

Water Supply Outlook

California
and
Northern Nevada

May 2002

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 1st through July 31st, unless otherwise noted.

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

April 1st Average: The April 1st 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 30th.

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 TELelemetry. 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 1st through September 30th.

General Outlook - May 2002

With most of the rainy season completed, it is expected that the critical water supply basins in California and Nevada will experience below average runoff this water year. After a promising start in November and December, a relatively dry January and February diminished prospects for a year of normal runoff. Precipitation in March and April was not enough to overcome this deficit. However, the outlook is better than last year except for basins in the southern Sierra. Conditions are expected to improve only slightly over last year in the Humboldt basin in Nevada.

Precipitation during April was much below normal except for the northeast interior basin of California and the Humboldt basin, both receiving about 115 percent of the monthly average, followed by the upper Klamath basin which received 105 percent. Monthly rainfall amounts were 45 percent of average in the Sacramento basin, 40 percent in the San Joaquin, and 35 percent in the Tulare Lake basin. The Truckee basin received 80 percent of the April average, with 70 percent in the Carson, and 75 percent in the Walker.

The relatively warm conditions during the first half of April accelerated the melt of the Sierra snowpack and many basins saw an increase in runoff for the month. The northern Sierra snowpack stands at about 65 percent of the May 1st average, the central Sierra is about 75 percent and the southern Sierra stands at 50 percent. Snow packs in the upper Klamath basin are now at 85 percent of average, the Tahoe-Truckee and the Carson-Walker basins at about 80 percent, and the Humboldt at 65 percent.

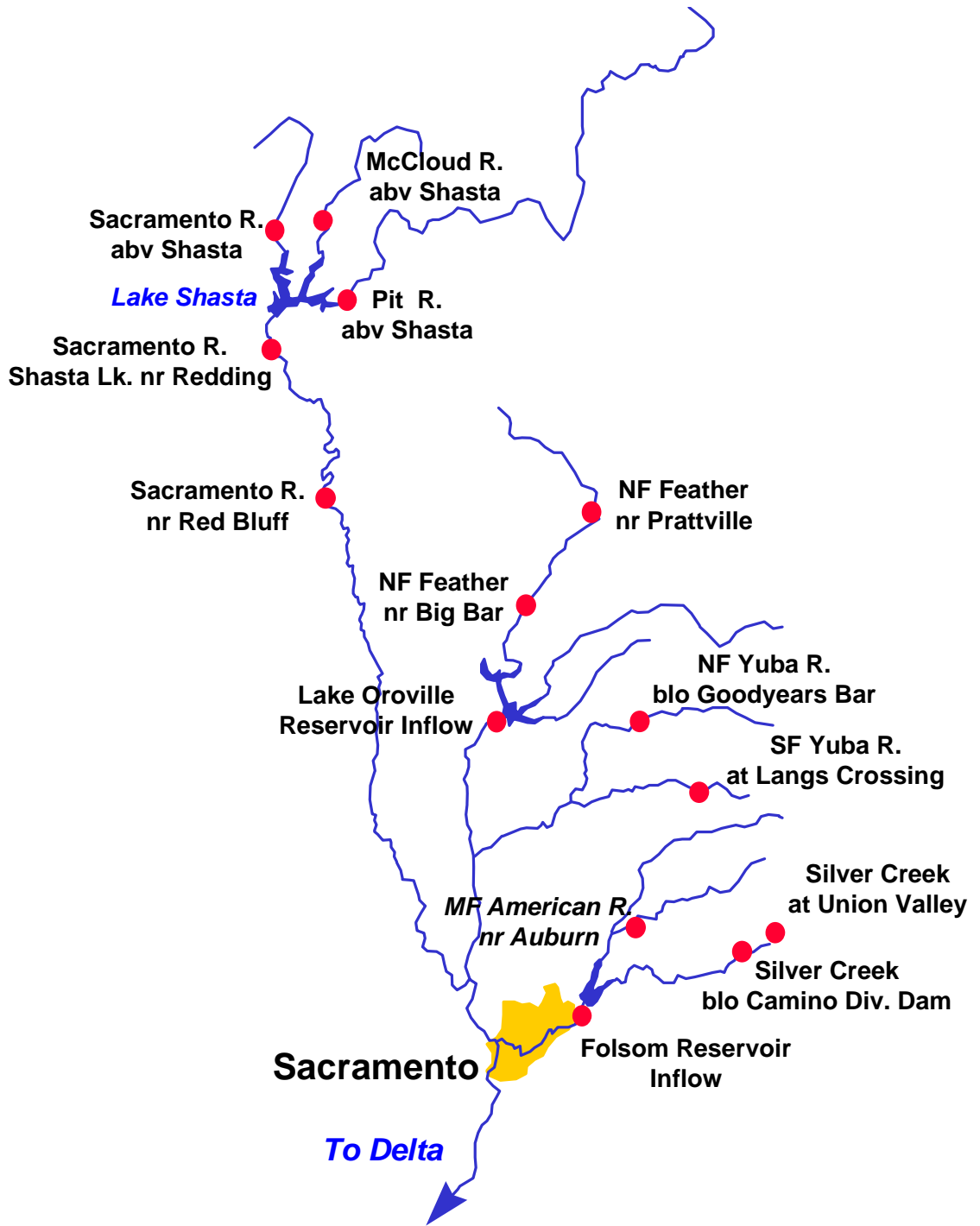
April flows range from 78 percent in the Sacramento basin, 92 percent in the Tulare and 104 percent in the San Joaquin basin. East side Sierra streams averaged 104 percent of the monthly average.

Reservoir storage for the Sacramento basin is at 92 percent of average, the San Joaquin at 104 percent and the Tulare Lake basin at 92 percent. East side Sierra reservoirs were at 65 percent of average. Storage at Rye Patch Reservoir in Nevada remains meager at only 22 percent of the average-to-date, while Lahontan Reservoir stands at 88 percent.

