

Water Supply Outlook



CALIFORNIA AND NORTHERN NEVADA

February
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 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 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 1st through September 30th.

General Outlook

February 1, 2003

Below average precipitation occurring in January has resulted in a downward revision of the April through July runoff forecasts.

January precipitation was below average and generally favored the northern portion of California. Monthly amounts ranged from 90 percent in the Klamath basin, 80 percent in the Trinity, 65 percent in the upper Sacramento and 50 percent in the Yuba. Rainfall amounts then taper off substantially with the American River basin receiving 30 percent, the upper San Joaquin 15 percent and the Tulare basin only about 10 percent. The Truckee basin received 40 percent, the Carson 25 percent, and the Walker 15 percent. About 60 percent of the January average fell in the Humboldt basin in Nevada.

Warm temperatures occurred in January resulting in some melt of the lower elevation snow pack. The warm weather also raised the density of the pack, with densities typical of April 1st conditions. This has increased the possibility of an early spring snowmelt barring any significant changes to the weather pattern. The February 1st average is about 126 percent in the northern Sierra basin, 93 percent in the central Sierra and 86 percent in the southern Sierras. The April 1st average stands at 81 percent for the northern Sierra, 59 percent for the central Sierra and 51 percent in the southern Sierra. Snow packs in the Tahoe-Truckee and Carson-Walker basins are about 115 percent of the average-to-date, and the Humboldt at 75 percent. The upper Klamath snow pack stands at 65 percent of the average-to-date.

January runoff varied from 219 percent in the Trinity, followed by 123 percent in the Shasta and 99 percent in the Yuba. Monthly averages then drop substantially with the American River basin at 63 percent, the Merced at 49 percent and the Kern at 78 percent.

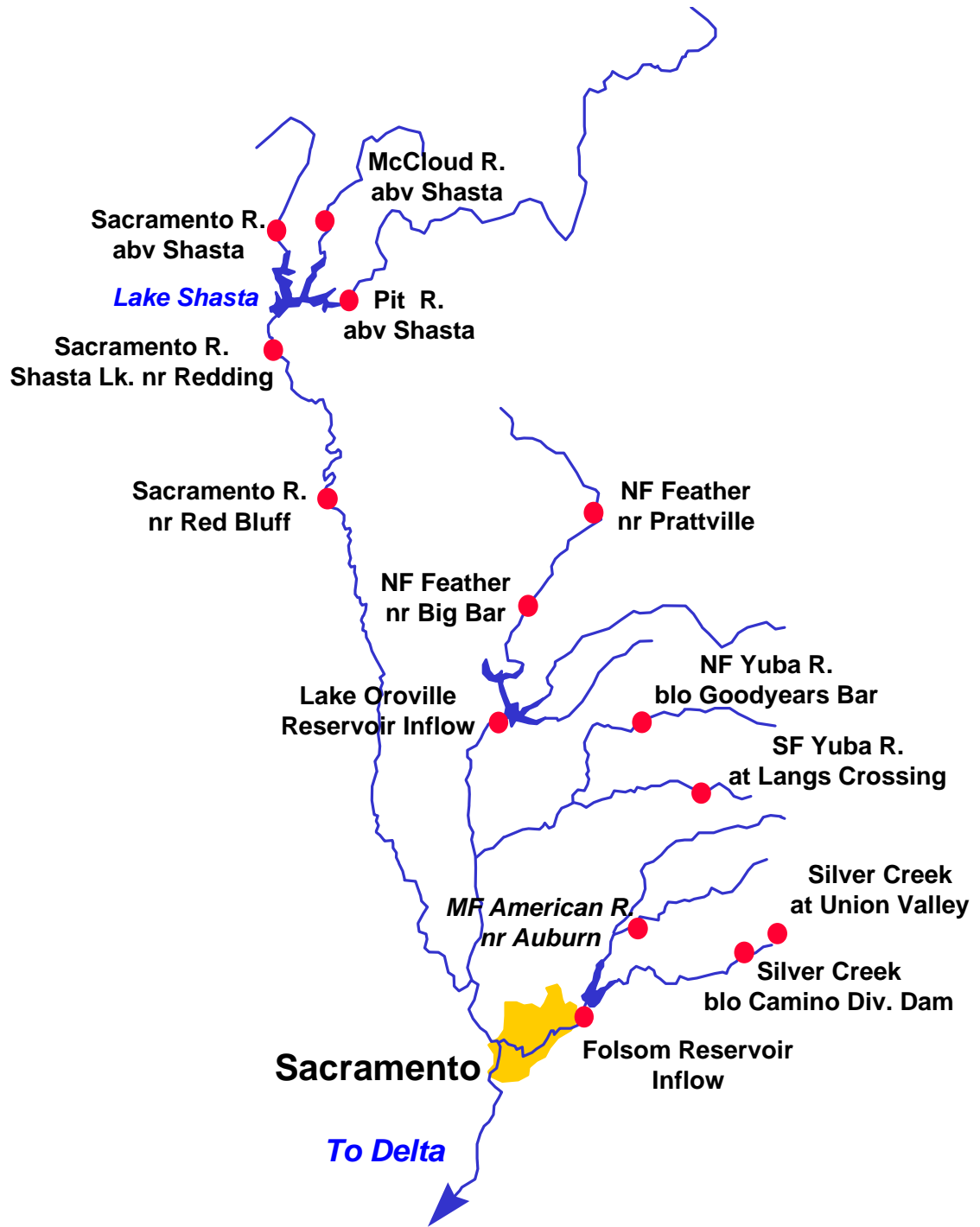
Reservoir storage in the Sacramento basin was at 97 percent of average for the date, the San Joaquin at 97 percent, and the Tulare Lake basin at 72 percent. East-side Sierra reservoirs were at 42 percent of average. Storage at Lahontan Reservoir in Nevada stands at 79 percent while Rye Patch Reservoir is at only 16 percent of the average-to-date.

The April through July runoff forecasts vary from 120 percent for the Trinity River inflow to about 65 percent in the Cosumnes river basin. Forecasts range from 81 to 103 percent for the east-side Sierra basins, and 38 to 66 percent in the Humboldt basin. The March through September forecast for the upper Klamath inflow is 74 percent.

