Water Supply Outlook

California and northern Nevada

March 2008

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

March 1, 2008

Precipitation from weather systems during the 1st and 4th week of February helped sustain the mountain snow pack from near to above the April 1st average. There has been little melting of the snow pack due to the predominantly cool weather conditions so far this season. The pack at the lowest elevations remains much above the April 1st average. How much of the runoff will be absorbed into soil already low in moisture due to last year's low spring runoff conditions will be apparent once substantial melt commences.

Precipitation amounts were generally below average during February except for areas in the Tulare, east side Sierra and Humboldt basins. Much above average monthly precipitation was actually recorded from stations from the Kings River basin to the Kern. Monthly percentages were in the 75 to 100 percent range for the west slope Sierra Nevada watersheds from the Upper Sacramento to the San Joaquin. February averages varied from about 120 to 190 percent from the Kings to the Tule. East Side Sierra basins received 75 to 115 percent of the February average. The upper Humboldt basin in Nevada averaged 115 percent, the lower Humboldt, 103 percent. The Upper Klamath Lake basin received only 70 percent of the monthly average. Seasonal averages (October 1, 2007 to February 29, 2008) for basins in the west slope Sierra Nevada range from 90 to 105 percent. East Side Sierra basins vary from 85 to 115 percent. Seasonal averages are about 110 percent for the Humboldt and 105 percent for the Upper Klamath Lake basin.

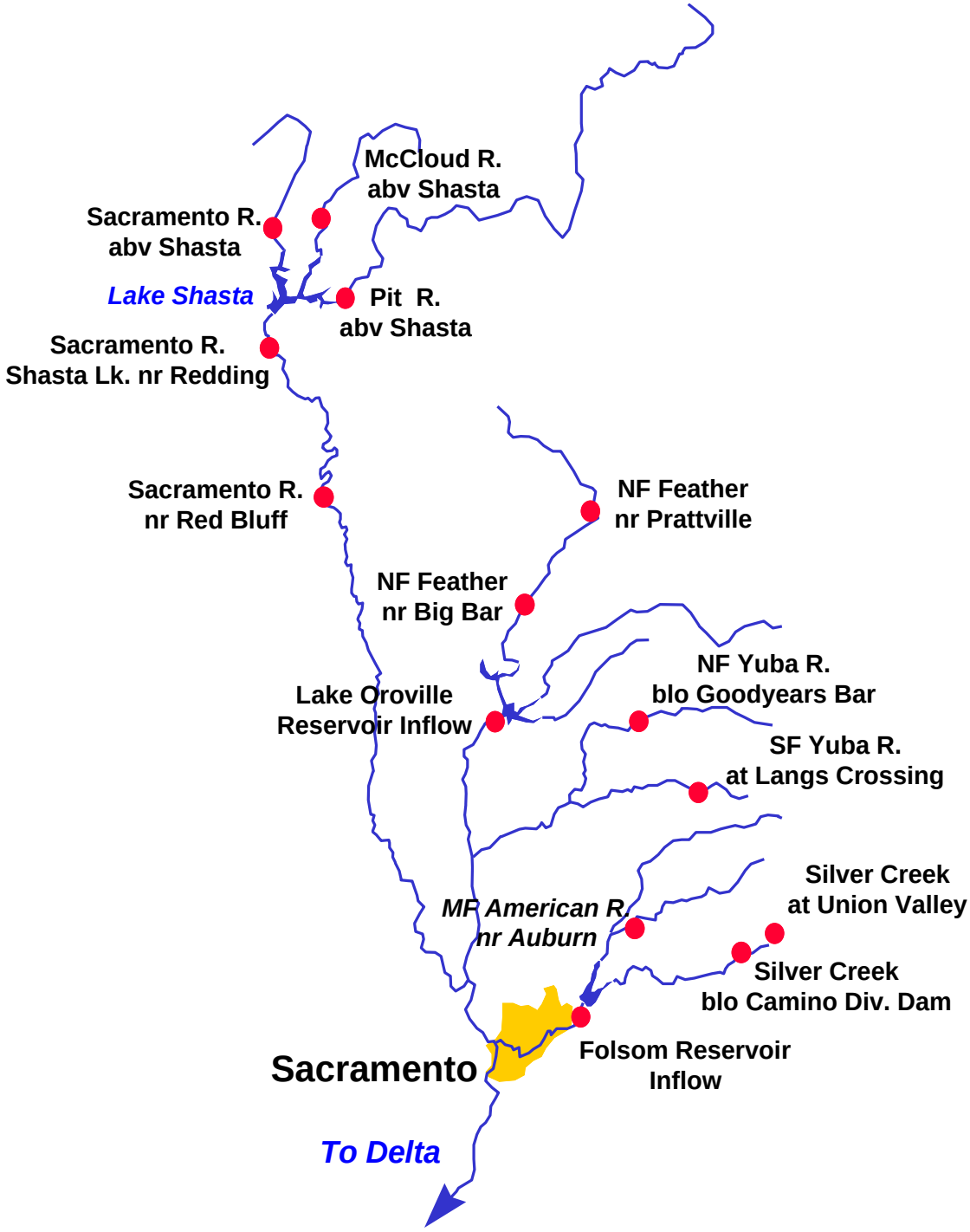
Snow packs at the lowest elevations are much above average and have experienced some limited melt so far. The pack at the highest elevations is generally below average. Snow packs in the Sacramento region stand at approximately 110 percent of the April 1st average, the San Joaquin, 105 percent and the Tulare Lake region 130 percent. The snow pack did not change appreciably from last February 1st for the east side Sierra with the Tahoe-Truckee basin about 105 percent of average and the Carson-Walker at 115 percent. The pack stands at about 105 percent of average for the Humboldt basin in Nevada and 120 percent for the Upper Klamath Lake basin.

Limited snow melt and dry antecedent soil conditions continue to keep seasonal runoff much below average. February runoff was much below average ranging from 51 percent for the Sacramento drainage to 77 percent for the Tulare Lake basin. East side Sierra basins received 36 percent of the monthly average while the Humboldt River at Palisade recorded about 22 percent. The Upper Klamath Lake basin received an estimated 68 percent of the February average.