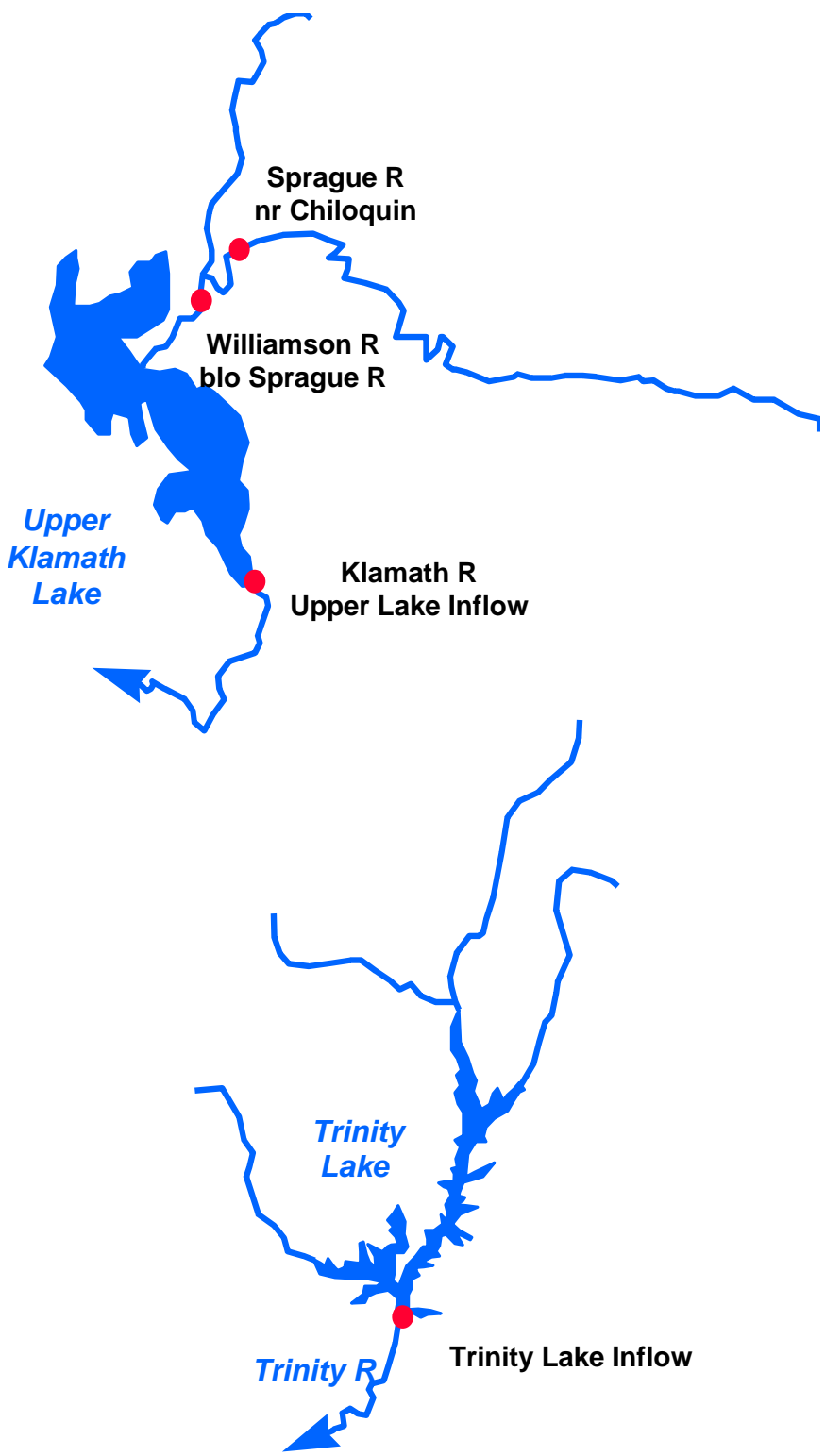
The April through July runoff forecasts range from 65 percent for the Cosumnes River basin to 85 percent for the Trinity and McCloud basins. Streamflow forecasts for the Tulare basin continue to be low, ranging from 44 percent in the Tule basin to 70 percent for the Kings River basin. Forecasts vary from 51 to 77 percent for the east-side Sierra basins and 40 to 80 percent in the Humboldt basin in northern Nevada. The March through September forecast for the upper Klamath basin is 67 percent.

Please Note: This will be the last Water Supply Outlook for Water Year 2002. 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 %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
COASTAL BASINS						
Williamson River Sprague, blo	Mar-Sep	355	70	450	260	505
Sprague River Chiloquin, nr	Mar-Sep	185	61	275	93	305
Upper Klamath Falls River Inflow	Mar-Sep	480	67	625	335	715
Trinity River Trinity Lake Inflow	Apr-Jul	540	85	635	445	635
SACRAMENTO RIVER BASIN						
SACRAMENTO RIVER ABOVE BEND BRIDGE						
Pit River Montgomery Ck, nr	Apr-Jul	880	82	965	795	1070
Mccloud River Shasta Lk, abv	Apr-Jul	315	85	355	275	370
Sacramento River Delta	Apr-Jul	235	81	325	145	290
Shasta Lake, Redding, nr	Apr-Jul	1420	79	1840	1040	1790
Bend Bridge, abv, Red Bluff	Apr-Jul	1900	78	2250	1610	2440
FEATHER RIVER ABOVE OROVILLE RESERVOIR						
NF Feather River Prattville, nr	Apr-Jul	240	72	310	169	333*
Big Bar	Apr-Jul	660	69	890	410	962*
Feather River Oroville Reservoir Inflow	Apr-Jul	1250	71	1620	880	1760

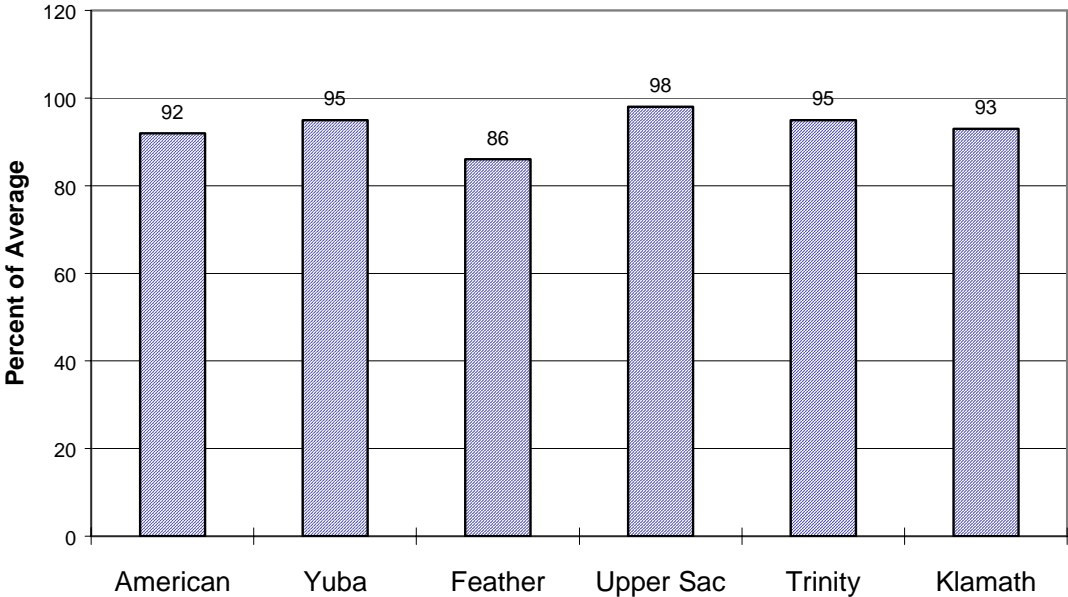
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Yuba River above Smartville						
North Yuba River Goodyears Bar, blo	Apr-Jul	220	81	260	179	273*
South Yuba River Langs Crossing	Apr-Jul	190	84	255	124	225*
Yuba River Smartville, nr	Apr-Jul	800	80	980	620	995
American River above Folsom Reservoir						
MF American River Auburn, nr	Apr-Jul	415	85	570	260	490*
Silver Ck Union Valley	Apr-Jul	82	84	104	60	98*
Camino Dam, blo	Apr-Jul	130	82	163	97	158*
American River Folsom Reservoir Inflow	Apr-Jul	1020	83	1240	800	1230

