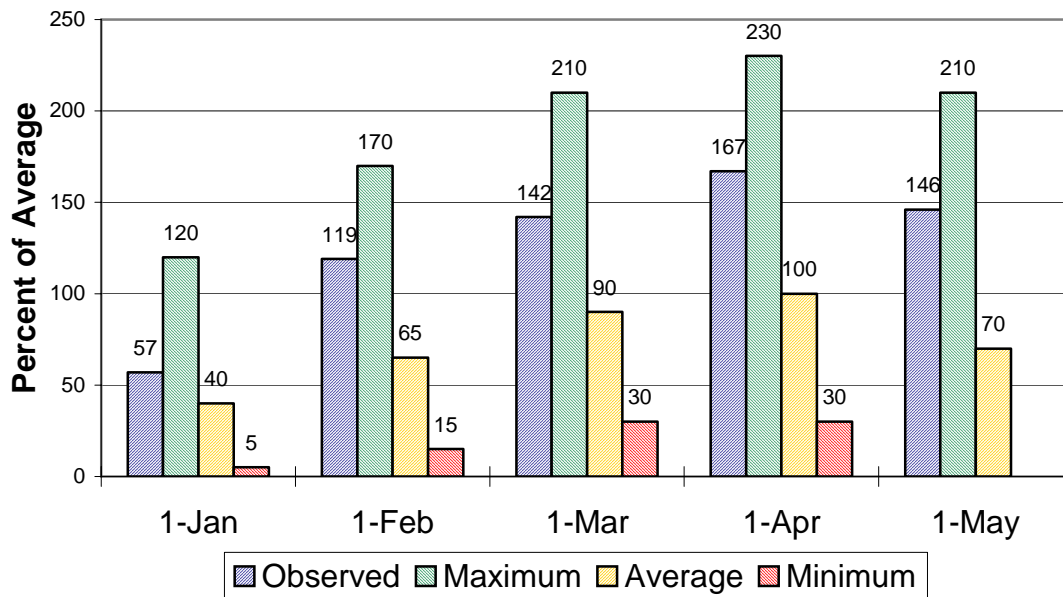
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>Kern River</b>						
Kernville, nr	Apr-Jul	550	138	600	500	398*
Isabella Dam, blo	Apr-Jul	690	144	760	620	480
Bakersfield, nr	Apr-Jul	710	145	785	635	490
<b>Tule River</b>						
Success Dam	Apr-Jul	85	129	110	60	66
<b>Kaweah River</b>						
Terminus Dam	Apr-Jul	390	134	440	340	290
<b>NF Kings River</b>						
Cliff Camp, nr	Apr-Jul	350	146	390	310	240*
<b>Kings River</b>						
Pine Flat Dam, blo	Apr-Jul	1730	138	1840	1620	1250

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## Tulare Lake Basin Seasonal Precipitation October 1 to Date



