



California Cooperative  
Snow Surveys  
Bulletin 120—1—98

State of California  
The Resources Agency

Department of  
Water Resources

# Water Conditions in California

Report 1 February 1, 1998



**Pete Wilson**  
Governor  
State of California

**Douglas P. Wheeler**  
Secretary for Resources  
The Resources Agency

**David N. Kennedy**  
Director  
Department of Water Resources

**STATE OF CALIFORNIA**

Pete Wilson, Governor

**THE RESOURCES AGENCY**

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**COOPERATING AGENCIES**

**Public Agencies**

- Buena Vista Water Storage District
- San Joaquin Exchange Contractors Water Association
- East Bay Municipal Utility District
- Friant Water Users Association
- Kaweah Delta Water Conservation District
- Kern Delta Water District
- Kings River Conservation District
- Lower Tule River Irrigation District
- Merced Irrigation District
- Modesto Irrigation District
- Nevada Irrigation District
- North Kern Water Storage District
- Northern California Power Agency
- Oakdale Irrigation District
- Omochumne-Hartnell Water District
- Oroville-Wyandotte Irrigation District
- Placer County Water Agency
- Sacramento Municipal Utility District
- South San Joaquin Irrigation District
- Tri-Dam Project
- Tulare Lake Basin Water Storage District
- Turlock Irrigation District
- Yuba County Water Agency
- Private Organizations**
- I.G. Boswell Company
- Kaweah and St. Johns River Association
- Kings River Water Association
- Tule River Association
- State Water Contractors

**Municipalities**

- City of Bakersfield Water Department
- City of Los Angeles Department of Water and Power
- City and County of San Francisco Hetch Hetchy Water and Power
- State Agencies**
- University of California, Central Sierra Snow Laboratory
- California Department of Forestry & Fire Protection
- California Department of Water Resources
- Public Utilities**
- Pacific Gas and Electric Company
- Southern California Edison Company
- Federal Agencies**
- U.S. Department of Agriculture
  - Forest Service (14 National Forests)
  - Natural Resource Conservation Service
- U.S. Department of Commerce
  - National Weather Service
- U.S. Department of Interior
  - Bureau of Reclamation
  - Geological Survey, Water Resources
  - National Park Service (3 National Parks)
- U.S. Department of Army
  - Corps of Engineers
- Other Cooperative Programs**
- Nevada Cooperative Snow Surveys
- Oregon Cooperative Snow Surveys

## SUMMARY OF WATER CONDITIONS FEBRUARY 1, 1998

This report provides a snapshot of water conditions as they were on February 1. The effect of the storms of the first week of February will be reflected in the next report. After a slow start with less than average precipitation in December, the winter turned wet. A series of El Nino driven storms delivered double normal precipitation in northern California during January building up the snowpack from about 75 percent of average to over 100 percent on February 1. In this 150 year anniversary of the discovery of gold on the American River, the prospects of a good water supply are now excellent.

**Forecasts** of April through July runoff are near average, slightly over 100 percent statewide. Northern watersheds show the higher percentages. Water year runoff forecasts are higher than the snowmelt forecasts due to ample runoff during January.

**Snowpack** water content is about 115 percent of average statewide for this date and 75 percent of the April 1 average, the date of maximum accumulation. Last year the pack was 155 percent of average at this time.

**Precipitation** during January was heavy especially in the northern half of the State, with 170 percent statewide during the month. The seasonal average since October 1 stands at 125 percent compared to 185 percent one year ago.

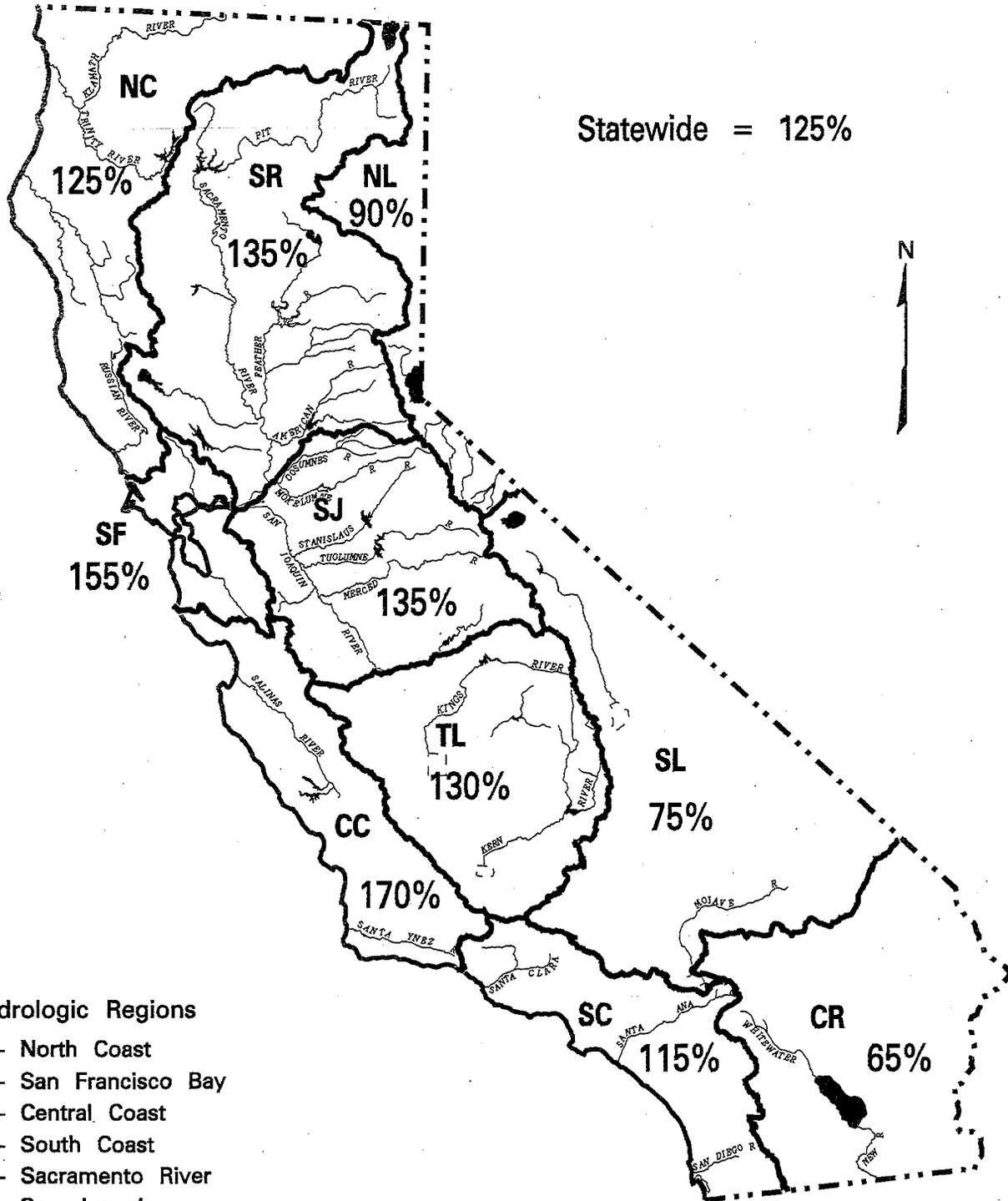
**Runoff** so far this season is now above average overall, most of which occurred during the last month. January runoff was estimated to be 190 percent of average and the seasonal amount is 120 percent compared to 290 percent last year. Estimated runoff of the 8 major rivers of the Sacramento and San Joaquin River regions during January was 5.3 million acre-feet.

**Reservoir storage** is now excellent at 115 percent of average overall for this date. Total storage last year stood at 135 percent, but some of that was temporary encroachment into flood control space in Central Valley foothill reservoirs.

