



California Cooperative  
Snow Surveys  
Bulletin 120-2-95

State of California  
The Resources Agency

Department of  
Water Resources

# Water Conditions in California

## Report 2 March 1, 1995



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

**Pete Wilson**  
Governor  
State of California

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

**STATE OF CALIFORNIA**

Pete Wilson, Governor

**THE RESOURCES AGENCY**

Douglas P. Wheeler, Secretary for Resources

**Department of Water Resources**

David N. Kennedy, Director

John J. Silveira  
Deputy Director

Robert G. Potter  
Chief Deputy Director

L. Lucinda Chipponeri  
Assistant Director for Legislation

Susan N. Weber  
Chief Counsel

**Division of Flood Management**

George T. Qualley ..... Chief  
Maurice Roos ..... Chief Hydrologist  
Gary Hester ..... Chief Forecaster

**Prepared by**

Frank Gehrke ..... Chief, Snow Surveys  
Robert R. Newton ..... Associate Engineer, W.R.  
Matthew S. Colwell ..... Associate Engineer, W.R.  
David M. Hart ..... Water Resources Engineering Associate  
Dudley E. McFadden ..... Assistant Engineer, W.R.  
Shawn T. Perkins ..... Water Resources Technician II

**COOPERATING AGENCIES**

**Public Agencies**

- Buena Vista Water Storage District
- Central California Irrigation District
- 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
- 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
- South San Joaquin Irrigation District
- Tri-Dam Project
- Tulare Lake Basin Water Storage District
- Turlock Irrigation District
- Yuba County Water Agency
- West Basin Municipal Water District

**Private Organizations**

- J.G. Boswell Company
- Kaweah River Association
- Kings River Water Association
- St. Johns River 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**

- California Department of Forestry & Fire Protection
- California Department of Water Resources

**Federal Agencies**

- U.S. Department of Agriculture
- Forest Service(14 National Forests)
- Pacific Southwest Forest and Range Experiment Station
- 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

March 1, 1995

February contrasted with January as rainfall amounts flip-flopped from the wettest to nearly the driest end of the spectrum. But most of the snowpack on the ground a month ago remains, assuring an above average runoff outlook. At press time, the month of March is starting out with a wetter pattern.

Forecasts of April through July runoff have been reduced 20 percent from those of a month ago because of the dry February. However, forecasts remain above average. Water year forecasts are about 5 percent higher reflecting high runoff in January and the first week of February.

Snowpack water content for this date is about 135 percent of average and about 120 percent of the April 1 average, the date of normal maximum accumulation. There was actually a slight loss of snowpack in February. The current pack is unusually dense, especially in the northern Sierra. Last year the snowpack was 80 percent of average at this time.

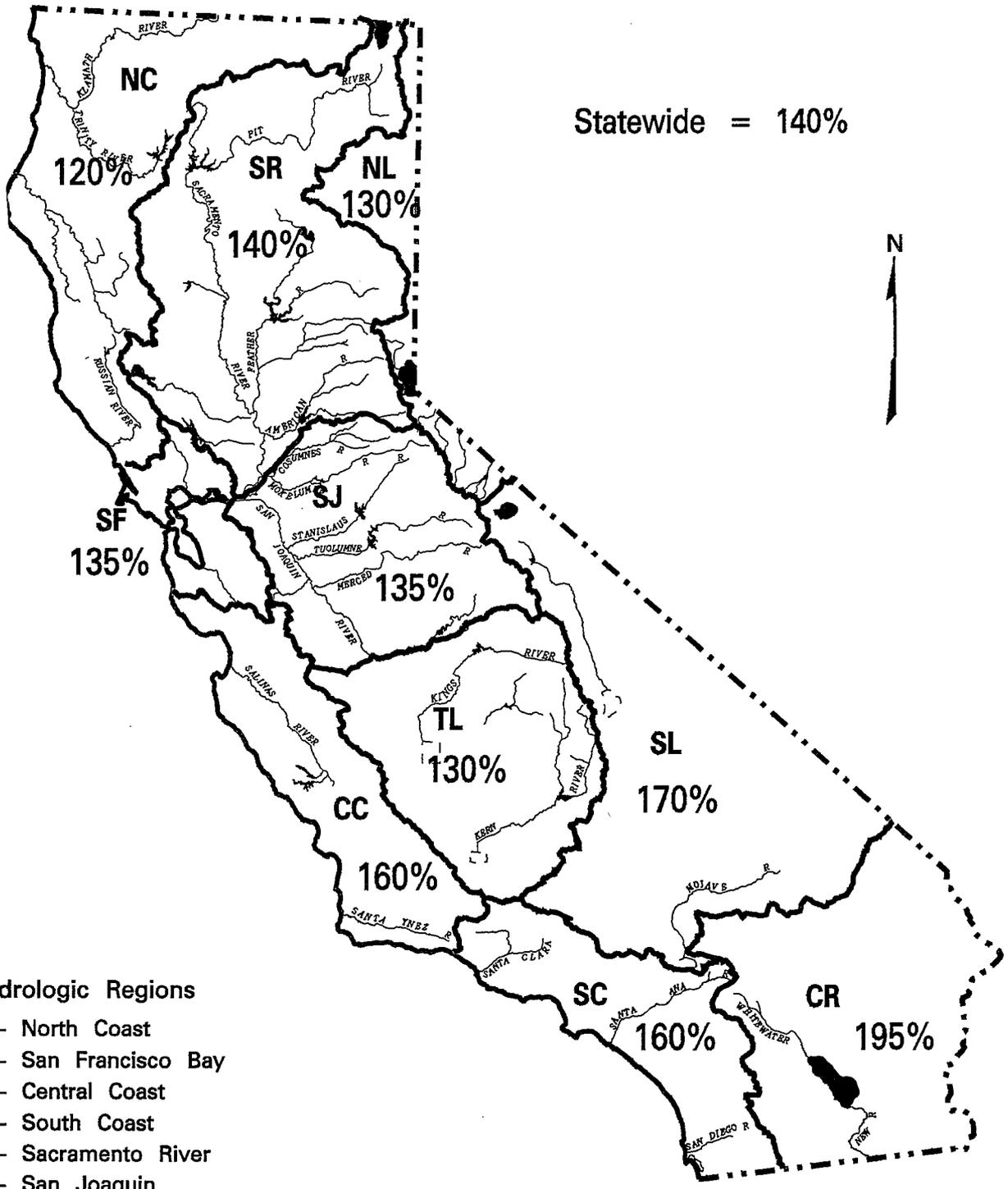
Precipitation during February was much below average, only about 35 percent statewide, but some stations in southern California reported near normal amounts for the month. Seasonal precipitation since October 1 is about 140 percent of average, boosted by the heavy rains of January. Last year it was 65 percent of average.

Runoff so far this season is estimated at 130 percent compared with only 40 percent one year ago. February runoff was about average. Estimated runoff during February of the 8 major rivers of the Sacramento and San Joaquin River regions was nearly 3.1 million acre-feet.