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

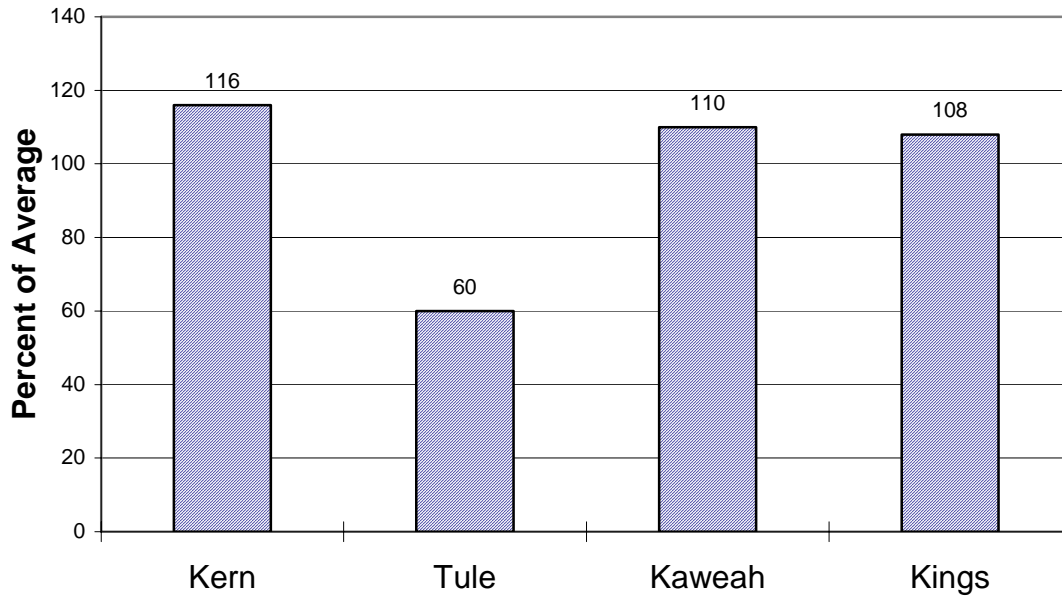




# Tulare Lake Basin

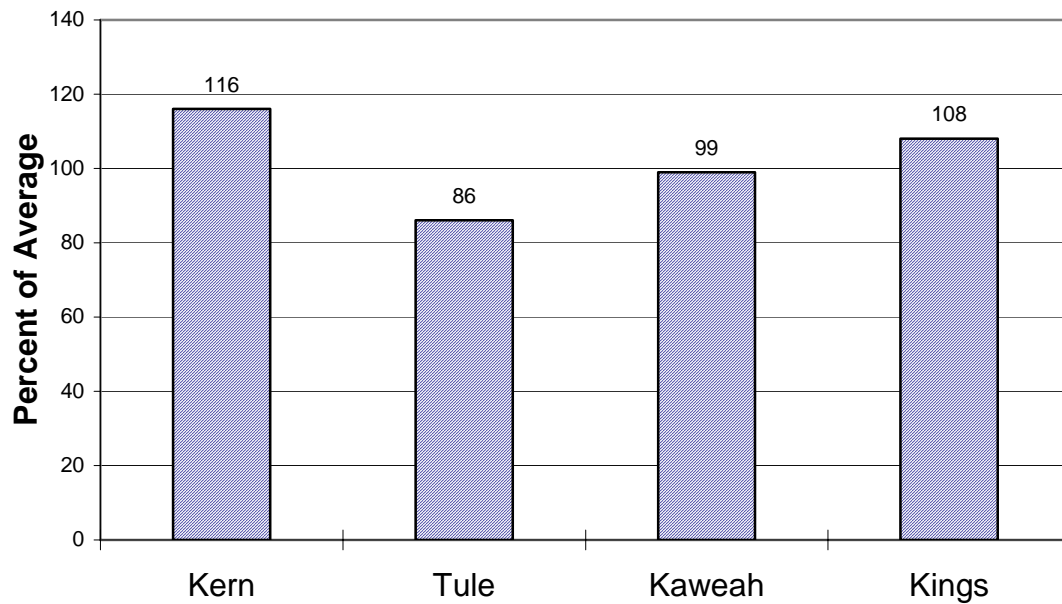
## Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