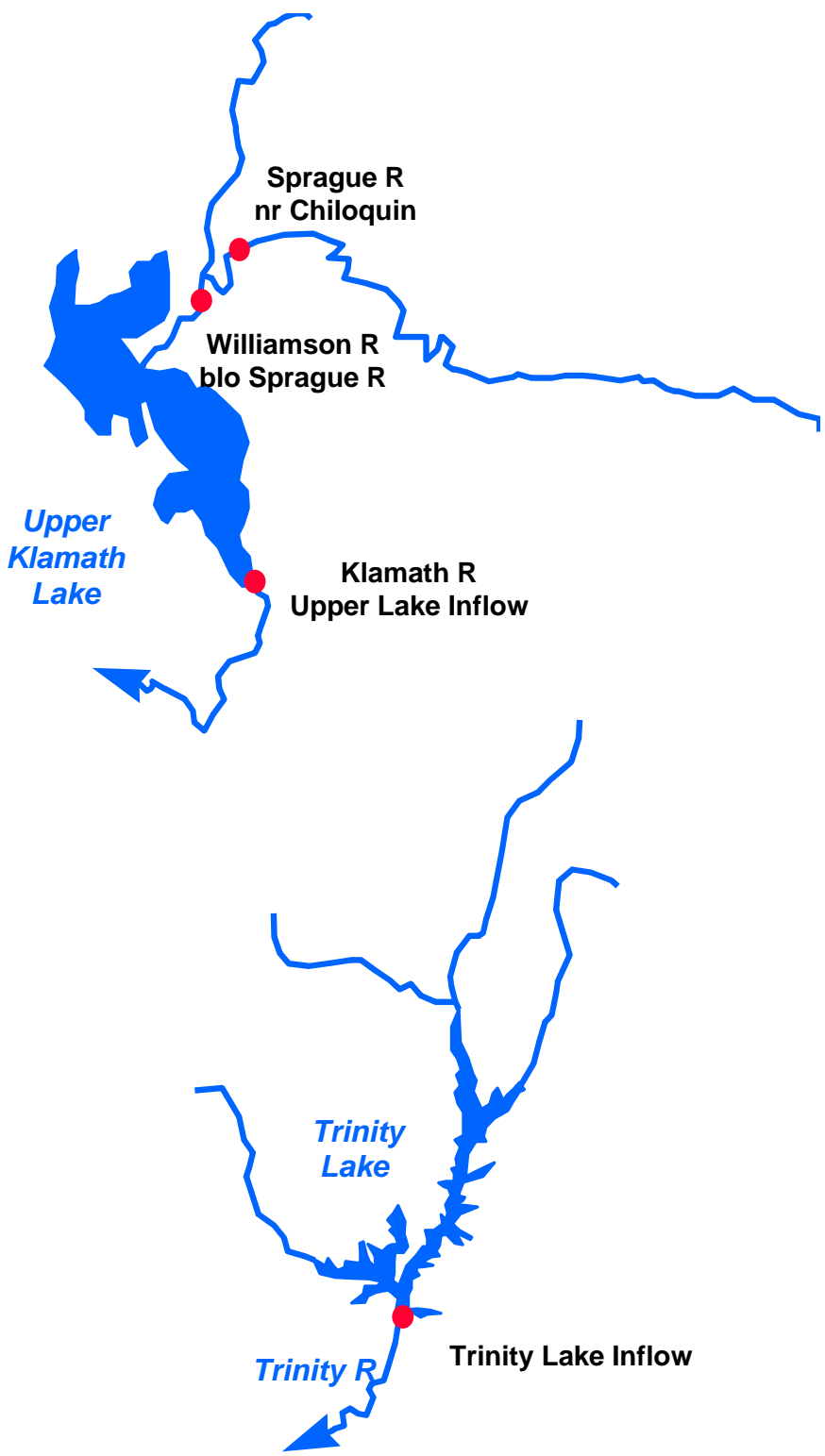
Please Note: A correction was made to the Humboldt, Truckee-Tahoe, and Carson-Walker Basin Snowpack graphics (% of basin SWE) for January, which incorrectly appeared in January's publication as % of April 1st average.

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
COASTAL BASINS						
Williamson River Sprague, blo	Mar-Sep	380	75	555	200	505
Sprague River Chiloquin, nr	Mar-Sep	210	69	335	85	305
Upper Klamath Falls River Inflow	Mar-Sep	530	74	735	325	715
Lost River Gerber Reservoir Inflow	Feb-Jul	16.5	35	23	10.0	47
Clear Lake Reservoir Inflow	Feb-Jul	47	45	75	20	105
Trinity River Trinity Lake Inflow	Apr-Jul	760	120	1070	455	635
SACRAMENTO RIVER BASIN						
SACRAMENTO RIVER ABOVE BEND BRIDGE						
Pit River Montgomery Ck, nr	Apr-Jul	940	88	1230	645	1070
Mccloud River Shasta Lk, abv	Apr-Jul	415	112	550	280	370
Sacramento River Delta	Apr-Jul	320	110	490	151	290
Shasta Lake, Redding, nr	Apr-Jul	1700	95	2410	990	1790
Bend Bridge, abv, Red Bluff, n	Apr-Jul	2310	95	3360	1260	2440
FEATHER RIVER ABOVE OROVILLE RESERVOIR						
NF Feather River Prattville, nr	Apr-Jul	310	93	480	142	333*
Big Bar	Apr-Jul	950	99	1440	460	962*
Feather River Oroville Reservoir Inflow	Apr-Jul	1700	97	2580	820	1760

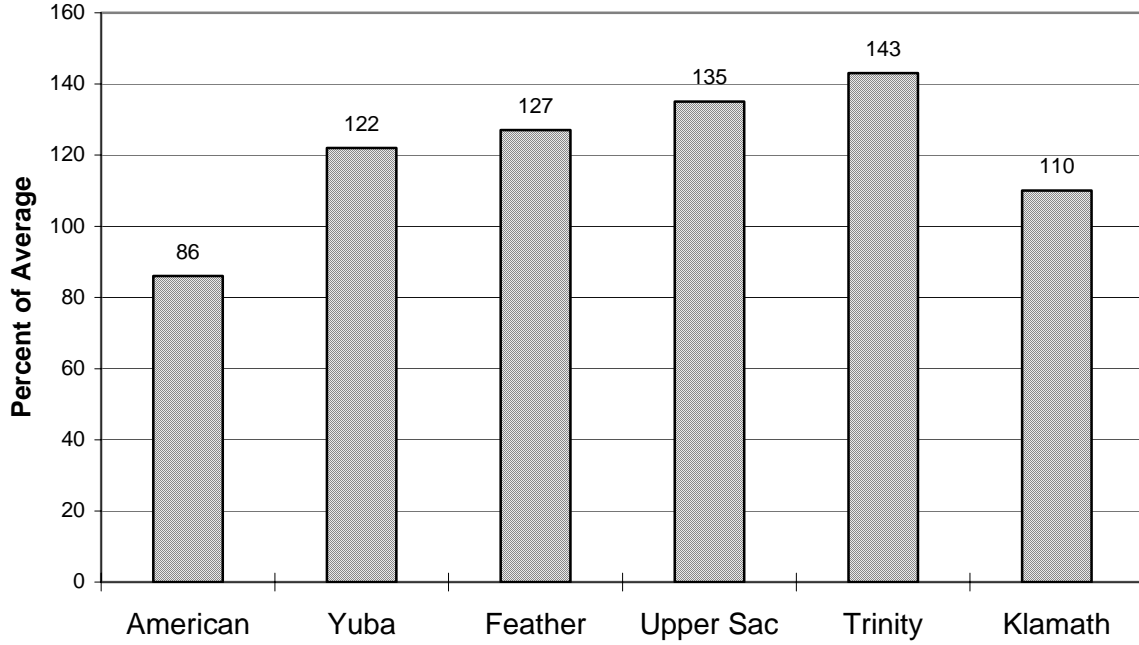
Water Supply Forecasts

		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	265	97	390	142	273*
South Yuba River						
Langs Crossing	Apr-Jul	210	93	320	118	225*
Yuba River						
Smartville, nr	Apr-Jul	960	96	1410	505	995
American River above Folsom Reservoir						
MF American River						
Auburn, nr	Apr-Jul	440	90	695	185	490*
Silver Ck						
Union Valley	Apr-Jul	83	85	123	43	98*
Camino Dam, blo	Apr-Jul	135	85	225	51	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	1070	87	1620	515	1230

