

WATER SUPPLY OUTLOOK



CALIFORNIA AND NORTHERN NEVADA

**FEBRUARY
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 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, 2005

January has been a month of contrasts. A series of storm systems brought major flooding to Southern California's coastal areas and substantial snow accumulation in the Sierra Nevada during the early portion of the month. Generally drier conditions prevailed thereafter; generating concerns of a repeat of last year's dry ending of the snow season after a wet start. While the water supply outlook is excellent for most basins at the present time, events during the next two months should bring this year's water supply picture into sharper focus.

January precipitation amounts show a pronounced gradient from north to south in California and Nevada. Monthly amounts ranged from 45 percent in the Upper Klamath Lake basin to 95 percent for the American River basin. January percentages then jump dramatically from 135 percent for the Stanislaus basin to 185 percent for the Kern. The Truckee basin received 120 percent of the monthly average, the Carson 130, and the Walker 190 percent. In Nevada, the Humboldt basin received about 120 percent of the January average.

The early January storms were cold resulting in good snow accumulation with more substantial amounts falling in the central and southern Sierra basins. The California Department of Water Resources reports that snow packs are about 140 percent of the February 1st average in the northern Sierra Nevada basin, 150 percent in the central and 195 percent in the southern Sierra. The April 1st average stands at 90 percent for the northern Sierra, 95 percent for the central and 115 percent for the southern Sierra. Snow packs in the Tahoe-Truckee are at 150 percent of the average-to-date, the Carson-Walker at 175 percent and the Humboldt basin at 110 percent. The upper Klamath basin snow pack stands at about 60 percent of the average-to-date.

The monthly runoff average was greatest in the San Joaquin and Tulare Lake basins ranging from 105 percent for the Mokelumne to 169 percent for the Kern. January runoff was only in the 50 to 70 percent range in the Trinity and Sacramento basins. The upper Klamath basin received only 52 percent of the January average while the Humboldt River at Palisade received 55 percent.

Stored water in the Sacramento basin was at 95 percent of average for the date, the San Joaquin at 113 percent, and the Tulare Lake basin at 72 percent. East-side Sierra reservoirs were at 66 percent of average. The lake level at Lake Tahoe rose back above the natural rim during the middle of the month to its current elevation of 6223.07 feet. This represents only 2 percent of the average-to-date. Storage at Lahontan Reservoir in Nevada stands at 70 percent while Rye Patch Reservoir is at only 25 percent of the average-to-date. Storage at Upper Klamath Lake is about 100 percent of average.

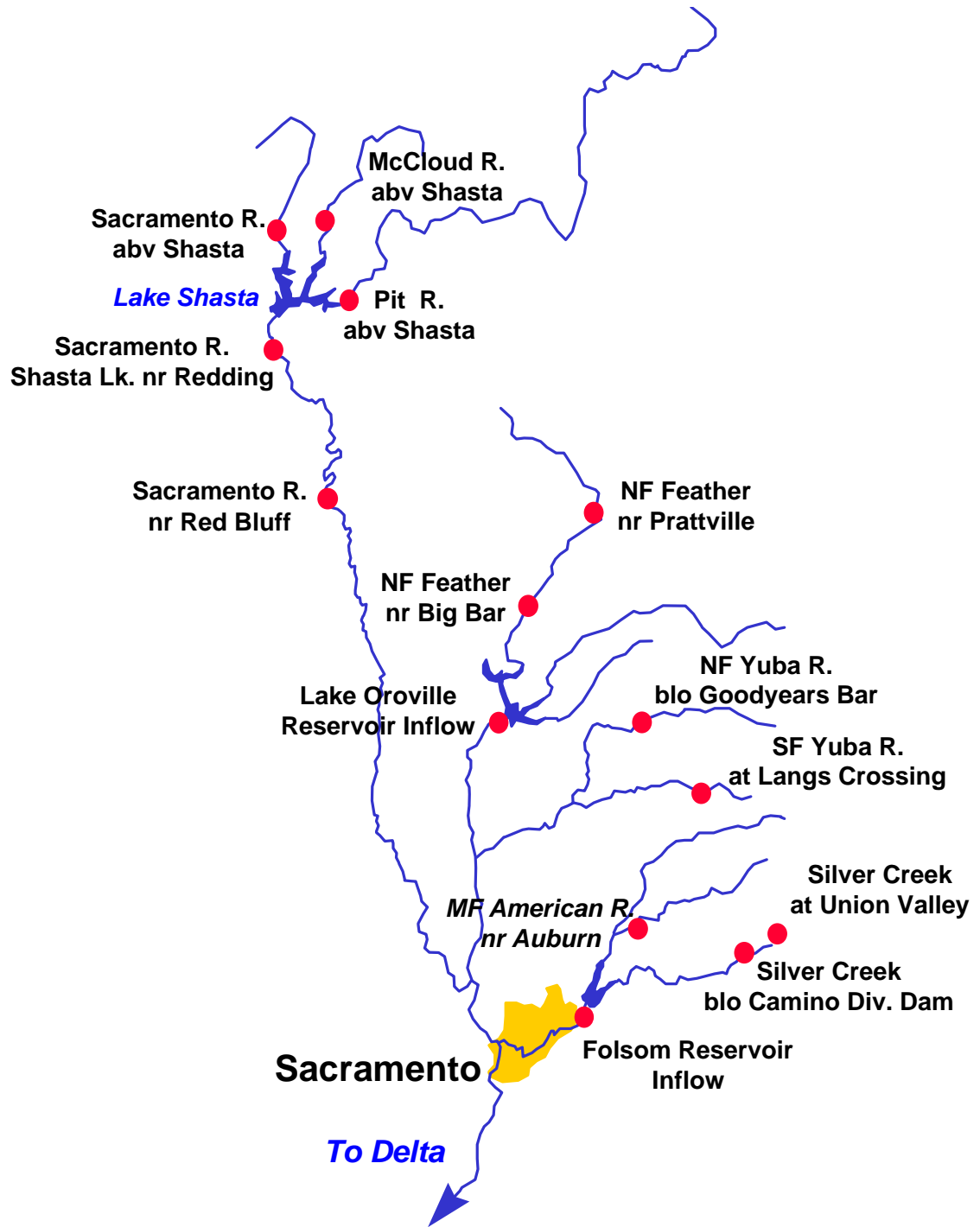
The spring runoff projections show most basins above average, the main exceptions being the Klamath and Pit River watersheds. The April through July runoff forecasts vary from 79 percent for the Pit River inflow to greater than 135 percent for the upper San Joaquin, Tuolumne and Kaweah basins. Forecasts range from 121 to 149 percent for east side Sierra forecast points and 91 to 125 percent in the Humboldt basin. The March through September forecast for the Upper Klamath Lake inflow is 64 percent.

Mid-month updates are scheduled for selected east side Sierra forecast points and the upper Klamath inflow. These will be posted on the CNRFC web page.