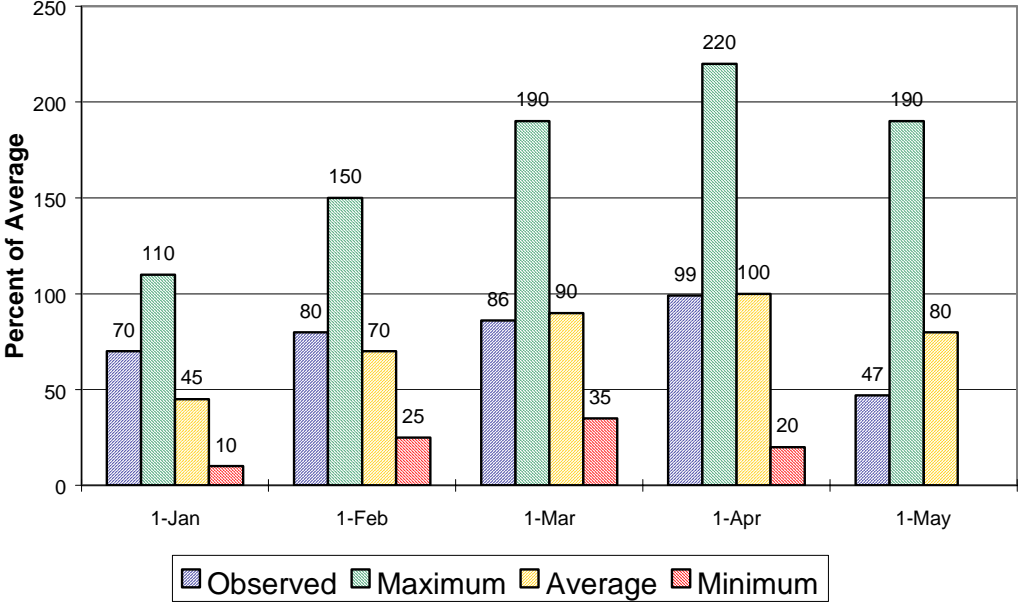
***30 Year Averages for 1971-2000 are incomplete. Those forecast points with an asterisk have incomplete averages, so 1961-1990 averages are listed. The new averages will be incorporated into this report when the complete data sets become available.**

Sacramento/Trinity/Klamath River Basins

Seasonal Basin Precipitation October 1 to Date

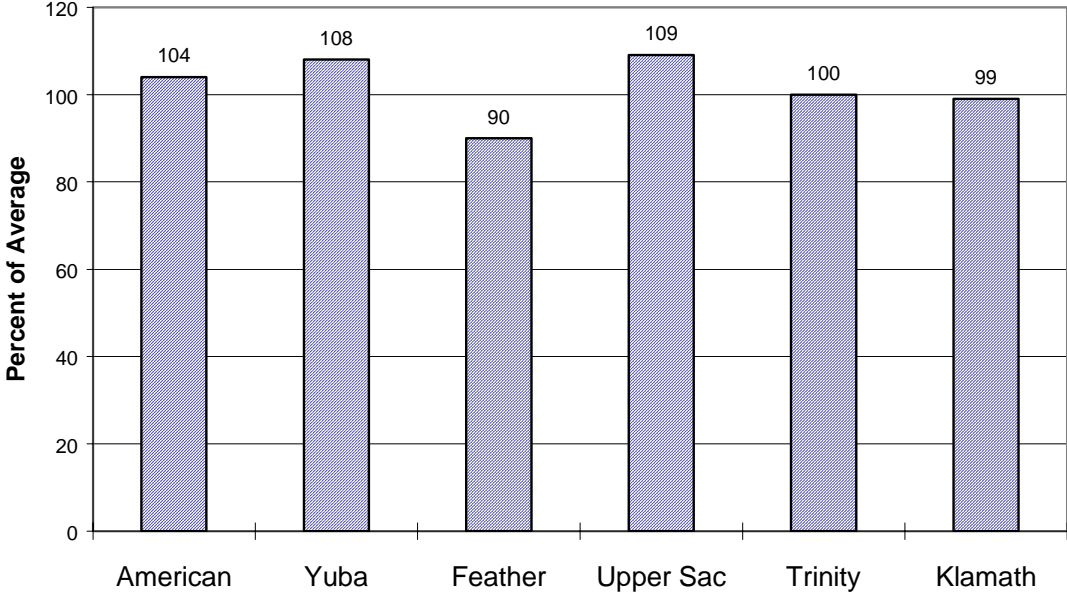


Seasonal Basin Snowpack Water Content in % of April 1 Average

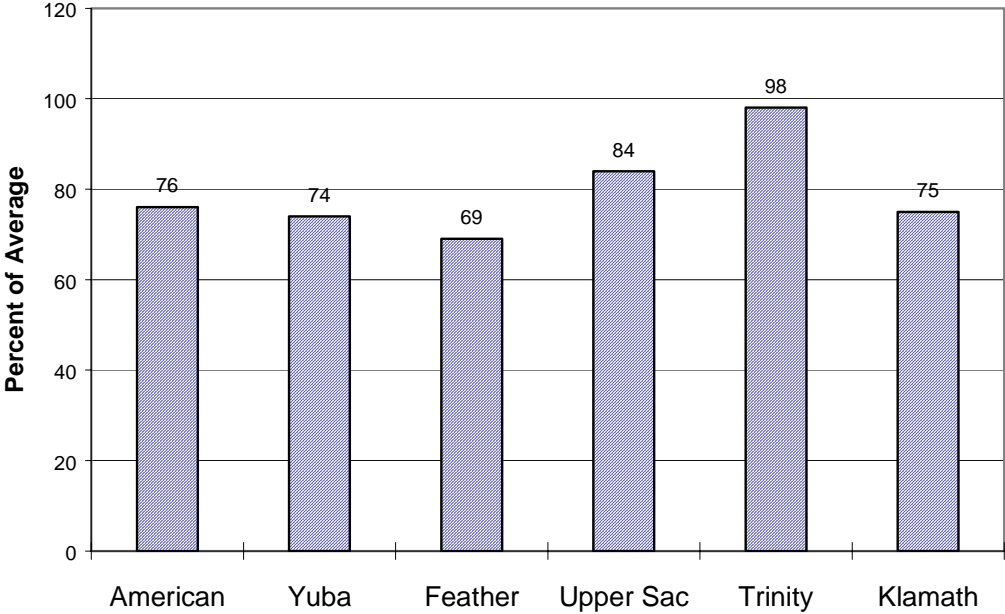


Sacramento/Trinity/Klamath River Basins

Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Seasonal Basin Runoff October 1 to Date