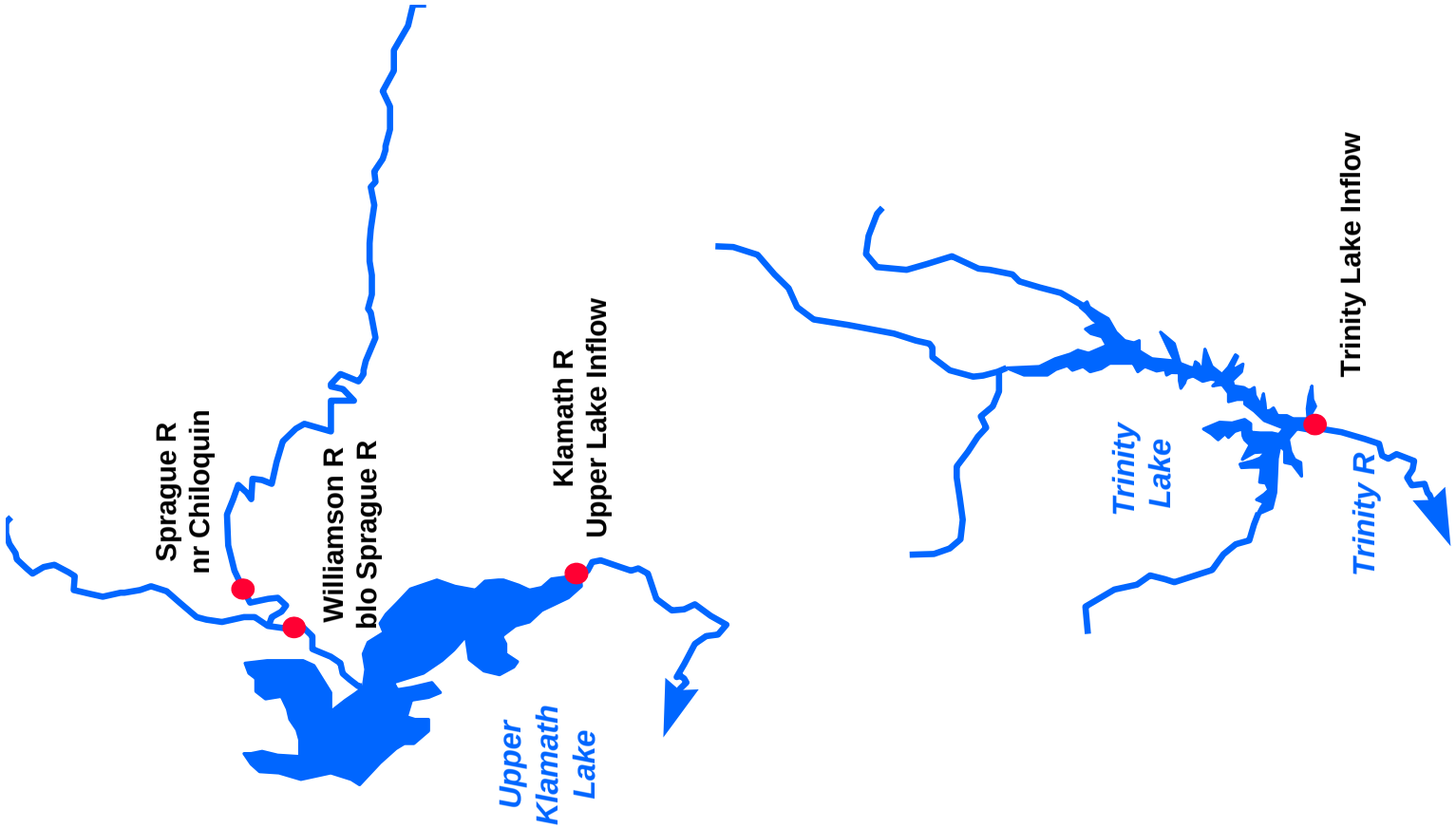
Overall storage to California's Sierra Nevada reservoirs improved slightly from last January 31st. Stored water in the Sacramento region as of February 29th was at 81 percent of average, the San Joaquin, 95 percent; and the Tulare Lake watershed at 69 percent. East-side Sierra reservoirs were at 83 percent of average. The lake level at Lake Tahoe stood at 6225.18 feet as of February 29th. This represents 69 percent of average. Storage at Lahontan Reservoir in Nevada stands at 56 percent as of February 29th while Rye Patch Reservoir is at 60 percent. Storage at Upper Klamath Lake is about 77 percent of average.

Forecasts continue to range from just below average to slightly above average. April through July runoff forecasts varies from 90 percent for the Yuba River near Smartville to 114 percent of average for the Kaweah River at Terminus. Forecasts range from 90 to 95 percent for the Sacramento basin, 96 to 101 percent for the main stem forecast points in the San Joaquin and 99 to 114 percent for the Tulare Lake basin. Forecasts vary from 95 to 112 percent of average for the east side Sierra Nevada basins and 97 to 104 percent for forecast points on the main stem Humboldt River. The March through September forecast for the Upper Klamath Lake inflow is 98 percent.

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
COASTAL BASINS						
Williamson River						
Sprague, blo	Mar-Sep	490	97	610	370	505
Sprague River						
Chiloquin, nr	Mar-Sep	305	100	415	210	305
Upper Klamath Falls River						
Inflow	Mar-Sep	700	98	870	490	715
Lost River						
Gerber Reservoir Inflow	Mar-Jul	38	103	61	15.0	37
Clear Lake Reservoir Inflow	Mar-Jul	94	118	141	40	80
Scott River						
Fort Jones, nr	Apr-Jul	195	108	290	140	181
Trinity River						
Trinity Lake Inflow	Apr-Jul	700	110	1020	500	635

Trinity River – Inflow at Lewiston Lake Distribution (kAF)

Exceedence Probability	Oct-Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Apr-Jul	Water Yr
90%	245	105	160	200	110	30	19	12	500	881
50%	245	145	225	275	160	40	22	15	700	1127
10%	245	220	325	390	245	60	28	20	1020	1533

		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
SACRAMENTO RIVER BASIN						
SACRAMENTO RIVER ABOVE BEND BRIDGE						
Pit River						
Montgomery Ck, nr	Apr-Jul	940	88	1480	710	1070
McCloud River						
Shasta Lake, abv	Apr-Jul	350	95	530	270	370
Sacramento River						
Delta	Apr-Jul	275	95	420	205	290
Shasta Dam	Apr-Jul	1650	92	2490	1230	1790
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	2120	87	3370	1640	2440

Water Supply Forecasts

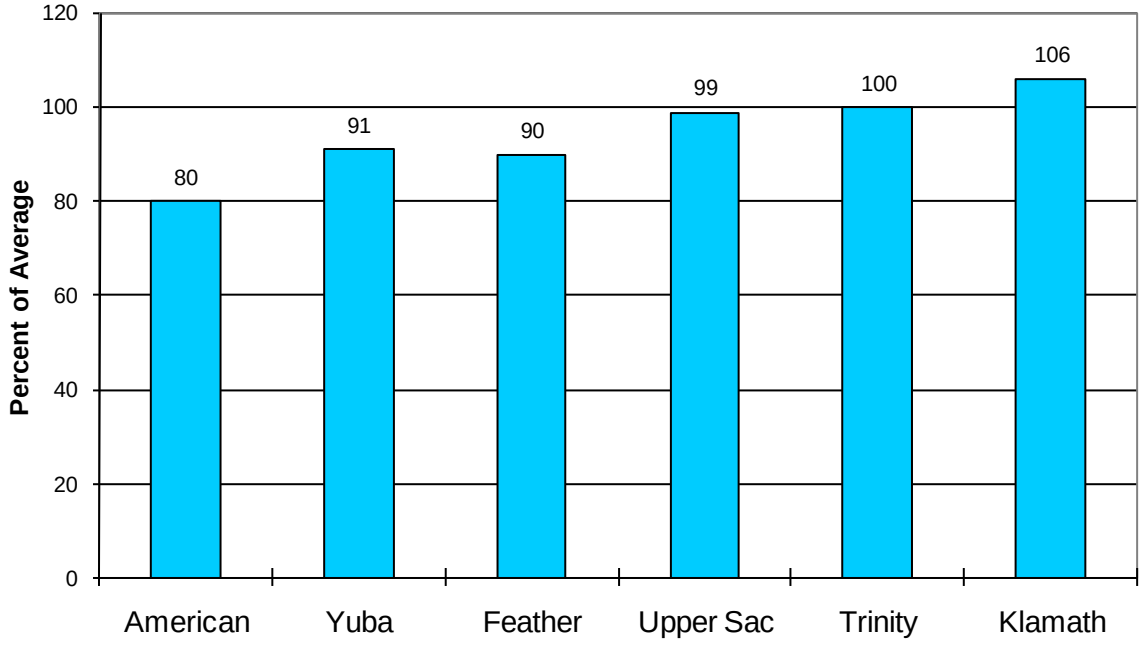
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
FEATHER RIVER ABOVE OROVILLE RESERVOIR						
North Fork Feather River						
Prattville, nr	Apr-Jul	300	90	490	220	333*
Big Bar	Apr-Jul	880	91	1410	640	962*
Feather River						
Oroville	Apr-Jul	1640	93	2720	1160	1760
YUBA RIVER ABOVE SMARTVILLE						
North Yuba River						
Goodyears Bar, blo	Apr-Jul	240	88	410	175	273*
South Yuba River						
Langs Crossing	Apr-Jul	200	89	340	145	225*
Yuba River						
Smartville, nr	Apr-Jul	900	90	1510	660	995
AMERICAN RIVER ABOVE FOLSOM RESERVOIR						
Middle Fork American River						
Auburn, nr	Apr-Jul	445	91	730	320	490*
Silver Creek						
Union Valley	Apr-Jul	91	93	150	66	98*
Camino Dam, blo	Apr-Jul	145	92	240	105	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	1150	93	1890	820	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