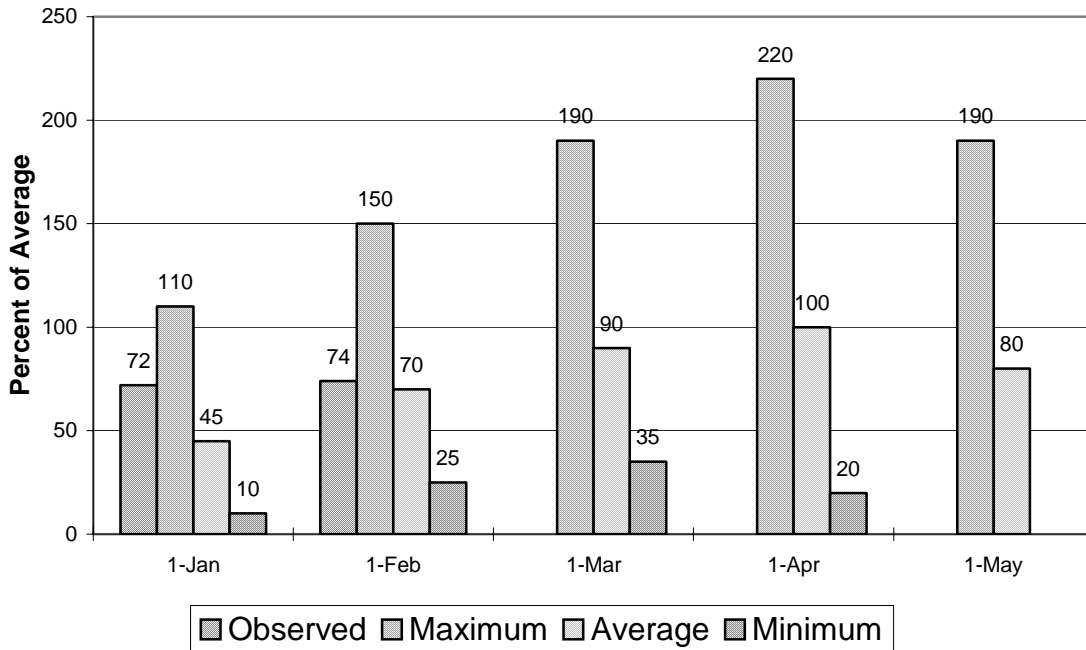
***30 Year Averages for 1971-2000 are incomplete. Those forecast points with an asterisk have incomplete averages, so 1961-1990 averages are listed. The new averages will be incorporated into this report when the complete data sets become available.**

Sacramento/Trinity/Klamath River Basins

Seasonal Basin Precipitation October 1 to Date

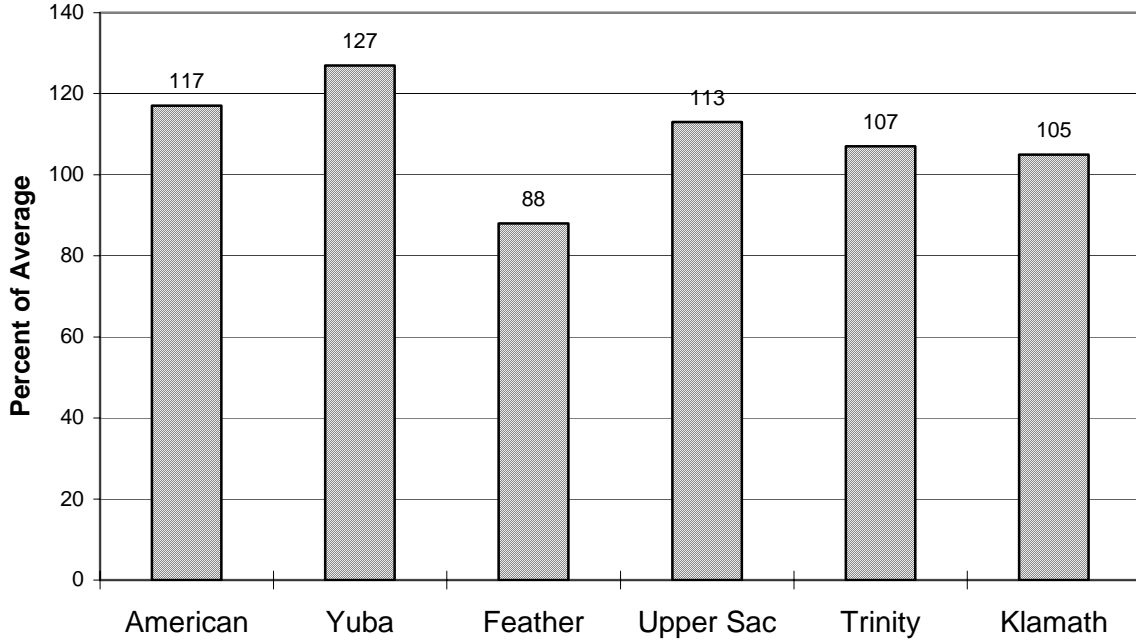


Seasonal Basin Snowpack Water Content in % of April 1 Average

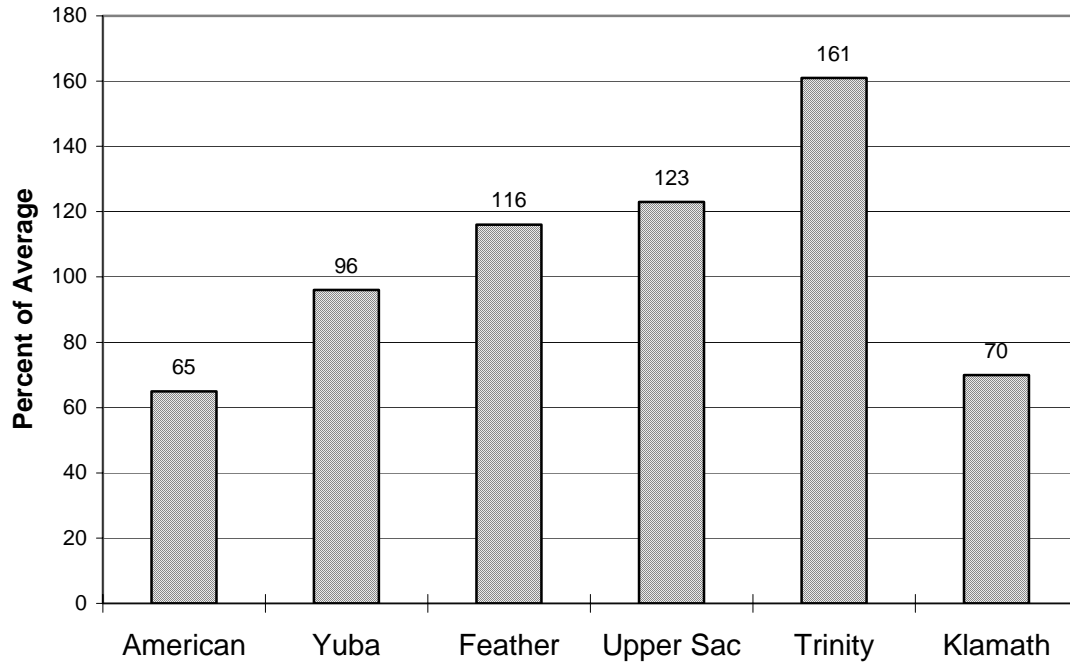


Sacramento/Trinity/Klamath River Basins

Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Seasonal Basin Runoff October 1 to Date