San Joaquin Basin



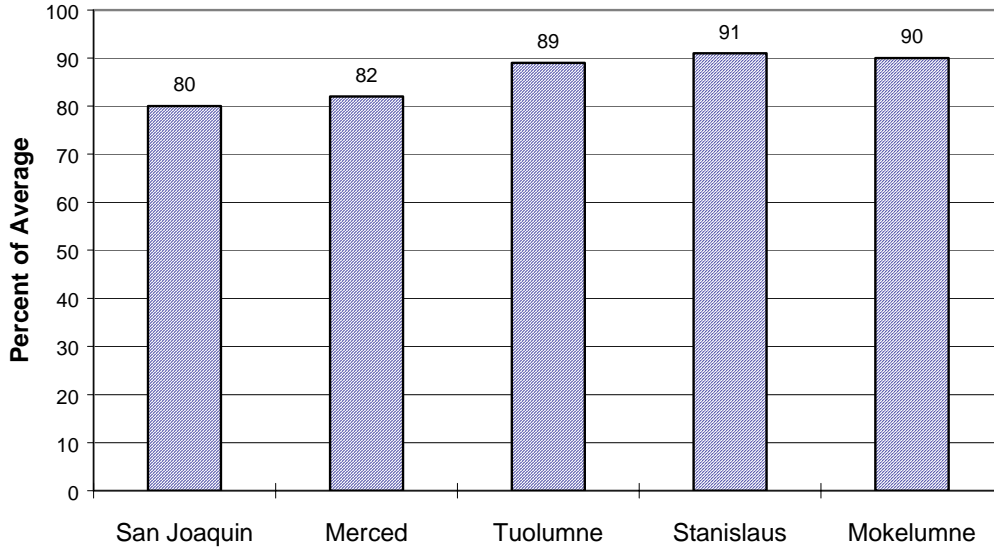
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
SF San Joaquin River						
Hooper Ck, blo, Florence Lk, n	Apr-Jul	130	68	197	63	192*
San Joaquin River						
Millerton Lk	Apr-Jul	840	66	1000	650	1270
Merced River						
Pohono Bridge, at, Yosemite, n	Apr-Jul	260	72	310	200	360*
Merced Falls, blo	Apr-Jul	425	66	550	300	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	490	82	590	380	596*
La Grange, nr	Apr-Jul	970	79	1100	800	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	265	83	320	175	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferr	Apr-Jul	560	81	675	425	695
NF Mokelumne River						
West Point	Apr-Jul	330	79	400	250	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	360	78	420	375	460
Cosumnes River						
Michigan Bar	Apr-Jul	80	65	120	40	123

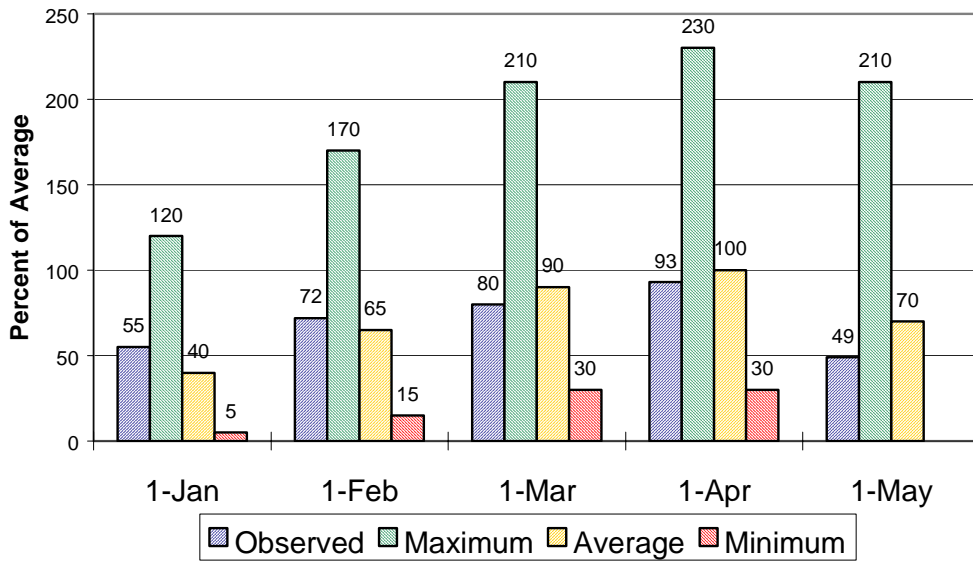
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San Joaquin Basin

Seasonal Basin Precipitation October 1 to Date



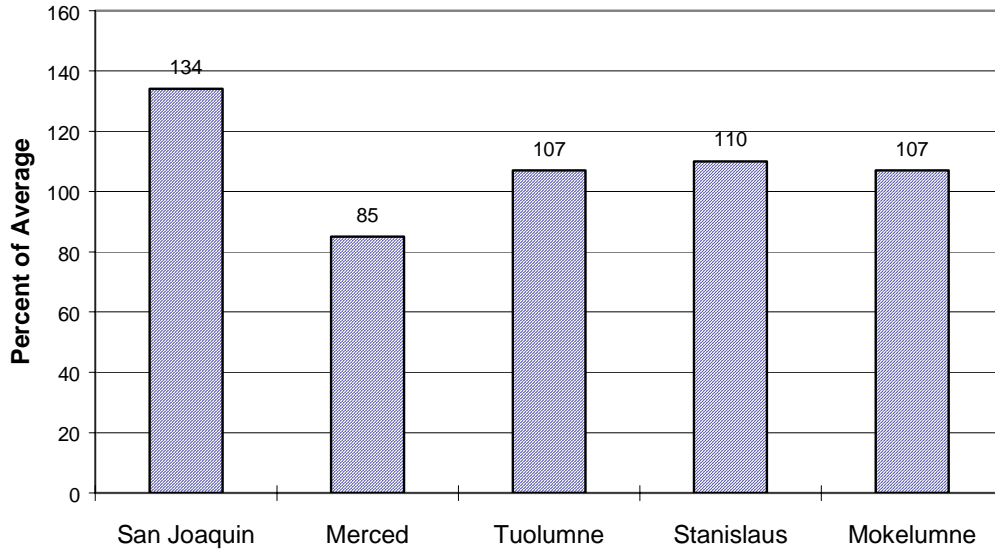
Seasonal Basin Snowpack Water Content in % of April 1 Average



San Joaquin Basin

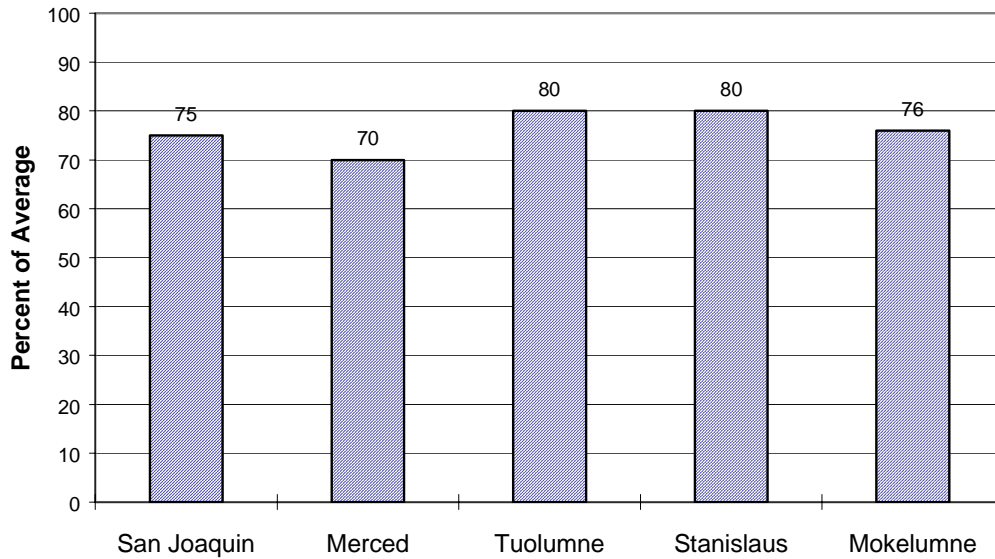
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