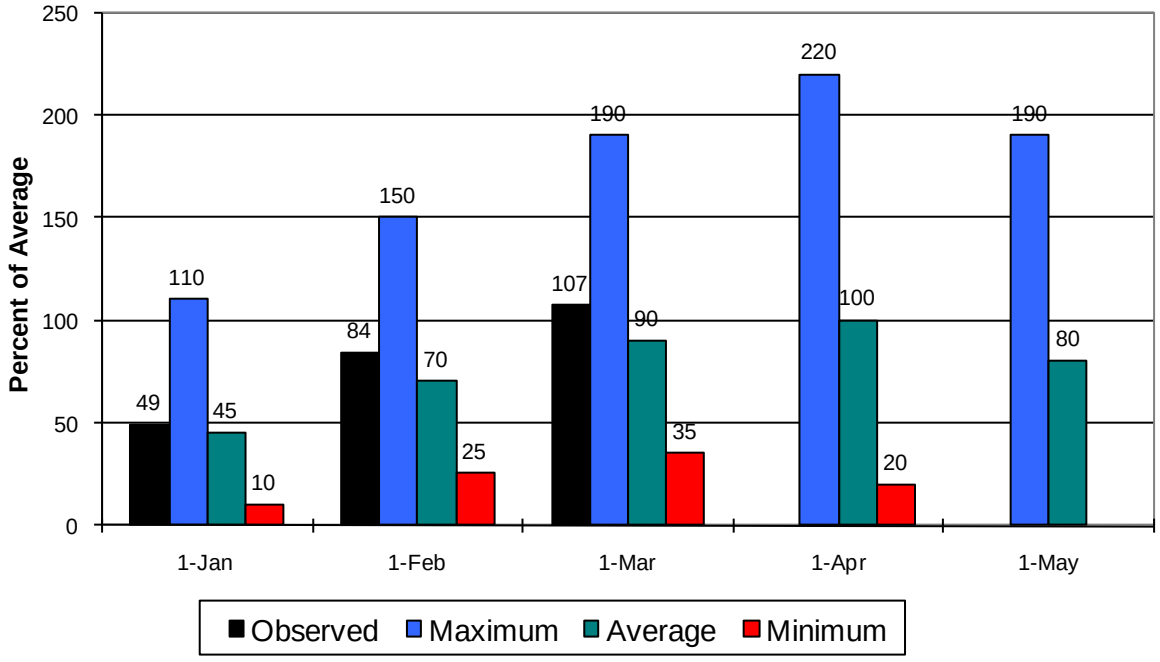
Seasonal Basin Precipitation

October 1 to Date



Seasonal Basin Snowpack

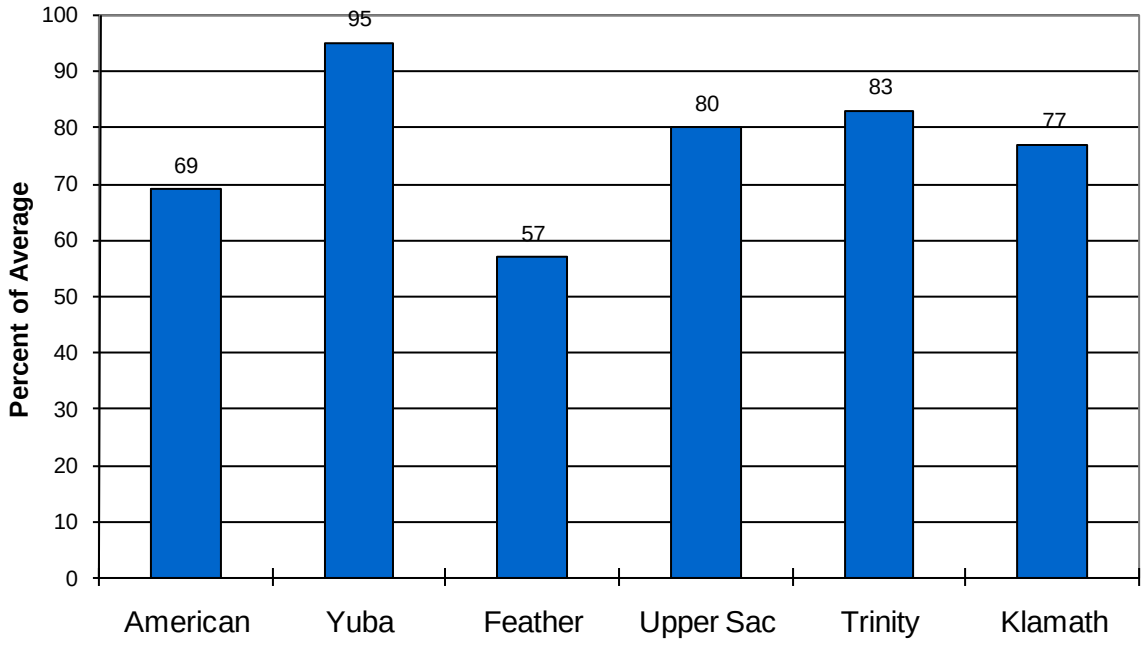
Water Content in % of April 1 Average



Sacramento/Trinity/Klamath River Basins

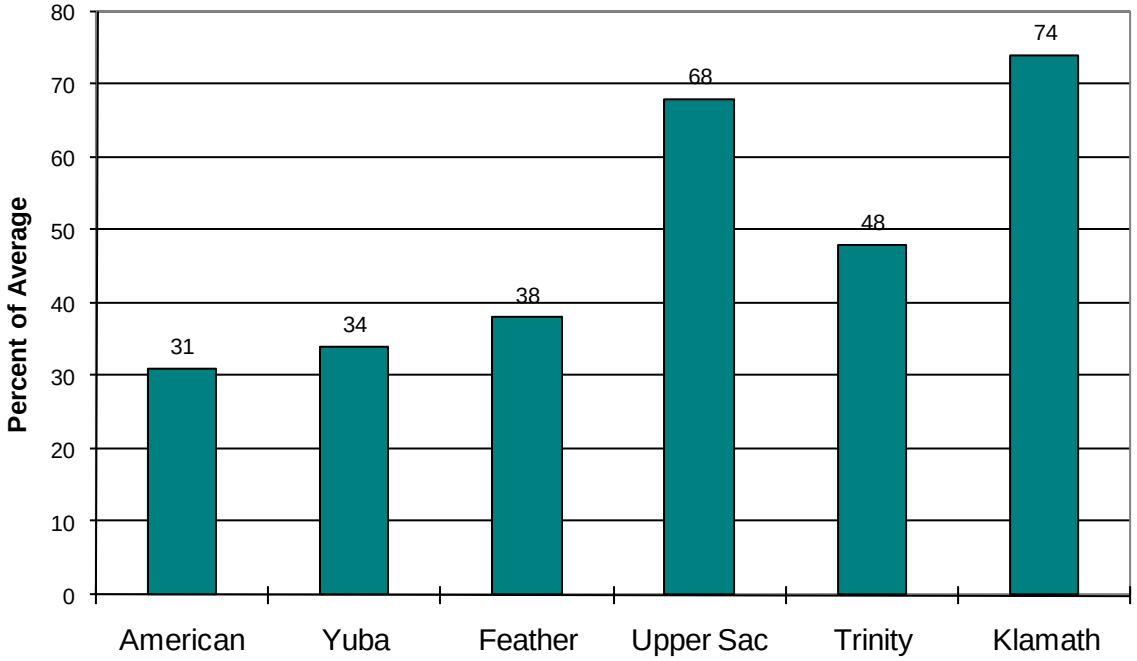
Basin Reservoir Storage

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
SAN JOAQUIN BASIN						
South Fork San Joaquin River						
Hooper Ck, blo, Florence Lk, nr	Apr-Jul	190	99	250	140	192*
San Joaquin River						
Millerton Lake	Apr-Jul	1220	96	1520	930	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	380	106	495	265	360*
Merced Falls, blo	Apr-Jul	620	96	840	400	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	590	99	730	450	596*
La Grange, nr	Apr-Jul	1200	98	1450	950	1230
Middle Fork Stanislaus River						
Beardsley Dam, blo	Apr-Jul	330	103	445	215	320*
Stanislaus River						
New Melones Dam	Apr-Jul	700	101	965	520	695
North Fork Mokelumne River						
West Point	Apr-Jul	430	103	620	300	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	450	98	600	340	460
Cosumnes River						
Michigan Bar	Apr-Jul	120	98	240	60	123