San Joaquin Basin



Water Supply Forecasts

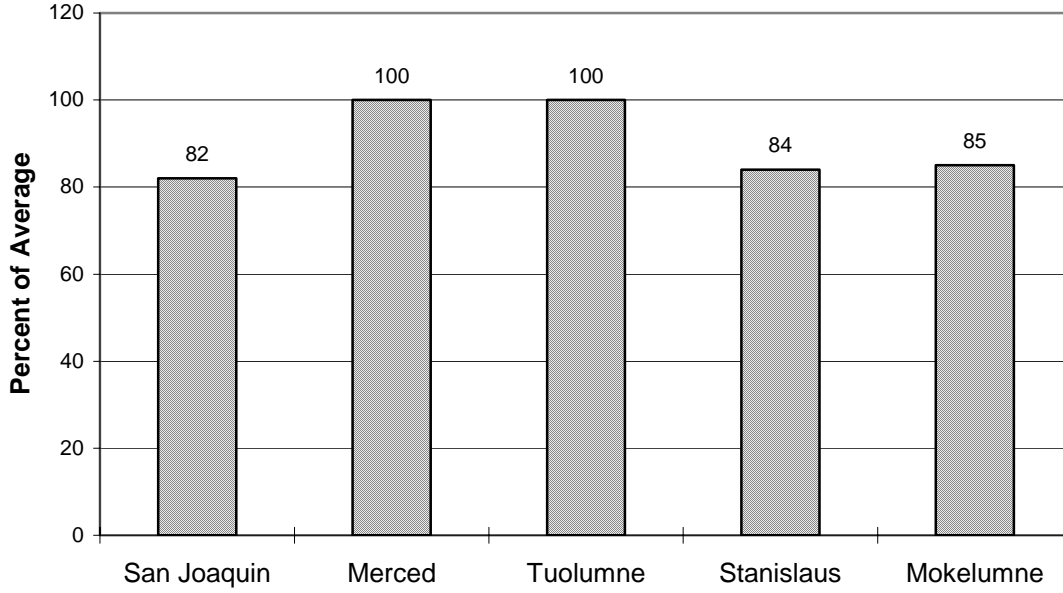
		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
SF San Joaquin River						
Hooper Ck, blo, Florence Lk,	Apr-Jul	165	86	300	80	192*
San Joaquin River						
Millerton Lk	Apr-Jul	1100	87	1700	580	1270
Merced River						
Pohono Bridge, at, Yosemite,	Apr-Jul	350	97	650	175	360*
Merced Falls, blo	Apr-Jul	550	85	880	220	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	600	101	900	300	596*
La Grange, nr	Apr-Jul	1150	93	1800	680	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	280	88	500	133	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	625	90	1000	290	695
NF Mokelumne River						
West Point	Apr-Jul	375	90	610	190	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	400	87	610	192	460
Cosumnes River						
Michigan Bar	Apr-Jul	80	65	200	20	123