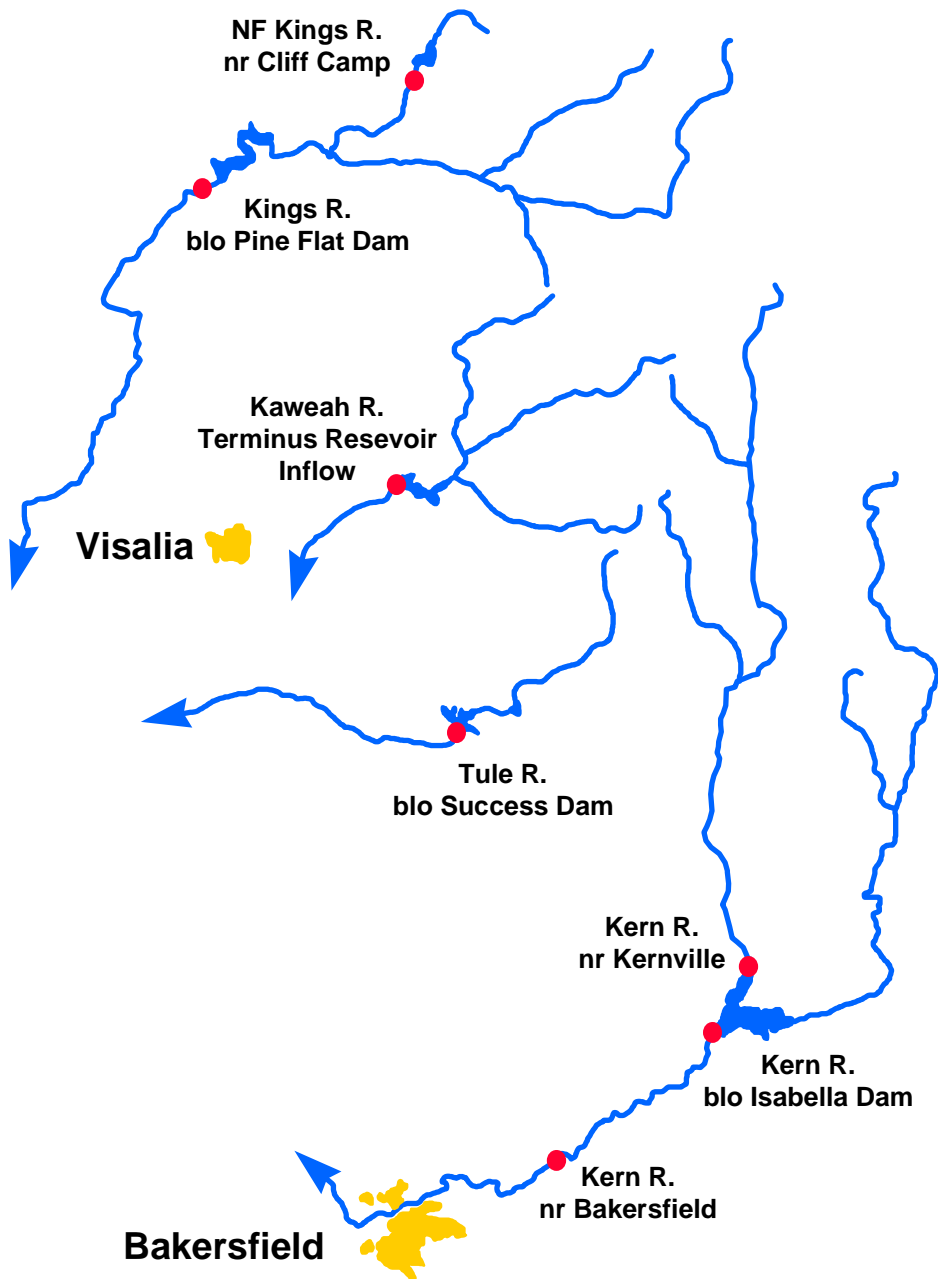


Season Basin Runoff

October 1 to Date



Tulare Basin



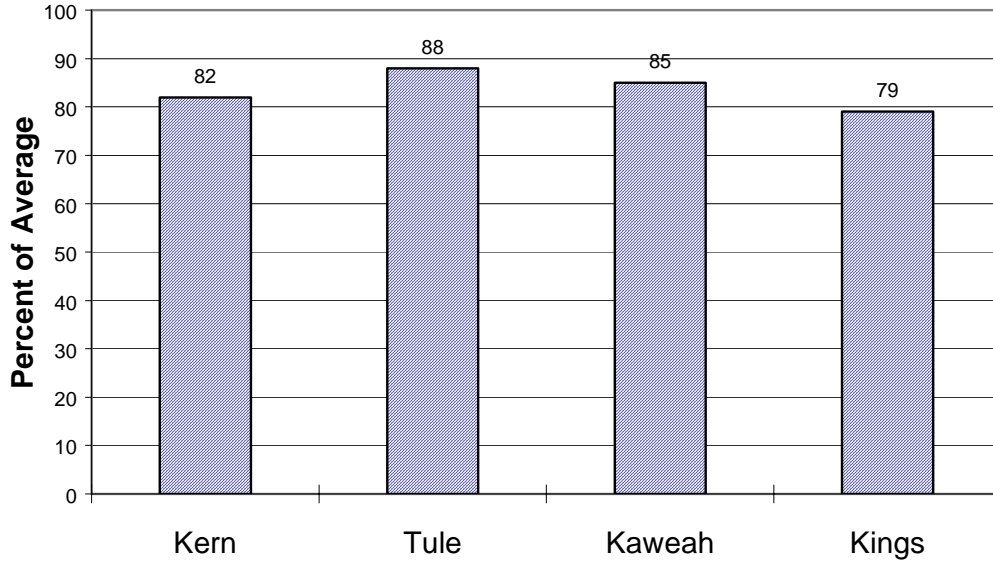
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Kern River						
Kernville, nr	Apr-Jul	200	50	275	124	398*
Isabella Dam, blo	Apr-Jul	215	45	305	125	480
Bakersfield, nr	Apr-Jul	225	46	320	135	490
Tule River						
Success Dam	Apr-Jul	29	44	40	15.0	66
Kaweah River						
Terminus Dam	Apr-Jul	200	69	250	150	290
NF Kings River						
Cliff Camp, nr	Apr-Jul	170	71	210	120	240*
Kings River						
Pine Flat Dam, blo	Apr-Jul	870	70	1050	700	1250