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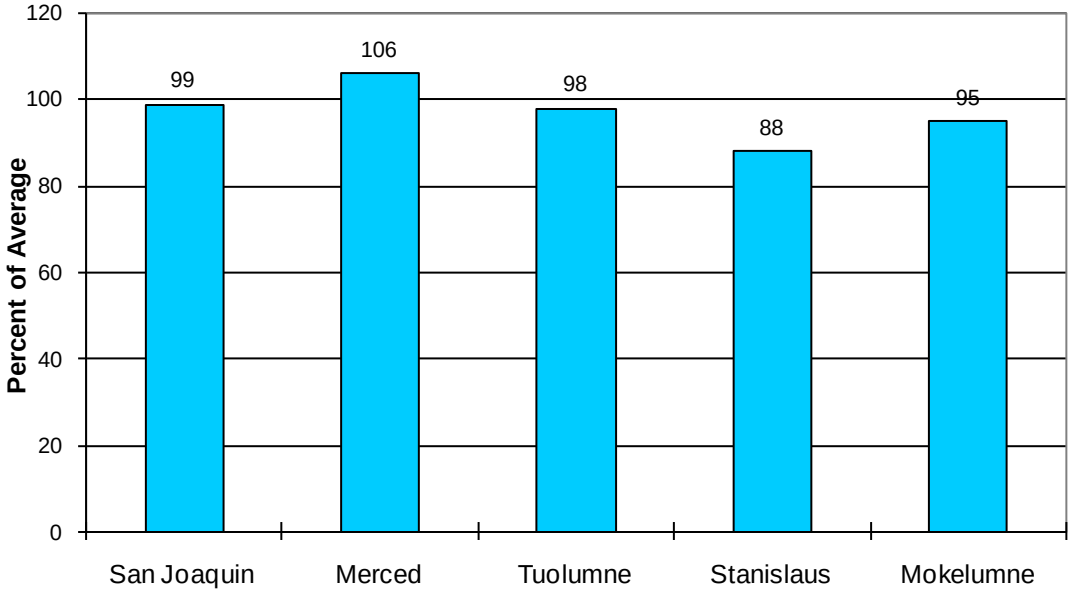
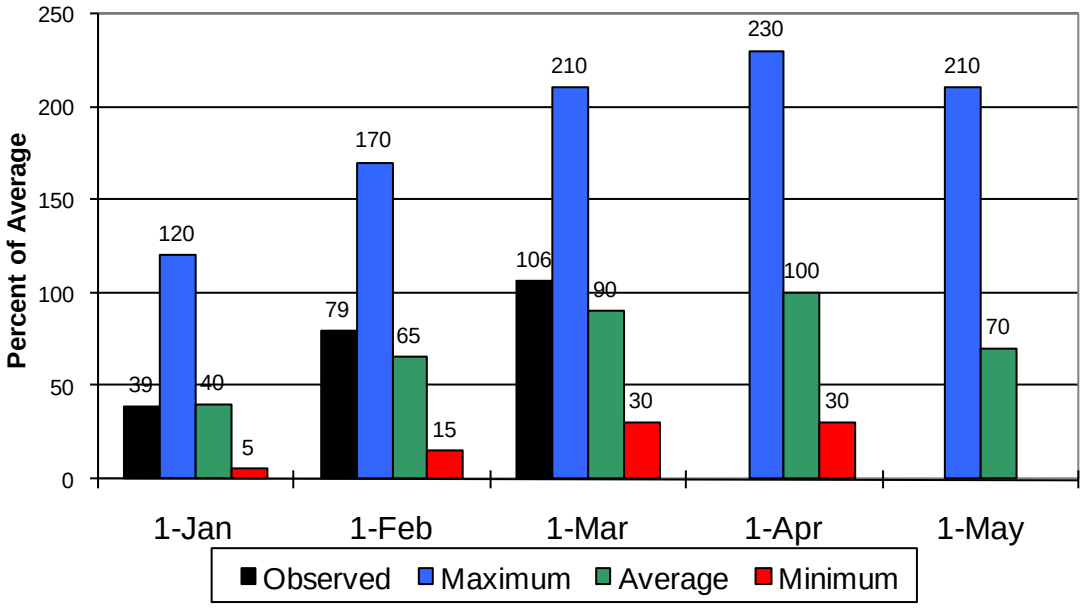
San Joaquin Basin