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San Joaquin Basin

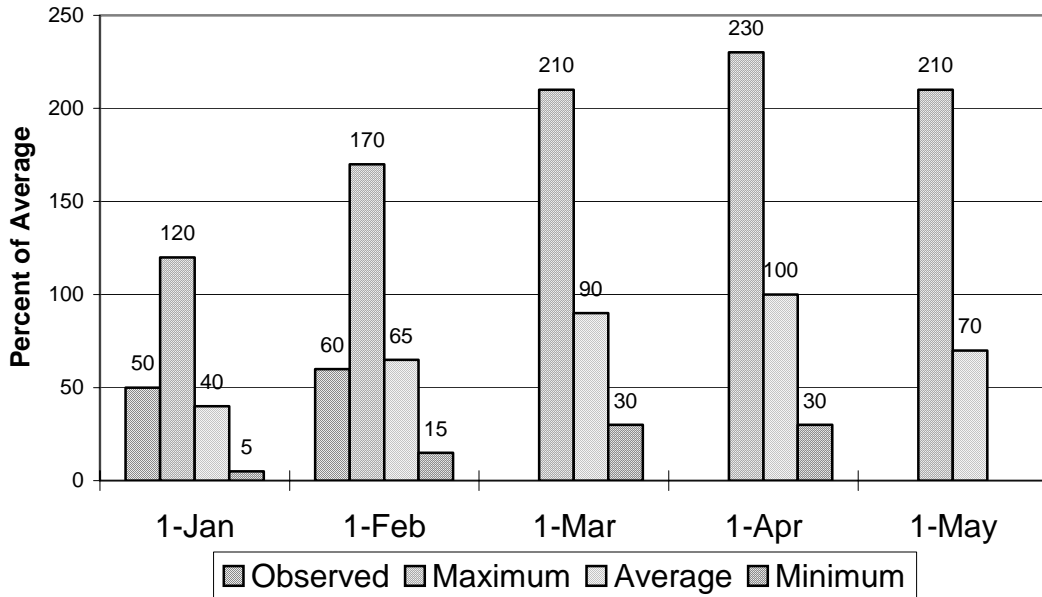
Seasonal Basin Precipitation

October 1 to Date



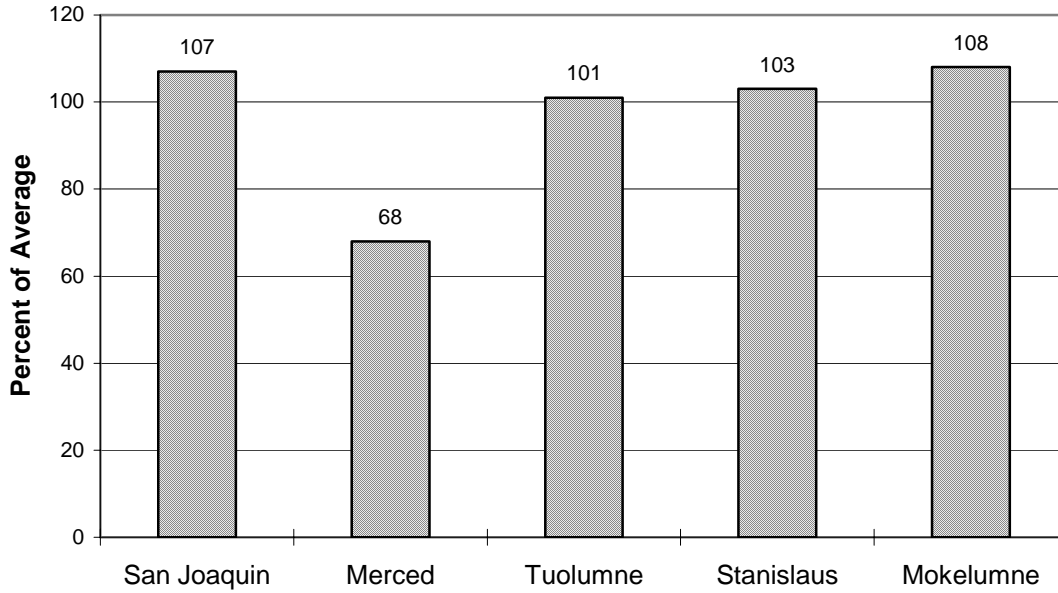
Seasonal Basin Snowpack

Water Content in % of April 1 Average

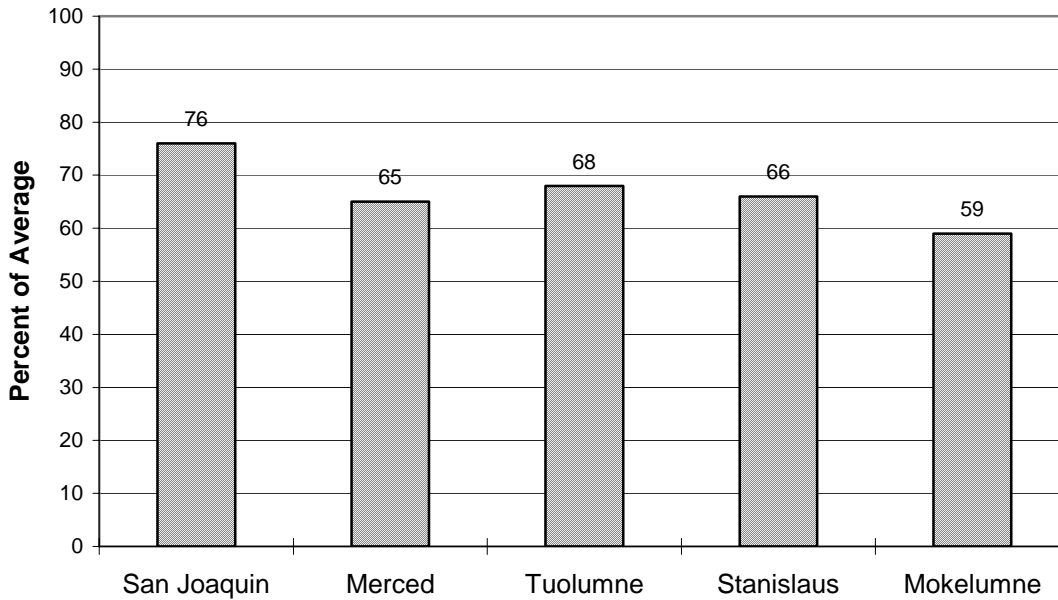


San Joaquin Basin

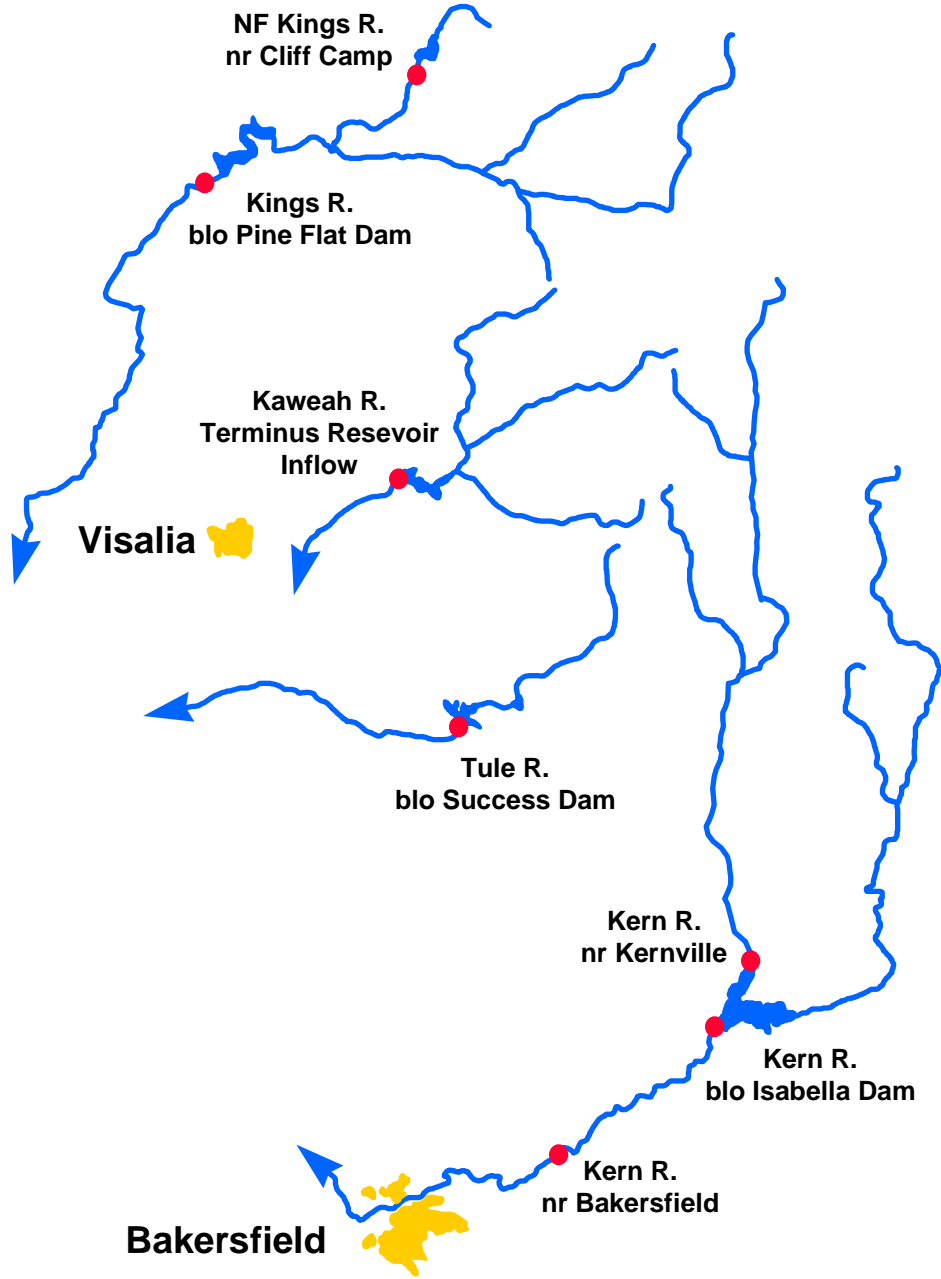
Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Season Basin Runoff October 1 to Date



Tulare Basin



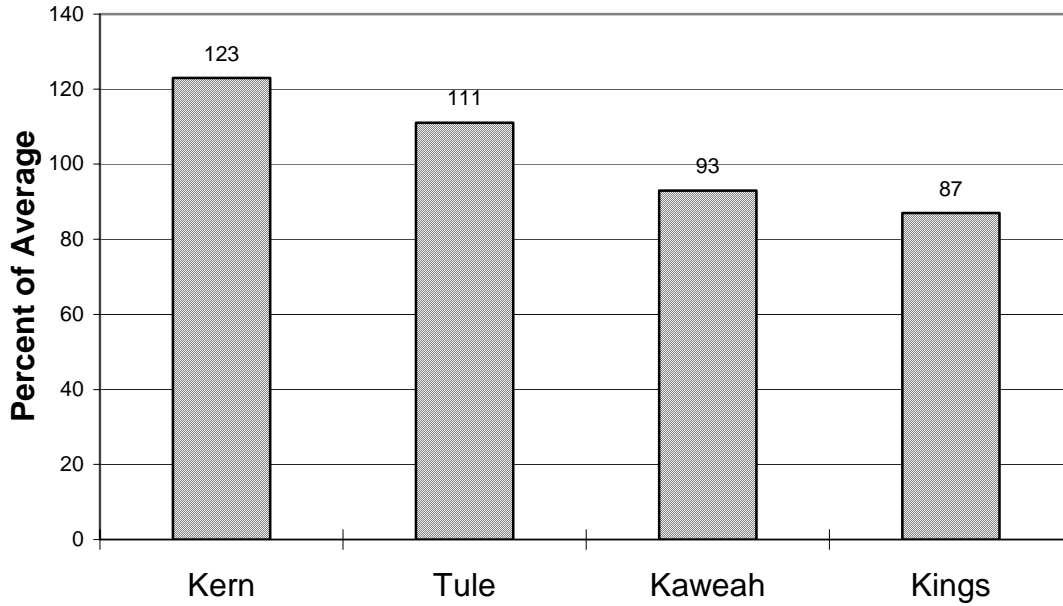
Water Supply Forecasts

		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Kern River						
Kernville, nr	Apr-Jul	320	80	650	130	398*
Isabella Dam, blo	Apr-Jul	380	79	650	110	480
Bakersfield, nr	Apr-Jul	390	80	675	115	490
Tule River						
Success Dam	Apr-Jul	45	68	95	12.0	66
Kaweah River						
Terminus Dam	Apr-Jul	245	84	400	100	290
NF Kings River						
Cliff Camp, nr	Apr-Jul	200	83	315	85	240*
Kings River						
Pine Flat Dam, blo	Apr-Jul	1050	84	1600	500	1250

