Water Supply Outlook

California and northern Nevada

March 2007

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, 2007

Two distinct periods of stormy weather during February brought much needed rain and snow to many locations in northern and central California and Nevada. However, seasonal precipitation remains below average for most of California and Nevada, much of it due to a dismal January. Reservoir storage remains above average. The March 1st outlook, although improved from last month for most forecast points, still calls for below average spring runoff. With about a quarter of the wet season remaining, significant improvement to this year's water supply picture will be difficult. So far, the beginning of March has been predominantly warm and dry.

The February storms brought average to above average monthly precipitation to northern and central California and Nevada. Good amounts were recorded from the Upper Sacramento basin to the Tuolumne, with monthly averages in the 135 to 160 percent range. The Upper Klamath Lake basin received about 120 percent of the February average. The Truckee River basin recorded 150 percent of the monthly average, the Walker 116, and the Carson 115 percent. It was about 129 percent of the February average for the upper Humboldt River basin in Nevada; the lower Humboldt received 119 percent. Seasonal precipitation averages are still below average for all basins in the region except for the Klamath.

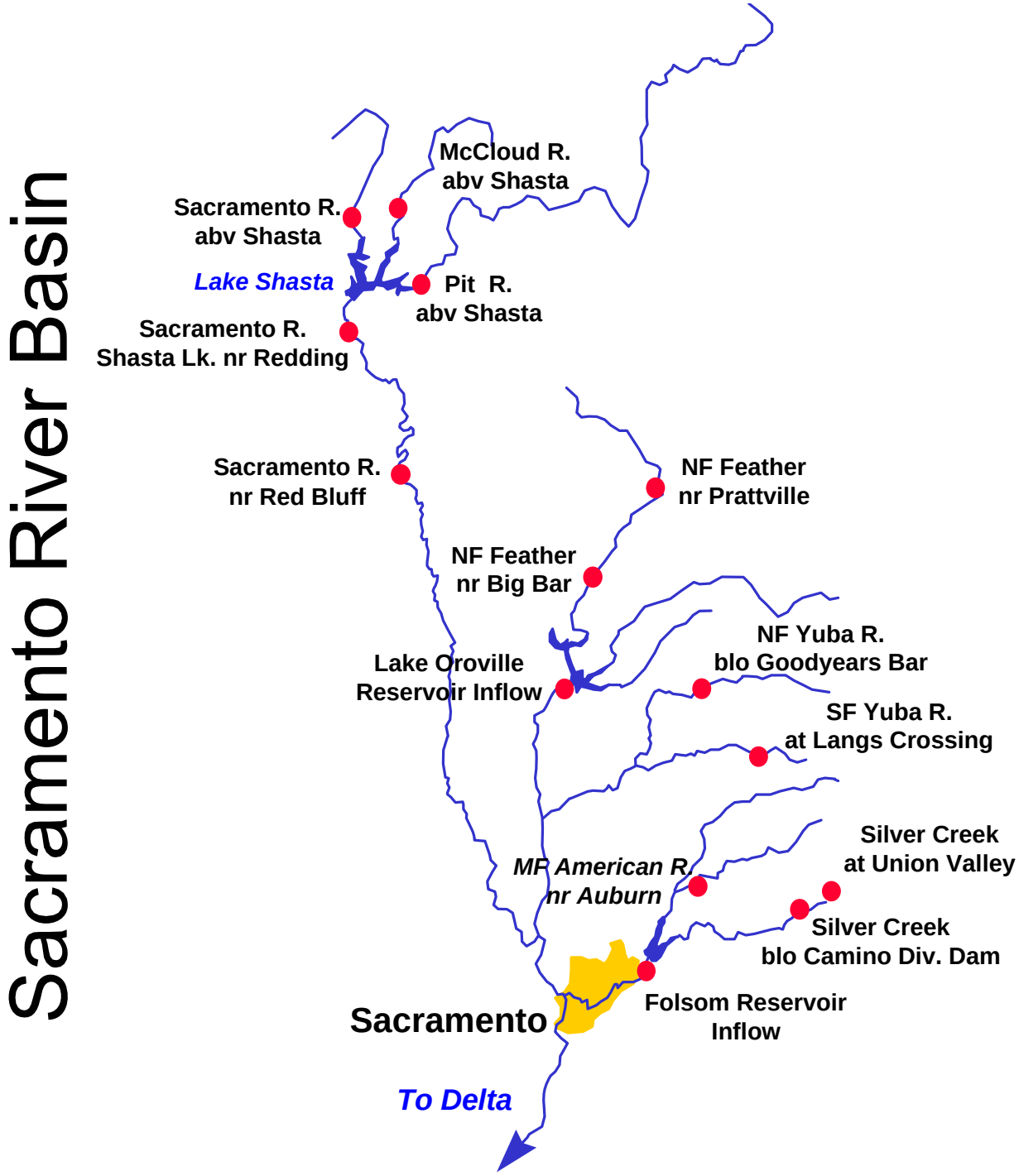
There was significant gain to the water equivalent of the snowpack during the last week of February but not enough to make up for the deficit in January. The California Department of Water Resources reports that the March 1st average is about 70 percent in the Sacramento River region, 68 percent in the San Joaquin and 56 percent in the Tulare Lake region. The April 1st average stands at 61, 59 and 50 percent, respectively. Snowpacks in the Tahoe-Truckee basin are at 67 percent of the average-to-date while the Carson-Walker is at 57 percent. The upper Humboldt basin stands at about 72 percent, the lower Humboldt--63 percent. Snowpacks in the Upper Klamath Lake basin are at 88 percent of the average-to-date.

February runoff was greatest in the Trinity-Sacramento drainage ranging from 69 percent of average for the Folsom Reservoir Inflow to 77 percent for the Yuba River near Smartville. February runoff was in the 36 to 61 percent range for the San Joaquin region and varied from 26 to 41 percent in the Tulare Lake drainage. Monthly runoff for the east side Sierra basins were in the 60 percent range. The Humboldt River at Palisade received an estimated 67 percent of the February average while the Upper Klamath Lake basin recorded 78 percent. Seasonal averages range from below to much below average for watersheds in the region.

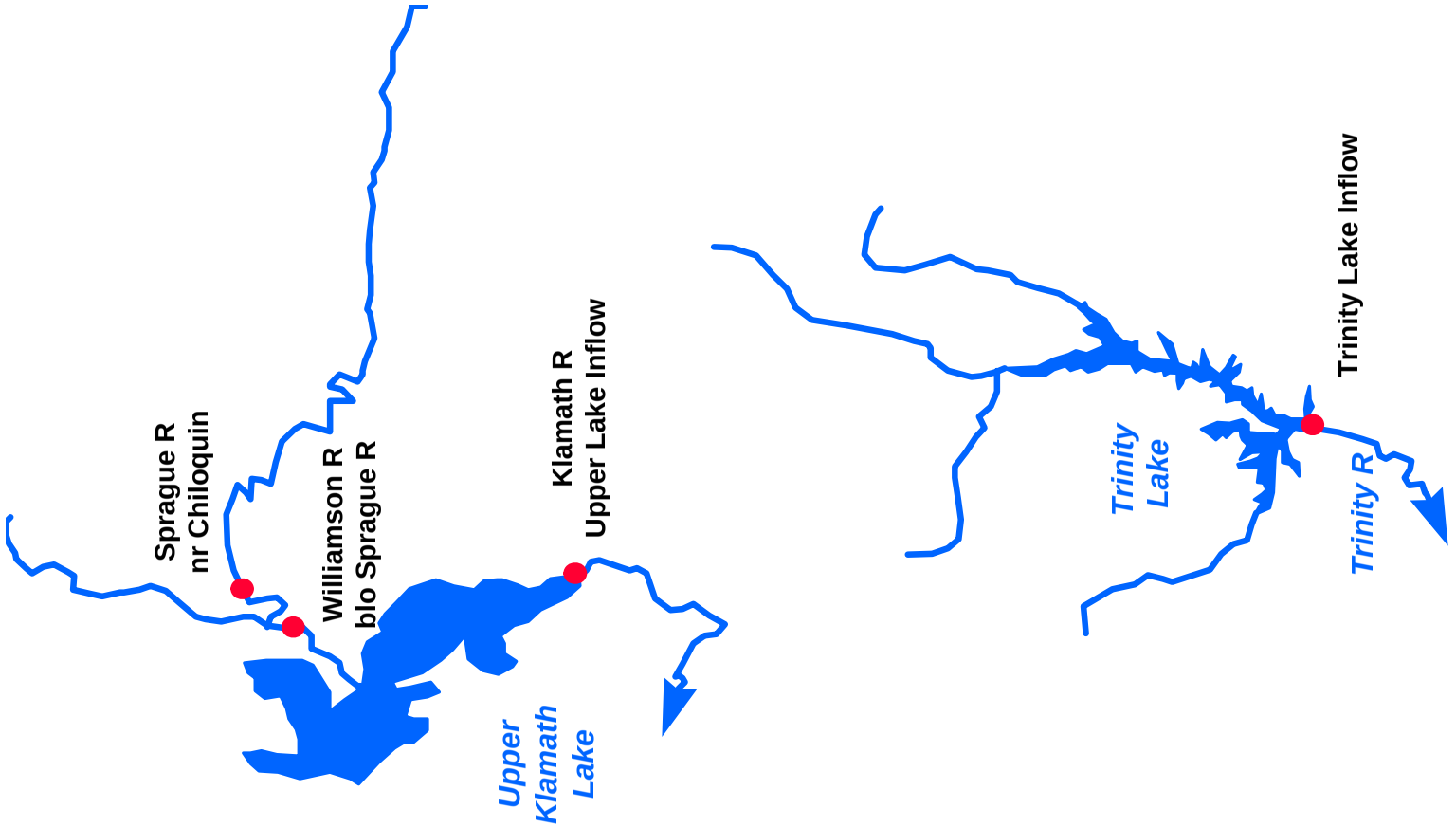
Storage continues to be above average for the bulk of the region's major reservoirs. Reservoir storage in the Sacramento River region was at 113 percent of average for the date, the San Joaquin at 119 percent and the Tulare Lake region at 98 percent. East side Sierra reservoirs are about 124 percent of average. The lake level at Lake Tahoe stood at 6227.17 feet on February 28 and usable storage was 507,600 acre feet or 133 percent of average. Storage at Lahontan Reservoir stands at 104 percent while Rye Patch Reservoir in Nevada is at 153 percent of the average-to-date. Upper Klamath Lake is at 102 percent of the average-to-date.