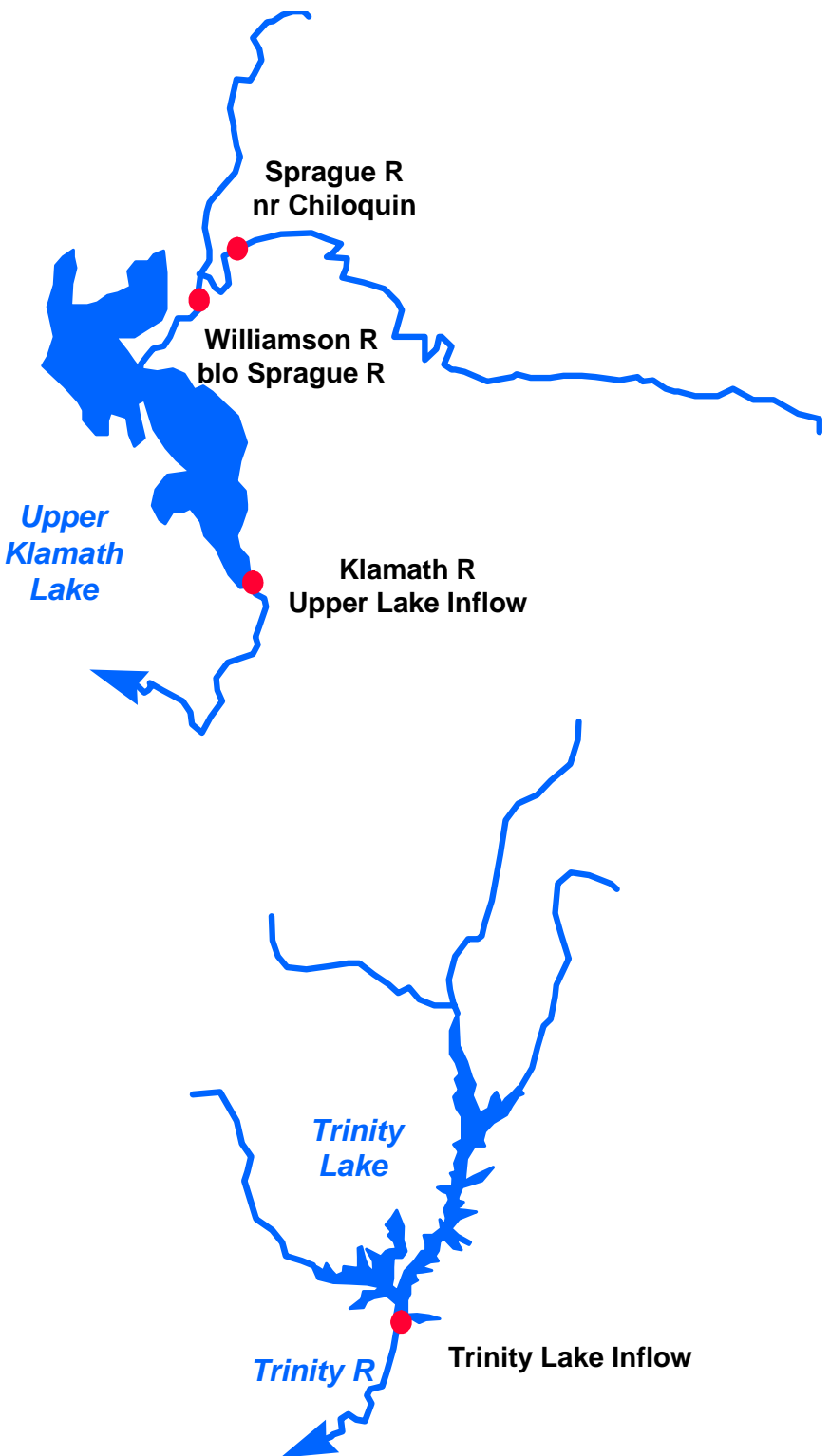
The Water Supply Outlook is available in pdf format on the World Wide Web at:

<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 %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF				
COASTAL BASINS											
Williamson River Sprague, blo	Mar-Sep	330	65	385	275	505					
Sprague River Chiloquin, nr	Mar-Sep	185	61	230	140	305					
Upper Klamath Falls River Inflow	Mar-Sep	460	64	520	395	715					
Lost River Gerber Reservoir Inflow	Feb-Jul	24	51	33	15.0	47					
Clear Lake Reservoir Inflow	Feb-Jul	55	52	78	31	105					
Scott River Fort Jones, nr	Apr-Jul	175	97	250	100	181					
Trinity River Trinity Lake Inflow	Apr-Jul	640	101	930	435	635					
Trinity River - Inflow at Lewiston Lake Distribution (kAF)											
Exceedence											
<u>Probability</u>	<u>Oct-Jan</u>	<u>Feb</u>	<u>Mar</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%	251	90	115	150	185	75	25	10	5	435	906
50%	251	160	210	220	250	130	40	15	10	640	1286
10%	251	280	360	320	335	220	55	20	15	930	1856

SACRAMENTO RIVER BASIN

SACRAMENTO RIVER ABOVE BEND BRIDGE

Pit River Montgomery Ck, nr	Apr-Jul	850	79	965	730	1070	
Mccloud River Shasta Lk, abv	Apr-Jul	390	105	525	255	370	
Sacramento River Delta	Apr-Jul	300	103	440	160	290	
Shasta Lake, Redding, nr	Apr-Jul	1700	95	2310	1090	1790	
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	2270	93	3200	1350	2440	

FEATHER RIVER ABOVE OROVILLE RESERVOIR

NF Feather River Prattville, nr	Apr-Jul	270	81	360	180	333*	
Big Bar	Apr-Jul	900	94	1300	510	962*	
Feather River Oroville Reservoir Inflow	Apr-Jul	1600	91	2240	960	1760	

Water Supply Forecasts

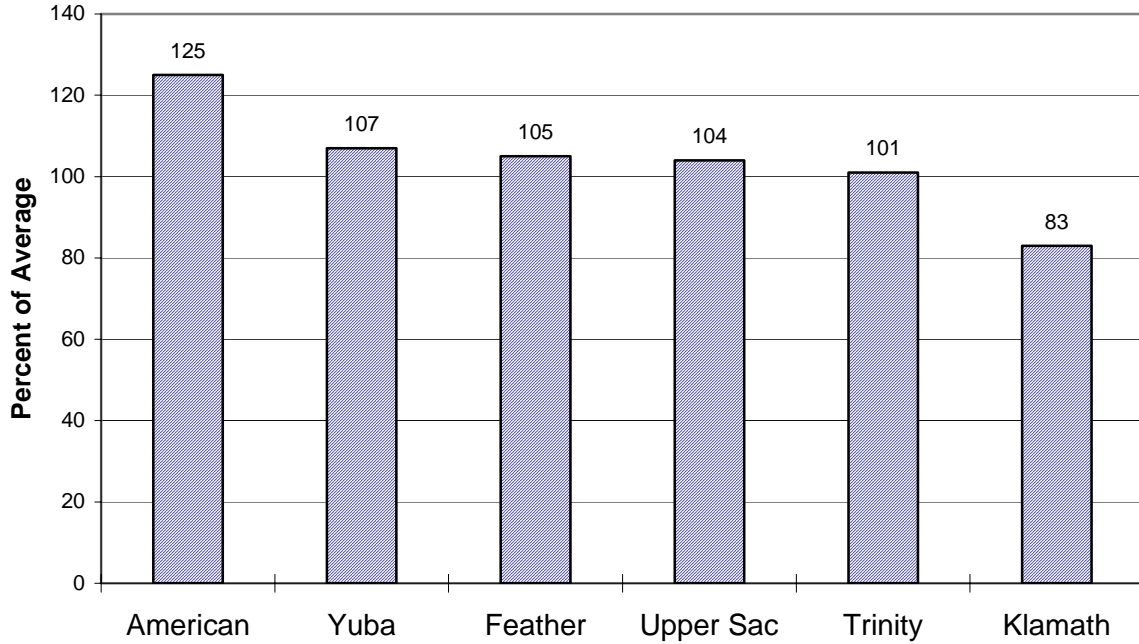
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
YUBA RIVER ABOVE SMARTVILLE						
North Yuba River						
Goodyears Bar, blo	Apr-Jul	270	99	380	160	273*
South Yuba River						
Langs Crossing	Apr-Jul	235	104	330	140	225*
Yuba River						
Smartville, nr	Apr-Jul	1000	101	1380	630	995
AMERICAN RIVER ABOVE FOLSOM RESERVOIR						
MF American River						
Auburn, nr	Apr-Jul	550	112	780	320	490*
Silver Ck						
Union Valley	Apr-Jul	115	117	160	70	98*
Camino Dam, blo	Apr-Jul	190	120	270	110	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	1450	118	2050	850	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