Reservoir storage gained about 0.6 million acre-feet during February and is about average for the date statewide. Last year it was 95 percent of average. The increase in storage was limited by flood control criteria at many of the large foothill reservoirs.

SUMMARY OF WATER CONDITIONS						
IN PERCENT OF AVERAGE						
HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	MARCH 1 SNOW WATER CONTENT	MARCH 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	120	115	100	125	105	115
SAN FRANCISCO BAY	135	--	120	170	--	--
CENTRAL COAST	160	--	75	130	--	--
SOUTH COAST	160	--	120	180	--	--
SACRAMENTO RIVER	140	140	100	135	110	120
SAN JOAQUIN RIVER	135	135	100	140	120	125
TULARE LAKE	130	145	90	110	115	115
NORTH LAHONTAN	130	115	20	90	110	105
SOUTH LAHONTAN	170	130	90	70	120	105
COLORADO RIVER -DESERT	195	--	--	--	--	--
STATEWIDE	140	135	100	130	115	120

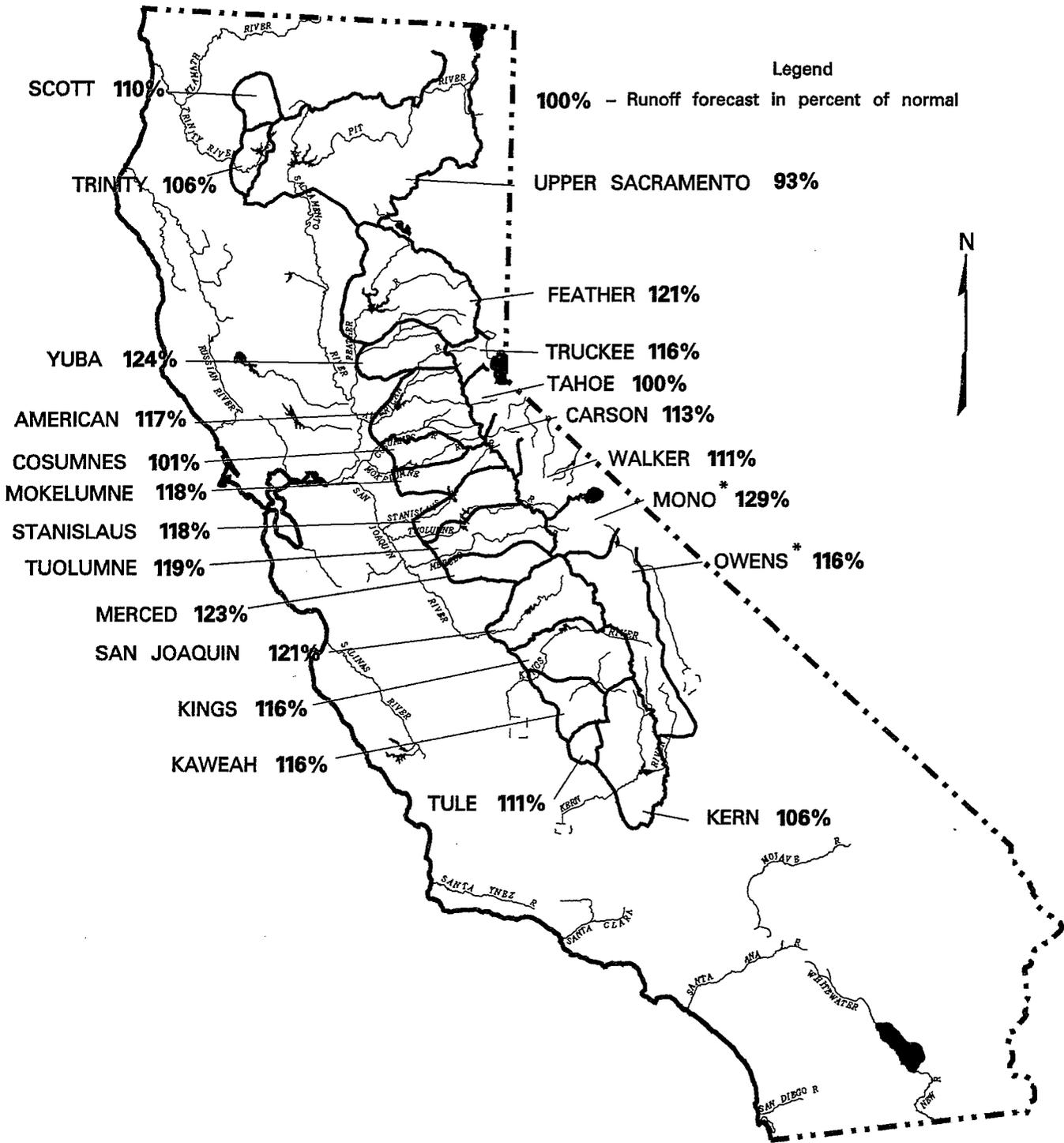
**SEASONAL PRECIPITATION**  
 IN PERCENT OF AVERAGE TO DATE  
 October 1, 1994 through February 28, 1995



- 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**  
March 1, 1995



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

**MARCH 1, 1995 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	297	702	39	270	91	
McCloud River at Shasta Lake	411	850	185	380	92	
Pit River at Shasta Lake	1,062	1,796	480	1,000	94	
Total Inflow to Shasta Lake	1,824	3,189	726	1,700	93	1,100-2,500
<b>Sacramento River above Bend Bridge, near Red Bluff</b>	2,491	4,674	943	2,350	94	1,500-3,500
<b>Feather River</b>						
Feather River at Lake Almanor near Prattville	333	675	120	390	117	
North Fork at Pulga	1,028	2,416	243	1,220	119	
Middle Fork near Clio (3)	86	518	4	100	116	
South Fork at Ponderosa Dam	110	267	13	135	123	
Total Inflow to Oroville Reservoir	1,857	4,676	392	2,250	121	1,780-3,100
<b>Yuba River</b>						
North Yuba below Goodyears Bar	286	647	51	350	122	
Inflow to Jackson Mdws and Bowman Reservoirs	112	236	25	140	125	
South Yuba at Langs Crossing	233	481	57	280	120	
Yuba River at Smartville	1,047	2,424	200	1,300	124	970-1,800
<b>American River</b>						
North Fork at North Fork Dam	262	716	43	300	115	
Middle Fork near Auburn	522	1,406	100	610	117	
Silver Creek Below Camino Diversion Dam	173	386	37	200	116	
Total Inflow to Folsom Reservoir	1,284	3,074	229	1,500	117	1,050-2,150
<b>SAN JOAQUIN RIVER</b>						
<b>Cosumnes River at Michigan Bar</b>	129	363	8	130	101	80-200
<b>Mokelumne River</b>						
North Fork near West Point (4)	437	829	104	490	112	
Total Inflow to Pardee Reservoir	465	1,065	102	550	118	410-740
<b>Stanislaus River</b>						
Middle Fork below Beardsley Dam	334	702	64	400	120	
North Fork Inflow to McKays Point Dam	224	503	34	260	116	
Total Inflow to New Melones Reservoir	713	1,710	116	840	118	640-1130
<b>Tuolumne River</b>						
Cherry Creek and Eleanor Creek near Hetch Hetchy	322	727	97	370	115	
Tuolumne River near Hetch Hetchy	606	1,392	153	720	119	
Total Inflow to New Don Pedro Reservoir	1,200	2,682	301	1,430	119	1,150-1,850
<b>Merced River</b>						
Merced River at Pohono Bridge	362	888	80	440	122	
Total Inflow to Lake McClure	617	1,587	123	760	123	620-1,010
<b>San Joaquin River</b>						
San Joaquin River at Mammoth Pool (5)	1,014	2,279	235	1,200	118	
Big Creek below Huntington Lake (5)	95	264	11	115	121	
South Fork near Florence Lake (5)	202	511	58	240	119	
Total Inflow to Millerton Lake	1,228	3,355	262	1,480	121	1,140-1,930
<b>TULARE LAKE</b>						
<b>Kings River</b>						
North Fork Kings River near Cliff Camp	239	565	50	280	117	
Total Inflow to Pine Flat Reservoir	1,203	3,114	273	1,400	116	1,050-1800
<b>Kaweah River at Terminus Reservoir</b>	284	814	61	330	116	250-440
<b>Tule River at Success Reservoir</b>	63	256	2	70	111	50-100
<b>Kern River</b>						
Kern River near Kernville	373	1,203	83	410	110	
Total Inflow to Isabella Reservoir	461	1,657	84	490	106	370-710