Spring runoff forecasts range from 40 to 86 percent in California's Central Valley. Forecasts are best for the upper Sacramento River basins and worst in the Tulare Lake region. Streamflow forecasts for the east side Sierra basins vary from 28 percent to 54 percent. The April through July forecasts along the mainstem of the Humboldt River are near 40 percent. The March through September forecast for the Upper Klamath Lake inflow is 81 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	400	79	520	280	505
Sprague River						
Chiloquin, nr	Mar-Sep	235	77	345	124	305
Upper Klamath Falls River						
Inflow	Mar-Sep	580	81	810	350	715
Lost River						
Gerber Reservoir Inflow	Mar-Jul	21	57	34	8.5	37
Clear Lake Reservoir Inflow	Mar-Jul	44	55	74	14.5	80
Scott River						
Fort Jones, nr	Apr-Jul	135	75	220	90	181
Trinity River						
Trinity Lake Inflow	Apr-Jul	480	76	790	330	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%	340	110	130	135	45	20	5	10	330	795
50%	340	155	190	190	70	30	15	10	480	1000
10%	340	190	290	300	160	40	20	15	790	1355

		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	920	86	1400	680	1070
Mccloud River						
Shasta Lk, abv	Apr-Jul	310	84	480	225	370
Sacramento River						
Delta	Apr-Jul	230	79	355	165	290
Shasta Dam	Apr-Jul	1400	78	2150	1050	1790
Bend Bridge, abv, Red Bluff, nr	Apr-Jul	1950	80	3030	1420	2440
FEATHER RIVER ABOVE OROVILLE RESERVOIR						
NF Feather River						
Prattville, nr	Apr-Jul	180	54	340	115	333*
Big Bar	Apr-Jul	530	55	1030	340	962*
Feather River						
Oroville Reservoir Inflow	Apr-Jul	990	56	1920	660	1760

Water Supply Forecasts

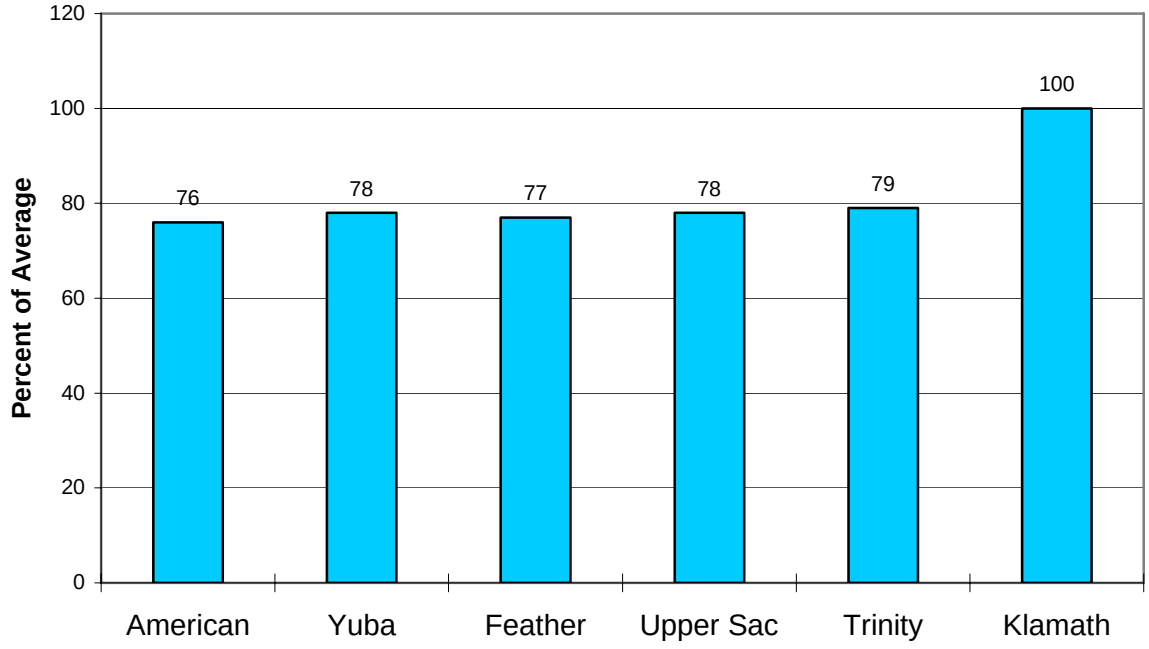
		Most Prob Vol KAF	Most Prob Vol %Norm	Reas Max Vol KAF	Reas Min Vol KAF	30 Year Avg KAF
YUBA RIVER ABOVE SMARTVILLE						
North Yuba River						
Goodyears Bar, blo	Apr-Jul	170	62	310	105	273*
South Yuba River						
Langs Crossing	Apr-Jul	145	64	260	90	225*
Yuba River						
Smartville, nr	Apr-Jul	660	66	1200	410	995
AMERICAN RIVER ABOVE FOLSOM RESERVOIR						
MF American River						
Auburn, nr	Apr-Jul	325	66	595	205	490*
Silver Ck						
Union Valley	Apr-Jul	66	67	120	41	98*
Camino Dam, blo	Apr-Jul	105	66	190	65	158*
American River						
Folsom Reservoir Inflow	Apr-Jul	820	67	1460	520	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