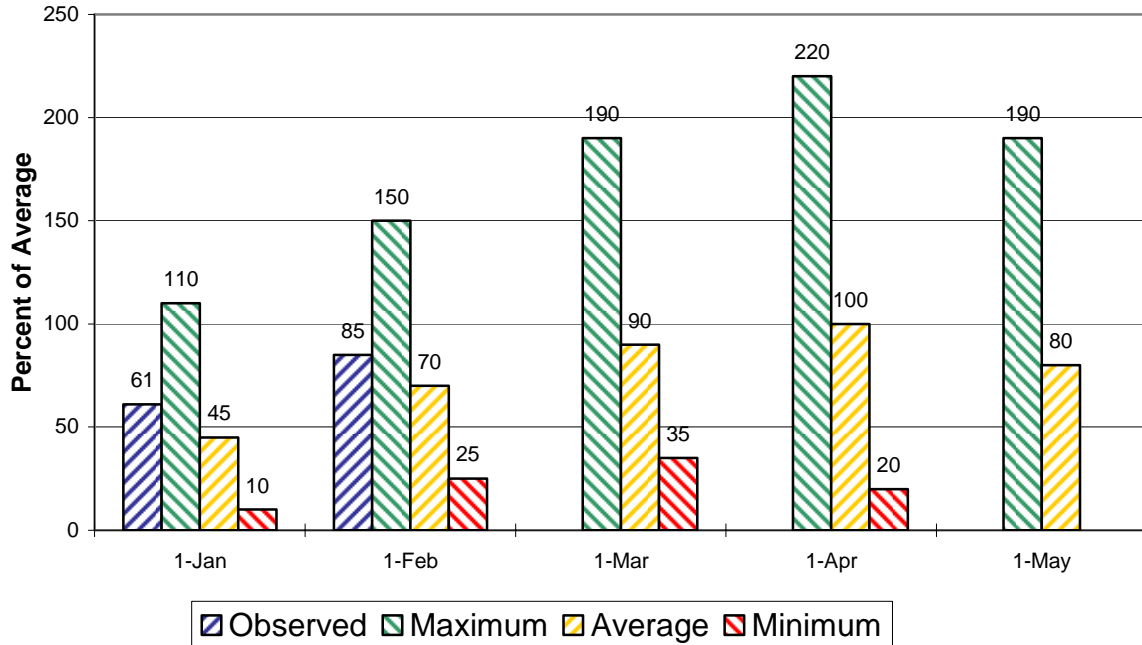
Seasonal Basin Precipitation

October 1 to Date



Seasonal Basin Snowpack

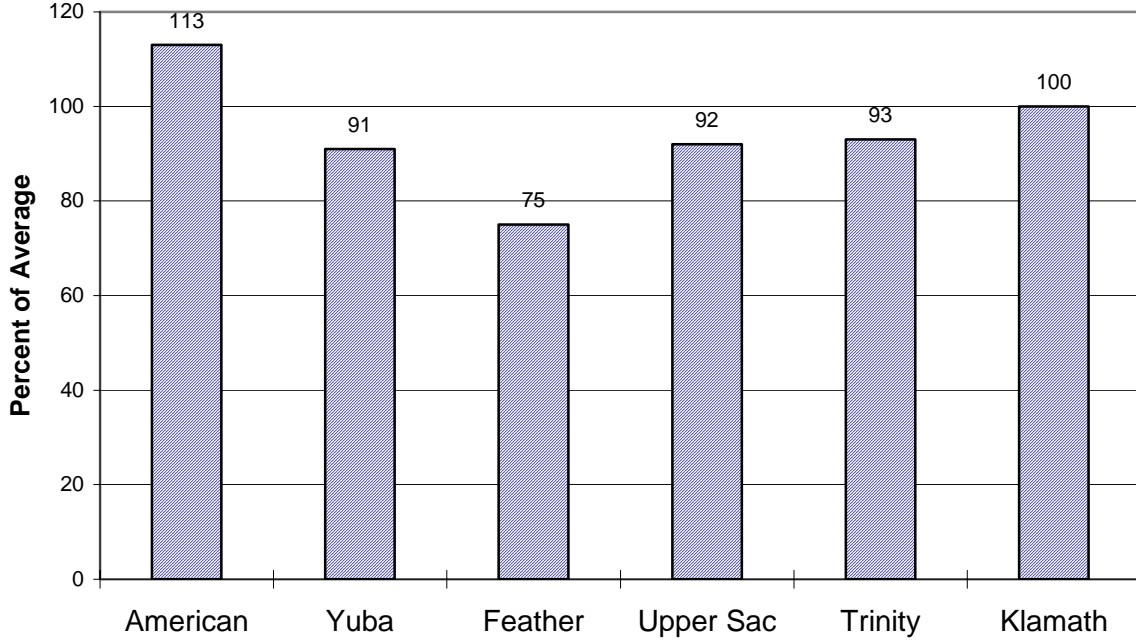
Water Content in % of April 1 Average



Sacramento/Trinity/Klamath River Basins

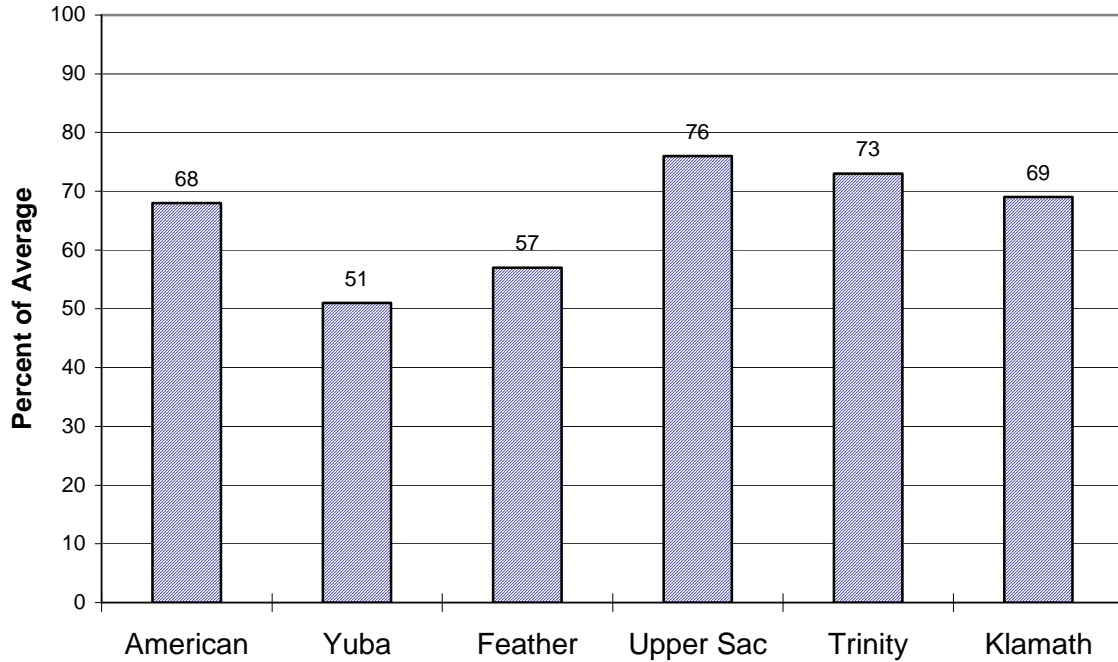
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average