(1) See inside back cover for definition

(2) All 50 year averages are based on years 1941-1990 unless otherwise noted

(3) 44 year average based on years 1936-79

(4) 36 year average based on years 1936-71

(5) 45 year average based on years 1936-80

**MARCH 1, 1995 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											
1,244	2,353	577											
3,145	5,150	1,484											
5,987	10,796	2,479	2,740	850	840	700	480	290	230	440	6,570	110	5,500 - 8,000
8,664	17,180	3,294	4,660	1,390	1,250	960	680	410	300	520	10,170	117	8,650 - 12,200
780	1,269	366											
2,417	4,400	666											
219	637	24											
291	562	32											
4,617	9,492	994	1,880	610	680	900	810	370	170	190	5,610	122	4,950 - 6,800
564	1,056	102											
181	292	30											
379	565	98											
2,390	4,926	369	1,000	320	360	470	510	260	60	50	3,030	127	2,600 - 3,700
616	1,234	66											
1,070	2,575	144											
318	705	59											
2,736	6,381	349	1,140	300	430	530	600	300	70	30	3,400	124	2,800 - 4,300
385	1,253	20	230	60	80	70	40	15	5	5	505	131	400 - 630
626	1,009	197											
748	1,800	129	170	70	100	150	230	150	20	10	900	120	730 - 1,150
471	929	88											
1,150	2,952	155	290	100	150	240	350	200	50	20	1,400	122	1,150 - 1,750
461	1,147	123											
770	1,661	258											
1,882	4,430	383	480	160	220	320	520	450	140	30	2,320	123	2,000 - 2,830
461	1,020	92											
966	2,859	150	260	70	120	180	300	220	60	20	1,230	127	1,070 - 1,550
1,337	2,964	308											
112	298	14											
248	653	71											
1,776	4,642	362	350	120	170	290	520	490	180	80	2,200	124	1,800 - 2,730
284	607	58											
1,669	4,294	383	280	100	140	260	510	480	150	70	1,990	119	1,600 - 2,450
444	1,402	92	60	30	50	80	125	100	25	10	480	108	380 - 620
145	615	16	30	15	30	30	25	10	5	5	150	103	110 - 200
558	1,577	163											
716	2,309	175	85	45	70	110	170	140	70	40	730	102	590 - 1,020

\* Indicates observed runoff

**MARCH 1, 1995 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	653	1,593	80	690	106
<b>Scott River</b>					
Near Fort Jones	200	NA	NA	220	110
<b>Klamath River</b>					
Total inflow to Upper Klamath Lake (3)	521	1,151	177	405	78
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<b>NORTH LAHONTAN</b>					
<b>Truckee River</b>					
Lake Tahoe to Farad accretions	268	713	58	310	116
Lake Tahoe Rise (assuming gates closed, in feet)	1.5	3.75	0.23	1.5	100
<b>Carson River</b>					
West Fork at Woodfords	54	131	12	60	111
East Fork near Gardnerville	186	407	43	210	113
<b>Walker River</b>					
West Fork near Coleville	148	330	35	170	115
East Fork near Bridgeport	63	209	7	65	103
<hr/>					
<b>SOUTH LAHONTAN</b>					
<b>Owens River</b>					
Total tributary flow to Owens River (4)	233	579	96	270	116

(1) See inside back cover for definition

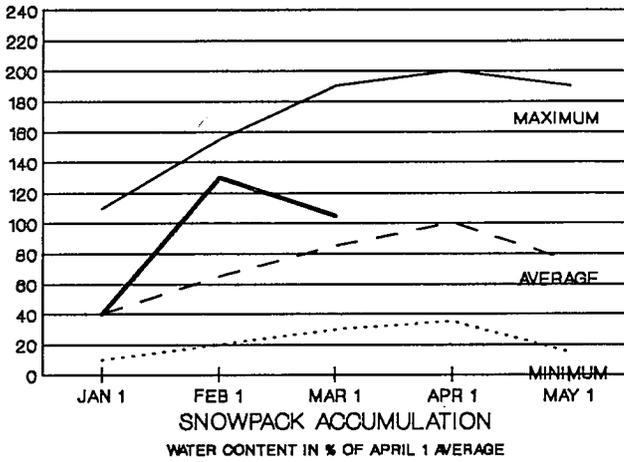
(2) All 50 year averages are based on years 1941-1990 unless otherwise noted

(3) Forecast by U.S. Natural Resources Conservation Service, Portland Oregon, for April through September. 25 year average

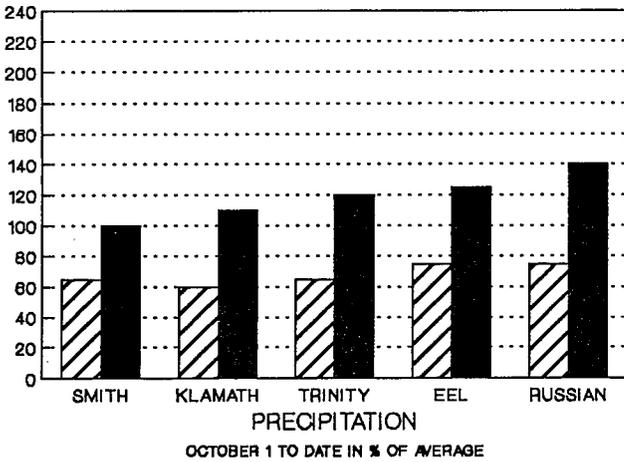
(4) Forecast by Department of Water and Power, City of Los Angeles