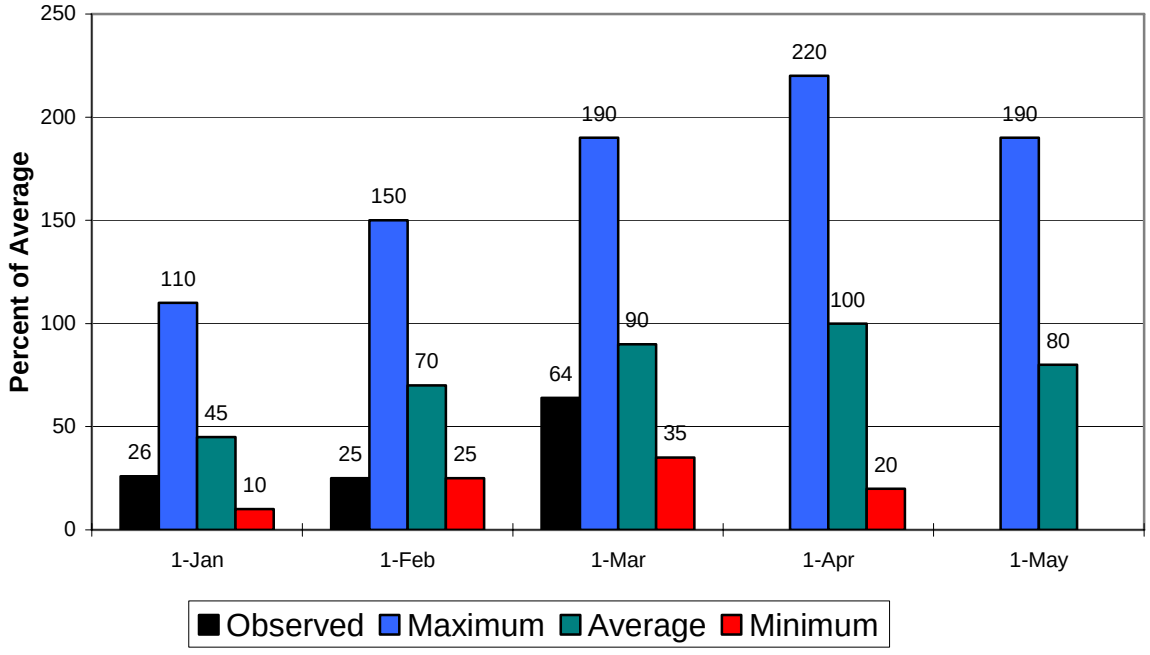
Seasonal Basin Precipitation

October 1 to Date



Seasonal Basin Snowpack

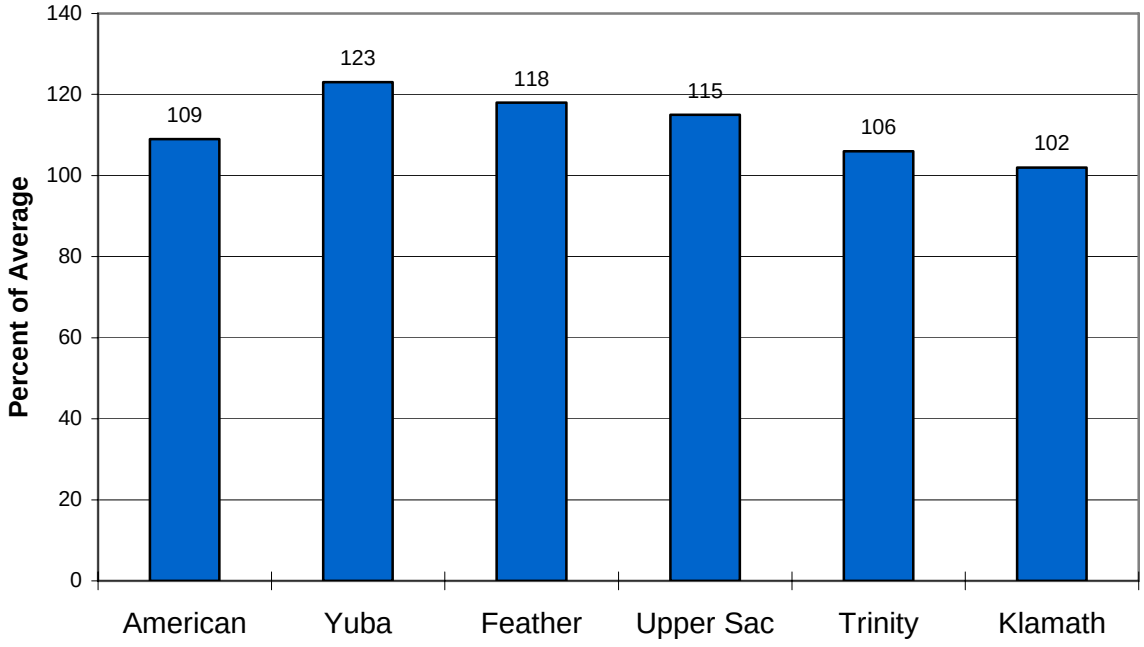
Water Content in % of April 1 Average



Sacramento/Trinity/Klamath River Basins

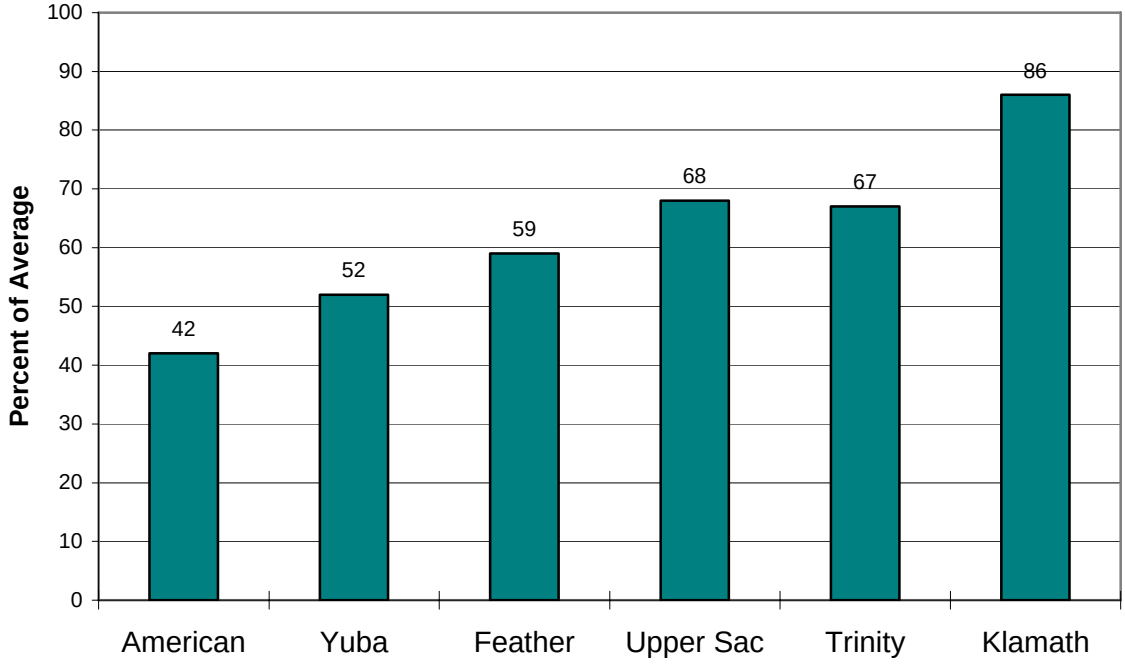
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