Seasonal Basin Runoff

October 1 to Date



San Joaquin Basin



Water Supply Forecasts

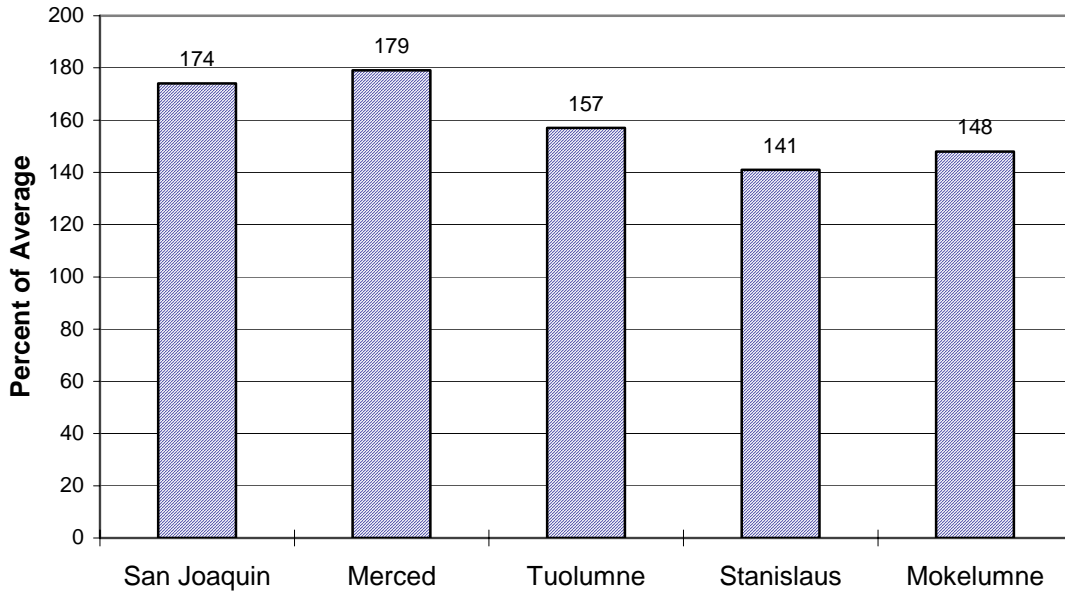
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
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SF San Joaquin River						
Hooper Ck, blo, Florence Lk, nr	Apr-Jul	270	141	350	188	192*
San Joaquin River						
Millerton Lk	Apr-Jul	1730	136	2250	1250	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	480	133	640	320	360*
Merced Falls, blo	Apr-Jul	860	133	1190	530	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	820	138	1030	610	596*
La Grange, nr	Apr-Jul	1700	138	2170	1230	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	430	134	575	285	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	900	129	1230	620	695
NF Mokelumne River						
West Point	Apr-Jul	480	115	715	245	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	540	117	750	330	460
Cosumnes River						
Michigan Bar	Apr-Jul	130	106	230	50	123