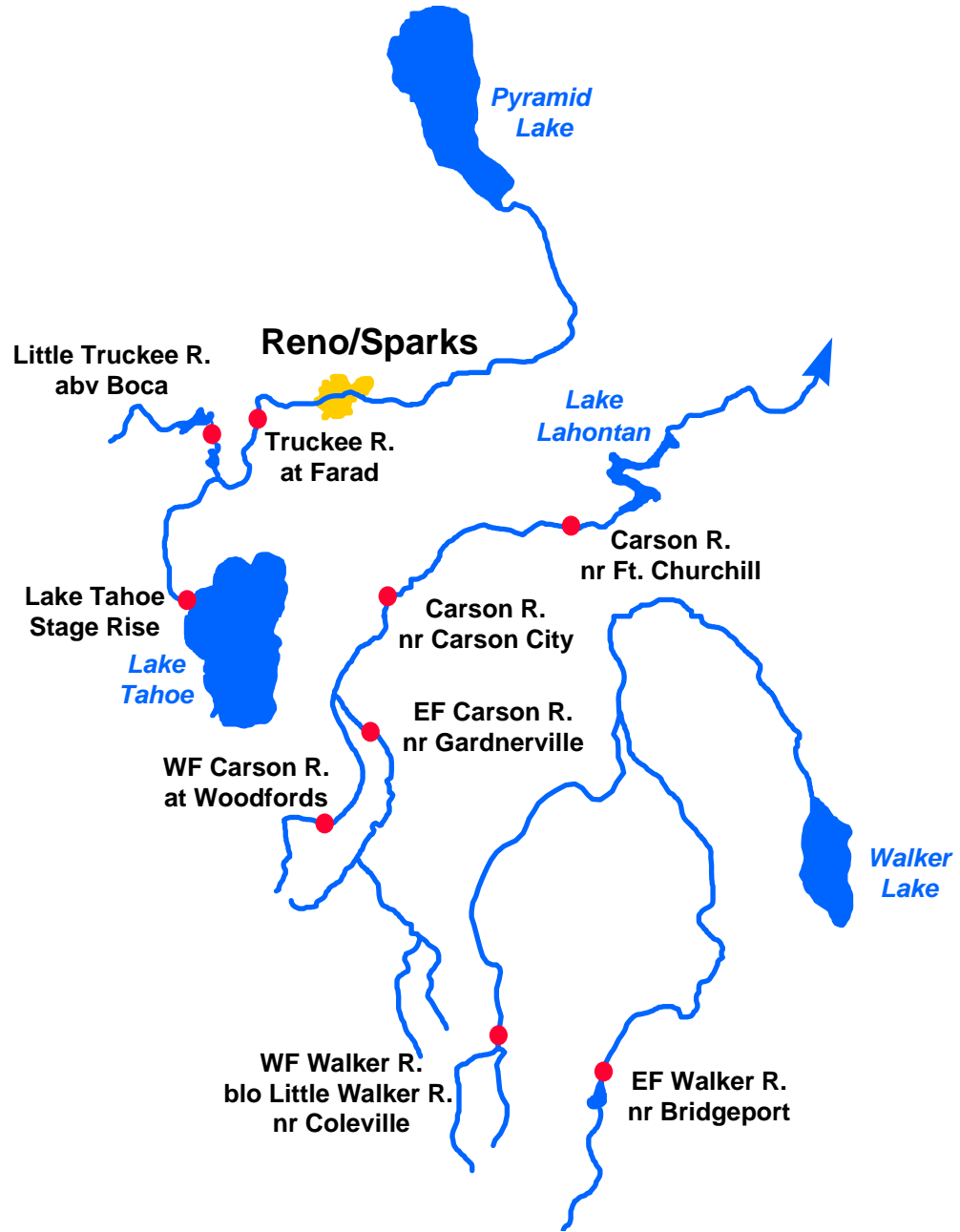


## Seasonal Basin Runoff

October 1 to Date



# East Side Sierra Nevada Basins



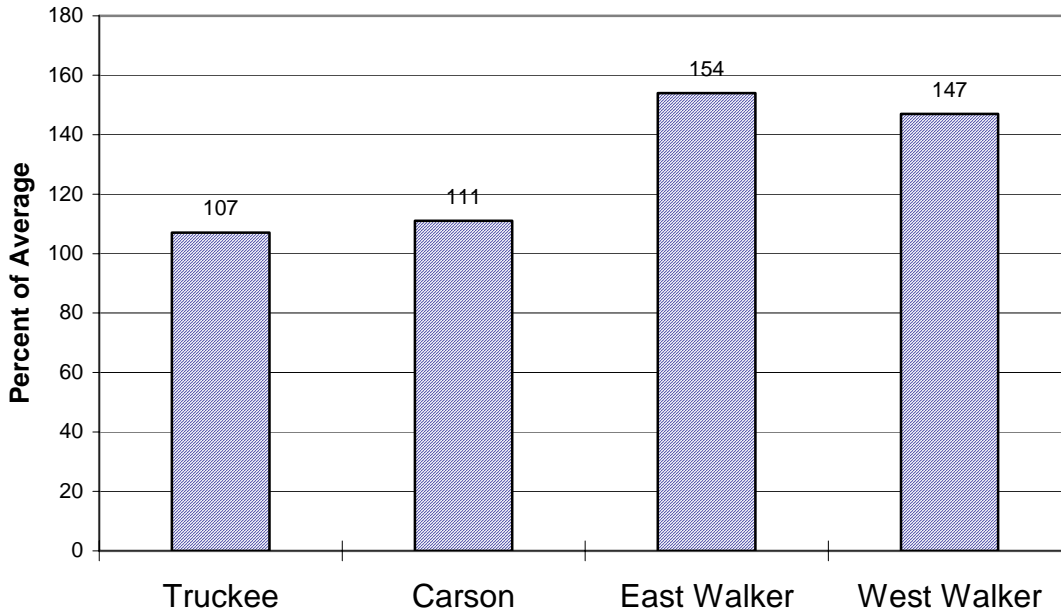
# Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<b>Truckee River</b>						
Truckee River						
Lake Tahoe Stage Rise	Apr-High	1.70	123	1.94	1.46	1.38
Ltl Truckee River						
Boca Res, abv, Truckee, nr	Apr-Jul	95	119	111	79	80
Truckee River						
Farad	Apr-Jul	315	121	345	285	260
<b>Carson River</b>						
EF Carson River						
Gardnerville, nr	Apr-Jul	265	140	300	230	189
WF Carson River						
Woodfords	Apr-Jul	77	138	88	66	56
Carson River						
Carson City, nr	Apr-Jul	270	144	300	240	188
Fort Churchill, nr	Apr-Jul	275	154	310	240	178
<b>Walker River</b>						
East Walker River						
Bridgeport, nr	Apr-Aug	110	164	135	85	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	230	147	255	205	156