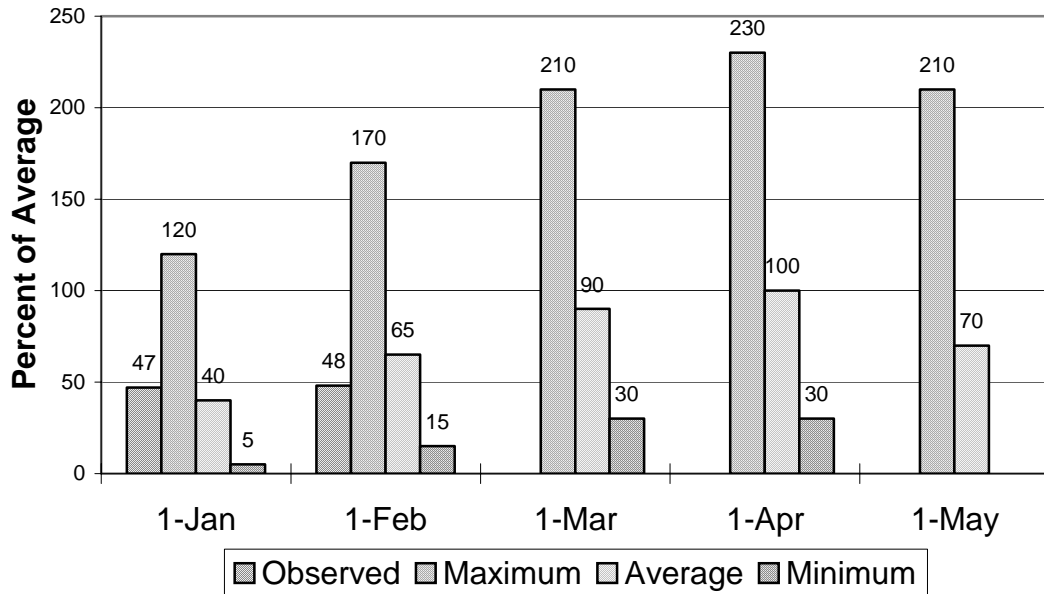
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Tulare Lake Basin