### SUMMARY OF WATER CONDITIONS IN PERCENT OF AVERAGE

HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	FEBRUARY 1 SNOW WATER CONTENT	FEBRUARY 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	125	130	105	125	110	120
SAN FRANCISCO BAY	155	--	125	130	--	--
CENTRAL COAST	170	--	125	120	--	--
SOUTH COAST	115	--	115	60	--	--
SACRAMENTO RIVER	135	115	110	125	105	115
SAN JOAQUIN RIVER	135	110	125	90	100	100
TULARE LAKE	130	120	125	95	95	95
NORTH LAHONTAN	90	90	140	75	90	90
SOUTH LAHONTAN	75	95	95	105	95	100
COLORADO RIVER- DESERT	65	--	--	--	--	--
<b>STATEWIDE</b>	<b>125</b>	<b>115</b>	<b>115</b>	<b>125</b>	<b>100</b>	<b>110</b>

**SEASONAL PRECIPITATION**  
 IN PERCENT OF AVERAGE TO DATE  
 October 1, 1997 through April 30, 1998

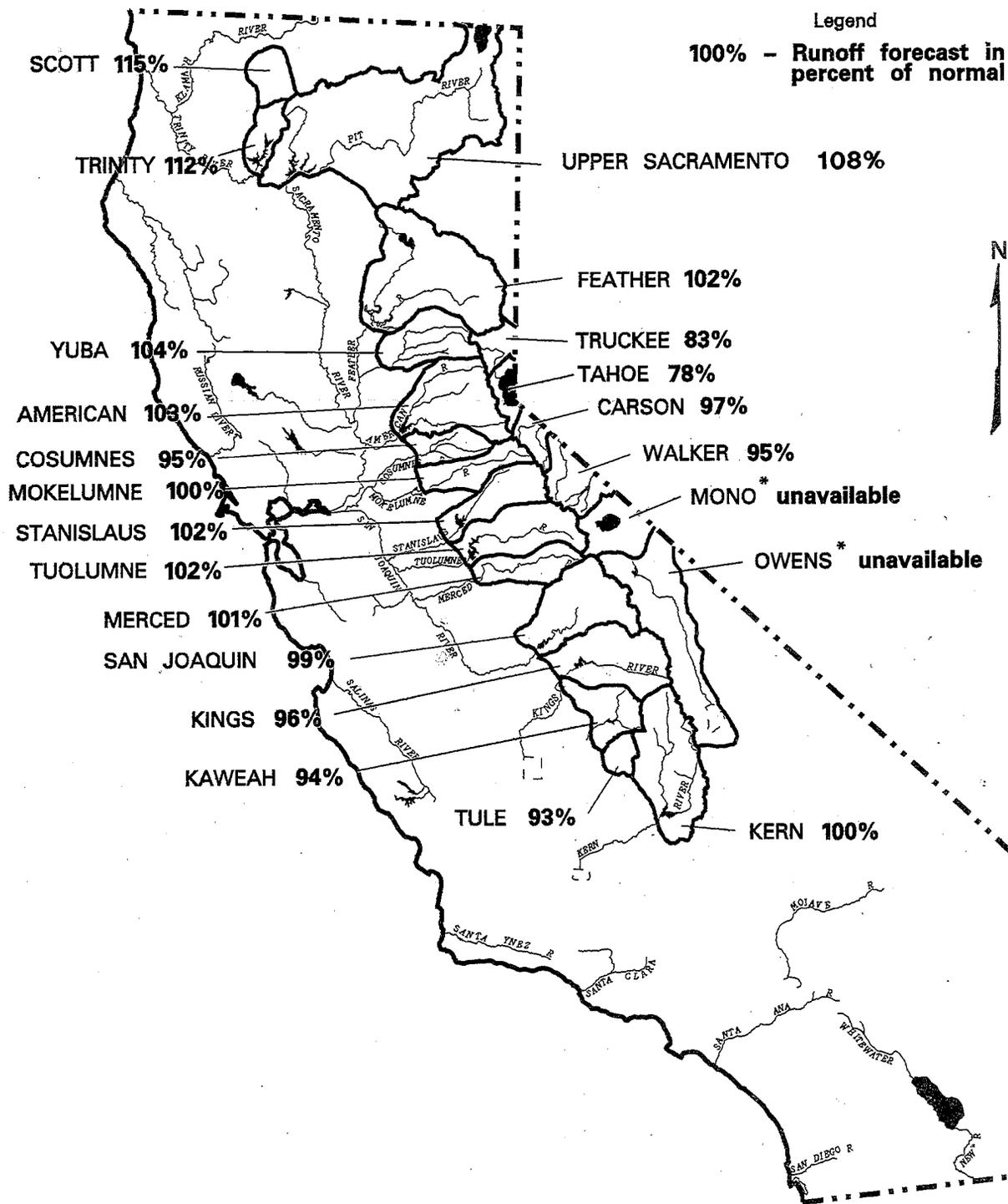


Statewide = 125%

- Hydrologic Regions**
- NC - North Coast
  - SF - San Francisco Bay
  - CC - Central Coast
  - SC - South Coast
  - SR - Sacramento River
  - SJ - San Joaquin
  - TL - Tulare Lake
  - NL - North Lahontan
  - SL - South Lahontan
  - CR - Colorado River-Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

**FORECAST OF APRIL - JULY  
UNIMPAIRED SNOWMELT RUNOFF**  
February 1, 1998



\* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

**FEBRUARY 1, 1998 FORECASTS  
APRIL-JULY UNIMPAIRED RUNOFF**

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)					
	HISTORICAL			FORECASTS		
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg	80 % Probability Range (1)
<b>SACRAMENTO RIVER</b>						
<b>Upper Sacramento River</b>						
Sacramento River at Shasta Lake (3)	297	702	39	300	101%	
McCloud River at Shasta Lake	392	850	185	410	105%	
Pit River at Shasta Lake	1,056	1,796	480	1,130	107%	
Total Inflow to Shasta Lake	1,801	3,189	726	<b>1,950</b>	108%	1,310 - 2,850
<b>Sacramento River above Bend Bridge, near Red Bluff</b>	2,451	4,674	943	<b>2,580</b>	105%	1,730 - 3,770
<b>Feather River</b>						
Feather River at Lake Almanor near Prattville (3)	333	675	120	340	102%	
North Fork at Pulga (3)	1,028	2,416	243	1,050	102%	
Middle Fork near Clio (4)	86	518	4	90	105%	
South Fork at Ponderosa Dam (3)	110	267	13	110	100%	
Total Inflow to Oroville Reservoir	1,831	4,676	392	<b>1,880</b>	103%	1,270 - 2,940
<b>Yuba River</b>						
North Yuba below Goodyears Bar (3)	286	647	51	290	101%	
Inflow to Jackson Mdws and Bowman Reservoirs (3)	112	236	25	120	107%	
South Yuba at Langs Crossing (3)	233	481	57	240	103%	
Yuba River at Smartville	1,029	2,424	200	<b>1,070</b>	104%	710 - 1,730
<b>American River</b>						
North Fork at North Fork Dam (3)	262	716	43	270	103%	
Middle Fork near Auburn (3)	522	1,406	100	540	103%	
Silver Creek Below Camino Diversion Dam (3)	173	386	37	180	104%	
Total Inflow to Folsom Reservoir	1,261	3,074	229	<b>1,300</b>	103%	800 - 2,200
<b>SAN JOAQUIN RIVER</b>						
<b>Cosumnes River at Michigan Bar</b>	128	363	8	<b>120</b>	94%	60 - 230
<b>Mokelumne River</b>						
North Fork near West Point (5)	437	829	104	430	98%	
Total Inflow to Pardee Reservoir	459	1,065	102	<b>460</b>	100%	310 - 700
<b>Stanislaus River</b>						
Middle Fork below Beardsley Dam (3)	334	702	64	340	102%	
North Fork Inflow to McKays Point Dam (3)	224	503	34	230	103%	
Total Inflow to New Melones Reservoir	699	1,710	116	<b>710</b>	102%	480 - 1,100
<b>Tuolumne River</b>						
Cherry Creek & Eleanor Creek near Hetch Hetchy (3)	322	727	97	320	99%	
Tuolumne River near Hetch Hetchy (3)	606	1,392	153	610	101%	
Total Inflow to Don Pedro Reservoir	1,184	2,682	301	<b>1,210</b>	102%	860 - 1,750
<b>Merced River</b>						
Merced River at Pohono Bridge (3)	362	888	80	370	102%	
Total Inflow to Lake McClure	611	1,587	123	<b>620</b>	101%	440 - 910
<b>San Joaquin River</b>						
San Joaquin River at Mammoth Pool (6)	1,014	2,279	235	980	97%	
Big Creek below Huntington Lake (6)	95	264	11	90	95%	
South Fork near Florence Lake (6)	202	511	58	200	99%	
Total Inflow to Millerton Lake	1,212	3,355	262	<b>1,200</b>	99%	800 - 1,820
<b>TULARE LAKE</b>						
<b>Kings River</b>						
North Fork Kings River near Cliff Camp (3)	239	565	50	230	96%	
Total Inflow to Pine Flat Reservoir	1,183	3,114	273	<b>1,140</b>	96%	700 - 1,720
<b>Kaweah River at Terminus Reservoir</b>						
	276	814	61	<b>260</b>	94%	150 - 410
<b>Tule River at Success Reservoir</b>						
	59	256	2	<b>55</b>	93%	30 - 100
<b>Kern River</b>						
Kern River near Kernville (3)	373	1,203	83	370	99%	
Total Inflow to Isabella Reservoir	442	1,657	84	<b>440</b>	100%	260 - 780