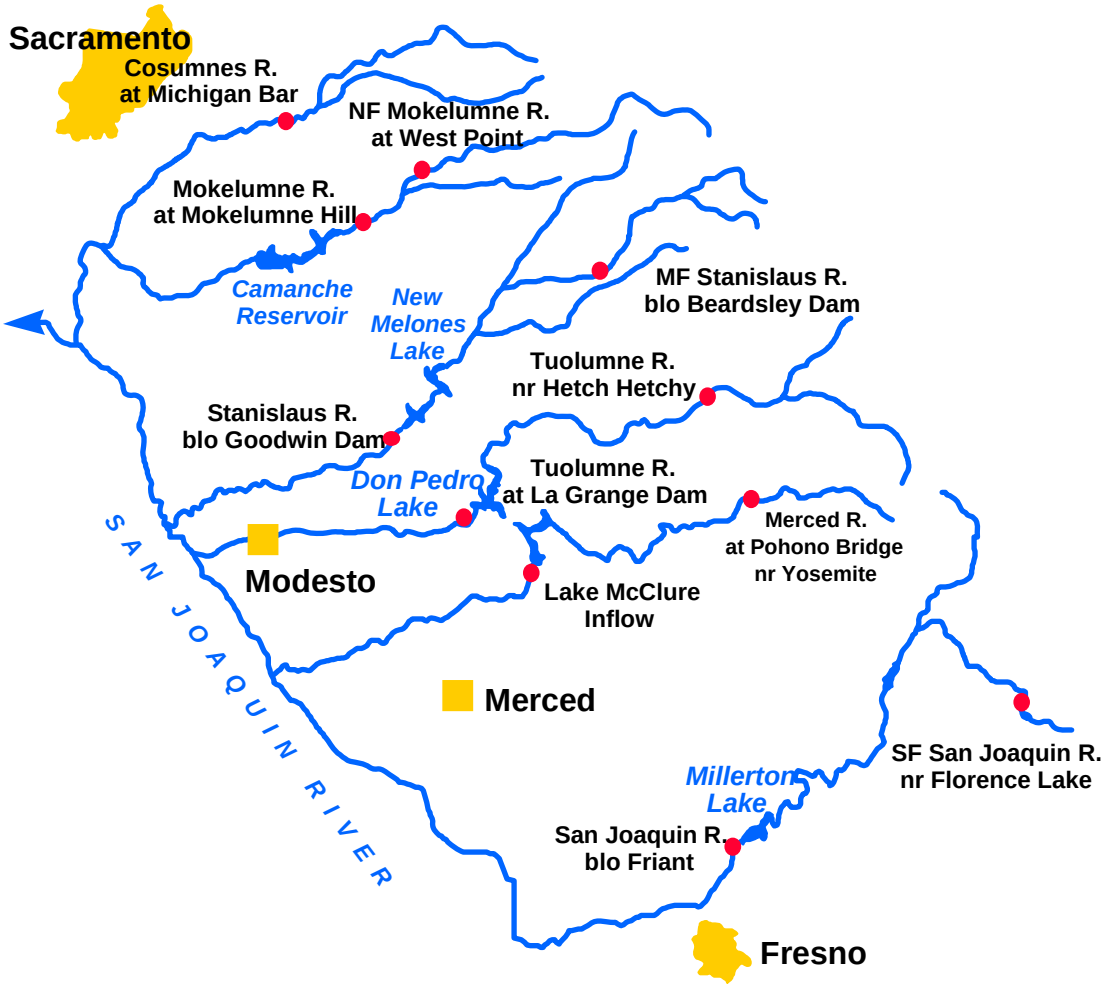


Seasonal Basin Runoff

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
SF San Joaquin River						
Hooper Ck, blo, Florence Lk, nr	Apr-Jul	130	68	200	60	192*
San Joaquin River						
Millerton Lk	Apr-Jul	700	55	1050	400	1270
Merced River						
Pohono Bridge, at, Yosemite, nr	Apr-Jul	230	64	340	120	360*
Merced Falls, blo	Apr-Jul	360	56	550	200	645
Tuolumne River						
Hetch Hetchy, nr	Apr-Jul	400	67	610	220	596*
La Grange, nr	Apr-Jul	765	62	1300	460	1230
MF Stanislaus River						
Beardsley Dam, blo	Apr-Jul	200	62	320	100	320*
Stanislaus River						
Goodwin Dam, blo, Knights Ferry	Apr-Jul	430	62	710	250	695
NF Mokelumne River						
West Point	Apr-Jul	295	71	485	130	416*
Mokelumne River						
Mokelumne Hill	Apr-Jul	310	67	530	190	460
Cosumnes River						
Michigan Bar	Apr-Jul	75	61	180	35	123

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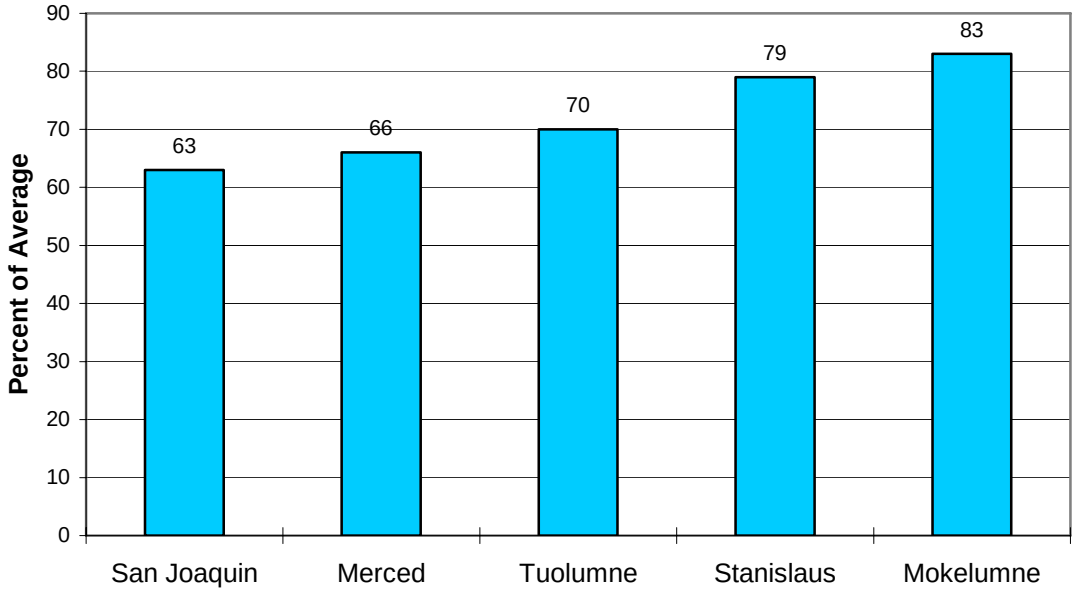
San Joaquin Basin