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San Joaquin Basin

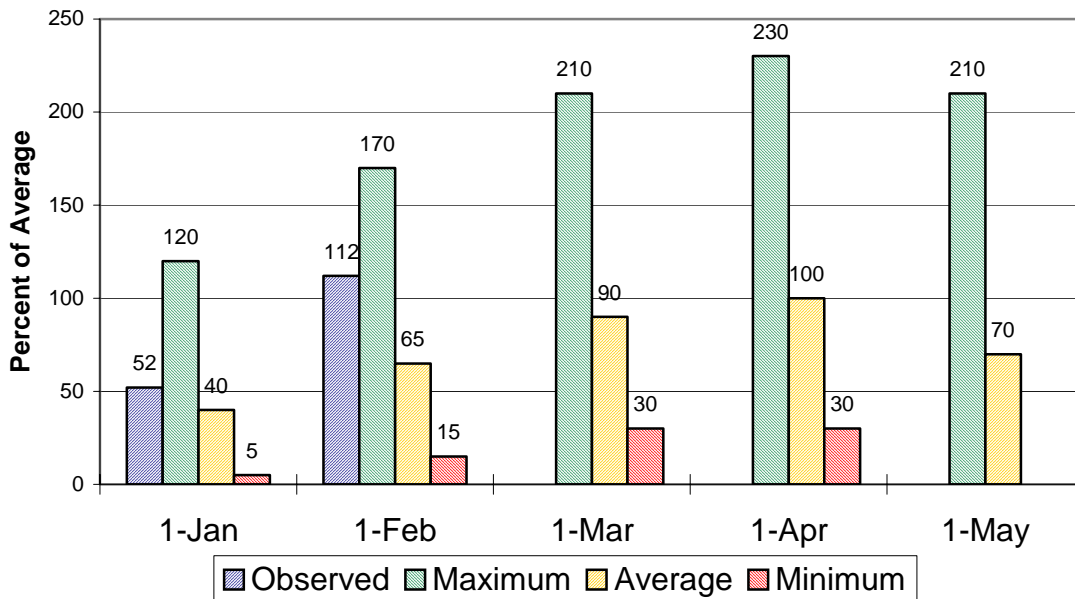
Seasonal Basin Precipitation

October 1 to Date



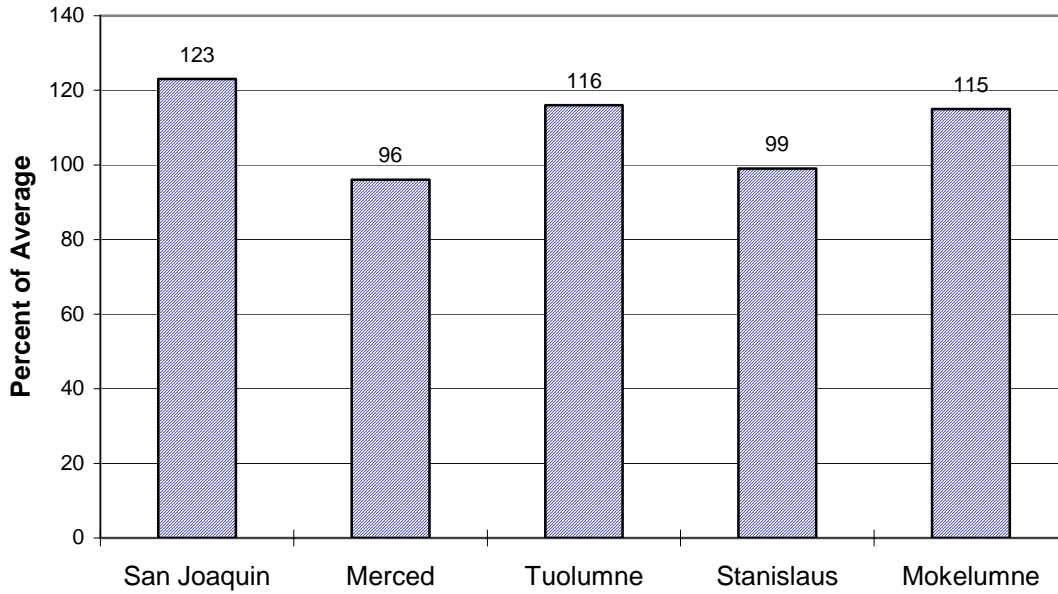
Seasonal Basin Snowpack

Water Content in % of April 1 Average

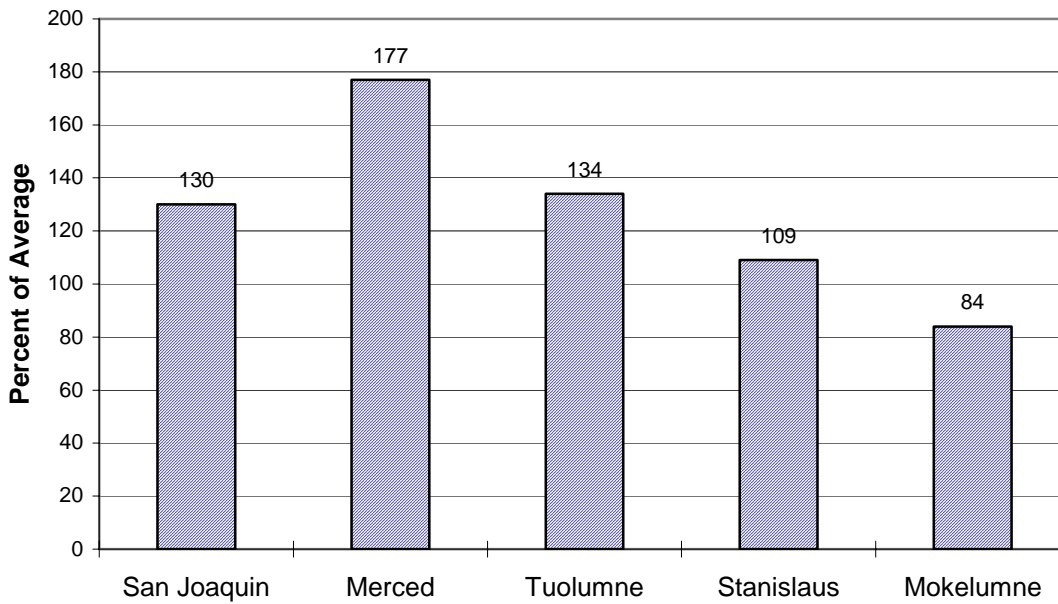


San Joaquin Basin

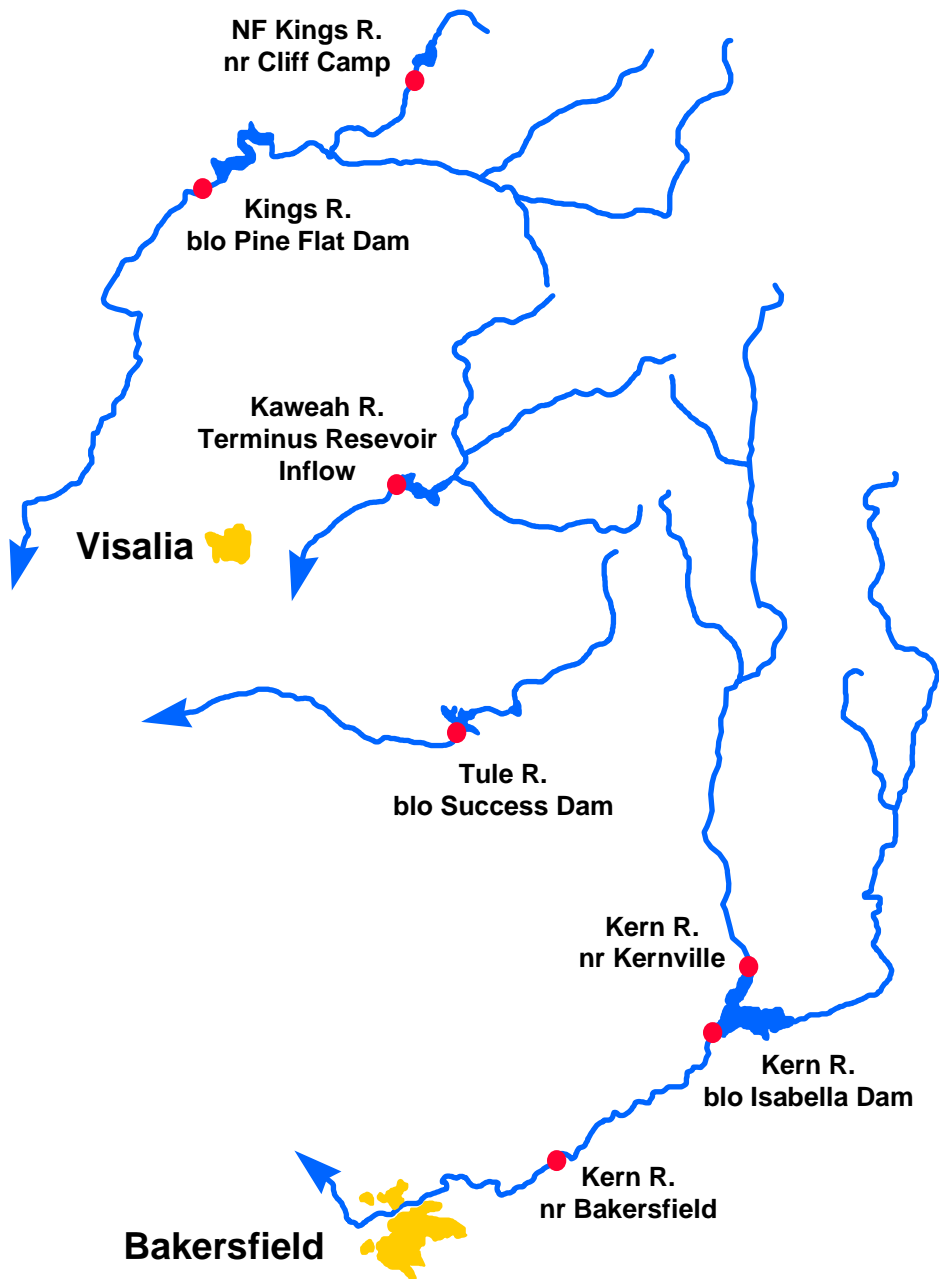
Basin Reservoir Storage Contents of Major Reservoirs in % of Average