## NORTH COAST REGION

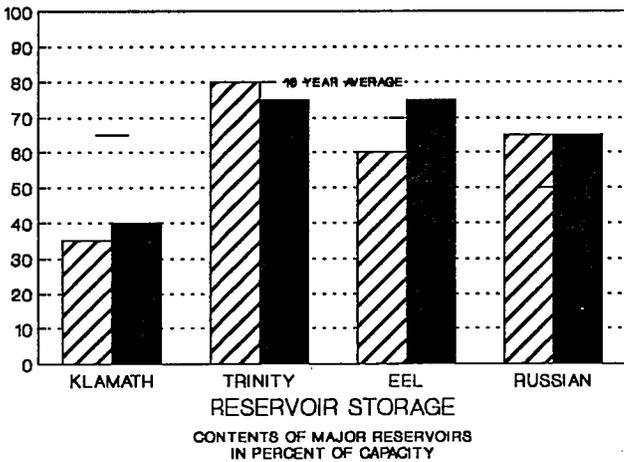
**SNOWPACK** - First of the month measurements made at 9 snow courses indicate an area wide snow water equivalent of 33.3 inches. This is 115 percent of the March 1 average and 105 percent of the seasonal (April 1) average. Last year at this time the pack was holding 20.2 inches of water.



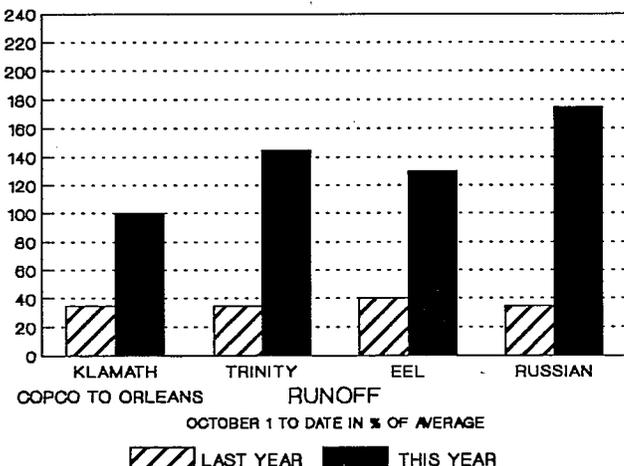
**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on this area was 120 percent of normal. Precipitation last month was about 40 percent of the monthly average. Seasonal precipitation at this time last year stood at 65 percent of normal.



**RESERVOIR STORAGE** - First of the month storage in 7 reservoirs was 2.3 million acre-feet which is 100 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 105 percent of average.



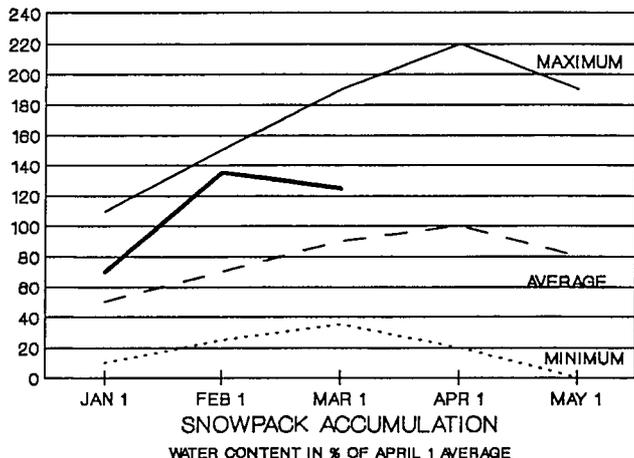
**RUNOFF** - Seasonal runoff of streams draining the area totaled 9.6 million acre-feet which is 125 percent of average for this period. Last year, runoff for the same period was 35 percent of average.



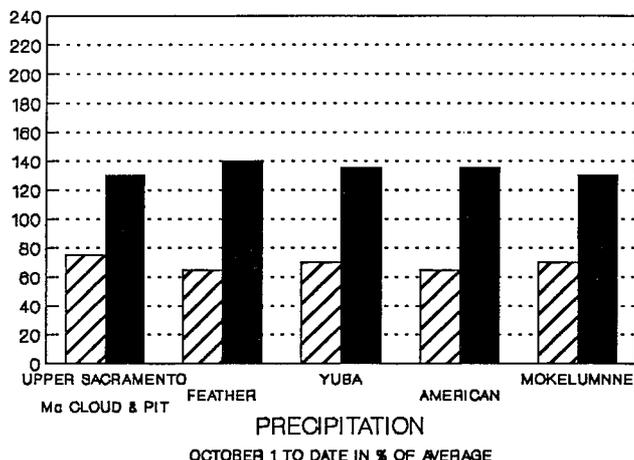
▨ LAST YEAR    ■ THIS YEAR

## SACRAMENTO RIVER REGION

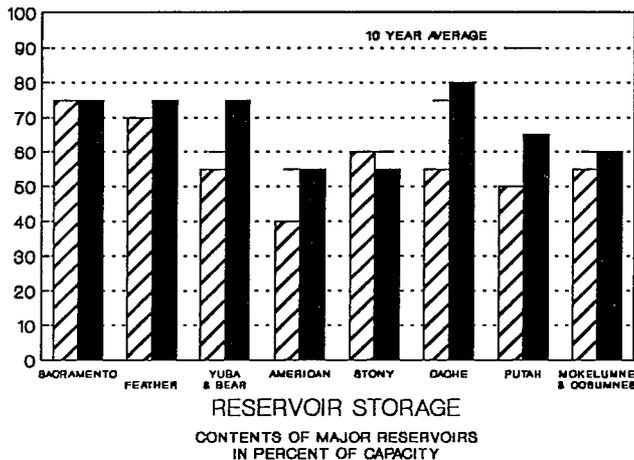
**SNOWPACK** - First of the month measurements made at 66 snow course indicate a basin-wide snow water equivalent of 41.2 inches. This is 140 percent of the average for this date and 125 percent for April 1. Last year at this time, the pack was holding 48.7 inches of water.