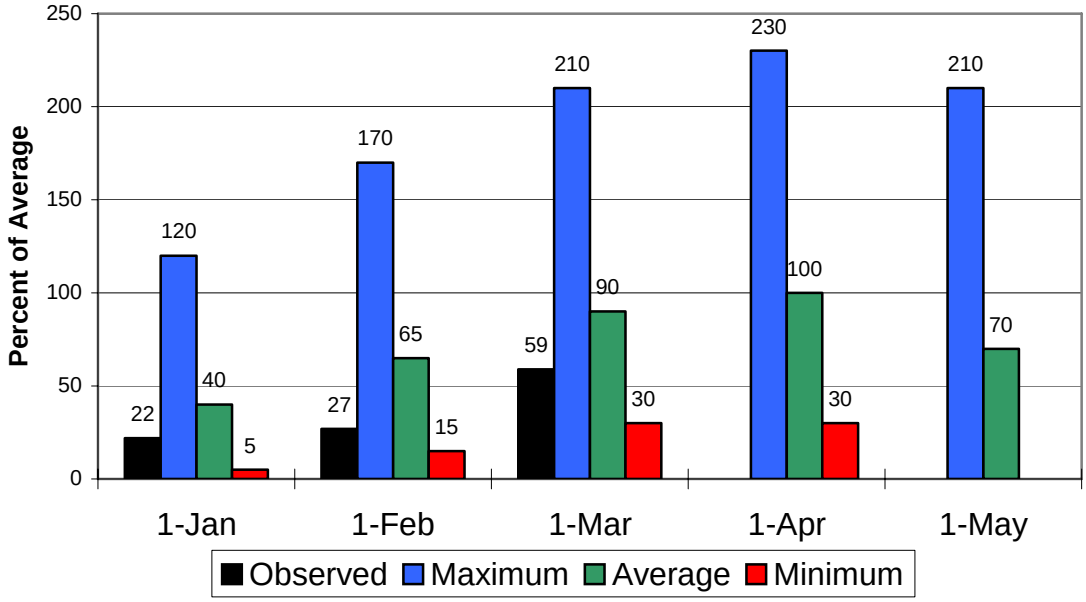
Seasonal Basin Precipitation

October 1 to Date



Seasonal Basin Snowpack

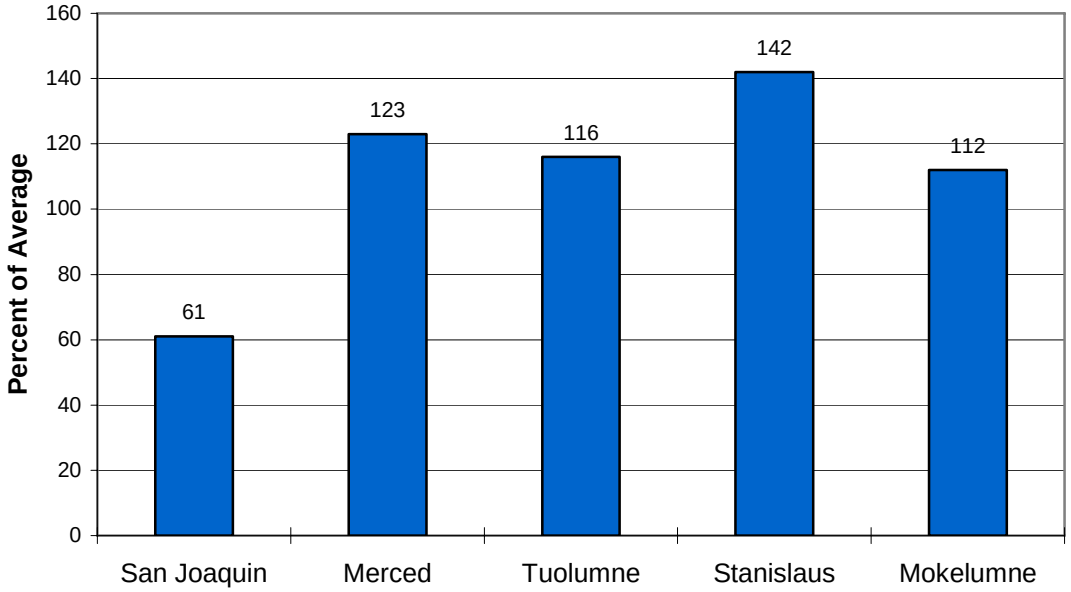
Water Content in % of April 1 Average



San Joaquin Basin

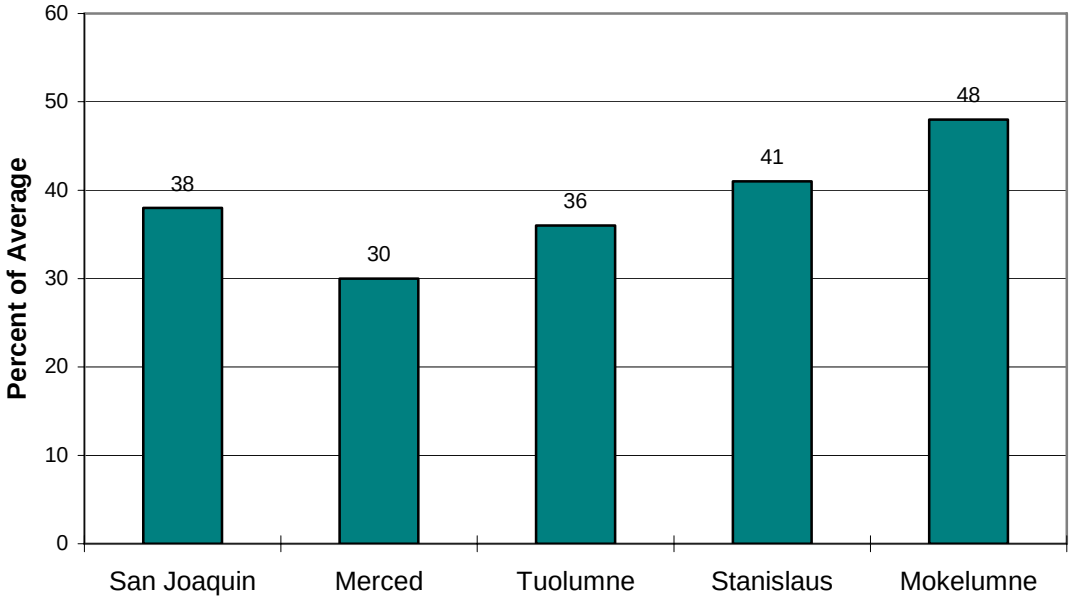
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

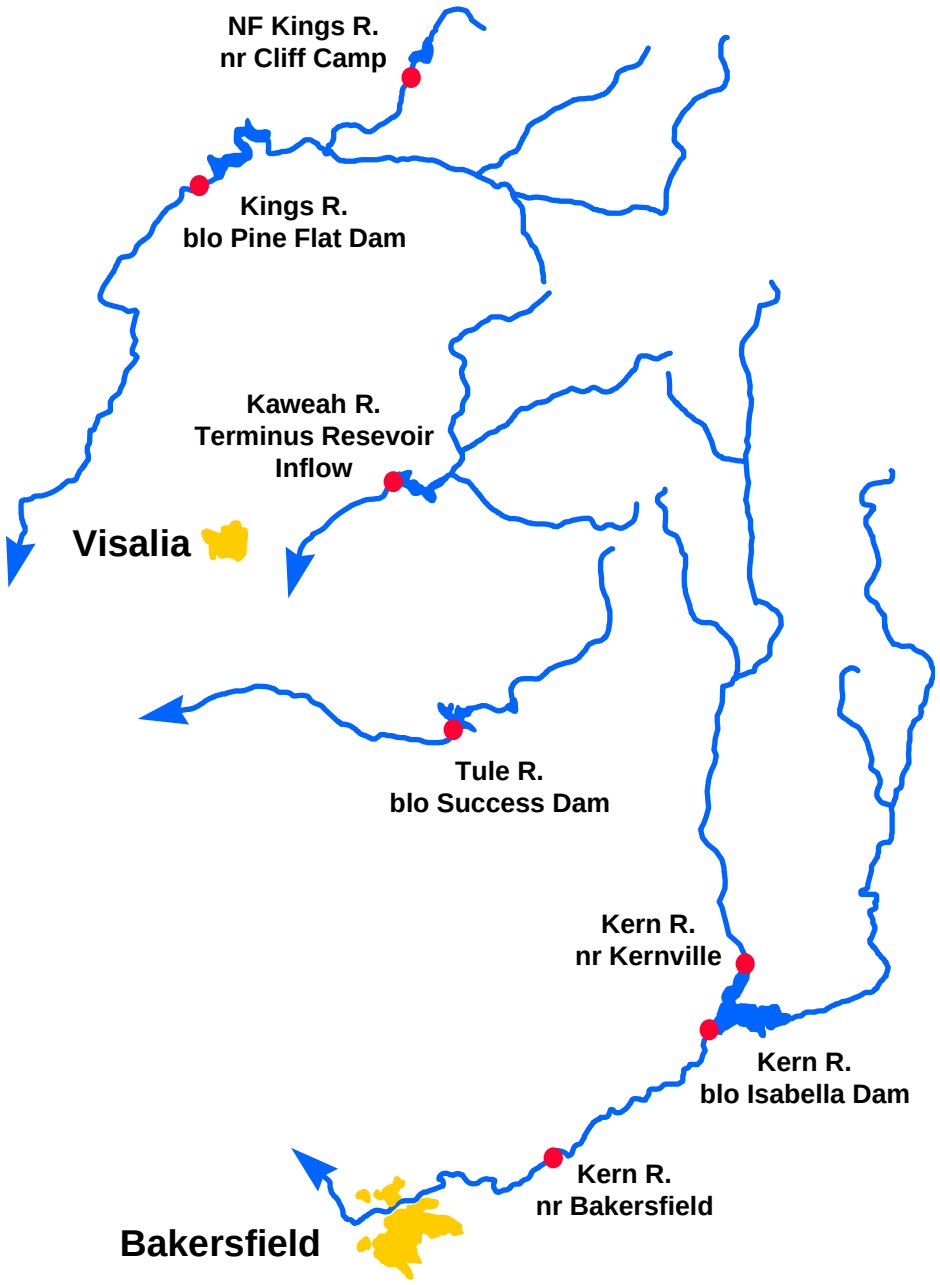


Season Basin Runoff

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	180	45	370	90	398*
Isabella Dam, blo	Apr-Jul	190	40	440	110	480
Bakersfield, nr	Apr-Jul	200	41	450	115	490
Tule River						
Success Dam	Apr-Jul	28	42	75	15.0	66
Kaweah River						
Terminus Dam	Apr-Jul	140	48	280	95	290
NF Kings River						
Cliff Camp, nr	Apr-Jul	160	67	210	65	240*
Kings River						
Pine Flat Dam, blo	Apr-Jul	650	52	1100	350	1250