Season Basin Runoff October 1 to Date



Tulare Basin

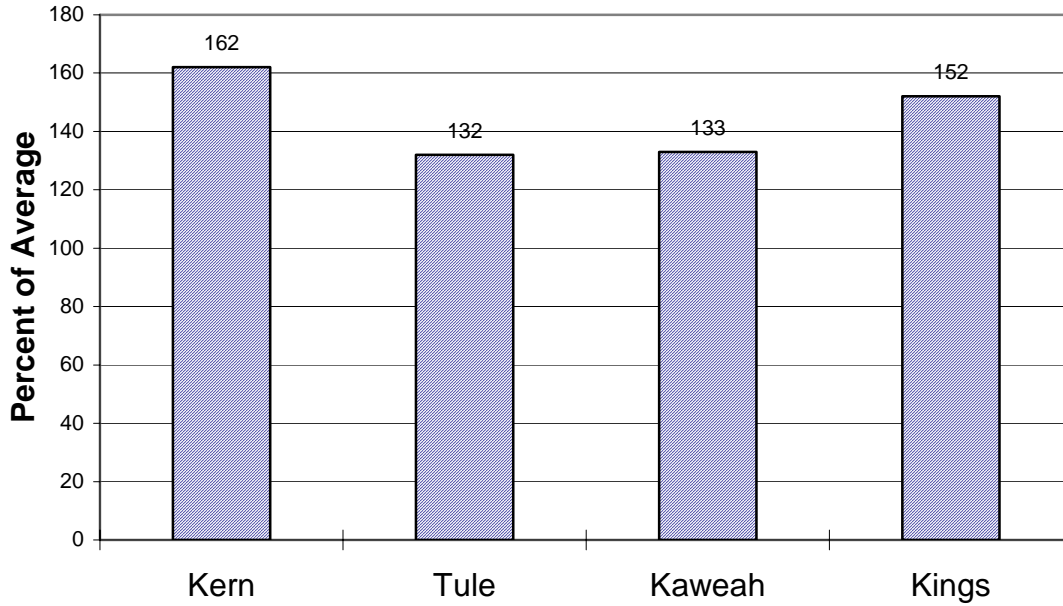


Water Supply Forecasts

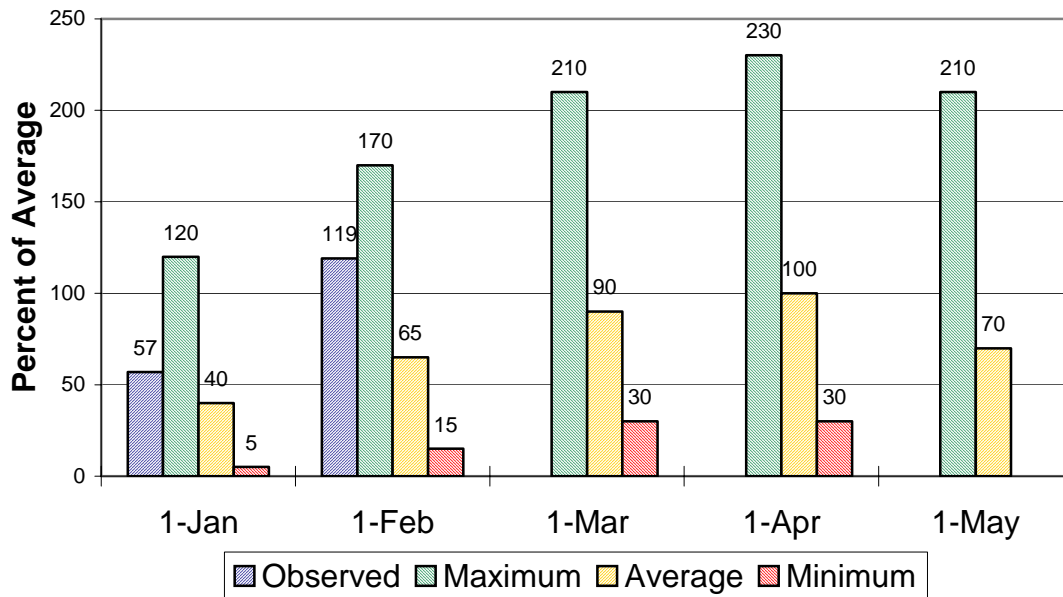
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
Kern River						
Kernville, nr	Apr-Jul	510	128	700	320	398*
Isabella Dam, blo	Apr-Jul	640	133	905	375	480
Bakersfield, nr	Apr-Jul	660	135	945	375	490
Tule River						
Success Dam	Apr-Jul	80	121	128	32	66
Kaweah River						
Terminus Dam	Apr-Jul	400	138	545	255	290
NF Kings River						
Cliff Camp, nr	Apr-Jul	310	129	425	194	240*
Kings River						
Pine Flat Dam, blo	Apr-Jul	1630	130	2170	1090	1250

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Tulare Lake Basin Seasonal Precipitation October 1 to Date



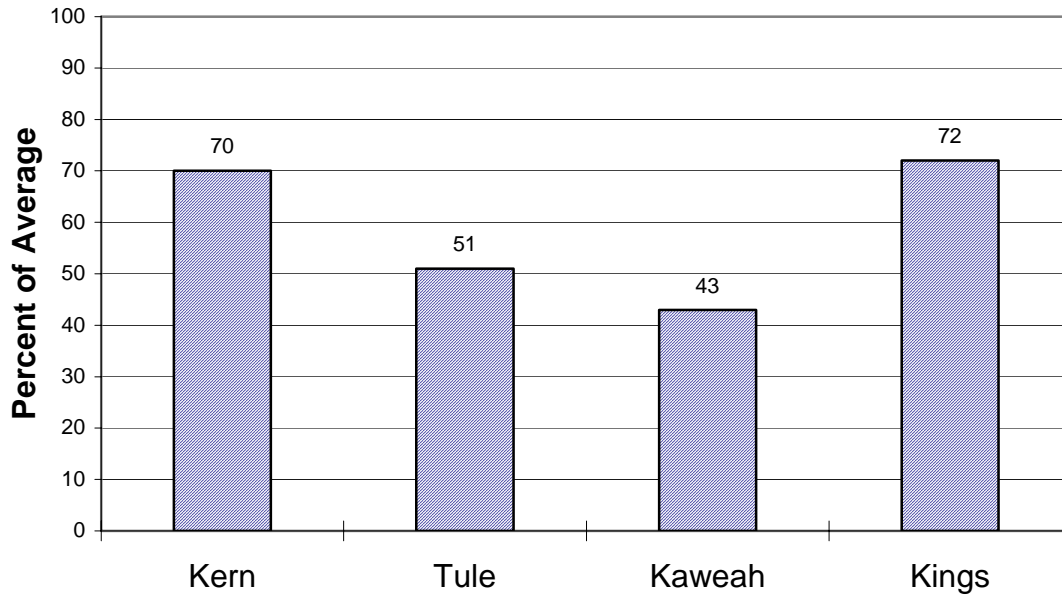
Seasonal Basin Snowpack Water Content in % of April 1 Average



Tulare Lake Basin

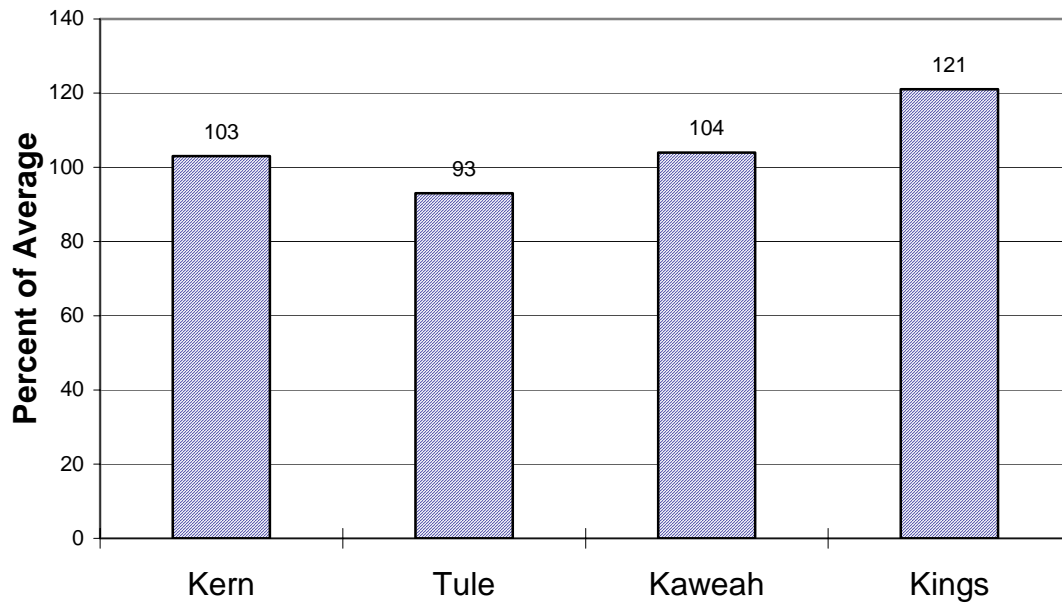
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