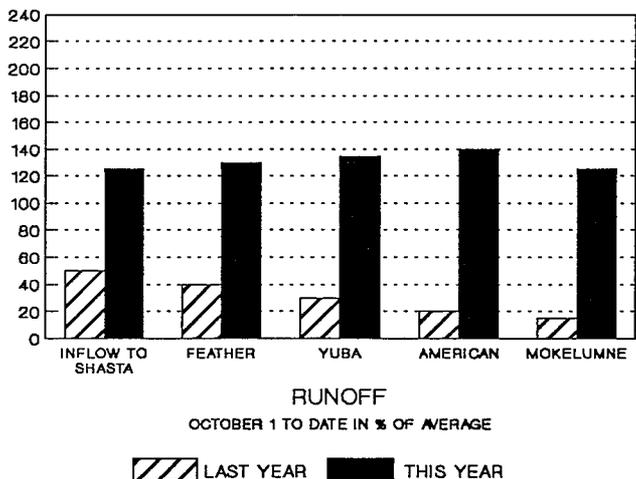
**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the Sacramento Basin was 140 percent of normal. Precipitation last month was about 25 percent of the monthly average. Seasonal precipitation at this time last year stood at 70 percent of average.



**RESERVOIR STORAGE** - First of the month storage in 43 reservoirs was 11.5 million acre-feet which is 100 percent of average. About 70 percent of available capacity was being used. Storage in these reservoirs was about 90 percent of average at this time last year.



**RUNOFF** - Seasonal runoff from streams draining into the basin totaled 11.3 million acre-feet which is 135 percent of average for this period. Last year runoff for the same period was 40 percent of average.



The Sacramento River Region 40-30-30 Water Supply Index is forecasted to be 8.7 million acre-feet assuming median meteorological conditions for the remainder of the year. This classifies the year as "above normal" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board.

## SAN JOAQUIN RIVER AND TULARE LAKE REGIONS

**SNOWPACK** - First of the month measurements made at 63 San Joaquin Basin snow courses indicate a basin wide snow water equivalent of 37.0 inches which is 120 percent of the seasonal (April 1) average and 135 percent of average for this date. Last year at this time, the pack was holding 18.8 inches of water.

At the same time, 34 Tulare Lake Basin snow courses indicated a basin-wide snow water equivalent of 27.8 inches which is 145 percent of the average for this date and 130 percent of the seasonal average. Last year at this time, the Basin was holding 16.1 inches of water.

**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin Basin was 135 percent of normal. Precipitation last month was 20 percent of the monthly average. Seasonal precipitation at this time last year stood at 65 percent of normal.

Seasonal precipitation on the Tulare Lake Basin was 130 percent of normal. Precipitation last month was 45 percent of the monthly average. Seasonal precipitation at this time last year stood at 130 percent of normal.

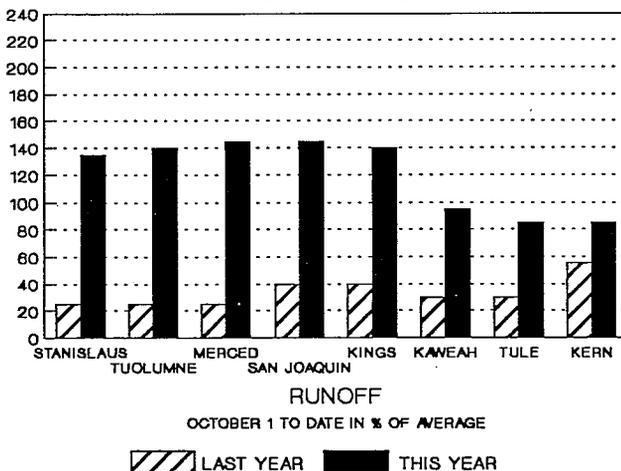
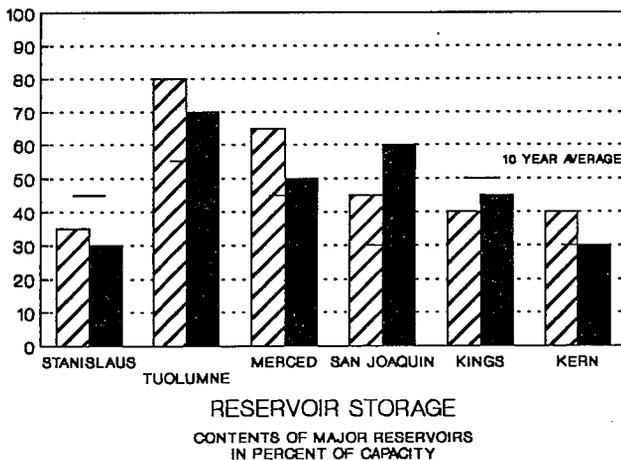
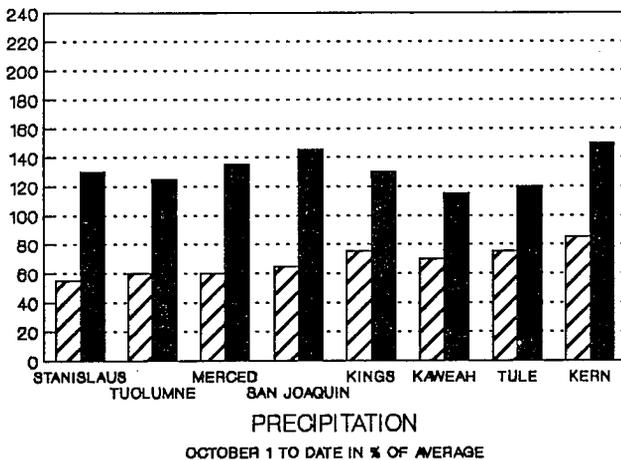
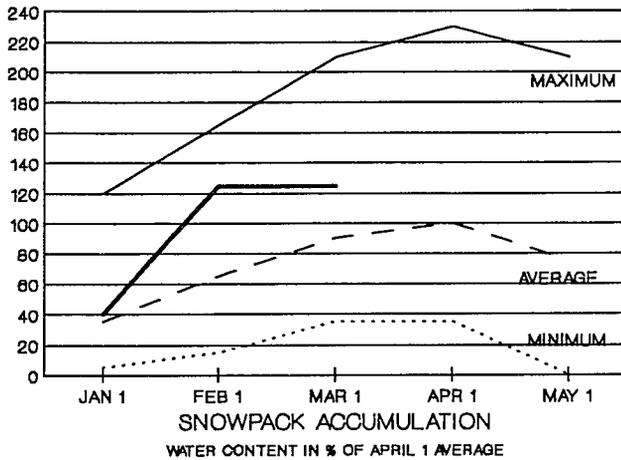
**RESERVOIR STORAGE** - First of the month storage in 33 San Joaquin Basin reservoirs was 6.9 million acre-feet which is 100 percent of average. About 60 percent of available capacity was being used. Storage in these reservoirs at this time last year was 105 percent of average.

First of the month storage in 6 Tulare Lake Basin reservoirs was 733 thousand acre-feet which is 90 percent of average. About 35 percent of available capacity was being used. Storage in these reservoirs at this time last year was 100 percent of average.

**RUNOFF** - Seasonal runoff of streams draining into the San Joaquin Basin totaled 2.4 million acre-feet which is 140 percent of average for this period. Last year, runoff for this same period was 25 percent of average.

Seasonal runoff of streams draining into the Tulare Lake Basin totaled 654 thousand acre-feet which is 110 percent of average for this period. Last year, runoff for this same period was 45 percent of average.