# East Side Sierra Nevada Basins

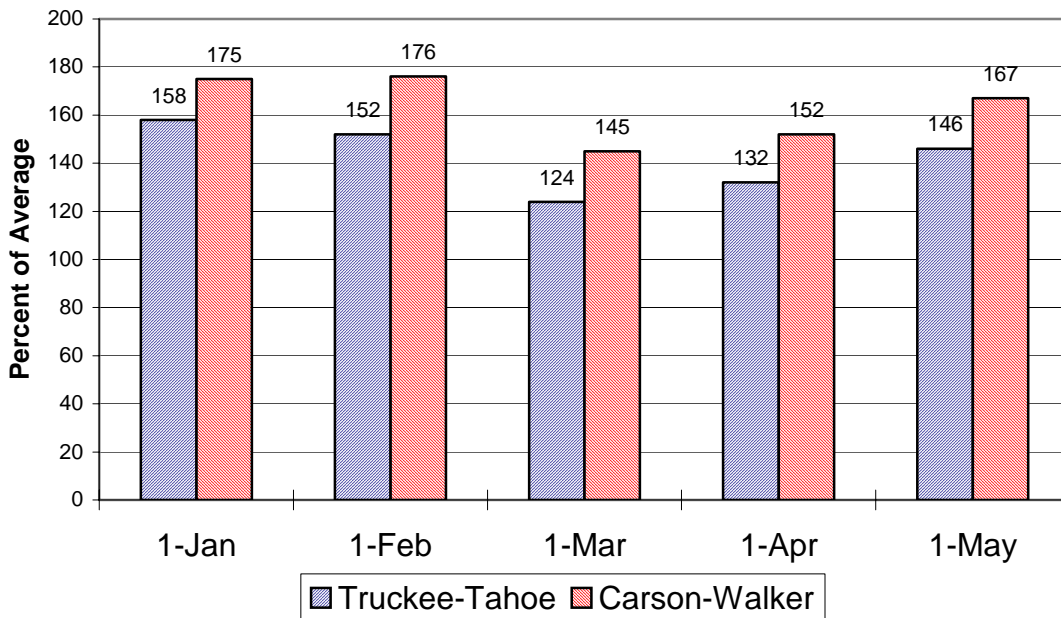
## Seasonal Basin Precipitation

October 1 to Date



## Basin Snowpack

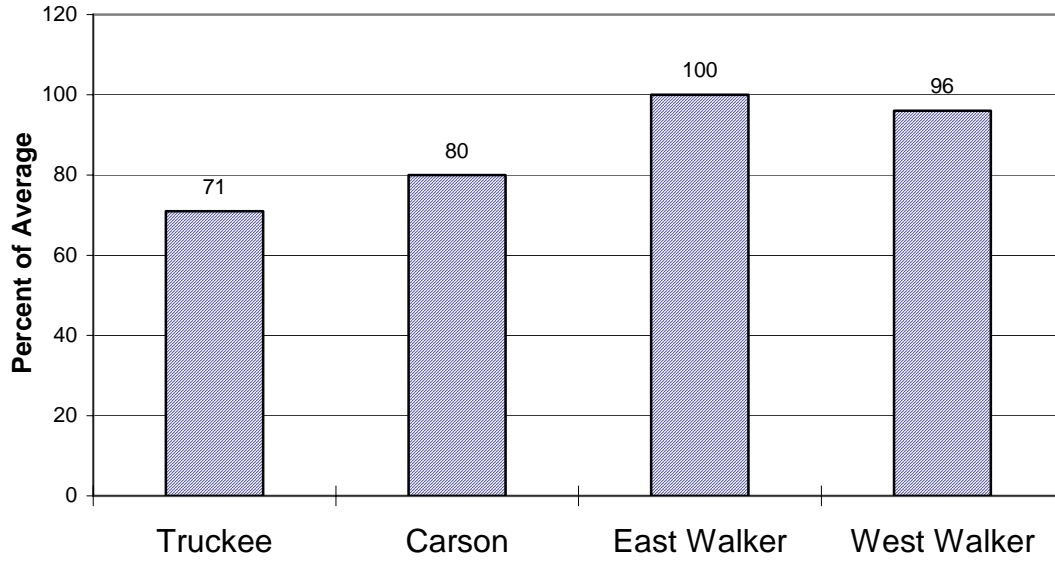
% of Average SWE to Date



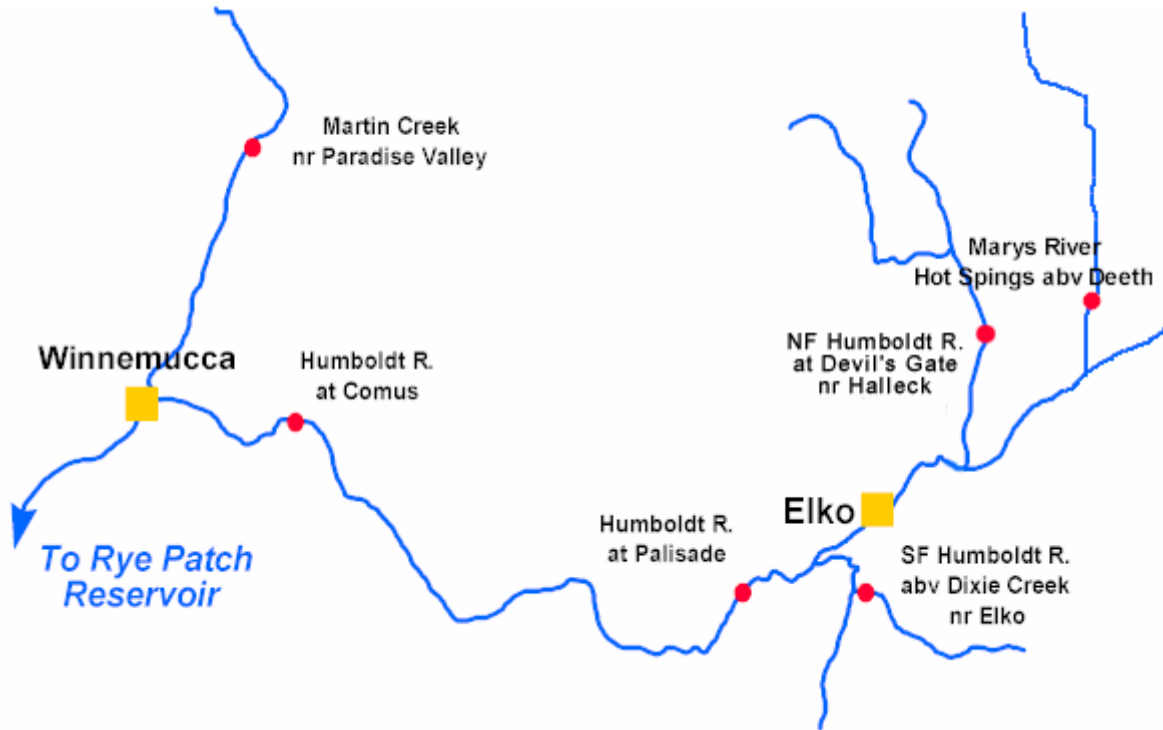
# East Side Sierra Nevada Basins

## Seasonal Basin Runoff

October 1 to Date



# Humboldt River Basin



## Water Supply Forecasts

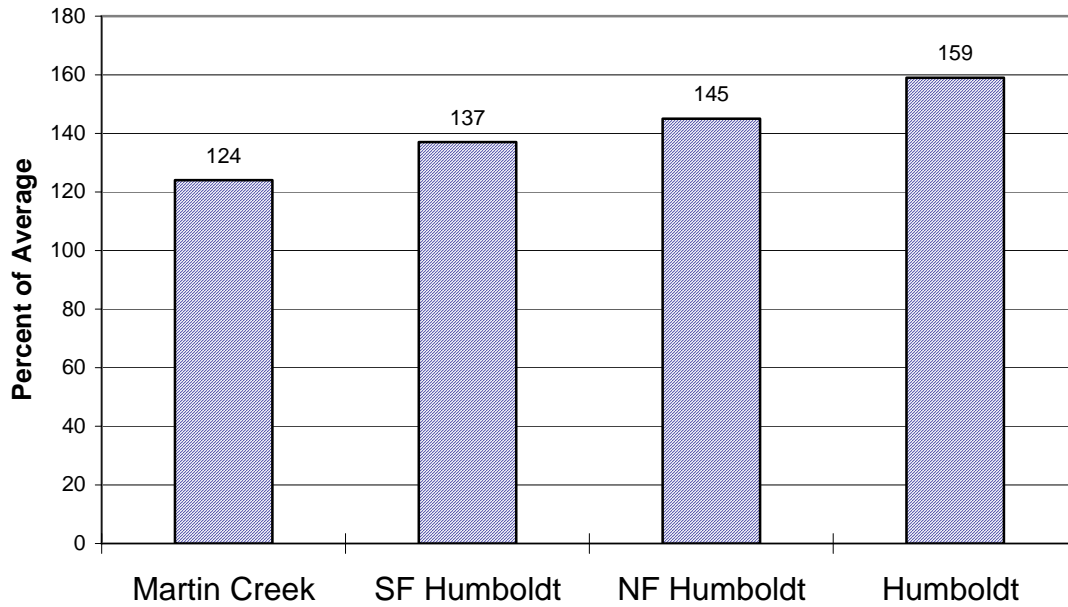
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
<hr/>						
NF Humboldt River						
Devlis Gate, at, Halleck, nr	Apr-Jul	43	126	57	29	34*
SF Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	100	132	127	73	76
Marys River						
Hot Springs, abv, Deeth, nr	Apr-Jul	50	128	63	37	39
Humboldt River						
Palisade	Apr-Jul	320	128	435	205	250
Comus	Apr-Jul	285	127	430	141	225
Martin Ck						
Paradise Vly, nr	Apr-Jul	18.0	96	23	12.0	18.7

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# Humboldt River Basin

## Seasonal Basin Precipitation

October 1 to Date



## Basin Snowpack

% of Average SWE to Date