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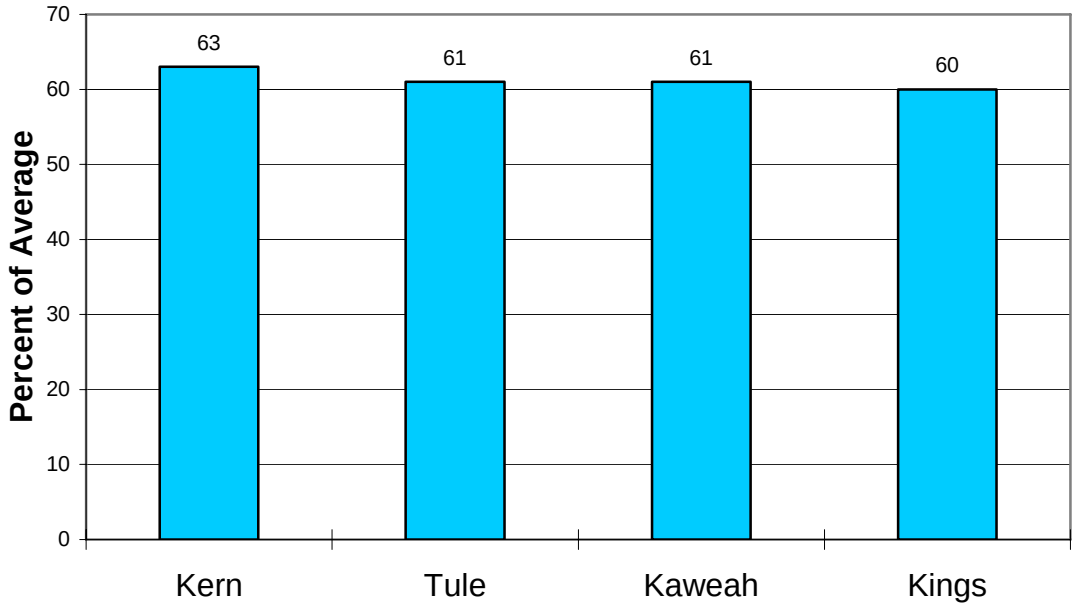
Tulare Lake Basin