The San Joaquin River Region 60-20-20 Water Supply Index is forecasted to be 3.6 MAF which classifies the year as "above normal".



## NORTH AND SOUTH LAHONTAN REGIONS

**SNOWPACK** - First of the month measurements made at 14 North Lahontan snow courses indicate an area wide snow water equivalent of 30.5 inches which is 115 percent of average for this date and 105 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 15.8 inches of water.

At the same time, 20 South Lahontan courses indicated an area-wide snow water equivalent of 27.9 inches which is 130 percent of the average for this date and 115 percent of the April 1 average. Last year at this time, the pack was holding 12.1 inches of water.

**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) over the North Lahontan area was 130 percent of normal. Precipitation last month was 30 percent of the monthly average. Seasonal precipitation at this time last year stood at 55 percent of normal.

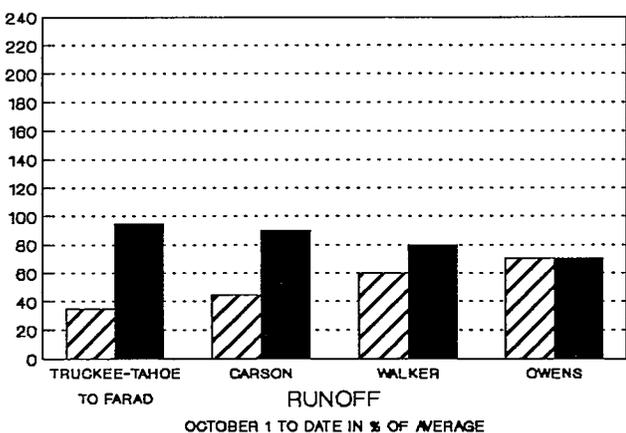
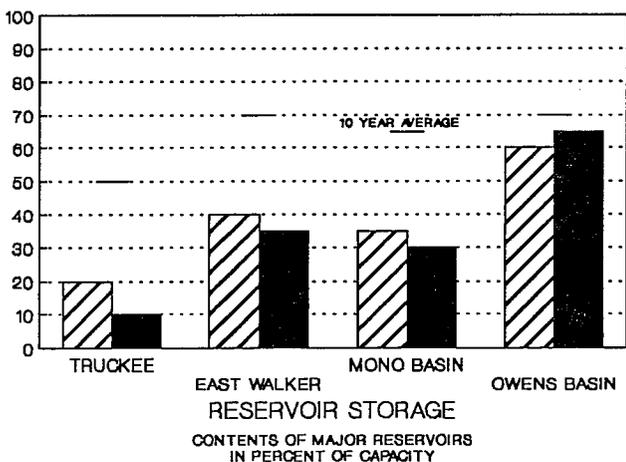
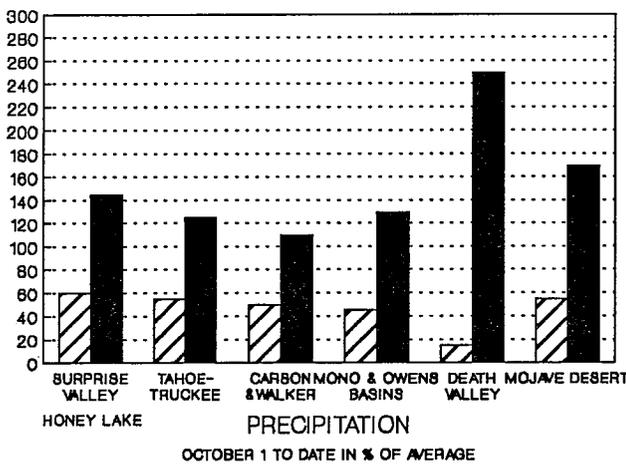
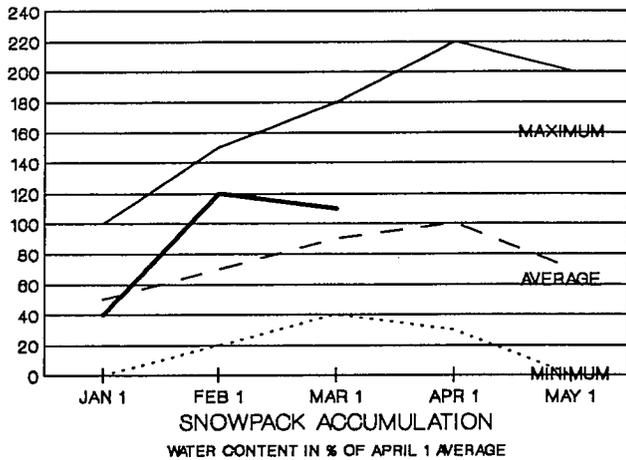
Seasonal precipitation over the South Lahontan area was 170 percent of normal. Last month's precipitation was 35 percent of the monthly average. Seasonal precipitation at this time last year stood at 40 percent of normal.

**RESERVOIR STORAGE** - First of the month storage in 5 North Lahontan reservoirs was 122 thousand acre-feet which is 20 percent of average. About 10 percent of available capacity was being used. Storage in these reservoirs at this time last year was 35 percent of average. Lake Tahoe was 0.8 feet below its natural rim on March 1.

First of the month storage in 8 South Lahontan reservoirs was 260 thousand acre-feet which is 90 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 183 thousand acre-feet which is 90 percent of average for this period. Last year, runoff for this same period was 45 percent of average.

Seasonal runoff of the Owens River in the South Lahontan region totaled 39 thousand acre-feet which is 70 percent of

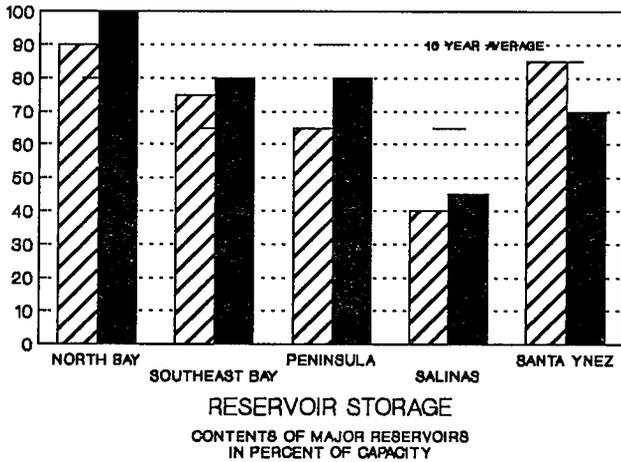
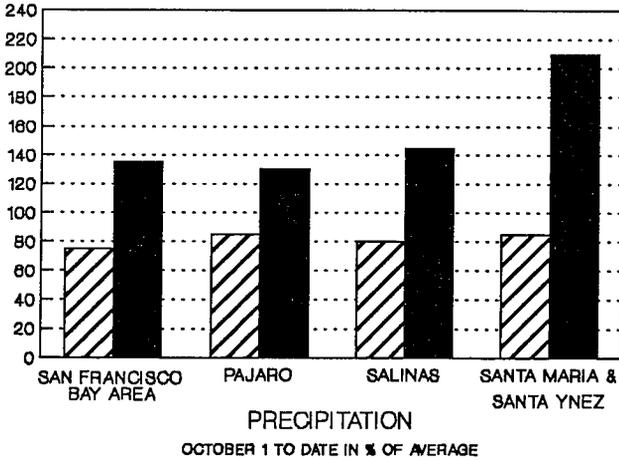