(1) See inside back cover for definition

(2) All 50 year averages are based on years 1946-1995 unless otherwise noted

(3) 50 year average based on years 1941-90

(4) 44 year average based on years 1936-79

(5) 36 year average based on years 1936-72

(6) 45 year average based on years 1936-81

**FEBRUARY 1, 1998 FORECASTS  
WATER YEAR UNIMPAIRED RUNOFF**

Unimpaired Runoff in 1,000 Acre-Feet (1)													
HISTORICAL			DISTRIBUTION								FORECASTS		
50 Yr Avg (2)	Max of Record	Min of Record	Oct Thru Jan*	Feb	Mar	Apr	May	Jun	Jul	Aug & Sep	Water Year Forecasts	Pct of Avg	80 % Probability Range (1)
856	1,964	165											
1,184	2,353	577											
3,078	5,150	1,484											
5,896	10,796	2,479	2,710	1,050	940	820	560	320	250	450	<b>7,100</b>	120%	5,660 - 9,140
8,518	17,180	3,294	4,280	1,460	1,340	1,040	760	460	320	560	<b>10,220</b>	120%	8,260 - 12,980
780	1,269	366											
2,417	4,400	666											
219	637	24											
291	562	32											
4,526	9,492	994	1,630	620	650	740	650	320	170	200	<b>4,980</b>	110%	3,880 - 6,880
564	1,056	102											
181	292	30											
379	565	98											
2,337	4,926	369	685	345	330	400	430	190	50	50	<b>2,480</b>	106%	1,870 - 3,590
616	1,234	66											
1,070	2,575	144											
318	705	59											
2,674	6,381	349	690	400	400	460	520	260	60	30	<b>2,820</b>	105%	2,000 - 4,300
378	1,253	20	120	80	58	60	40	15	5	2	<b>380</b>	101%	240 - 630
626	1,009	197											
736	1,800	129	105	70	90	130	190	120	20	5	<b>730</b>	99%	520 - 1,060
471	929	88											
1,131	2,952	155	200	105	110	200	300	160	50	15	<b>1,140</b>	101%	830 - 1,680
461	1,147	123											
770	1,661	258											
1,857	4,430	383	265	185	190	280	460	380	90	30	<b>1,880</b>	101%	1,410 - 2,660
461	1,020	92											
952	2,859	150	130	85	100	150	270	160	40	15	<b>950</b>	100%	710 - 1,360
1,337	2,964	308											
112	298	14											
248	653	71											
1,753	4,642	362	180	110	140	240	460	360	140	60	<b>1,690</b>	96%	1,180 - 2,540
284	607	58											
1,647	4,294	383	165	80	110	210	450	360	120	55	<b>1,550</b>	94%	1,010 - 2,340
431	1,402	92	60	30	40	60	100	80	20	10	<b>400</b>	93%	250 - 600
135	615	16	40	13	20	22	20	10	3	2	<b>130</b>	96%	80 - 210
558	1,577	163											
694	2,309	175	110	45	60	100	150	130	60	45	<b>700</b>	101%	450 - 1,200

\* Indicates observed runoff

**FEBRUARY 1, 1998 FORECASTS  
APRIL-JULY UNIMPAIRED RUNOFF**

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)				
	HISTORICAL			FORECASTS	
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg
<b>NORTH COAST</b>					
<b>Trinity River</b>					
Total Inflow to Lewiston Lake	642	1,593	80	<b>720</b>	112%
<b>Scott River</b>					
Near Fort Jones	200	N/A	N/A	<b>230</b>	115%
<b>Klamath River</b>					
Total inflow to Upper Klamath Lake (3)	509	758	280	<b>520</b>	102%
<b>NORTH LAHONTAN</b>					
<b>Truckee River</b>					
Lake Tahoe to Farad accretions	264	713	58	<b>220</b>	83%
Lake Tahoe Rise (assuming gates closed, in feet) (4)	1.5	3.8	0.2	<b>1.2</b>	78%
<b>Carson River</b>					
West Fork at Woodfords	54	135	12	<b>50</b>	93%
East Fork near Gardnerville	183	407	43	<b>180</b>	98%
<b>Walker River</b>					
West Fork near Coleville	143	330	35	<b>140</b>	98%
East Fork near Bridgeport	61	209	7	<b>60</b>	98%
<b>SOUTH LAHONTAN</b>					
<b>Owens River</b>					
Total tributary flow to Owens River (5)	226	579	96	<b>n/a</b>	

(1) See inside back cover for definition

(2) All 50 year averages are based on years 1946-1995 unless otherwise noted

(3) Forecast by U.S. Natural Resources Conservation Service, Portland Oregon, 30 year average based on years 1961-1990. April through September forecast.

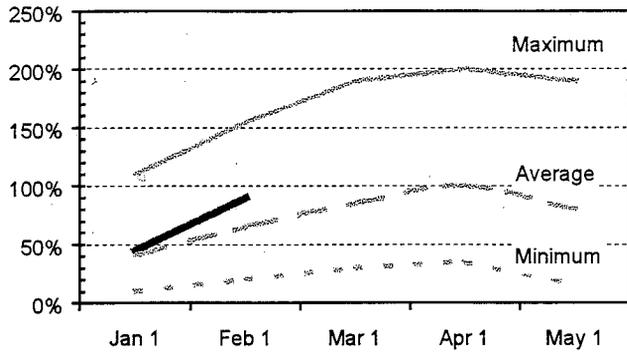
(4) 50 year average based on years 1941-1990

(5) Forecast by Department of Water and Power, City of Los Angeles

# NORTH COAST REGION

## Snowpack Accumulation

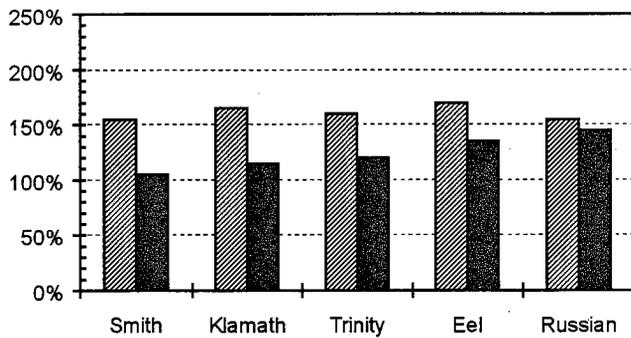
Water Content in % of April 1 average



**SNOWPACK** - First of the month measurements made at 10 snow courses indicate an area wide snow water equivalent of 26.9 inches. This is 130 percent of the February 1 average and 90 percent of the seasonal (April 1) average. Last year at this time the pack was holding 16.6 inches of water.