Seasonal Basin Precipitation
October 1 to Date

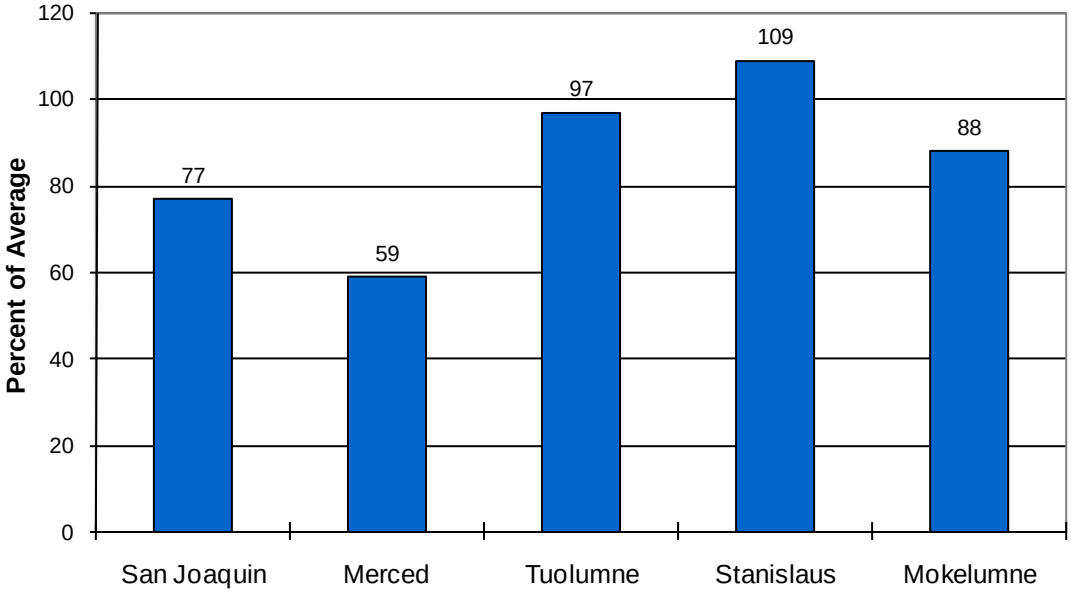


Seasonal Basin Snowpack
Water Content in % of April 1 Average

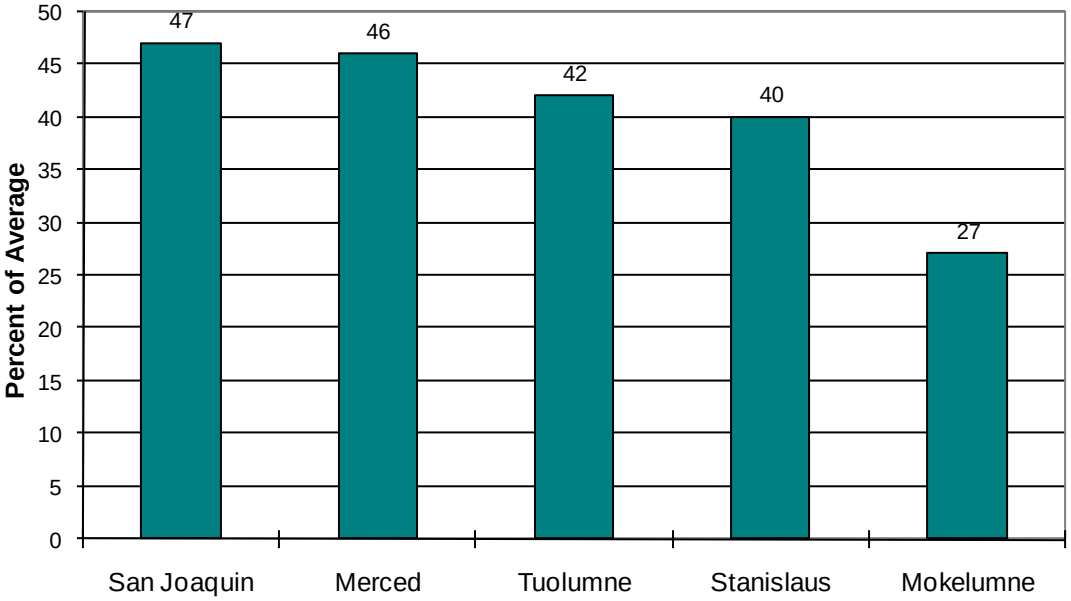


San Joaquin Basin

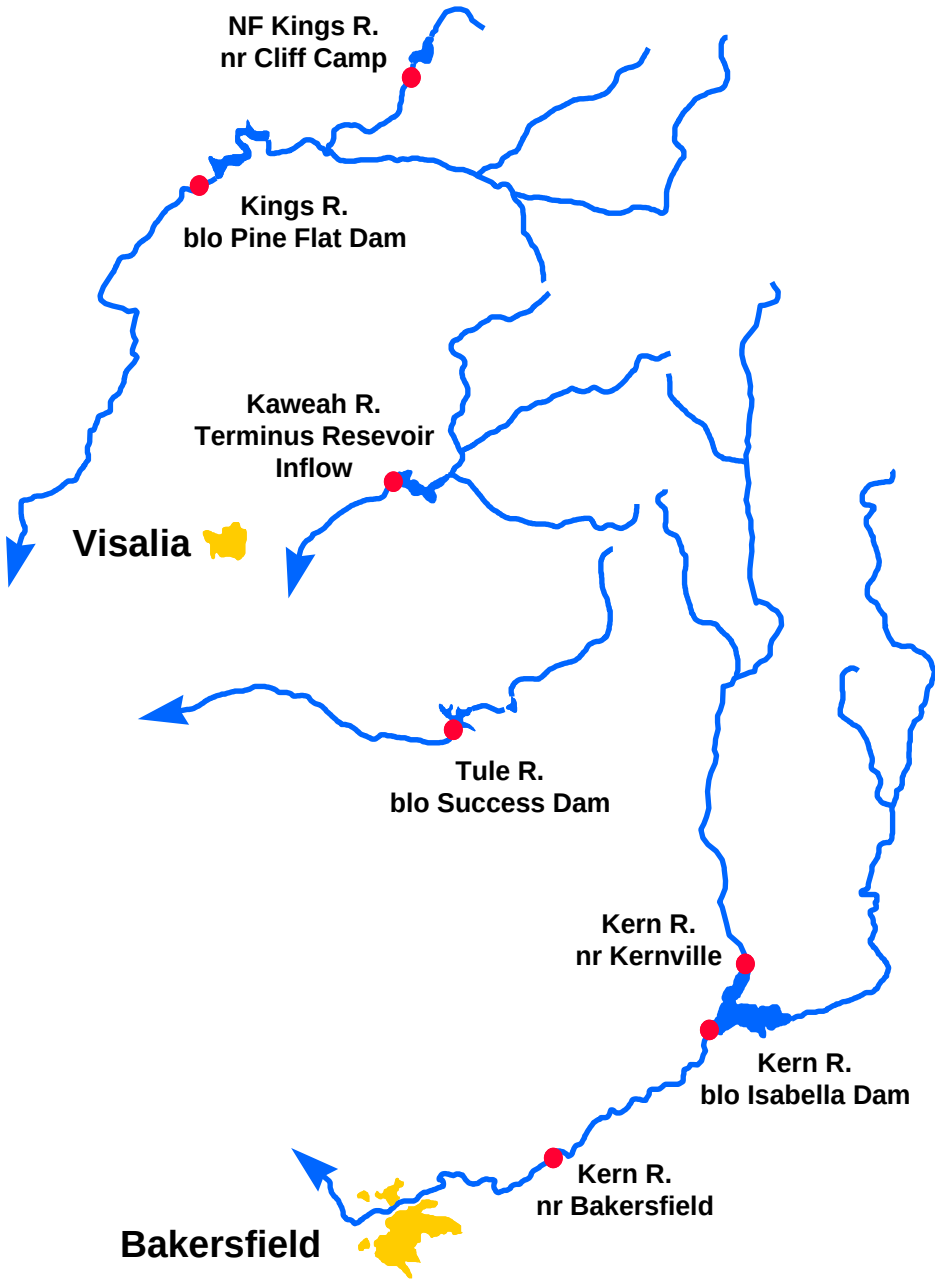
Basin Reservoir Storage
Contents of Major Reservoirs in % of Average



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
TULARE LAKE BASIN						
Kern River						
Kernville, nr	Apr-Jul	430	108	545	315	398*
Isabella Dam, blo	Apr-Jul	530	110	700	390	480
Bakersfield, nr	Apr-Jul	550	112	725	390	490
Tule River						
Success Dam	Apr-Jul	70	106	115	25	66
Kaweah River						
Terminus Dam	Apr-Jul	330	114	430	230	290
North Fork Kings River						
Cliff Camp, nr	Apr-Jul	260	108	330	170	240*
Kings River						
Pine Flat Dam, blo	Apr-Jul	1240	99	1700	1000	1250

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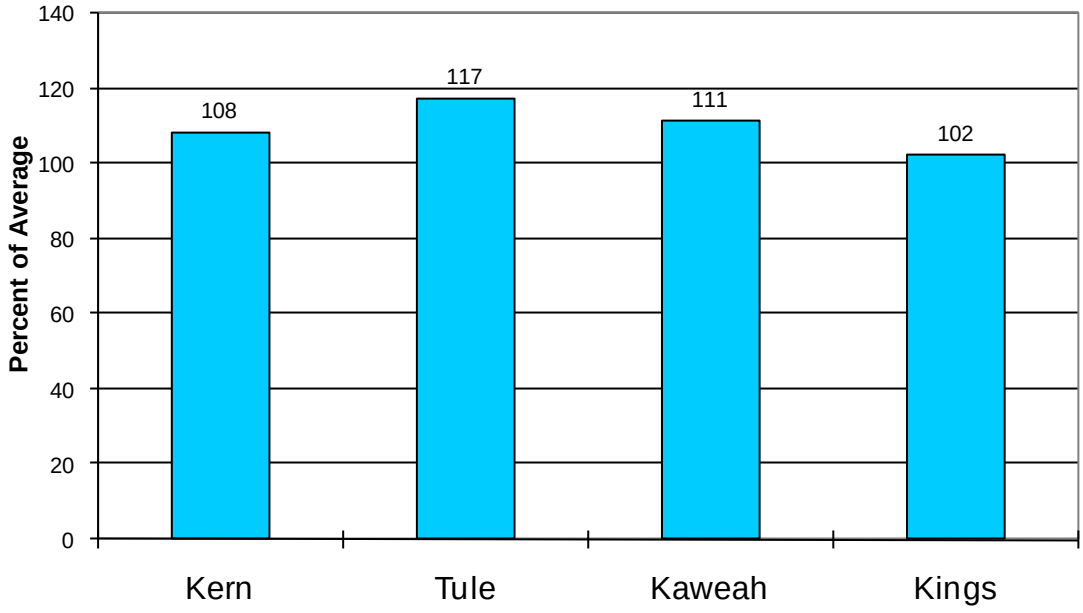
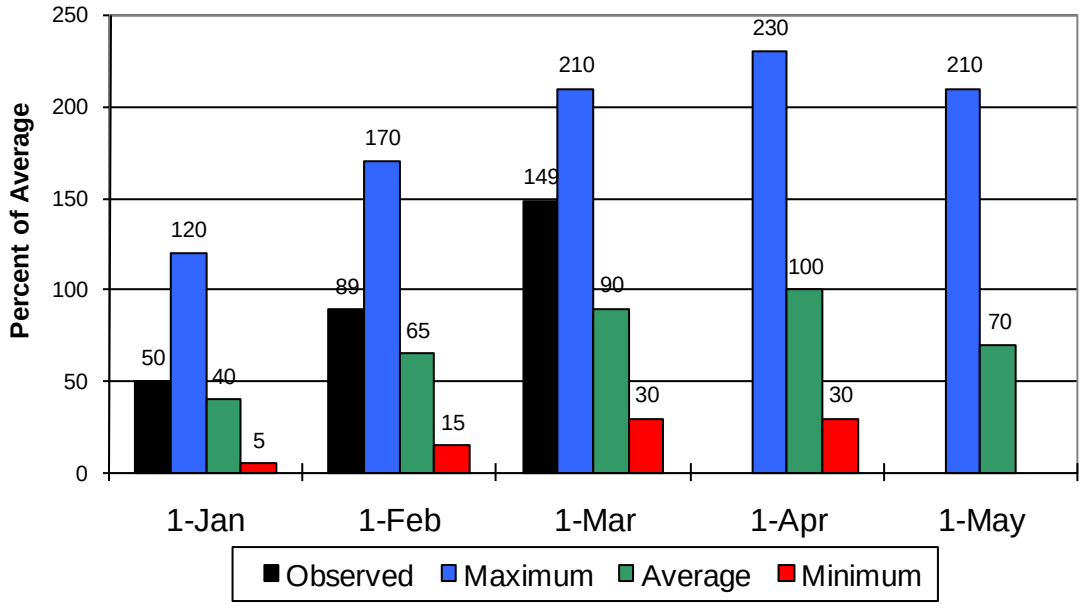
Tulare Lake Basin