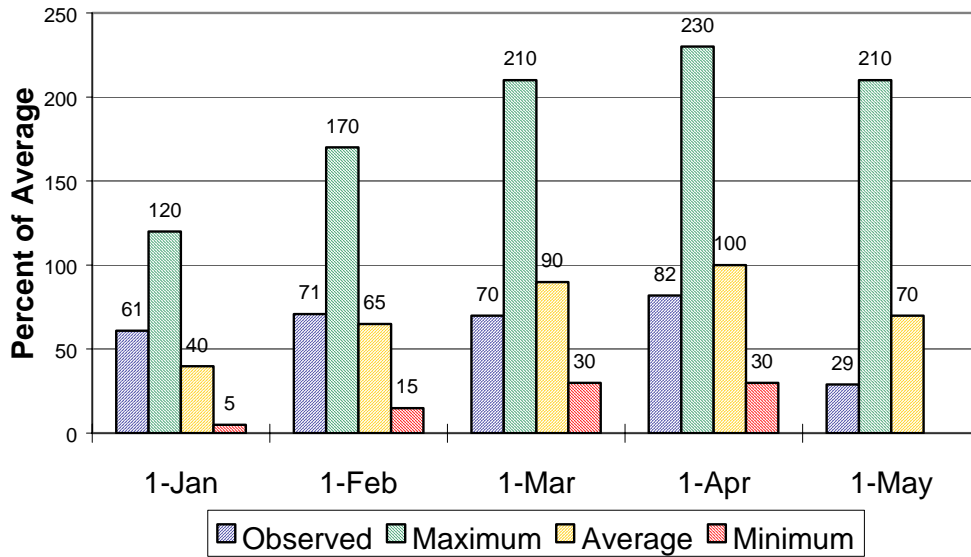
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Tulare Lake Basin