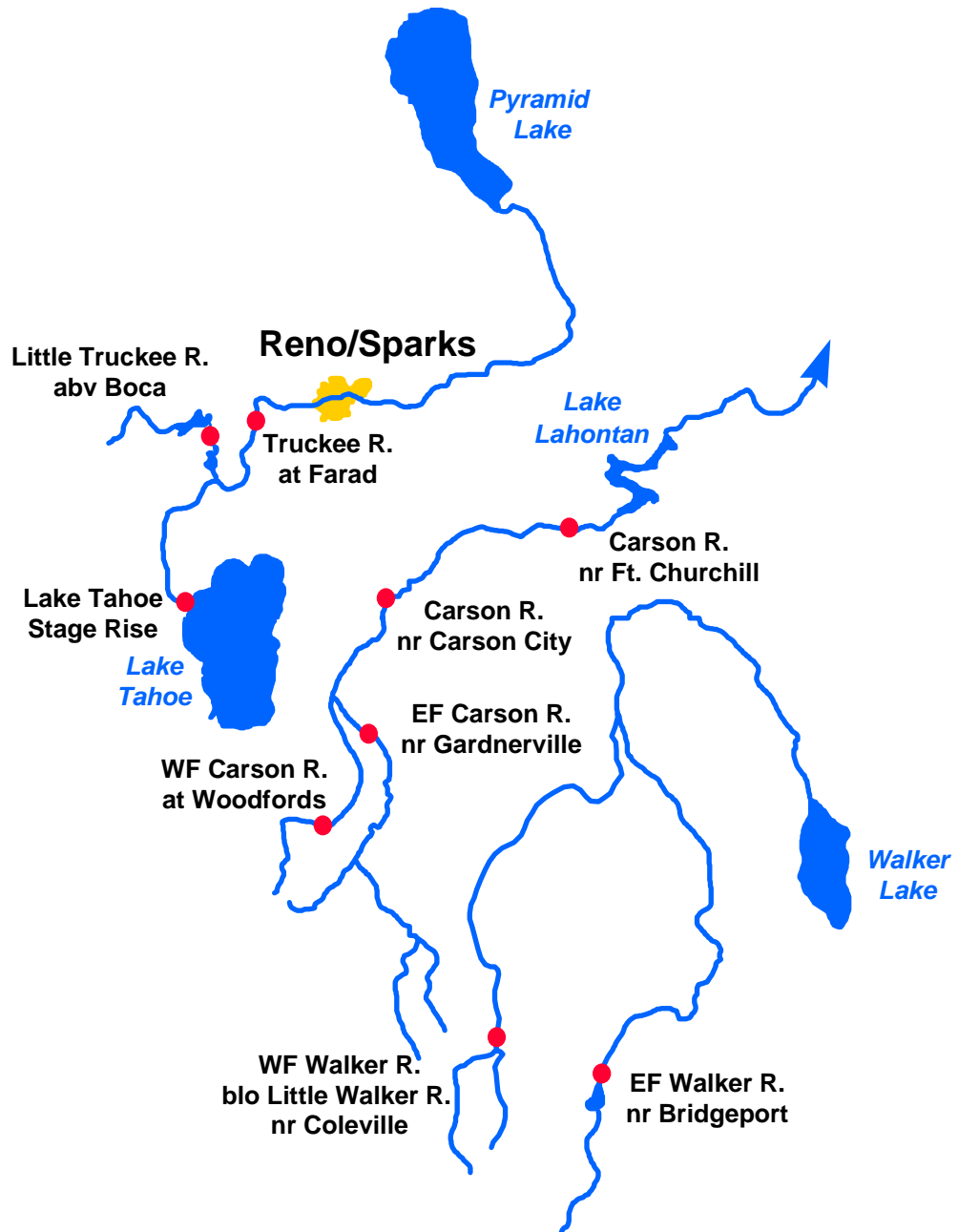


Seasonal Basin Runoff

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
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Truckee River

Truckee River Lake Tahoe Stage Rise	Apr-High	1.70	123	2.4	1.04	1.38
Ltl Truckee River Boca Res, abv, Truckee, nr	Apr-Jul	97	121	129	65	80
Truckee River Farad	Apr-Jul	325	125	475	175	260

Carson River

EF Carson River Gardnerville, nr	Apr-Jul	240	127	345	135	189
WF Carson River Woodfords	Apr-Jul	70	125	100	40	56
Carson River Carson City, nr	Apr-Jul	250	133	390	110	188
Fort Churchill, nr	Apr-Jul	255	143	410	100	178

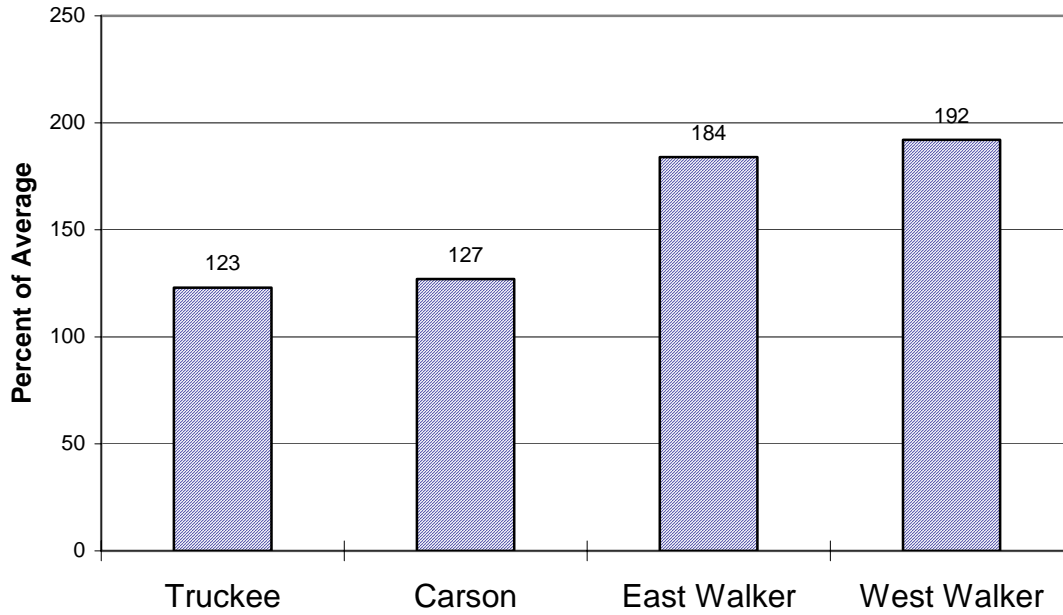
Walker River

East Walker River Bridgeport, nr	Apr-Aug	100	149	149	50	67
West Walker River Ltl Walker, blo, Coleville, nr	Apr-Jul	220	141	315	125	156

East Side Sierra Nevada Basins

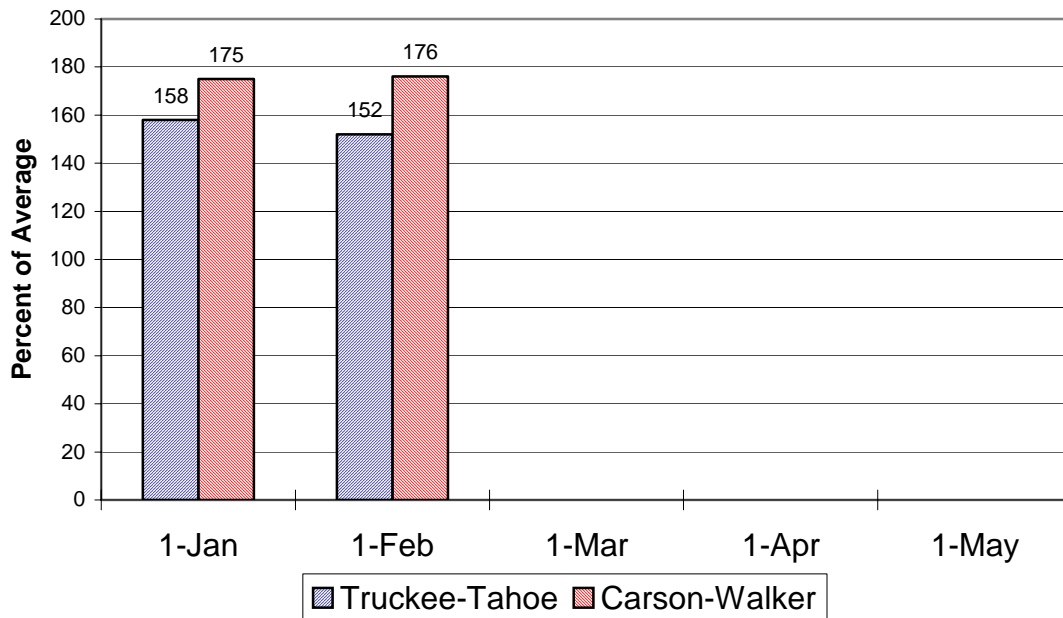
Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