Seasonal Precipitation
October 1 to Date



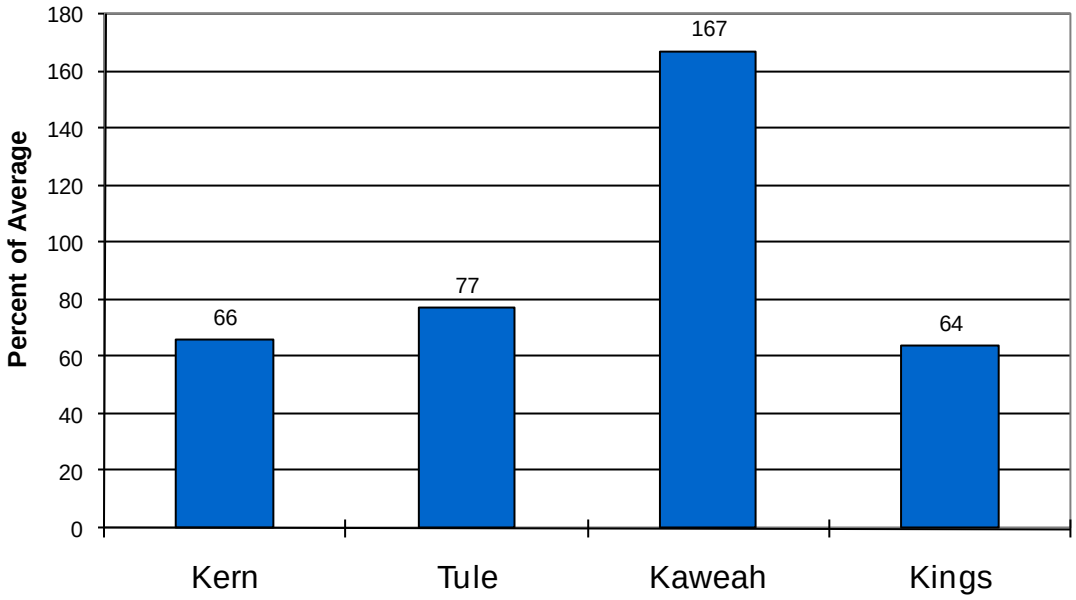
Seasonal Basin Snowpack
Water Content in % of April 1 Average



Tulare Lake Basin

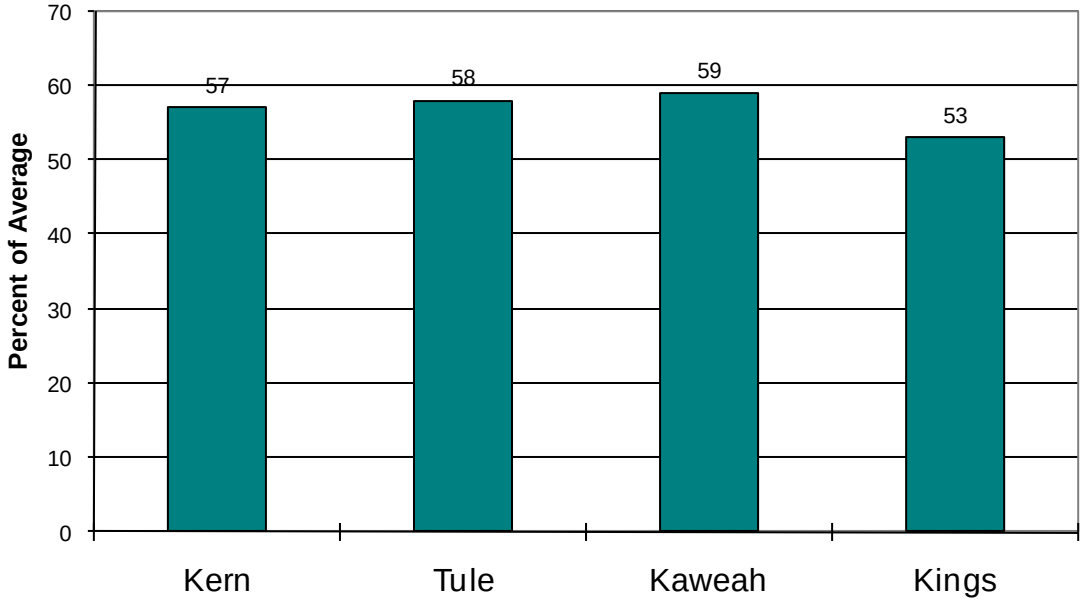
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