▨ LAST YEAR    ■ THIS YEAR

## SAN FRANCISCO AND CENTRAL COAST REGIONS

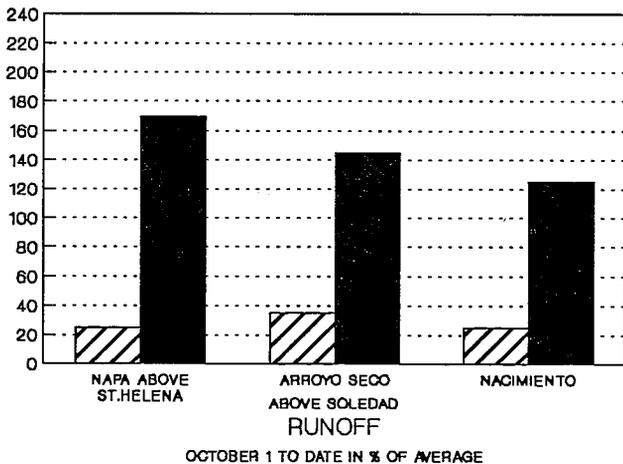
**PRECIPITATION** - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 135 percent of normal. Precipitation last month was 1 percent of the monthly average. Seasonal precipitation at this time last year stood at 75 percent of normal.

Seasonal precipitation on the Central Coast area averaged 160 percent of normal. Precipitation last month was 35 percent of the monthly average. Seasonal precipitation at this time last year stood at 85 percent of normal.



**RESERVOIR STORAGE** - First of the month storage in 18 major Bay area reservoirs was 586 thousand acre-feet which is 120 percent of average. About 85 percent of available capacity was being used. Storage in these reservoirs at this time last year was 105 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 482 thousand acre-feet which is 75 percent of average. About 50-percent of available capacity was being used. Storage in these reservoirs at this time last year was 80 percent of average.



**RUNOFF** - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 86 thousand acre-feet which is 170 percent of average for this period. Last year, runoff for this same period was 25 percent of average.

Seasonal runoff of selected Central Coast streams totaled 279 thousand acre-feet which is 130 percent of average for this period. Last year, runoff for this same period was 30 percent of average.

▨ LAST YEAR    ■ THIS YEAR

## **SOUTH COAST AND COLORADO RIVER REGIONS**

**PRECIPITATION** - Seasonal precipitation (October through the end of February) on the South Coast was 160 percent of normal. February precipitation was 75 percent of the monthly average. Seasonal precipitation at this time last year stood at 70 percent of normal.

Seasonal precipitation in the Colorado Desert region was 195 percent of normal. Seasonal precipitation at this time last year was 90 percent of the average. February precipitation was 90 percent of average.

**RUNOFF** - Seasonal runoff from selected South Coast streams totaled 54 thousand acre-feet which is 180 percent of average. Last year, runoff for the same period was 70 percent of average.

**RESERVOIR STORAGE** - March 1 storage in 29 major South Coast area reservoirs was 1.6 million acre-feet or 120 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 120 percent of average.

First of the month combined storage in Lakes Powell, Mead, Mohave and Havasu was about 39.2 million acre-feet which is 104 percent of average. About 73 percent of available capacity was being used. One year ago, these reservoirs were storing 41.7 million acre-feet. The April through July inflow to Lake Powell is forecasted to be 7.4 million acre-feet which will be 96 percent of average.

**UPPER COLORADO RIVER BASIN** - The first of the month snowpack, according to the U.S. Soil Conservation Service reports was 100 percent of average and ranges from 90 percent in the Green River Basin above Flaming Gorge to 115 percent in the Dolores.

### **CENTRAL VALLEY PROJECT**

Based on March 1 conditions, Bureau of Reclamation water year forecasts for runoff into CVP reservoirs are: Trinity--148 percent of average, Shasta--128 percent of average, American--142 percent of average, Stanislaus--130 percent of average, San Joaquin above Friant--129 percent of average. As of February 28, 1995 CVP storage was 7.6 MAF which is approximately equal to storage compared to one year ago, and is approximately 103 percent of normal for that date.

The Bureau of Reclamation announced water allocations for the CVP on February 15, 1995. Agricultural contractors north of the Delta received 100 percent of their contract supply; Agricultural contractors south of the Delta received 75 percent of their contract supply; urban contractors received 75 to 100% supplies. Wildlife refuges received 75 to 100% percent of level II supplies. Sacramento River water rights settlement contractors received 100 percent supplies, and San Joaquin Exchange contractors were allocated 100% supplies. Friant Division received 100 percent Class I, and 100% Class II supplies. No update to the water allocations has been scheduled for March. Stanislaus River contractors were not allocated any water because of the continuing shortage in New Melones water supply.

### **STATE WATER PROJECT**

As of March 1, State Water Project (SWP) conservation storage (Lake Oroville plus the State share of San Luis Reservoir) held 3.8 million acre-feet of water. Although February was very dry, this is still more than 200 thousand acre-feet greater than at this same time last year. Approved entitlement deliveries to State water contractors remains at 3.2 million acre-feet, which is 100 percent of the current demand.

## MAJOR WATER DISTRIBUTION PROJECTS

### RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AS OF FEBRUARY 28		PERCENT AVERAGE
			1994 1,000 AF	1995 1,000 AF	
<b><u>STATE WATER PROJECT</u></b>					
Oroville	3,540	2,588	2,489	2,641	102
San Luis SWP	1,062	935	1,066	1,157	124
Lake Del Valle	77	33	28	37	111
Silverwood	73	66	66	69	104
Pyramid Lake	171	162	163	164	101
Castaic Lake	324	268	276	190	71
Perris Reservoir	132	115	118	117	101
<b><u>CENTRAL VALLEY PROJECT</u></b>					
Clair Engle Lake	2,450	1,897	1,962	1,821	96
Shasta Lake	4,550	3,377	3,299	3,449	102
Whiskeytown	241	208	206	206	99
Folsom	975	579	377	574	99
New Melones	2,420	1,492	792	701	47
Millerton Lake	521	306	279	437	143
San Luis CVP	971	764	965	867	113
<b><u>COLORADO RIVER PROJECT</u></b>					
Lake Mead	26,300	20,023	21,632	20,485	102
Lake Powell	25,000	15,410	17,852	16,570	108
Lake Mohave	1,810	1,641	1,693	1,608	98
Lake Havasu	619	537	538	570	106
<b><u>EAST BAY MUNICIPAL UTILITY DISTRICT</u></b>					
Pardee	210	177	185	207	117
Camanche	432	251	271	246	98
East Bay (4 reservoirs)	151	129	127	134	104
<b><u>CITY &amp; COUNTY OF SAN FRANCISCO</u></b>					
Hetch Hetchy	360	131	240	140	107
Cherry Lake	269	103	266	152	148
Lake Eleanor	28	10	22	6	65
South Bay (4 reservoirs)	225	169	179	204	121
<b><u>CITY OF LOS ANGELES(DWP)</u></b>					
Crowley Lake(Long Valley)	183	130	117	130	100
Grant Lake	48	30	19	17	56
Other Aqueduct Storage(6 reservoirs)	95	75	63	63	84