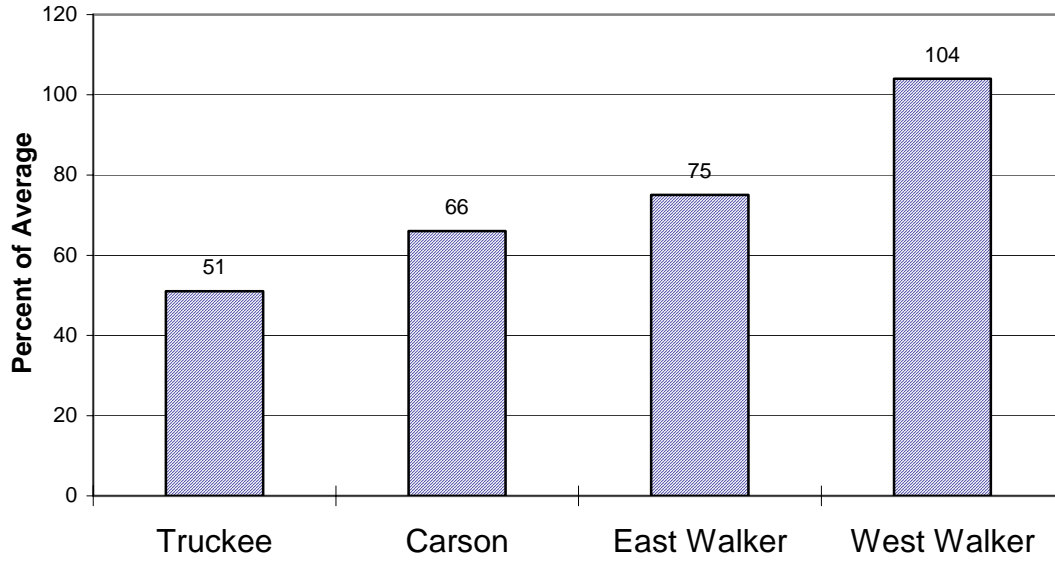
% of Average SWE to Date



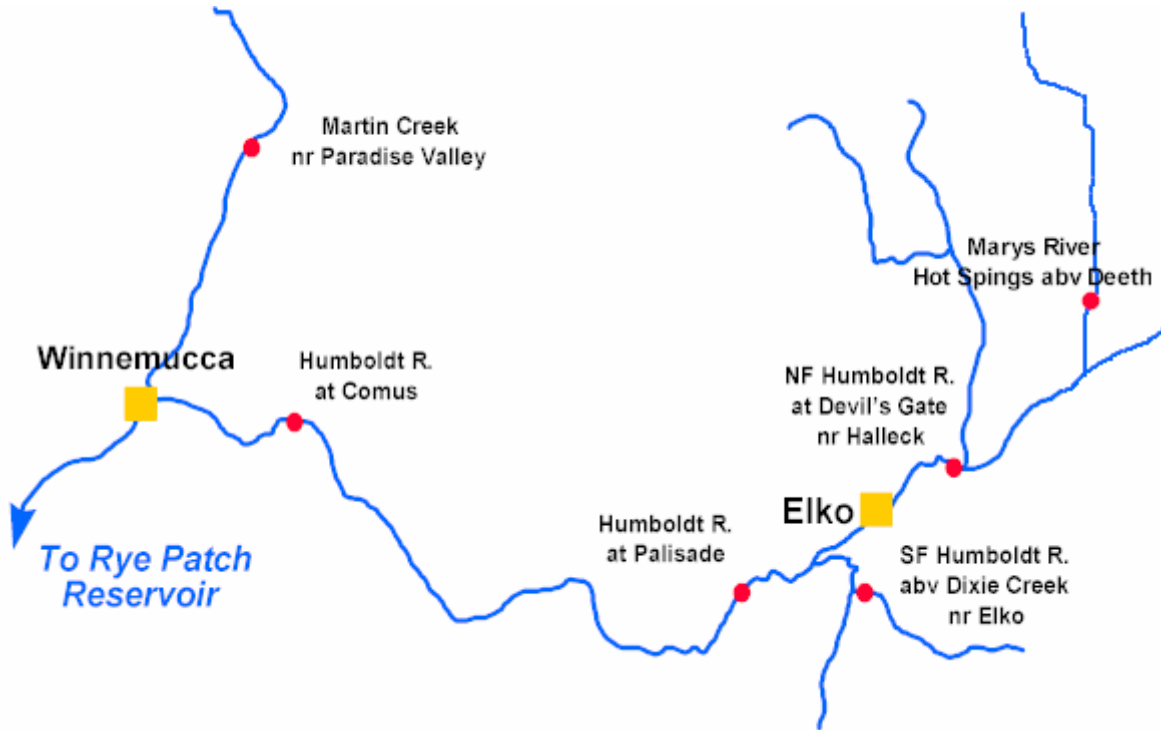
East Side Sierra Nevada Basins

Seasonal Basin Runoff

October 1 to Date



Humboldt River Basin



Water Supply Forecasts

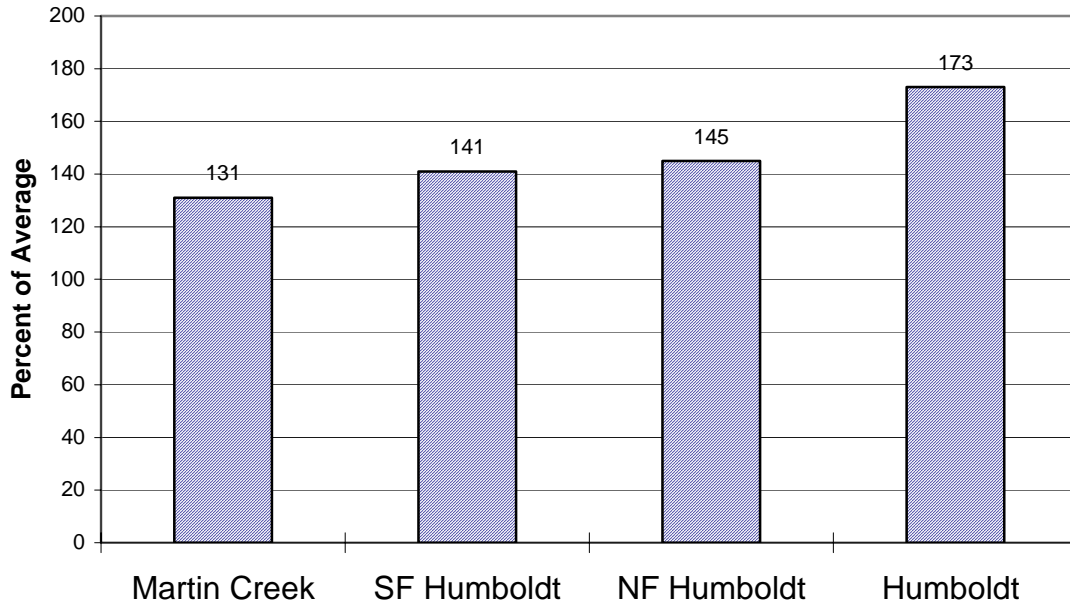
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
NF Humboldt River						
Devl's Gate, at, Halleck, nr	Apr-Jul	40	118	60	20	34*
SF Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	95	125	127	63	76
Marys River						
Hot Springs, abv, Deeth, nr	Apr-Jul	46	118	68	24	39
Humboldt River						
Palisade	Apr-Jul	285	114	450	122	250
Comus	Apr-Jul	270	120	475	63	225
Martin Ck						
Paradise Vly, nr	Apr-Jul	17.0	91	27	7.5	18.7

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Humboldt River Basin

Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

% of Average SWE to Date