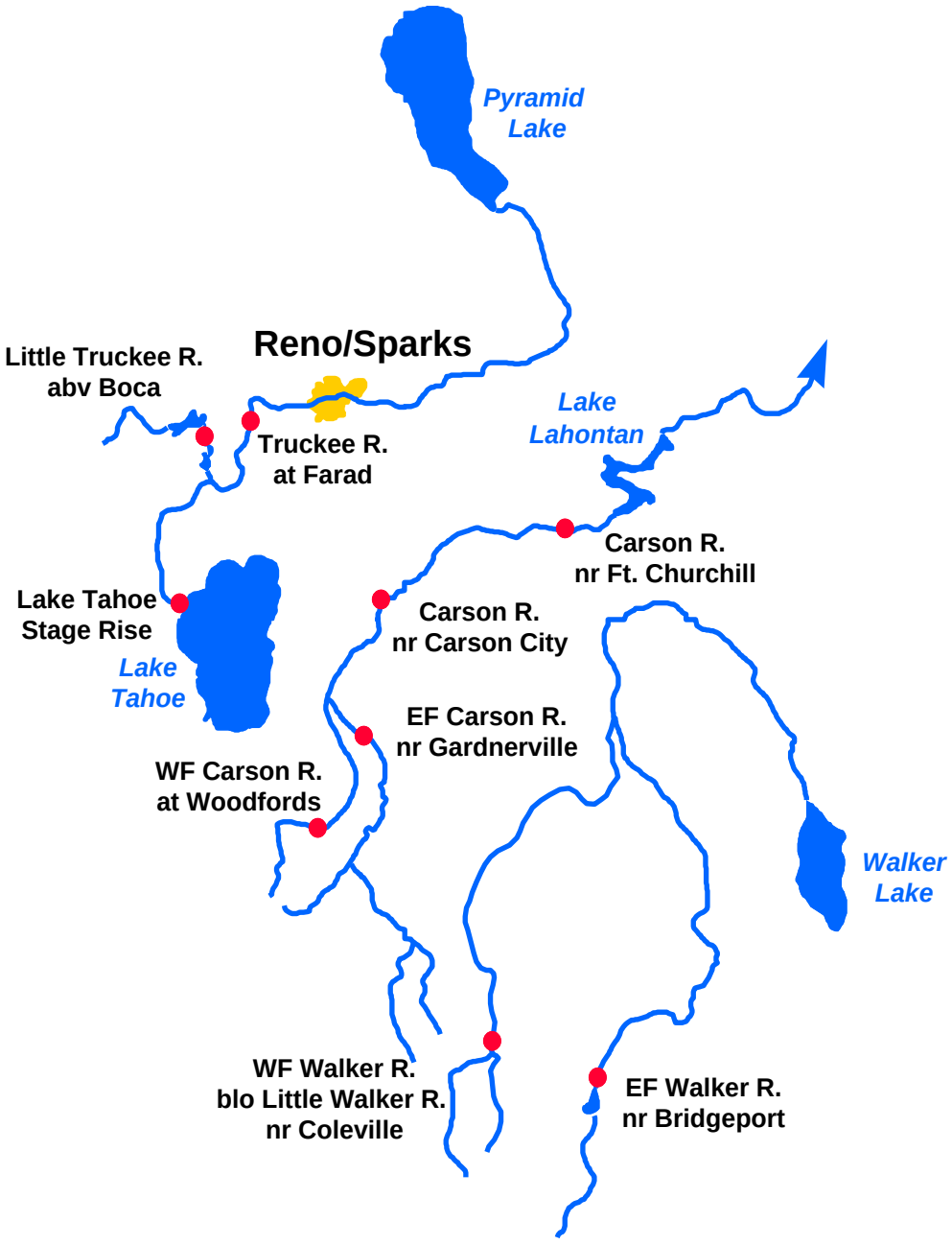


Seasonal Basin Runoff

October 1 to Date



East Side Sierra Nevada Basins

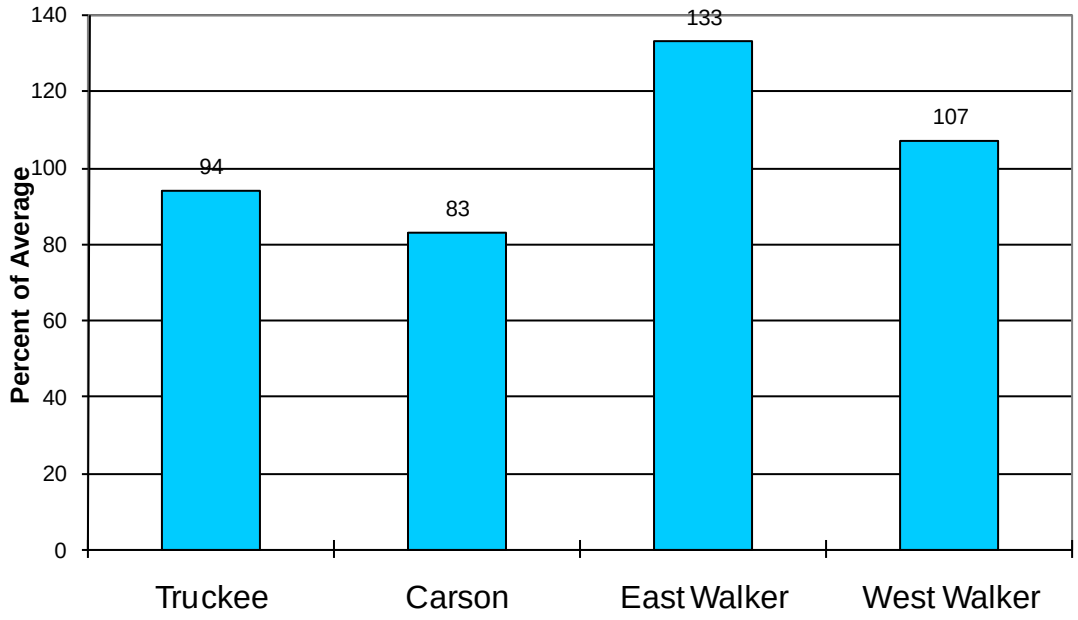


Water Supply Forecasts

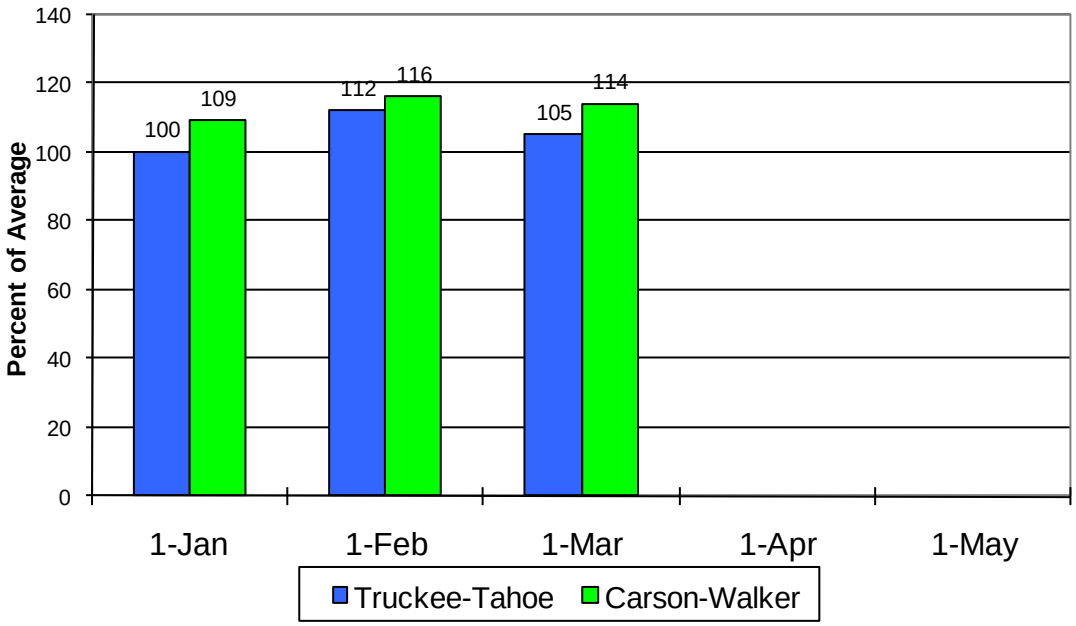
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Truckee River						
Truckee River						
Lake Tahoe Stage Rise	Apr-High	1.35	98	1.88	0.80	1.38
Little Truckee River						
Stampede Dam	Apr-Jul	76	95	138	48	80
Truckee River						
Farad	Apr-Jul	250	96	355	144	260
Carson River						
East Fork Carson River						
Gardnerville, nr	Apr-Jul	195	103	240	135	189
West Fork Carson River						
Woodfords	Apr-Jul	57	102	72	39	56
Carson River						
Carson City, nr	Apr-Jul	195	104	285	128	188
Fort Churchill, nr	Apr-Jul	195	110	260	125	178
Walker River						
East Walker River						
Bridgeport, nr	Apr-Aug	75	112	99	51	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	165	106	197	120	156