## Precipitation

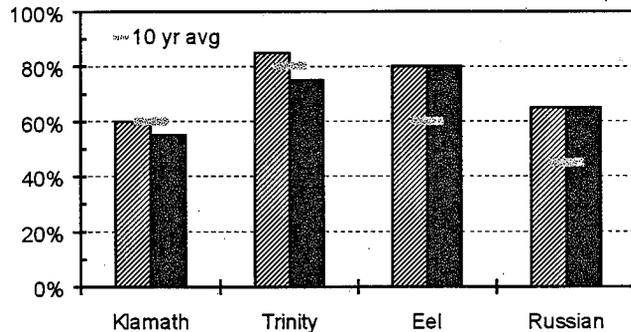
October 1 to date in % of average



**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on this area was 125 percent of normal. Precipitation last month was about 195 percent of the monthly average. Seasonal precipitation at this time last year stood at 160 percent of normal.

## Reservoir Storage

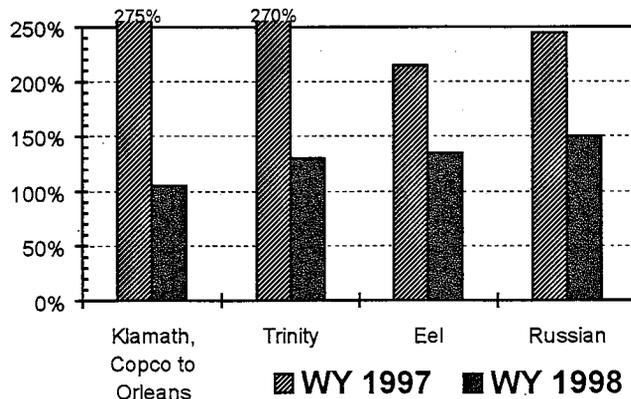
Contents of major reservoirs in % of capacity



**RESERVOIR STORAGE** - First of the month storage in 7 reservoirs was 2.3 million acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 120 percent of average.

## Runoff

October 1 to date in % of average

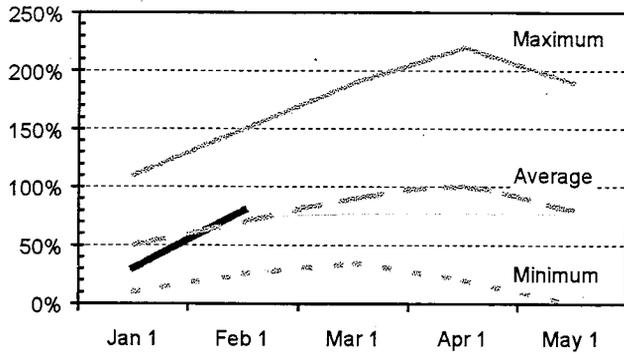


**RUNOFF** - Seasonal runoff of streams draining the area totaled 6.9 million acre-feet which is 125 percent of average for this period. Last year, runoff for the same period was 240 percent of average.

# SACRAMENTO RIVER REGION

## Snowpack Accumulation

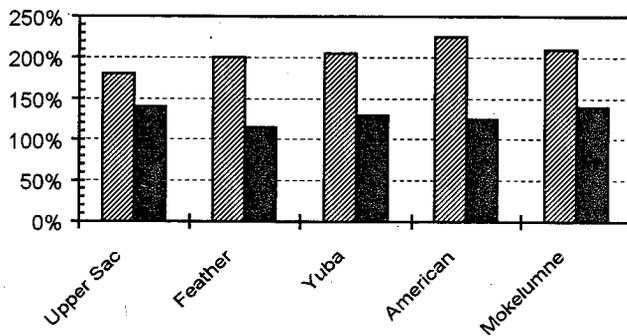
Water Content in % of April 1 average



**SNOWPACK** - First of the month measurements made at 70 snow courses indicate an area wide snow water equivalent of 24.4 inches. This is 120 percent of the February 1 average and 80 percent of the seasonal (April 1) average. Last year at this time the pack was holding 23.1 inches of water.

## Precipitation

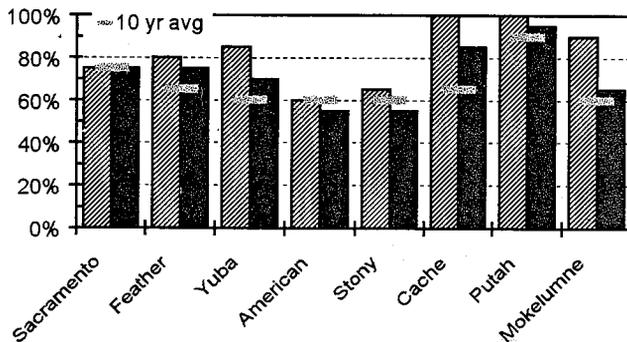
October 1 to date in % of average



**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on this area was 135 percent of normal. Precipitation last month was about 185 percent of the monthly average. Seasonal precipitation at this time last year stood at 195 percent of normal.

## Reservoir Storage

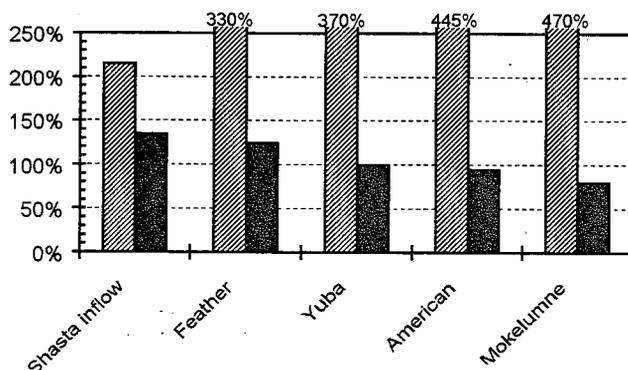
Contents of major reservoirs in % of capacity



**RESERVOIR STORAGE** - First of the month storage in 43 reservoirs was 11.9 million acre-feet which is 110 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 120 percent of average.

## Runoff

October 1 to date in % of average



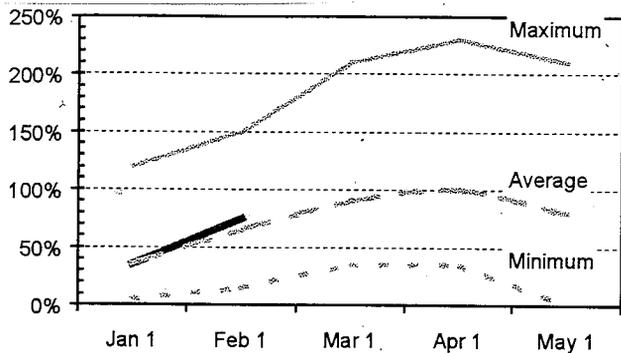
**RUNOFF** - Seasonal runoff of streams draining the area totaled 7.3 million acre-feet which is 125 percent of average for this period. Last year, runoff for the same period was 280 percent of average.

▨ WY 1997    ■ WY 1998

The Sacramento River Region 40-30-30 Water Supply Index is forecast to be 9.6 assuming median meteorological conditions for the remainder of the year. This classifies the year as "wet" in the Sacramento Valley according to the State Water Resources Control Board.

# SAN JOAQUIN RIVER and TULARE LAKE REGIONS

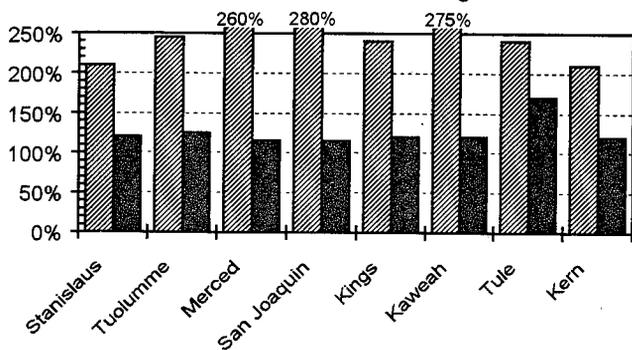
**Snowpack Accumulation**  
Water Content in % of April 1 average



**SNOWPACK** - First of the month measurements made at 51 San Joaquin Region snow courses indicate an area wide snow water equivalent of 22.1 inches. This is 110 percent of the February 1 average and 70 percent of the seasonal (April 1) average. Last year at this time the pack was holding 40.0 inches of water. At the same time, 36 Tulare Lake Region snow courses indicated a basin-wide snow water equivalent of 17.1 inches which is 145 percent of the average for February 1 and 90 percent of the seasonal average. Last year at this time the basin was holding 26.8 inches of water.