Seasonal Precipitation October 1 to Date

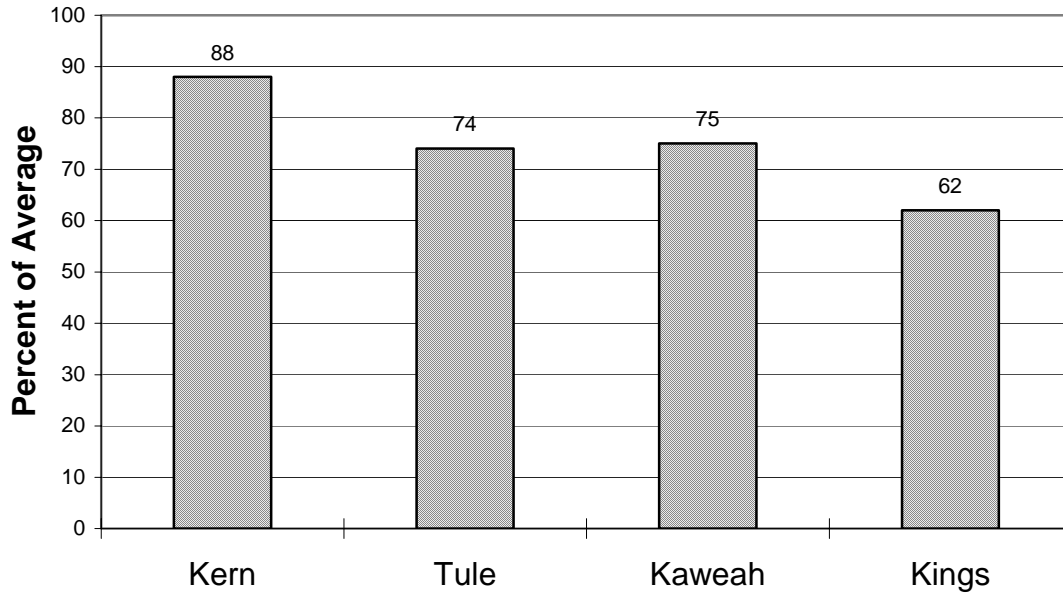


Seasonal Basin Snowpack Water Content in % of April 1 Average

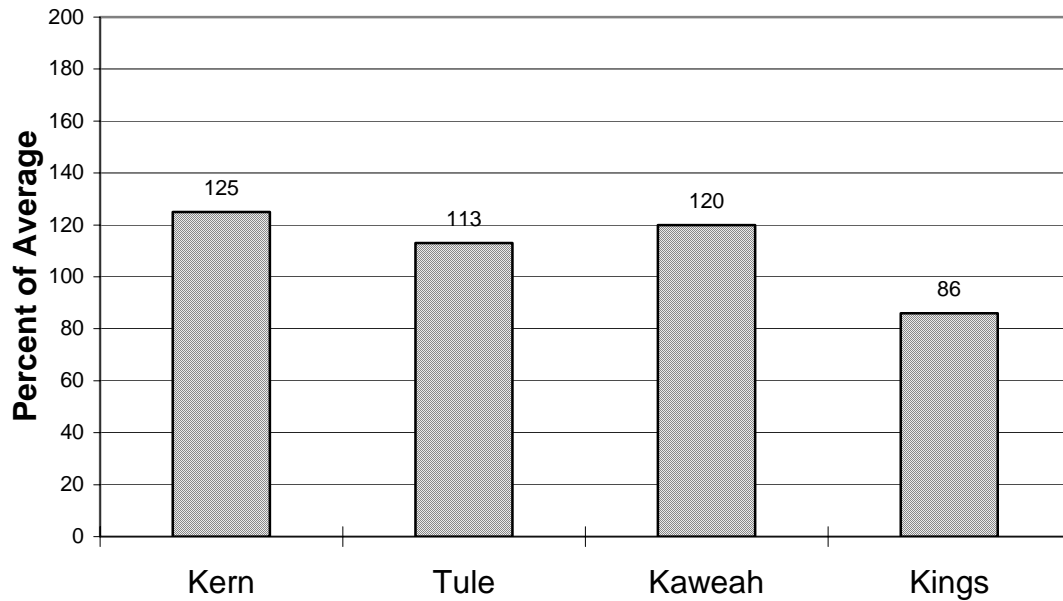


Tulare Lake Basin

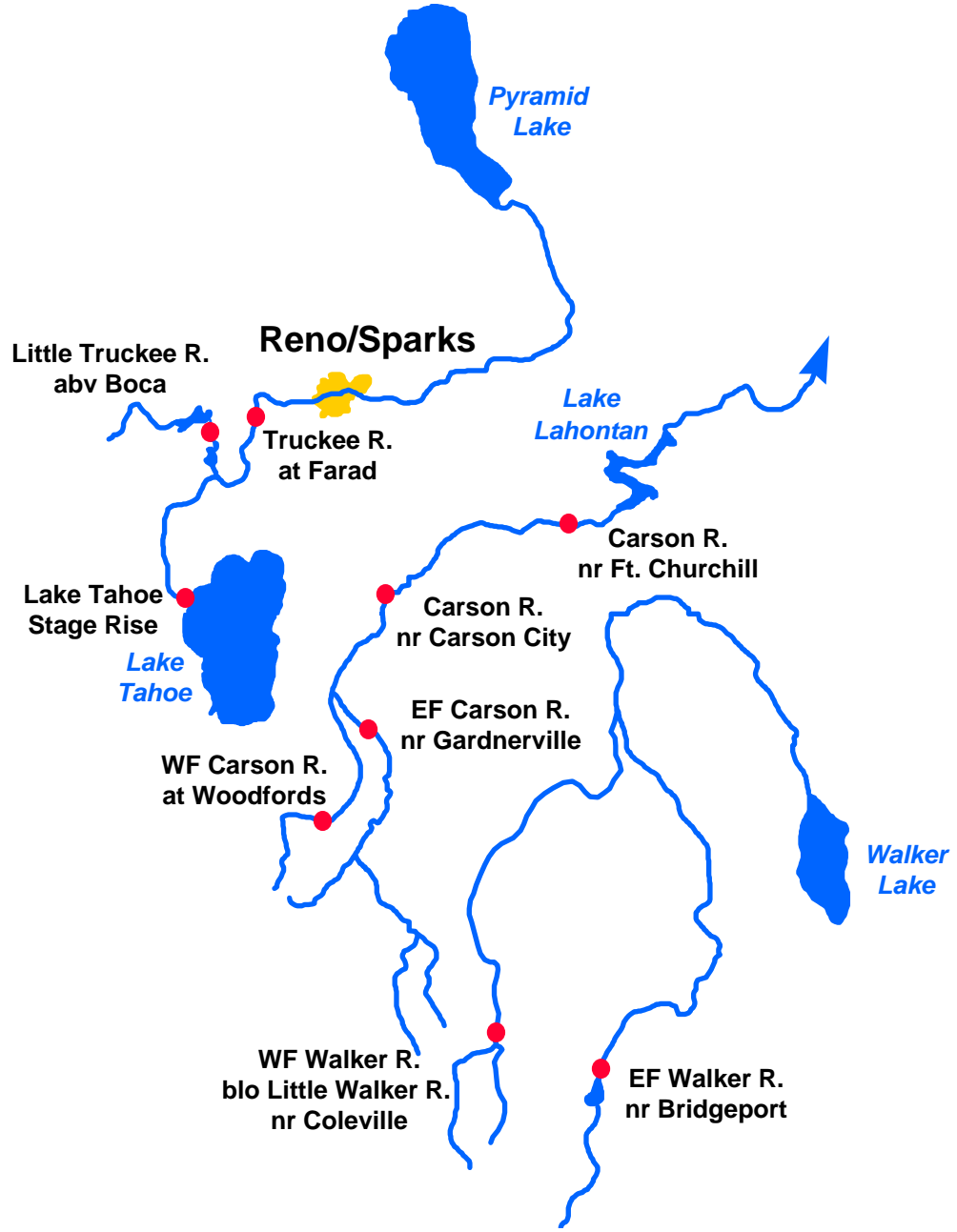
Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Seasonal Basin Runoff October 1 to Date



East Side Sierra Nevada Basins



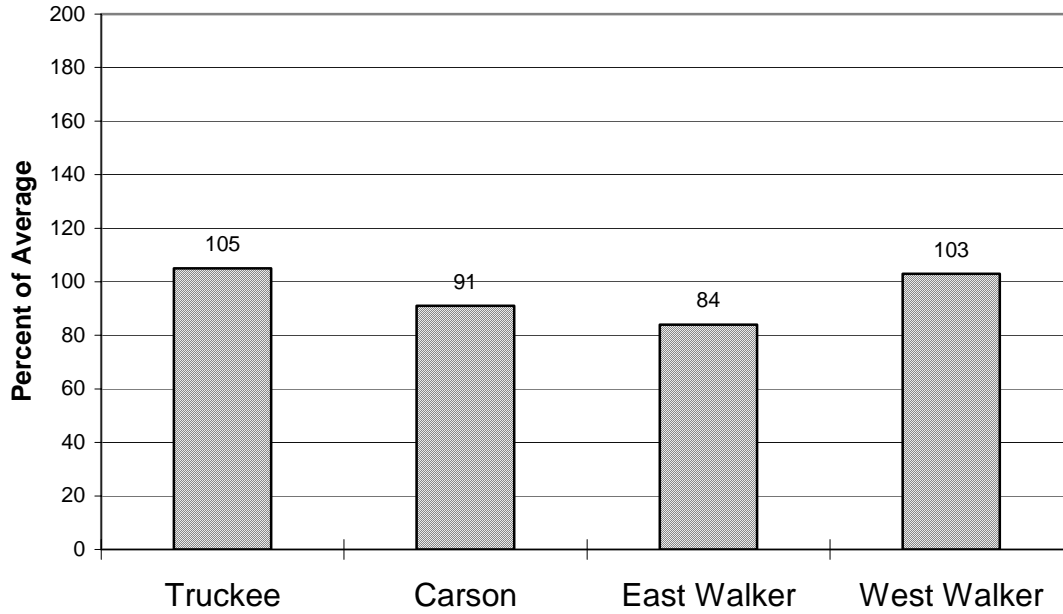
Water Supply Forecasts

		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	1.2	87	1.9	0.5	1.4
Ltl Truckee River						
Boca Res, abv, Truckee, nr	Apr-Jul	70	88	110	31	80
Truckee River						
Farad	Apr-Jul	230	88	340	120	260
Carson River						
EF Carson River						
Gardnerville, nr	Apr-Jul	170	90	250	90	189
WF Carson River						
Woodfords	Apr-Jul	49	88	73	26	56
Carson River						
Carson City, nr	Apr-Jul	160	85	245	75	188
Fort Churchill, nr	Apr-Jul	145	81	225	66	178
Walker River						
East Walker River						
Bridgeport, nr	Apr-Aug	57	85	90	24	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	160	103	225	95	156

East Side Sierra Nevada Basins

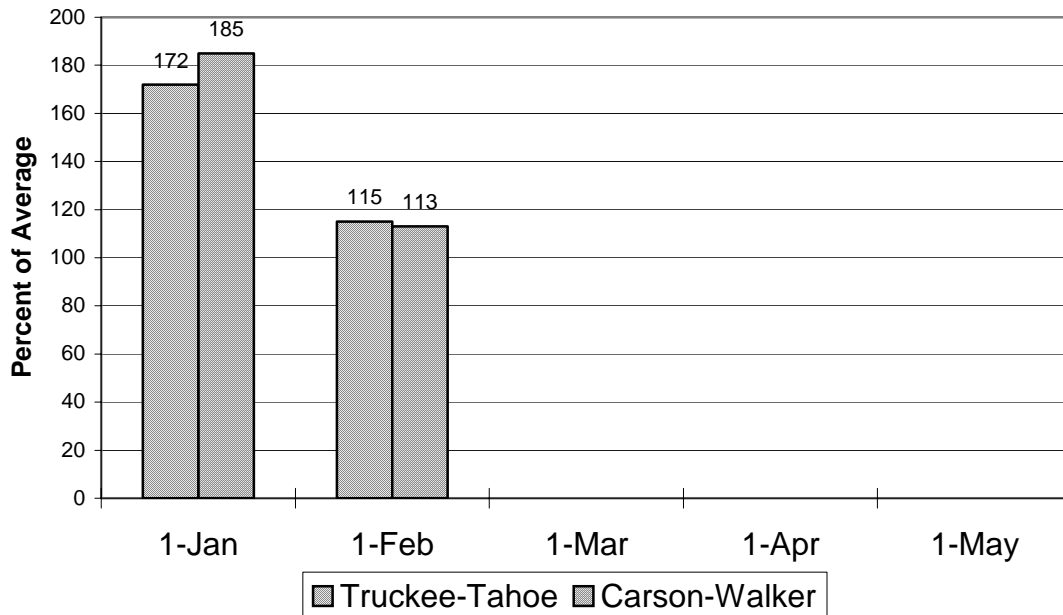
Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