East Side Sierra Nevada Basins

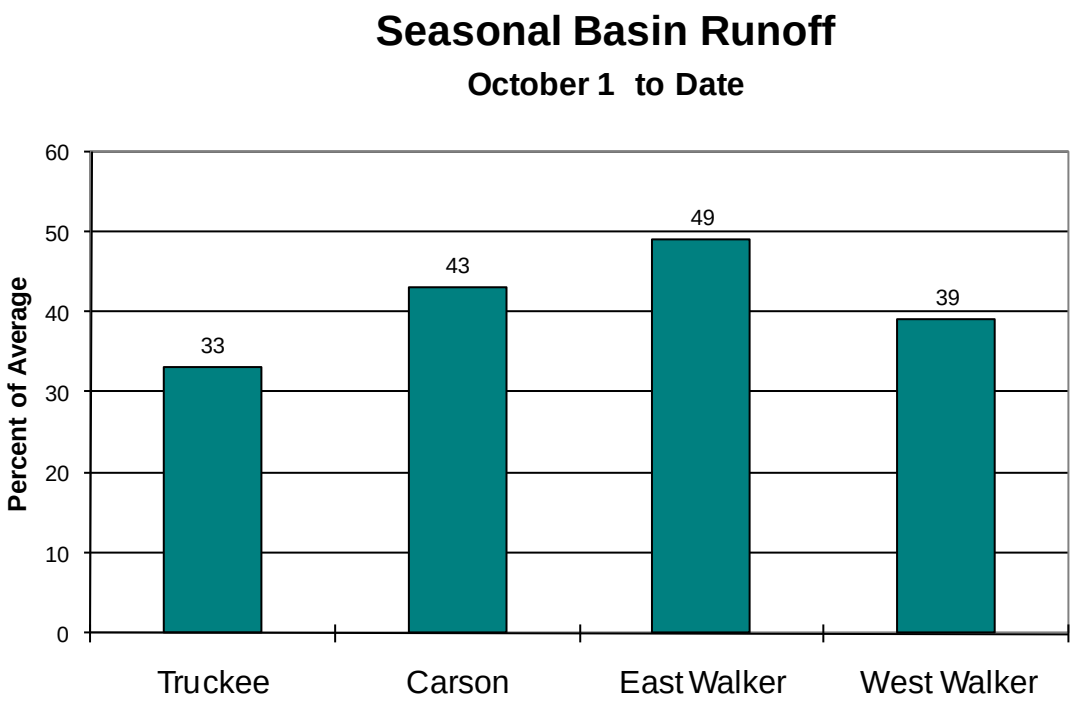
Seasonal Basin Precipitation
October 1 to Date



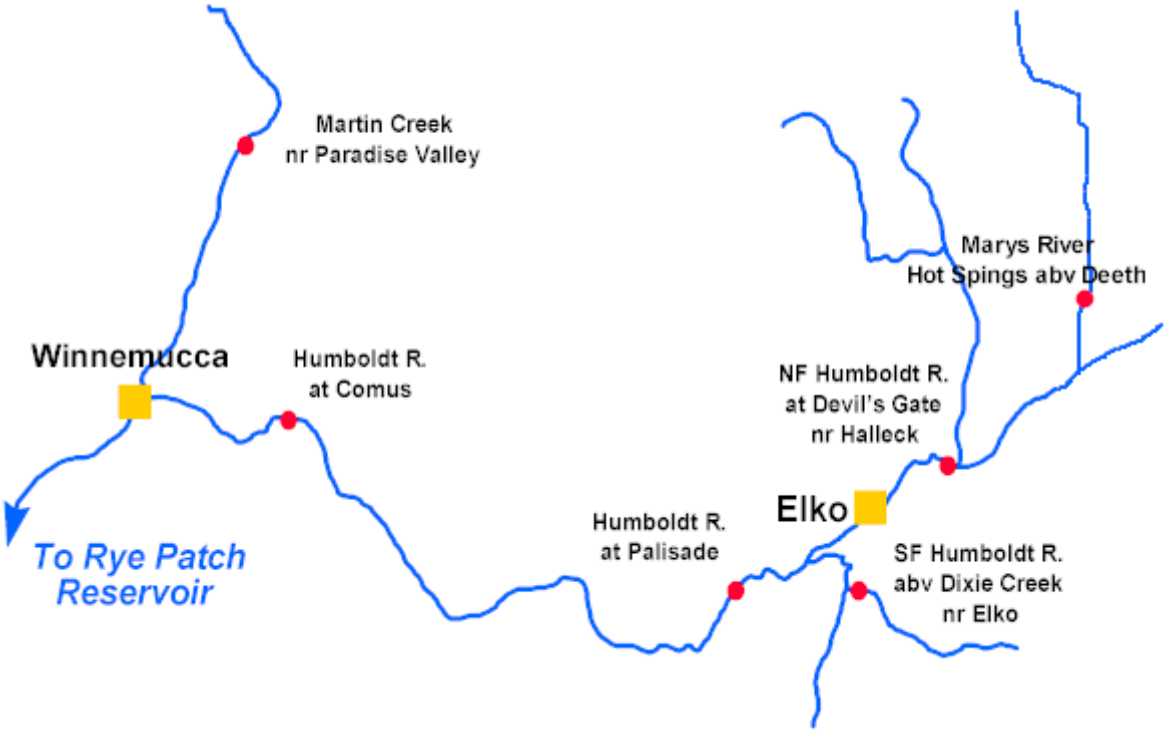
Basin Snowpack
% of Average SWE to Date



East Side Sierra Nevada Basins



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
North Fork Humboldt River						
Devils Gate, at, Halleck, nr	Apr-Jul	34	100	50	18.0	34*
South Fork Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	85	112	140	30	76
Marys River						
Hot Springs, abv, Deeth, nr	Apr-Jul	39	100	55	20	39
Humboldt River						
Elko, nr	Apr-Jul	150	97	240	60	154
Palisade	Apr-Jul	250	100	360	140	250
Comus	Apr-Jul	220	98	340	100	225
Imlay, nr	Apr-Jul	195	104	360	30	188
Martin Ck						
Paradise Vly, nr	Apr-Jul	20	107	31	9.0	18.7

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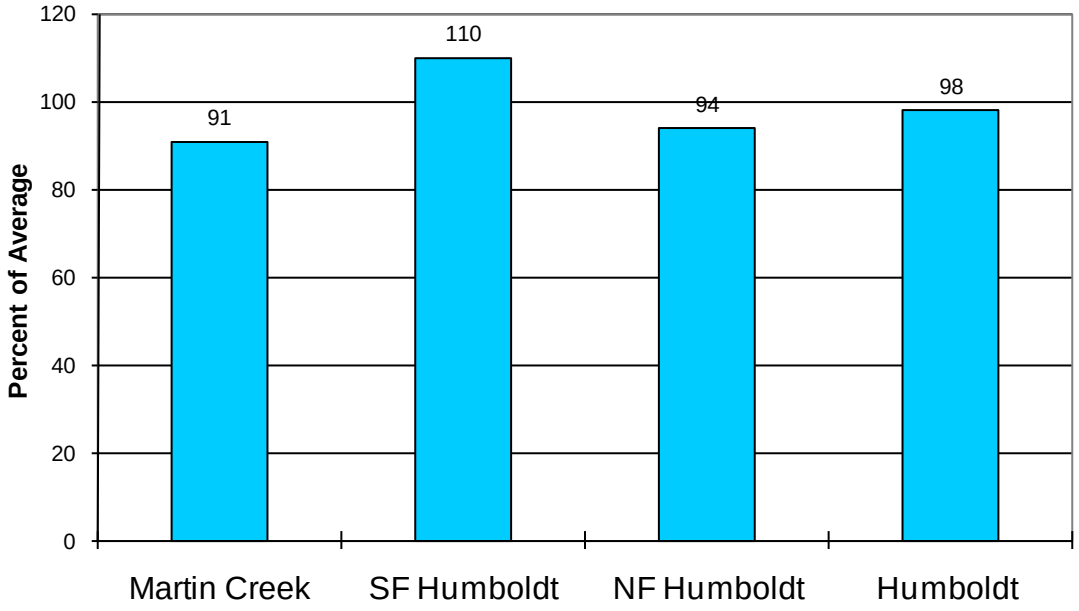
Humboldt River Basin

Seasonal Basin Precipitation
October 1 to Date



Basin Snowpack
% of Average SWE to Date