**Precipitation**

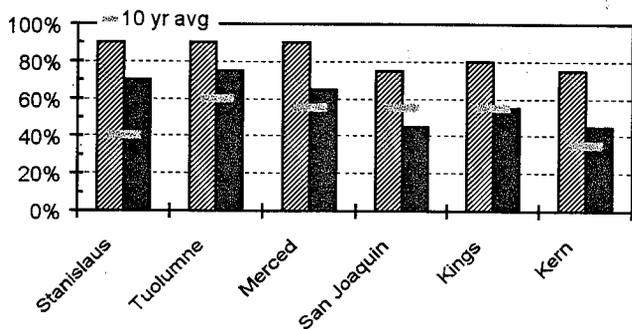
October 1 to date in % of average



**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin Region was 135 percent of normal. Precipitation last month was about 210 percent of the monthly average. Seasonal precipitation at this time last year stood at 235 percent of normal. Seasonal precipitation on the Tulare Lake Region was 135 percent of normal. Precipitation last month was 165 percent of the monthly average. Seasonal precipitation at this time last year stood at 240 percent of normal.

**Reservoir Storage**

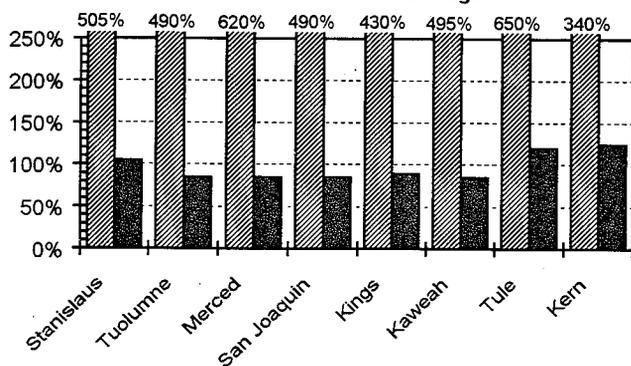
Contents of major reservoirs in % of capacity



**RESERVOIR STORAGE** - First of the month storage in 33 San Joaquin Region reservoirs was 8.0 million acre-feet which is 126 percent of average and about 70 percent of available capacity. Storage in these reservoirs at this time last year was 155 percent of average. First of the month storage in 6 Tulare Lake Region reservoirs was 935 thousand acre-feet which is 125 percent of average and about 45 percent of available capacity. Storage in these reservoirs at this time last year was 220 percent of average.

**Runoff**

October 1 to date in % of average



**RUNOFF** - Seasonal runoff of streams draining the San Joaquin Region totaled 1.0 million acre-feet which is 90 percent of average for this period. Last year, runoff for the same period was 510 percent of average. Stream runoff draining into the Tulare Lake Basin totaled 380 thousand acre-feet which is 95 percent of average for this period. Last year, runoff for the same period was 430 percent of average.

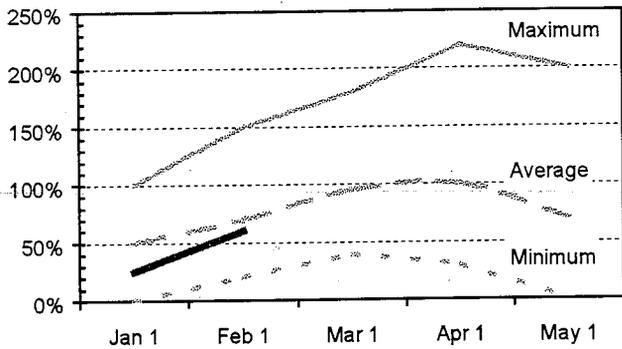
The San Joaquin River Region 60-20-20 Water Supply Index is forecasted to be 3.4 assuming median meteorological conditions for the remainder of the year. This classifies the year as "above normal" in the San Joaquin Valley according to the State Water Resources Control Board.

▨ WY 1997    ■ WY 1998

# NORTH and SOUTH LAHONTAN REGIONS

## Snowpack Accumulation

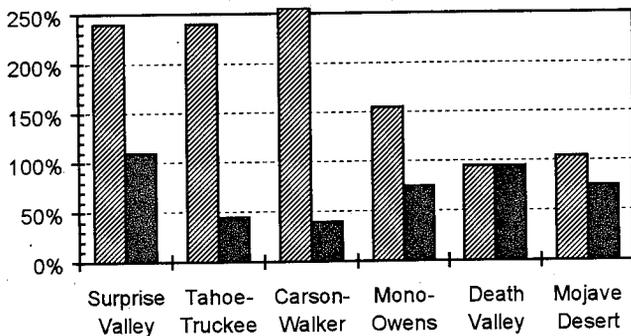
Water Content in % of April 1 average



## Precipitation

October 1 to date in % of average

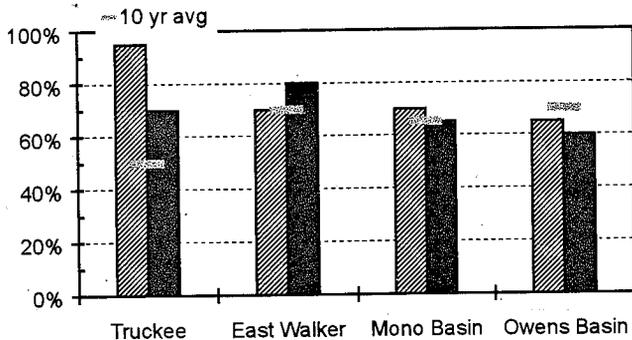
October 1 to date in % of average



## Reservoir Storage

Contents of major reservoirs in % of capacity

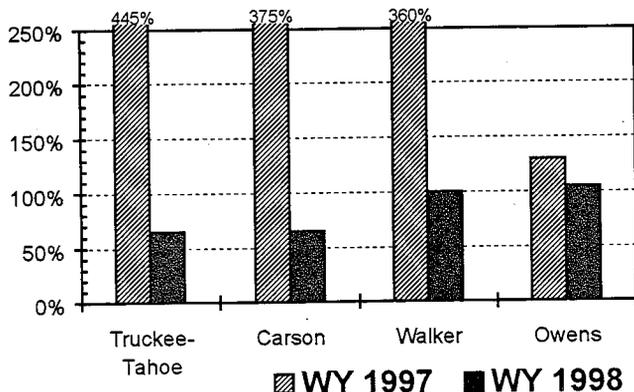
Contents of major reservoirs in % of capacity



## Runoff

October 1 to date in % of average

October 1 to date in % of average



**SNOWPACK** - First of the month measurements made at 13 North Lahontan snow courses indicate an area wide snow water equivalent of 17.1 inches. This is 90 percent of the February 1 average and 60 percent of the seasonal (April 1) average. Last year at this time the pack was holding 33.4 inches of water.

At the same time, 16 South Lahontan snow courses indicated a basin-wide snow water equivalent of 10.7 inches, which is 95 percent of the average for February 1 and 60 percent of the seasonal average. Last year at this time the pack was holding 32.7 inches of water.

**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the North Lahontan Region was 90 percent of normal. Precipitation last month was about 130 percent of the monthly average. Seasonal precipitation at this time last year stood at 250 percent of normal.

Seasonal precipitation on the South Lahontan Region was 75 percent of normal. Precipitation last month was 60 percent of the monthly average. Seasonal precipitation at this time last year stood at 120 percent of normal.

**RESERVOIR STORAGE** - First of the month storage in 5 North Lahontan Region reservoirs was 780 thousand acre-feet which is 140 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 185 percent of average. Lake Tahoe was 4.3 feet above its natural rim on February 1.

First of the month storage in 8 South Lahontan Region reservoirs was 270 thousand acre-feet which is 95 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 85 percent of average.