Seasonal Precipitation October 1 to Date

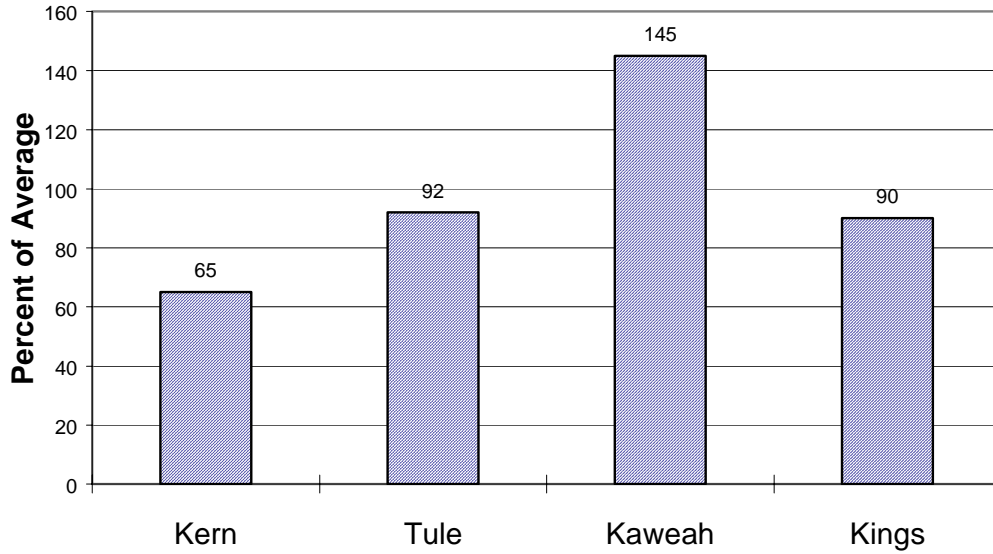


Seasonal Basin Snowpack Water Content in % of April 1 Average

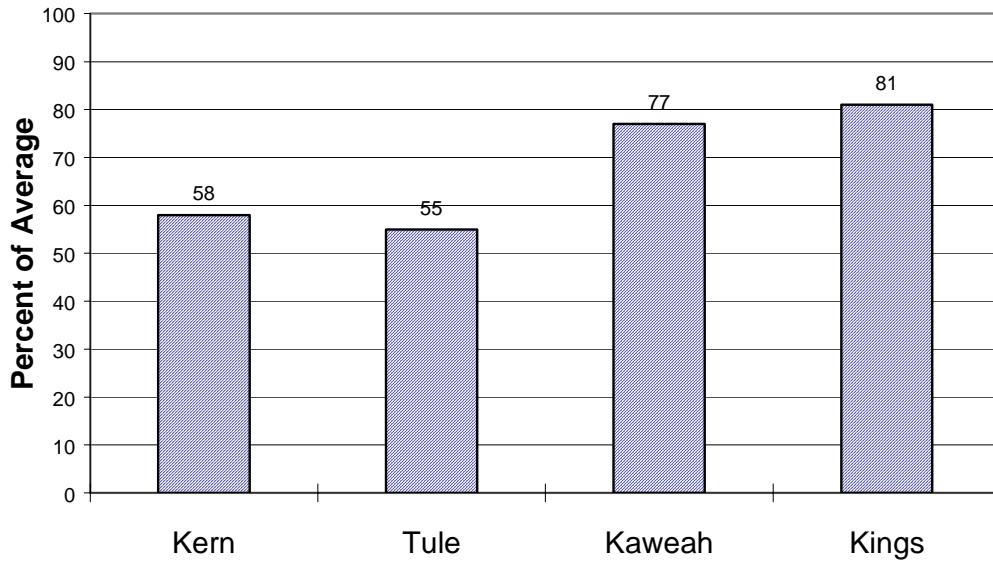


Tulare Lake Basin

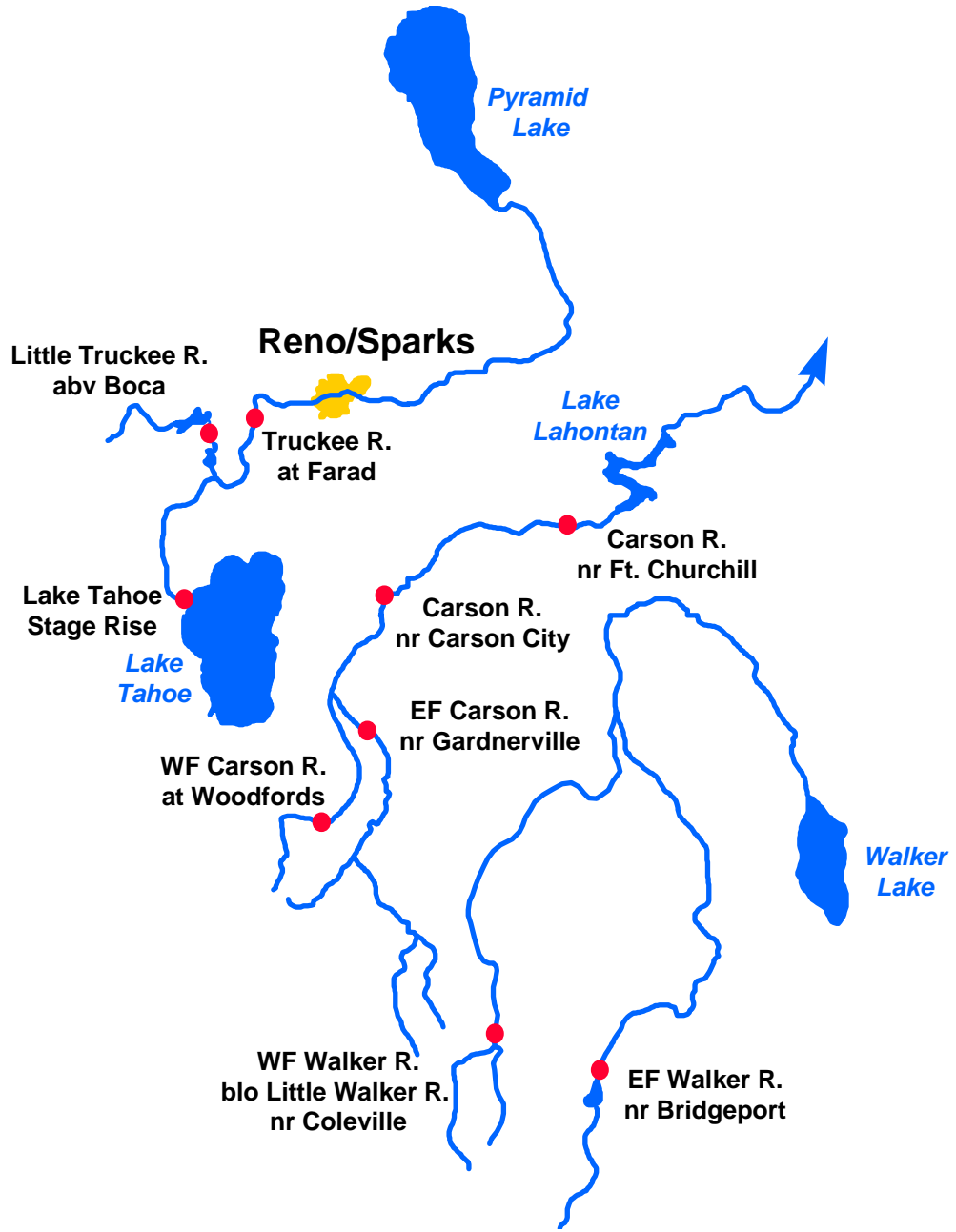
Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Seasonal Basin Runoff October 1 to Date



East Side Sierra Nevada Basins



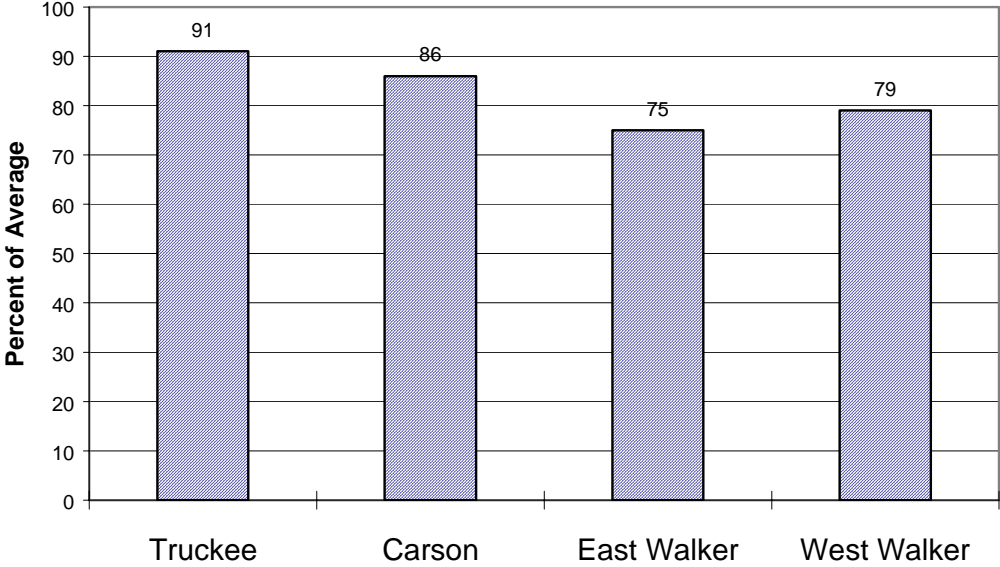
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Truckee River						
Truckee River						
Lake Tahoe Stage Rise	Apr-High	0.9	65	1.1	0.7	1.4
Ltl Truckee River						
Boca Res, abv, Truckee, nr	Apr-Jul	60	75	75	36	80
Truckee River						
Farad	Apr-Jul	180	69	215	155	260
Carson River						
EF EF Carson River						
Gardnerville, nr	Apr-Jul	132	70	149	115	189
WF Carson River						
Woodfords	Apr-Jul	37	66	43	31	56
Carson River						
Carson City, nr	Apr-Jul	100	53	130	70	188
Fort Churchill, nr	Apr-Jul	90	51	124	56	178
Walker River						
East Walker River						
Bridgeport, nr	Apr-Aug	37	55	53	21	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	120	77	147	94	156

East Side Sierra Nevada Basins

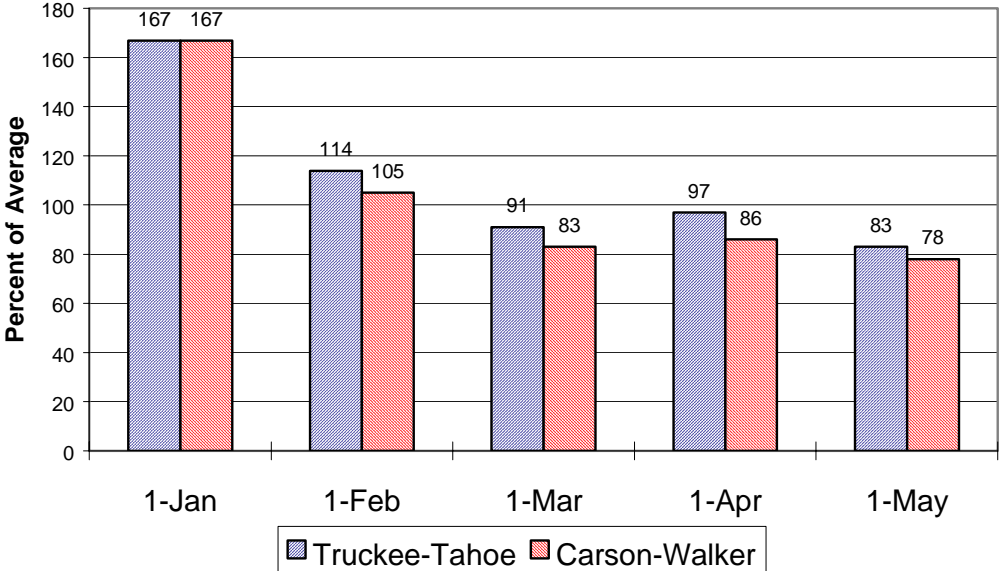
Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