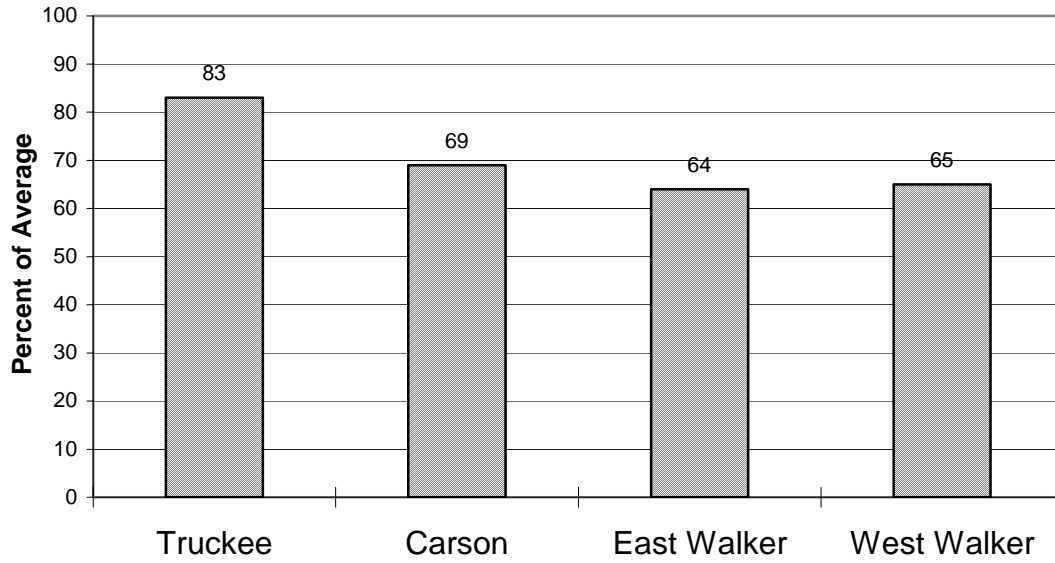
% of Average SWE to Date



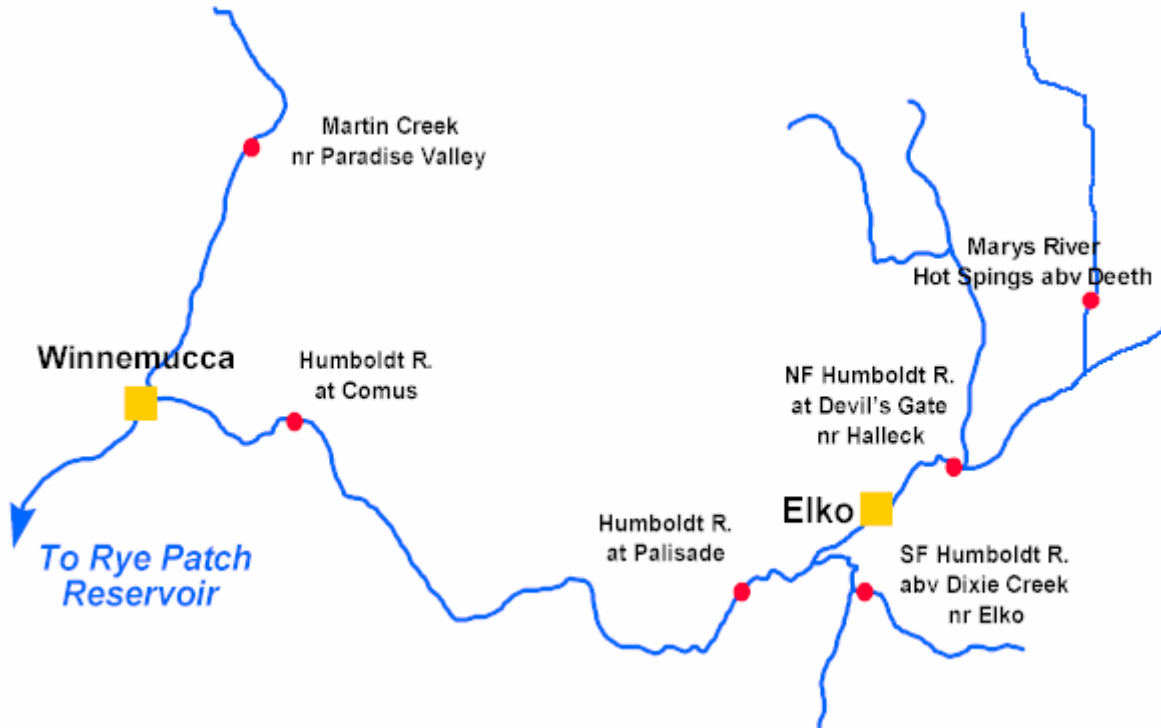
East Side Sierra Nevada Basins

Seasonal Basin Runoff

October 1 to Date



Humboldt River Basin



Water Supply Forecasts

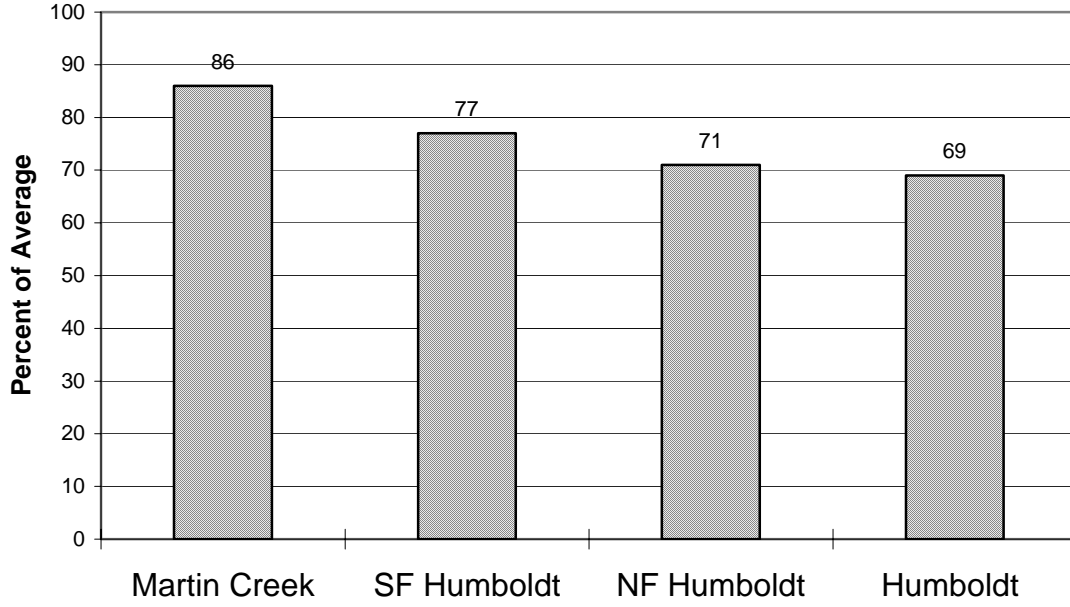
		Most Prob Vol KAF	Most Prob Vol %Nrml	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
NF Humboldt River						
Devils Gate, at, Halleck, nr	Apr-Jul	17.0	50	37	8.0	34*
SF Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	50	66	100	20	76
Humboldt River						
Palisade	Apr-Jul	125	50	290	50	250
Comus	Apr-Jul	85	38	290	35	225
Martin Ck						
Paradise Vly, nr	Apr-Jul	9.0	48	18.5	4.0	18.7
Marys River						
Hot Springs, abv Deeth	Apr-Jul	20.0	51	50	10	39

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Humboldt River Basin

Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

% of Average SWE to Date