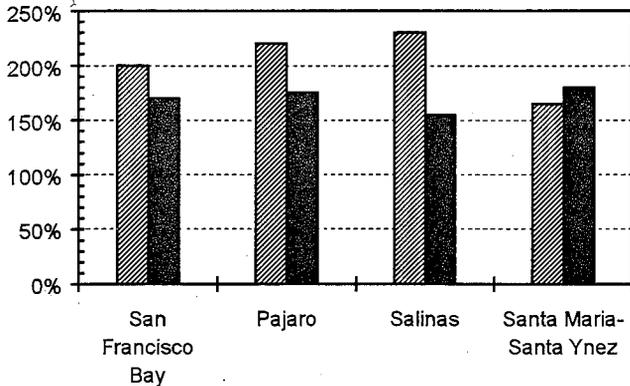
**RUNOFF** - Seasonal runoff of streams draining the North Lahontan area totaled 113 thousand acre-feet which is 75 percent of average for this period. Last year, runoff for the same period was 400 percent of average.

Seasonal runoff of the Owens River in the South Lahontan Region totaled 47 thousand acre-feet which is 105 percent of average for this period. Last year, runoff for this same period was 135 percent of average.

# SAN FRANCISCO BAY and CENTRAL COAST REGIONS

## Precipitation

October 1 to date in % of average

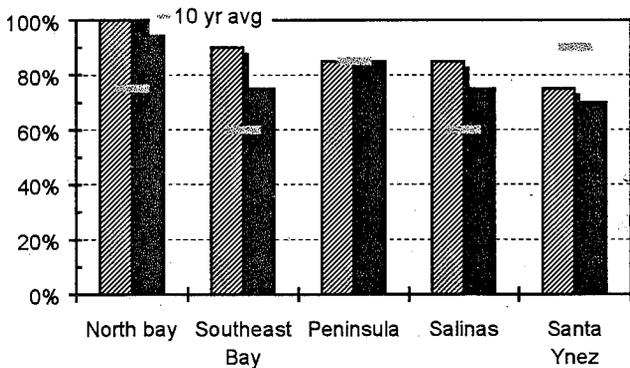


**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 155 percent of normal. Precipitation last month was about 200 percent of the monthly average. Seasonal precipitation at this time last year stood at 200 percent of normal.

Seasonal precipitation on the Central Coast area was 170 percent of normal. Precipitation last month was about 170 percent of the monthly average. Seasonal precipitation at this time last year stood at 205 percent of normal.

## Reservoir Storage

Contents of major reservoirs in % of capacity

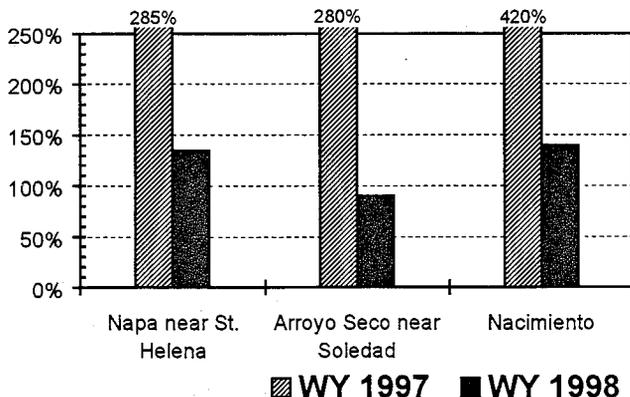


**RESERVOIR STORAGE** - First of the month storage in 18 major Bay area reservoirs was 562 thousand acre-feet which is 125 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 140 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 701 thousand acre-feet which is 125 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 140 percent of average.

## Runoff

October 1 to date in % of average



**RUNOFF** - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 44 thousand acre-feet which is 135 percent of average for this period. Last year, runoff for the same period was 280 percent of average.

Seasonal runoff of selected Central Coast streams totaled 158 thousand acre-feet which is 120 percent of average for this period. Last year, runoff for the same period was 370 percent of average.

## **SOUTH COAST**

*PRECIPITATION* - October through January (seasonal) precipitation on the South Coast area was 115 percent of normal. January precipitation was 95 percent of the monthly average. Seasonal precipitation at this time last year was 160 percent of normal.

Seasonal precipitation on the Colorado Desert area was 65 percent of normal. Precipitation in January was 80 percent of average. Seasonal precipitation at this time last year stood at 80 percent of average.

*RESERVOIR STORAGE* - February 1 storage in 29 major South Coast area reservoirs was 1.4 million acre-feet or 115 percent of average. About 70 percent of available capacity was being used. Storage in these reservoirs at this time last year was 130 percent of average.

On February 1 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 48 million acre-feet or 125 percent of average. About 90 percent of available capacity was in use. Last year at this time, these reservoirs were storing 115 percent of average.

*RUNOFF* - Seasonal runoff from selected South Coast streams totaled 11 thousand acre-feet which is 60 percent of average. Runoff from these streams during January totaled 5 thousand acre-feet or 55 percent of average. Seasonal runoff from these streams last year was 150 percent of average.

## **COLORADO RIVER**

The May 1 snowpack in the Upper Colorado River basin according to U.S. Natural Resources Conservation Service reports was 85 percent of average, highest in the Upper Colorado and Dushesne at 90 percent and lowest in the Animas at 62 percent.

The April through July inflow to Lake Powell is forecast to be 6.9 million acre-feet, which is 89 percent of average.

## **CENTRAL VALLEY PROJECT**

Based on February 1 conditions, Bureau of Reclamation water year forecasts for unimpaired runoff to CVP reservoirs are: Trinity--136% of average, Shasta--156% of average, American--127% of average, Stanislaus--114% of average, San Joaquin above Friant--107% of average. As of January 31, 1998 CVP storage was 8.4 million acre feet which is a decrease of 0.7 million acre feet compared to one year ago, and is approximately 123% of normal for that date.

The Bureau of Reclamation announced preliminary water allocations for the CVP contractors on January 16, 1998. Based on conservative water supply forecasts prepared from information available January 1, 1998 CVP water allocations were: Agricultural contractors-50%; Urban contractors-100%; Sacramento River water rights and San Joaquin Exchange Contractors- 100%; Wildlife Refuges-100%. Updated allocations will be announced February 13, 1998.

## **STATE WATER PROJECT**

State Water Project deliveries have been approved at about 2.4 million acre feet which meets at least 60 percent of most contractors' entitlement. This approval considered several factors, including the existing storage in SWP reservoirs, a conservative projection of hydrology and water supply expected to develop during the remainder of the 1998-99 water year, SWP operational constraints, and 1998 contractor demands. Approvals will be reevaluated with each new round of water supply forecasts.

**MAJOR WATER DISTRIBUTION PROJECTS**

**RESERVOIR STORAGE**

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AT END OF JANUARY			
			1997 1,000 AF	1998 1,000 AF	PERCENT AVERAGE	PERCENT CAPACITY
<i>STATE WATER PROJECT</i>						
Lake Oroville	3,538	2,427	2,860	2,788	115%	79%
San Luis Reservoir (SWP)	1,062	833	1,102	1,068	128%	101%
Lake Del Valle	77	30	37	37	124%	48%
Lake Silverwood	73	64	12	70	110%	96%
Pyramid Lake	171	162	165	169	105%	99%
Castaic Lake	324	248	307	287	116%	89%
Perris Lake	132	110	124	108	98%	82%
<i>CENTRAL VALLEY PROJECT</i>						
Trinity	2,448	1,815	2,100	1,800	99%	74%
Lake Shasta	4,552	3,181	3,476	3,390	107%	74%
Whiskeytown Lake	241	208	206	206	99%	85%
Folsom Lake	977	534	376	542	102%	55%
New Melones Reservoir	2,420	1,401	2,243	1,925	137%	80%
Millerton Lake	520	305	455	320	105%	62%
San Luis Reservoir (CVP)	971	734	897	791	108%	81%
<i>COLORADO RIVER PROJECT</i>						
Lake Mead	26,159	19,864	22,288	25,068	126%	96%
Lake Powell	25,002	16,600	19,991	21,103	127%	84%
Lake Mohave	1,810	1,595	1,672	1,682	105%	93%
Lake Havasu	619	539	564	548	102%	88%
<i>EAST BAY MUNICIPAL UTILITY DISTRICT</i>						
Pardee Reservoir	198	176	191	166	94%	84%
Camanche Reservoir	417	241	360	321	133%	77%
East Bay (4 reservoirs)	151	122	136	143	117%	95%
<i>CITY AND COUNTY OF SAN FRANCISCO</i>						
Hetch-Hetchy Reservoir	360	144	291	196	136%	54%
Cherry Lake	268	103	243	168	162%	63%
Lake Eleanor	26	9	25	11	127%	42%
South Bay/Peninsula (4 reservoirs)	225	157	210	191	122%	85%
<i>CITY OF LOS ANGELES (D.W.P.)</i>						
Lake Crowley	183	129	127	115	90%	63%
Grant Lake	48	28	47	42	148%	87%
Other Aqueduct Storage (6 res.)	83	71	67	58	82%	70%