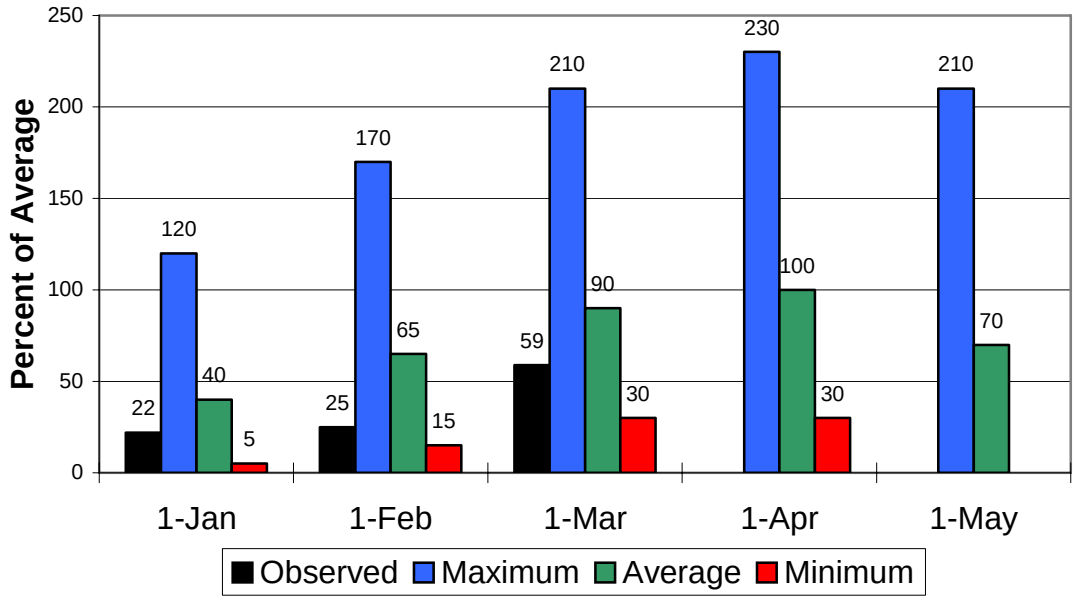
Seasonal Precipitation

October 1 to Date



Seasonal Basin Snowpack

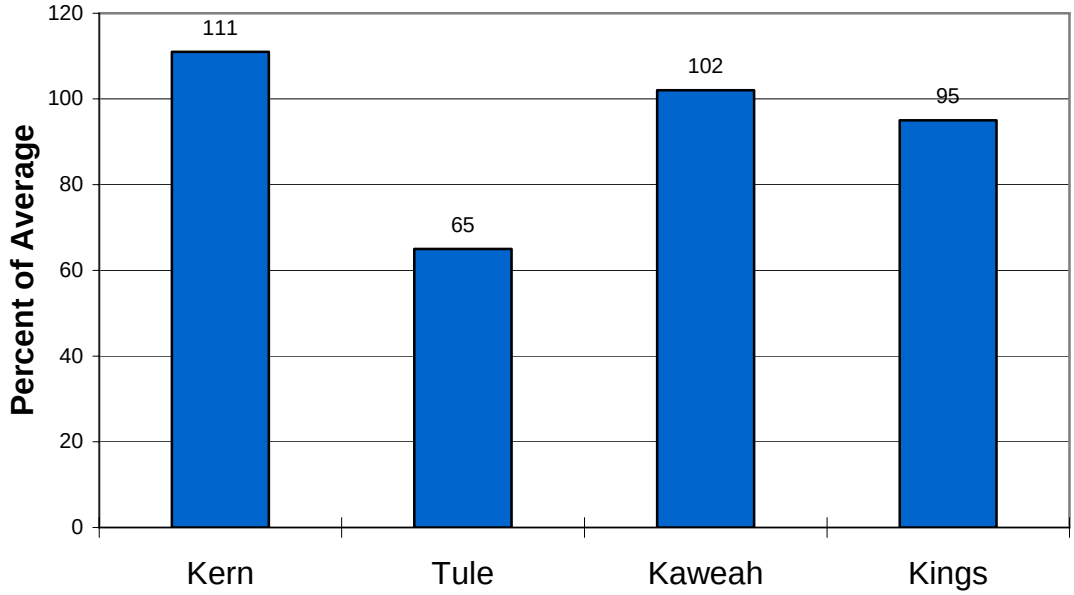
Water Content in % of April 1 Average



Tulare Lake Basin

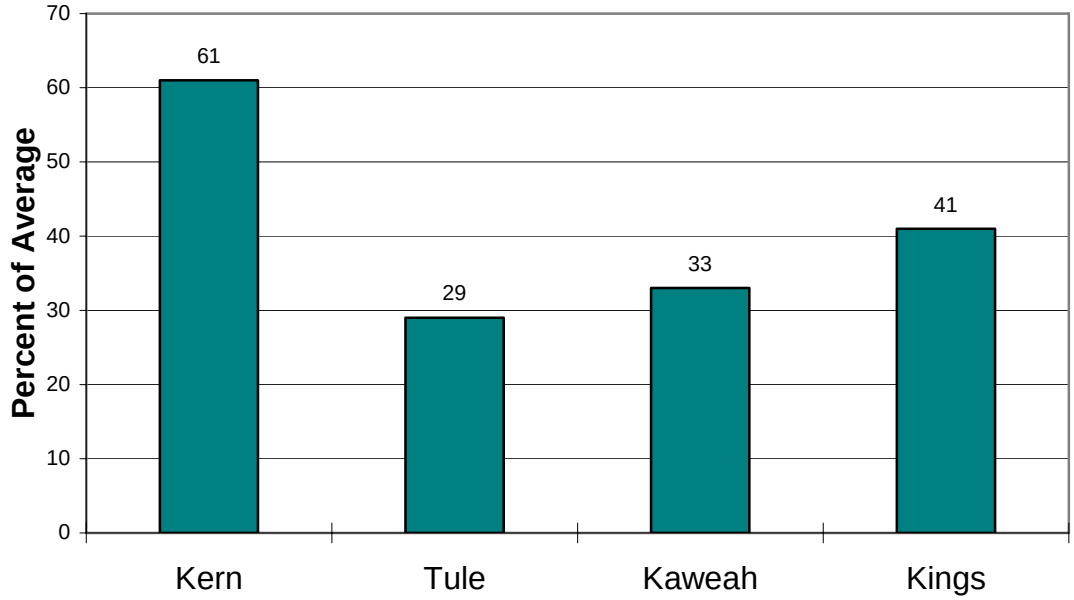
Basin Reservoir Storage

Contents of Major Reservoirs in % of Average

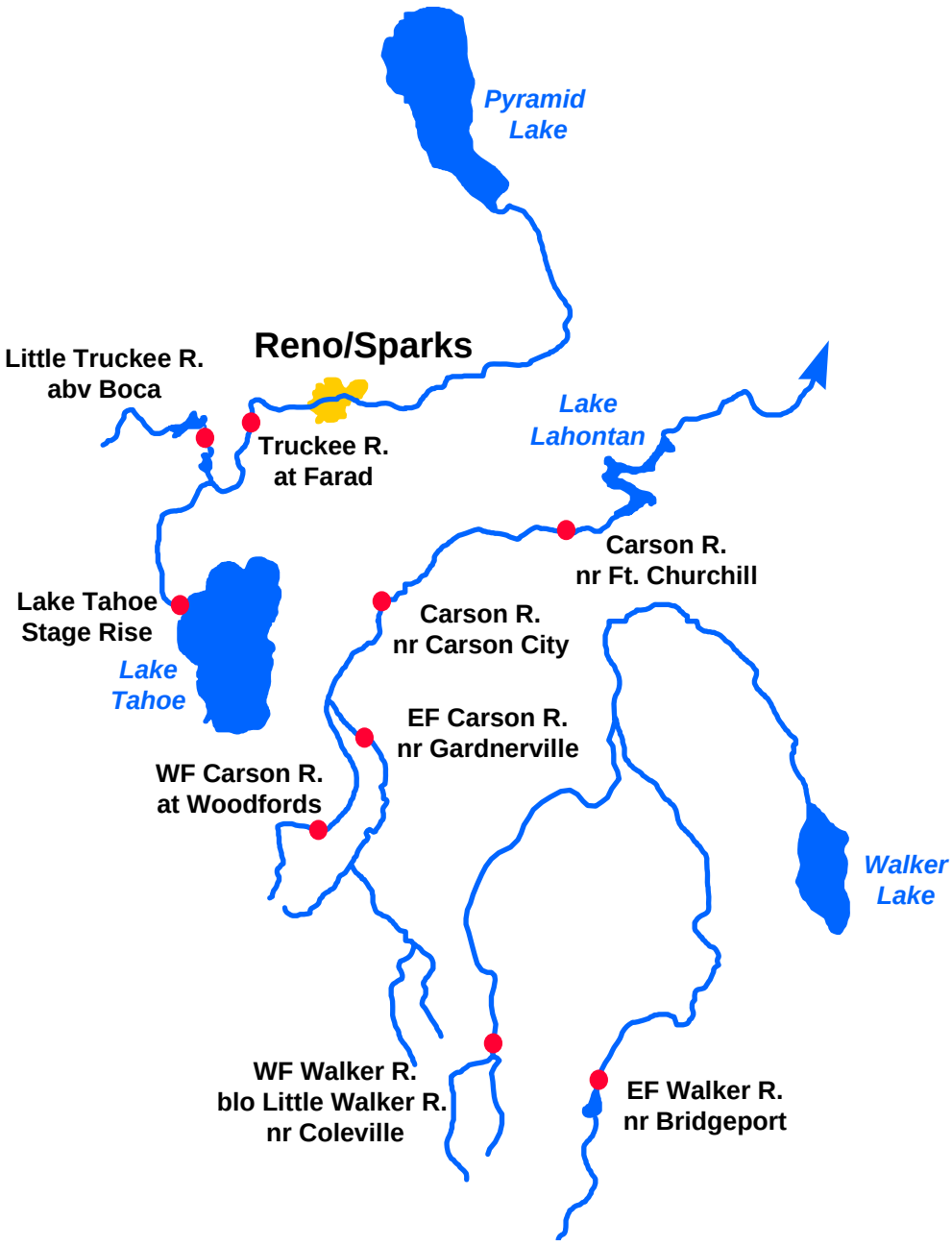


Seasonal Basin Runoff

October 1 to Date



East Side Sierra Nevada Basins



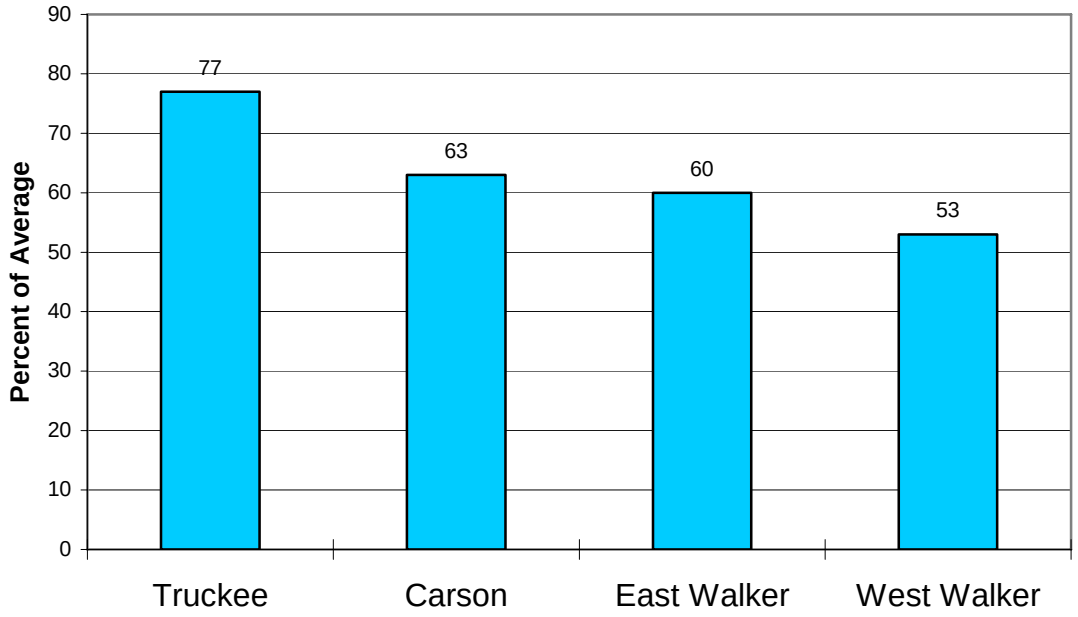
Water Supply Forecasts

		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	0.60	43	1.40	0.22	1.38
Ltl Truckee River						
Boca Res, abv, Truckee, nr	Apr-Jul	36	45	80	20	80
Truckee River						
Farad	Apr-Jul	140	54	265	60	260
Carson River						
EF Carson River						
Gardnerville, nr	Apr-Jul	87	46	174	21	189
WF Carson River						
Woodfords	Apr-Jul	27	48	50	6.2	56
Carson River						
Carson City, nr	Apr-Jul	55	29	162	13.2	188
Fort Churchill, nr	Apr-Jul	45	25	154	12.5	178
Walker River						
East Walker River						
Bridgeport, nr	Apr-Aug	26	39	54	9.0	67
West Walker River						
Ltl Walker, blo, Coleville, nr	Apr-Jul	68	44	135	40	156