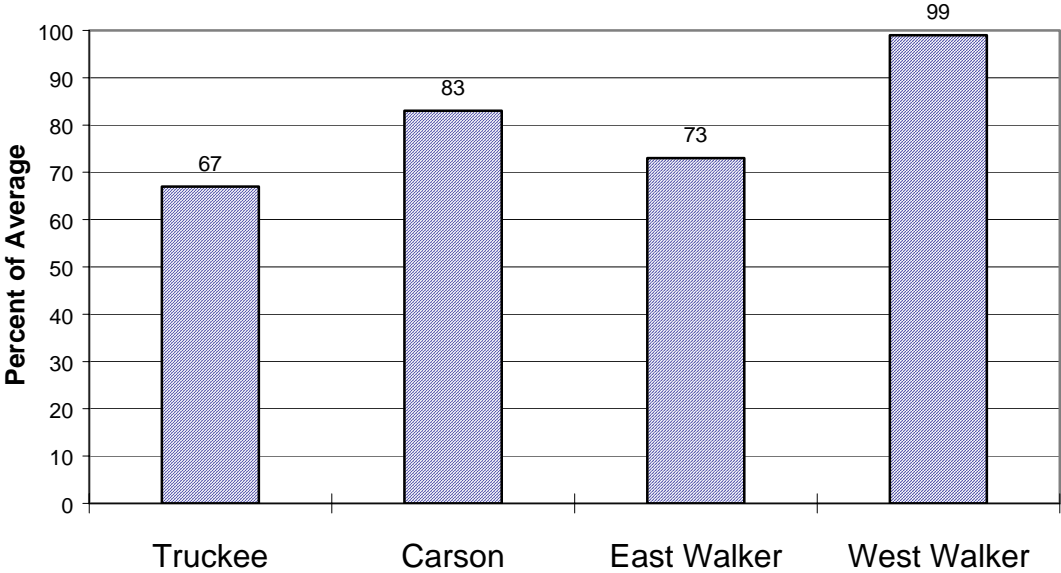
% of Average SWE to Date



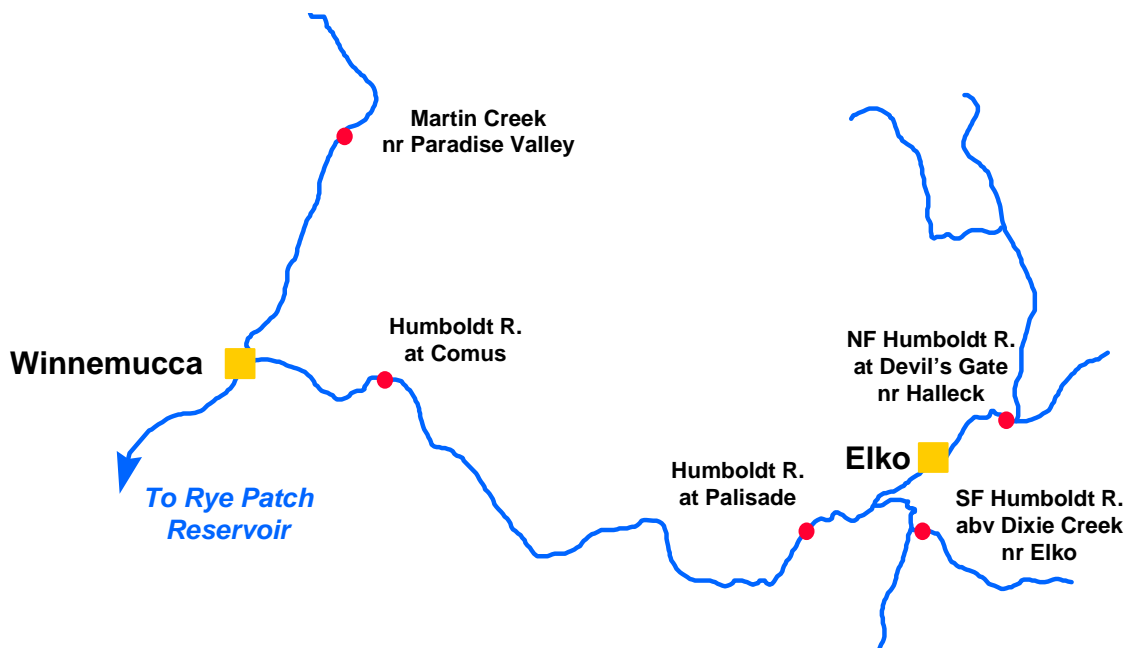
East Side Sierra Nevada Basins

Seasonal Basin Runoff

October 1 to Date



Humboldt River Basin



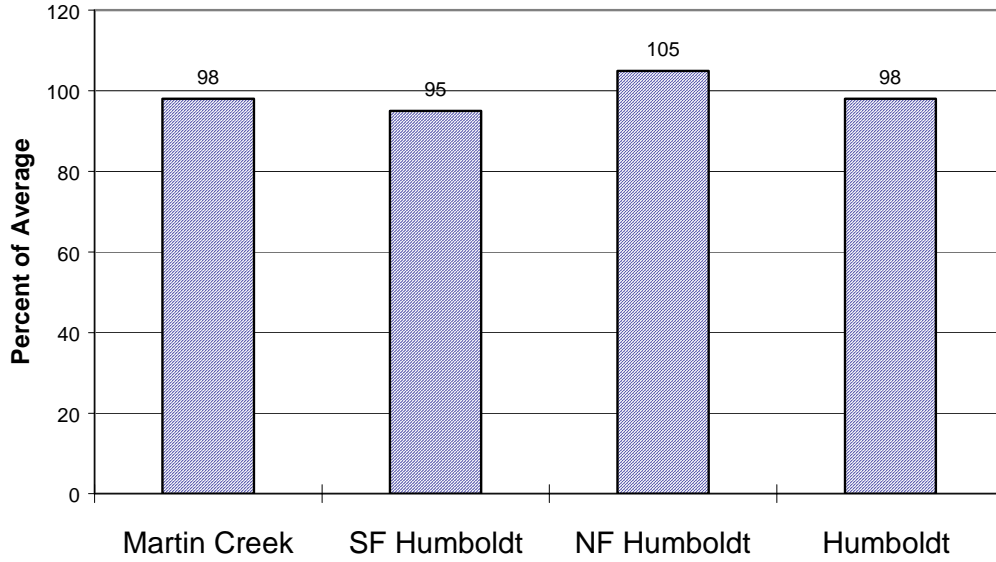
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
NF Humboldt River						
Devils Gate, at, Halleck, nr	Apr-Jul	24	71	38	10.1	34*
SF Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	56	74	83	29	76
Humboldt River						
Palisade	Apr-Jul	115	46	178	63	250
Comus	Apr-Jul	90	40	126	54	225
Martin Ck						
Paradise Valley, nr	Apr-Jul	15.0	80	20	9.6	18.7

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Humboldt River Basin

Seasonal Basin Precipitation October 1 to Date



Basin Snowpack % of Average SWE to Date