# TELEMETERED SNOW WATER EQUIVALENTS

FEBRUARY 1, 1998

(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT			
			FEB 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
<b>TRINITY RIVER</b>						
Peterson Flat	7150'	29.2	26.3	90%	25.6	22.1
Red Rock Mountain	6700'	39.6	37.3	94%	35.3	30.1
Bonanza King	6450'	40.5	33.3	82%	32.5	—
Shimmy Lake	6200'	40.3	45.0	112%	45.0	42.0
Middle Boulder 3	6200'	28.3	17.6	62%	17.0	15.7
Highland Lakes	6030'	29.9	30.5	102%	30.0	25.0
Scott Mountain	5900'	16.0	17.8	111%	17.6	15.6
Mumbo Basin	5700'	22.4	23.4	104%	22.3	19.6
Big Flat	5100'	15.8	16.3	103%	16.1	15.2
<b>SACRAMENTO RIVER</b>						
Cedar Pass	7100'	18.1	16.2	90%	16.0	15.9
Blacks Mountain	7100'	12.7	9.4	74%	9.4	8.5
Sand Flat	6750'	42.4	31.7	75%	31.3	26.4
Medicine Lake	6700'	32.6	19.4	60%	19.4	17.5
Adin Mountain	6350'	13.6	14.0	103%	13.9	13.1
Snow Mountain	5950'	27.0	27.4	101%	27.4	25.0
Slate Creek	5600'	29.0	27.8	96%	26.6	23.0
Stouts Meadow	5400'	36.0	28.8	80%	27.2	26.9
<b>FEATHER RIVER</b>						
Kettle Rock	7300'	25.5	28.3	111%	28.3	23.7
Grizzly Ridge	6900'	29.7	—	—	—	—
Pilot Peak (DWR)	6800'	52.6	33.4	63%	33.4	31.6
Gold Lake	6750'	36.5	28.8	79%	28.7	26.5
Humbug	6500'	28.0	37.4	134%	37.2	34.2
Rattlesnake	6100'	14.0	18.8	135%	18.8	17.2
Bucks Lake	5750'	44.7	33.7	75%	33.1	30.2
Four Trees	5150'	20.0	14.8	74%	14.5	13.2
<b>EEL RIVER</b>						
Noel Spring	5100'	—	1.3	—	0.8	0.8
Plaskett Meadows	6000'	—	—	—	—	—
<b>YUBA &amp; AMERICAN RIVERS</b>						
Lake Lois	8800'	39.5	25.5	65%	26.8	29.4
Schneiders	8750'	34.5	27.8	81%	27.9	26.1
Caples Lake (DWR)	7800'	30.9	21.5	70%	21.5	20.0
Alpha	7600'	35.9	28.4	79%	28.3	26.7
Beta	7600'	35.9	26.1	73%	26.1	24.1
Meadow Lake	7200'	55.5	40.5	73%	39.8	37.9
Silver Lake (DWR)	7100'	22.7	19.9	88%	19.9	19.2
Central Sierra Snow Lab	6950'	33.6	24.5	73%	24.3	22.7
Huysink	6600'	42.6	22.8	54%	22.6	21.3
Van Vleck	6700'	35.9	25.3	70%	25.3	23.6
Robbs Saddle	5900'	21.4	18.0	84%	18.0	16.2
Greek Store	5600'	21.0	14.8	70%	14.8	13.0
Blue Canyon	5280'	9.0	2.4	26%	2.4	2.2
Robbs Powerhouse	5150'	5.2	6.8	131%	6.9	5.7
<b>MOKELUMNE &amp; STANISLAUS RIVERS</b>						
Deadman Creek	9250'	37.2	18.5	50%	18.7	17.0
Highland Meadow	8800'	47.9	27.9	58%	28.0	26.3
Gianelli Meadow	8350'	55.5	30.7	55%	30.7	28.5
Lower Relief Valley	8100'	41.2	26.6	64%	25.9	24.0
Blue Lakes	8000'	33.1	17.6	53%	16.9	16.1
Mud Lake	7900'	44.9	37.3	83%	37.2	34.6
Stanislaus Meadow	7750'	47.5	30.4	64%	30.4	28.4
Bloods Creek	7200'	35.5	40.0	113%	39.5	37.3
Black Springs	6500'	32.0	32.0	100%	31.8	29.2
<b>TUOLUMNE &amp; MERCED RIVERS</b>						
Dana Meadows	9800'	27.7	17.0	61%	17.0	16.3
Slide Canyon	9200'	41.1	23.6	57%	23.6	22.3
Snow Flat	8700'	44.1	23.8	54%	23.8	23.1
Tuolumne Meadows	8600'	22.6	14.8	65%	14.9	14.3
Horse Meadow	8400'	48.6	29.5	61%	29.5	26.9
Ostrander Lake	8200'	34.8	21.2	61%	21.2	20.6
Paradise Meadow	7650'	41.3	—	—	—	—
Gin Flat	7050'	34.2	15.6	46%	15.6	14.5
Lower Kibbie Ridge	6600'	27.4	14.3	52%	14.3	12.3