East Side Sierra Nevada Basins

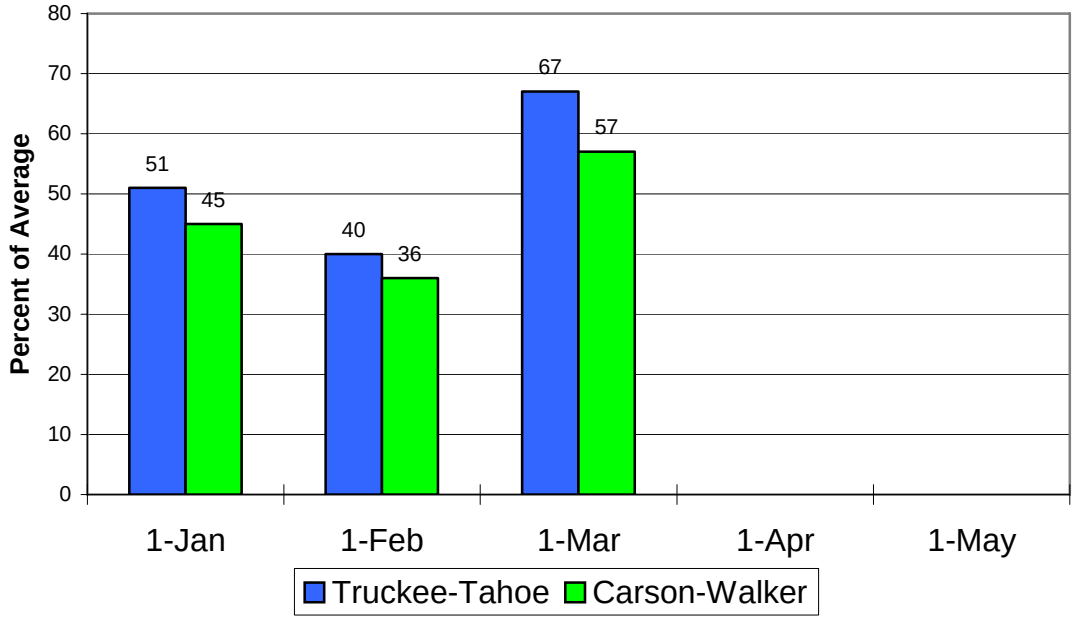
Seasonal Basin Precipitation

October 1 to Date

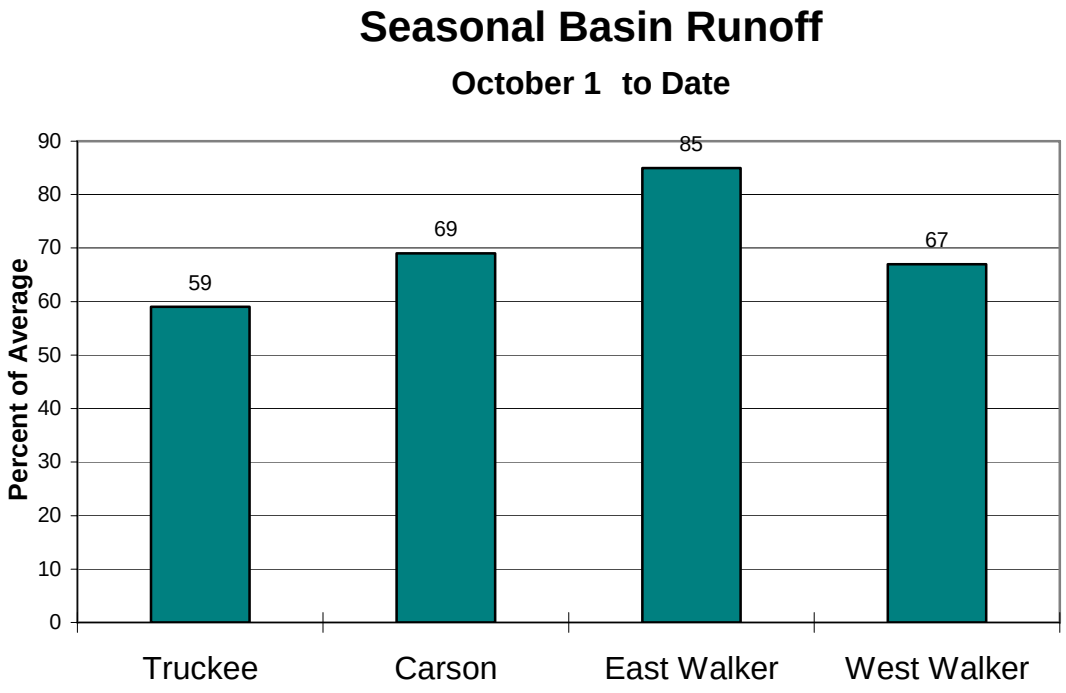


Basin Snowpack

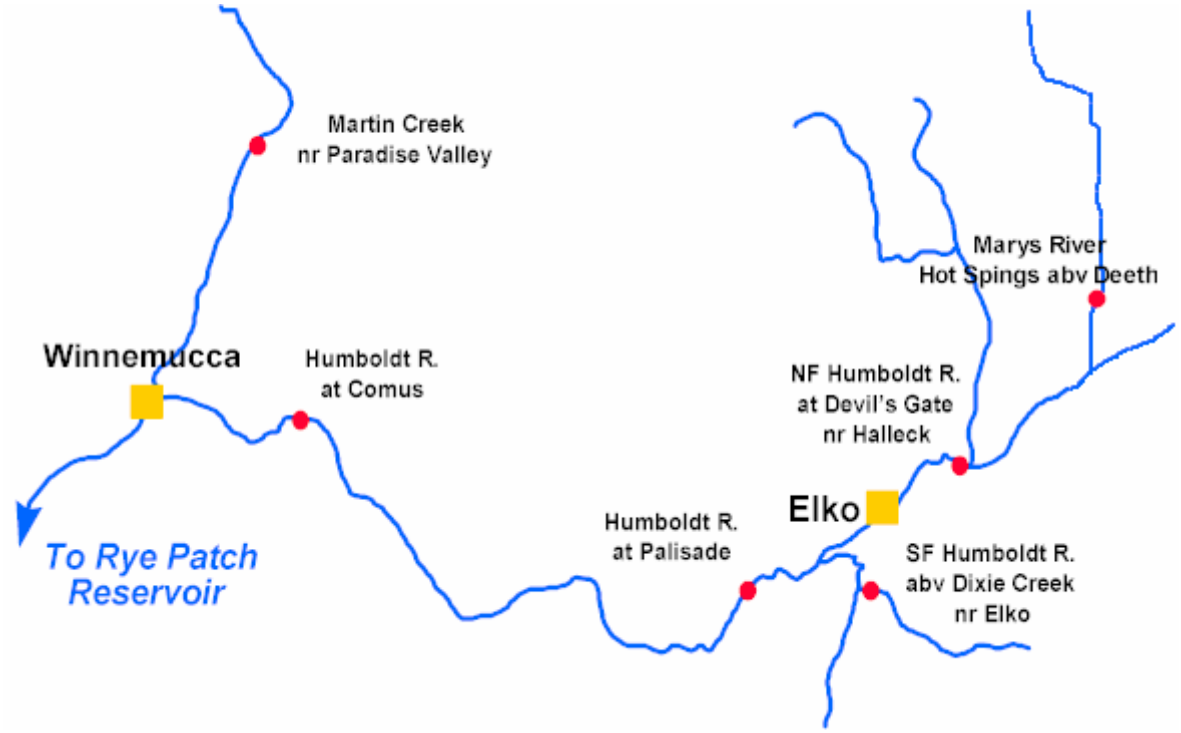
% of Average SWE to Date



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
NF Humboldt River						
Devils Gate, at, Halleck, nr	Apr-Jul	21	62	37	5.0	34*
SF Humboldt River						
Dixie Ck, abv, Elko, nr	Apr-Jul	52	68	83	21	76
Marys River						
Hot Springs, abv, Deeth, nr	Apr-Jul	22	56	38	9.0	39
Humboldt River						
Elko, nr	Apr-Jul	60	39	145	8.0	154
Palisade	Apr-Jul	100	40	225	20	250
Comus	Apr-Jul	85	38	205	16.0	225
Martin Ck						
Paradise Vly, nr	Apr-Jul	8.0	43	19.0	2.5	18.7

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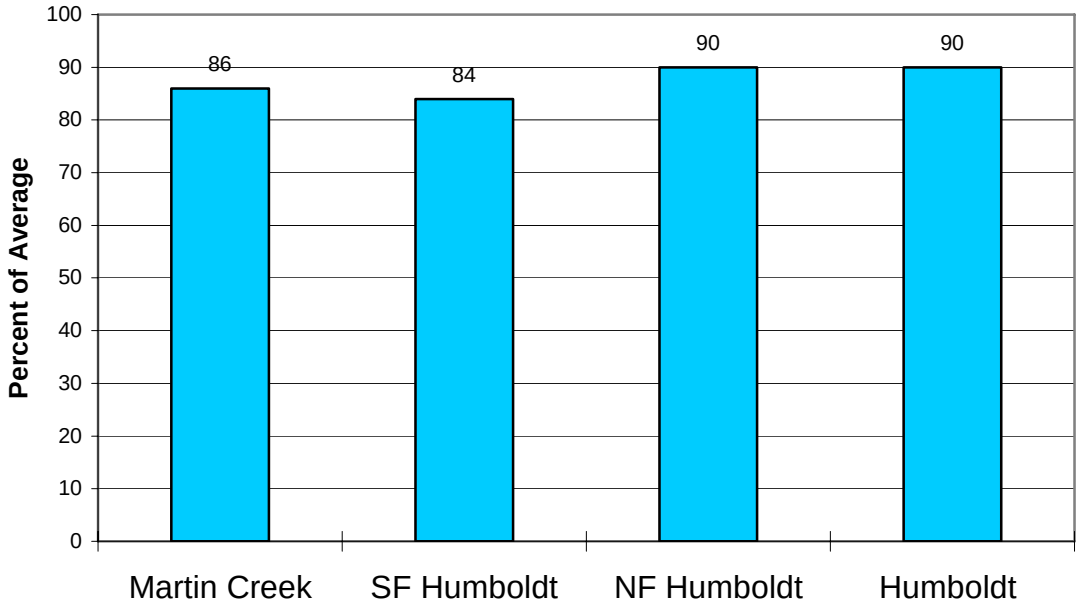
Humboldt River Basin

Seasonal Basin Precipitation

October 1 to Date



Basin Snowpack

% of Average SWE to Date