# TELEMETERED SNOW WATER EQUIVALENTS

FEBRUARY 1, 1998

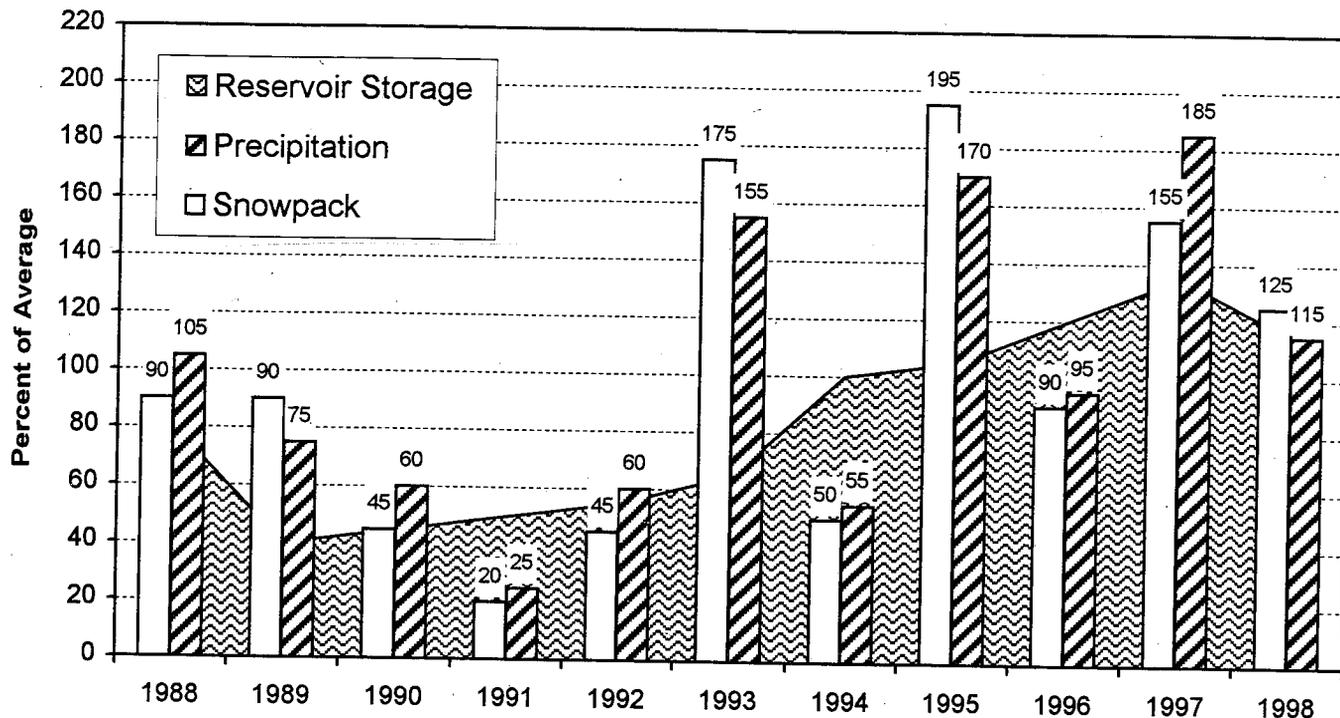
(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT			
			FEB 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
<b>SAN JOAQUIN RIVER</b>						
Volcanic Knob	10100'	30.1	17.6	59%	17.6	17.0
Agnew Pass	9450'	32.3	—	—	—	—
Kaiser Point	9200'	37.8	19.1	51%	19.1	17.7
Green Mountain	7900'	30.8	17.3	56%	17.3	16.3
Tamarack Summit	7600'	30.5	17.1	56%	17.1	15.9
Chilkoot Meadow	7150'	38.0	11.6	31%	11.6	10.2
Huntington Lake (USBR)	7000'	20.1	14.4	71%	14.2	12.6
Graveyard Meadow	6900'	18.8	12.0	64%	12.0	11.0
Poison Ridge	6900'	28.9	—	—	—	—
<b>KINGS RIVER</b>						
Bishop Pass	11200'	34.0	18.0	53%	18.7	17.4
Charlotte Lake	10400'	27.5	16.0	58%	15.8	14.8
State Lakes	10400'	29.0	24.2	83%	24.2	22.1
Mitchell Meadow	10375'	32.9	23.2	71%	23.2	21.4
Blackcap Basin	10300'	34.3	22.2	65%	22.2	20.9
Upper Burnt Corral	9700'	34.6	26.1	76%	26.1	24.2
West Woodchuck Meadow	9100'	32.8	21.7	66%	21.6	19.8
Big Meadows (DWR)	7600'	25.9	16.1	62%	16.1	14.9
<b>KAWEAH &amp; TULE RIVERS</b>						
Quaking Aspen	7200'	21.0	18.6	89%	18.6	17.4
Giant Forest (Corps)	6400'	10.0	9.7	97%	9.7	8.4
<b>KERN RIVER</b>						
Upper Tyndall Creek	11500'	27.7	18.5	67%	18.6	18.2
Crabtree Meadow	10700'	19.8	—	—	—	—
Chagoopa Plateau	10300'	21.8	13.5	62%	13.5	13.5
Pascoes	9150'	24.9	22.9	92%	22.7	20.9
Tunnel Guard Station	8950'	15.6	10.1	65%	10.1	9.4
Wet Meadows	8900'	30.3	18.7	62%	18.8	17.5
Casa Vieja Meadows	8400'	20.9	13.1	63%	12.4	11.8
Beach Meadows	7650'	11.0	9.4	86%	9.2	8.6
<b>SURPRISE VALLEY AREA</b>						
Dismal Swamp	7050'	29.2	24.2	83%	23.8	22.4
<b>TRUCKEE RIVER</b>						
Mount Rose Ski Area	8850'	38.5	20.4	53%	18.7	18.1
Independence Lake (NRCS)	8450'	41.4	27.1	65%	25.5	23.7
Big Meadows (NRCS)	8700'	25.7	12.1	47%	11.4	10.8
Independence Camp	7000'	21.8	13.7	63%	12.6	12.2
Independence Creek	6500'	12.7	11.1	87%	10.1	9.0
<b>LAKE TAHOE BASIN</b>						
Heavenly Valley	8800'	28.1	17.5	62%	16.4	16.0
Hagans Meadow	8000'	16.5	11.1	67%	10.6	10.0
Marlette Lake	8000'	21.1	14.8	70%	13.5	12.6
Echo Peak 5	7800'	39.5	27.0	68%	27.0	25.5
Rubicon Peak 2	7500'	29.1	17.9	62%	16.9	15.8
Ward Creek 3	6750'	39.4	23.2	59%	21.8	20.3
Fallen Leaf Lake	6300'	7.0	5.2	74%	4.5	4.2
<b>CARSON RIVER</b>						
Ebbetts Pass	8700'	38.8	22.3	57%	21.2	20.9
Poison Flat	7900'	16.2	10.4	64%	9.9	9.4
<b>WALKER RIVER</b>						
Virginia Lakes	9200'	20.3	9.1	45%	8.2	8.2
Lobdell Lake	9200'	17.3	8.7	50%	8.2	7.6
Sonora Pass Bridge	8750'	26.0	14.6	56%	13.9	12.7
Leavitt Meadows	7200'	8.0	8.4	105%	7.8	6.4
<b>OWENS RIVER/MONO LAKE</b>						
Gem Pass	10750'	31.7	18.3	58%	18.3	17.0
Sawmill	10300'	19.4	11.1	57%	11.1	11.1
Cottonwood Lakes	10200'	11.6	5.5	48%	5.5	5.5
Big Pine Creek	9800'	17.9	7.8	44%	7.8	7.8
South Lake	9600'	16.0	8.3	52%	8.3	8.0
Mammoth Pass (USBR)	9500'	42.4	21.8	52%	21.8	20.5
Rock Creek Lakes	10000'	14.0	7.9	57%	7.9	7.6

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
Central Valley North	45%	70%	90%	100%	75%
Central Valley South	45%	65%	85%	100%	80%
North Coast	40%	60%	85%	100%	80%

## February 1 Statewide Conditions



## SNOWLINES

**BULLETIN 120** is now available on the web. Please check <http://snow.water.ca.gov> for a preview of our efforts.

**TESTS** of the new snow water content detector continue at the Snow Lab located in Soda Springs. This detector, developed by Sandia National Labs, measures cosmic radiation. A detector above the snow and one at ground level measures the attenuation of that radiation by the snow. From this measurement the water content can be computed. A paper will be presented at the 1998 meeting of the Western Snow Conference describing the results of these tests.

**THE 1998 WESTERN SNOW CONFERENCE** annual meeting will be held April 20-23 at Snowbird, Utah. Contact Frank Gehrke at 916-547-2635 or [gridley@water.ca.gov](mailto:gridley@water.ca.gov) for more information.

SNOWPACK - Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1946).

PRECIPITATION - Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1946).

RUNOFF AND FORECASTS - Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedence level value and the 10 percent exceedence level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the period 1946-1995. For more details contact California Cooperative Snow Surveys, P.O. Box 942836, Sacramento, CA 94236-0001, (916) 574-2635 or gridley@water.ca.gov.

#### INDICES OF WATER AVAILABILITY

The Sacramento River Hydrologic Region 40-30-30 Water Supply Index. The 40-30-30 represent the percentage weight given to the three variables in the formula for the index. The first variable is the forecasted unimpaired runoff from April through July (40 Percent). The second variable is the forecasted unimpaired runoff from October through March (30 Percent). The third variable is the previous year's index with a cap to account for required flood control releases during wet years. The basins used in this computation are those used in the Sacramento River water year unimpaired runoff.

The Sacramento River water year unimpaired runoff is the sum of: Sacramento River above Bend Bridge, Feather River Inflow to Lake Oroville, Yuba River near Smartville and American River Inflow to Folsom Lake.

The San Joaquin River Hydrologic Region 60-20-20 Water Supply Index. In a similar manner, the 60-20-20 represents the percentage weights on April through July runoff, October through March runoff and previous year's index. The San Joaquin River unimpaired runoff is the sum of: Stanislaus River Inflow to New Melones Lake, Tuolumne River Inflow to New Don Pedro Reservoir, Merced River Inflow to Lake McClure and San Joaquin River Inflow to Millerton Lake.

Prior month unimpaired runoff is the sum of the runoff in the eight major rivers used in the two above indices.

State of California – The Resources Agency  
DEPARTMENT OF WATER RESOURCES  
P.O. Box 942836  
Sacramento, CA 94236-0001

**First Class**