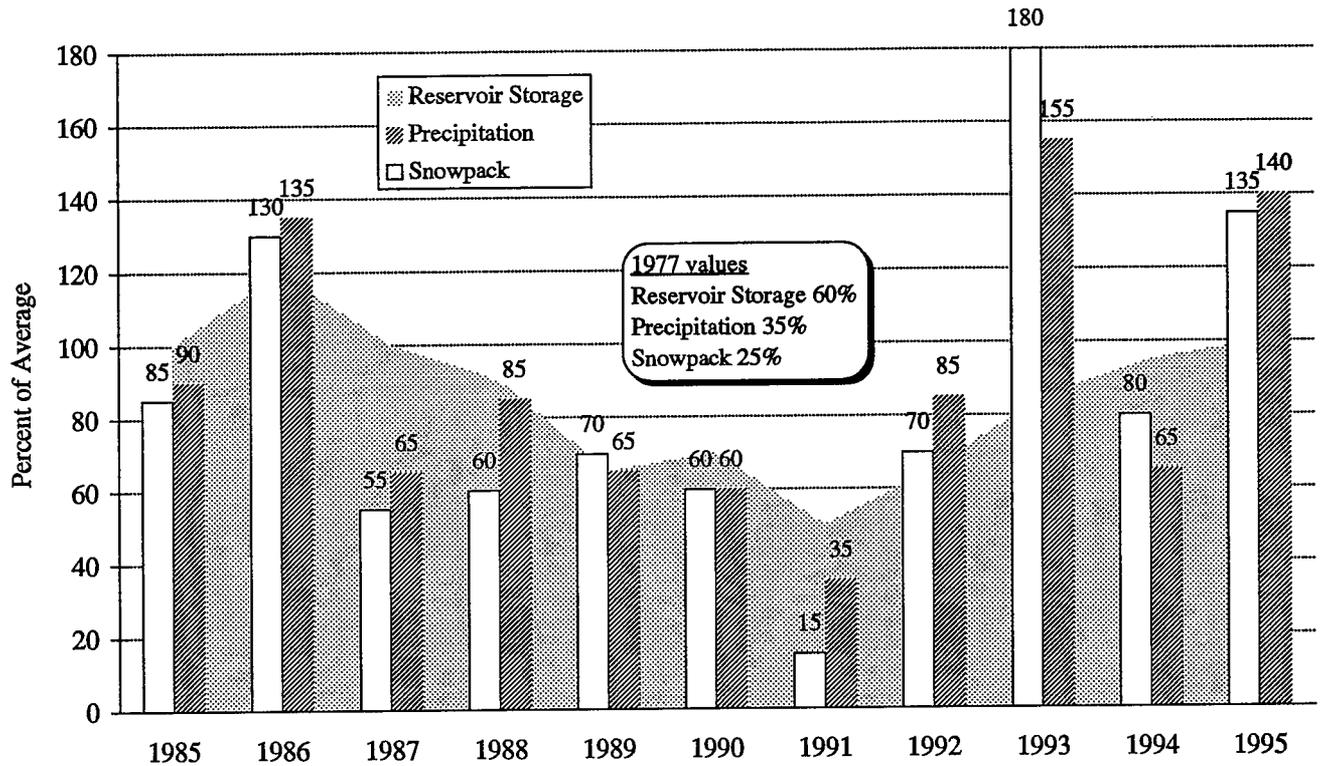
DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER  
TELEMETERED SNOW WATER EQUIVALENTS - March 1, 1995

BASIN NAME STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
TRINITY RIVER							
PETERSON FLAT	USBR	7150	----	22.2	----	22.2	24.1
RED ROCK MOUNTAIN	USBR	6700	39.6	57.5	145%	58.2	59.5
BONANZA KING	USBR	6450	40.5	28.9	71%	30.5	38.4
SHIMMY LAKE	USBR	6200	40.3	56.2	139%	56.2	59.5
MIDDLE BOULDER #3	USBR	6200	28.3	22.2	79%	22.2	24.8
HIGHLAND LAKES	USBR	6030	29.9	19.8	66%	20.5	25.2
SCOTTS MOUNTAIN	USBR	5900	----	20.6	----	20.9	22.8
MUMBO BASIN	USBR	5700	22.4	----	----	----	----
BIG FLAT	USBR	5100	----	----	----	----	----
SACRAMENTO RIVER							
CEDAR PASS	SCS	7100	18.1	22.2	123%	22.4	22.2
BLACKS MOUNTAIN	DWR	7100	----	18.4	----	18.5	19.1
SAND FLAT	USBR	6750	42.4	40.7	96%	40.7	41.5
MEDICINE LAKE	USBR	6700	----	----	----	----	----
ADIN MOUNTAIN	SCS	6350	13.6	17.7	130%	18.1	18.6
SNOW MOUNTAIN	USBR	5950	27.0	31.5 <sup>e</sup>	117%	31.5	33.5
SLATE CREEK	USBR	5600	29.0	41.7	144%	42.5	45.1
STOUTS MEADOW	USBR	5400	36.0	46.8	130%	47.5	49.1
FEATHER RIVER							
KETTLEROCK	DWR	7300	25.5	32.8	128%	32.8	35.2
GRIZZLY	DWR	6900	29.7	35.6	120%	35.8	36.4
PILOT PEAK	DWR	6800	52.6	51.1	97%	53.2	55.6
GOLD LAKE	DWR	6750	36.5	45.2	124%	45.2	45.2
HUMBUG	DWR	6500	28.0	47.9	171%	48.1	49.2
RATTLESNAKE	DWR	6100	14.0	40.8	291%	41.2	43.4
BUCKS LAKE	DWR	5750	44.7	61.9	139%	61.9	61.9
FOUR TREES	DWR	5150	20.0	36.8	184%	37.0	38.4
YUBA & AMERICAN RIV							
LAKE LOIS	DWR	8800	----	52.9	----	52.9	52.9
SCHNEIDERS	SMUD	8750	34.5	47.9	139%	48.7	48.6
CAPLES LAKE COURSE	USBR	7800	30.9	35.4	115%	35.6	36.1
ALPHA	SMUD	7600	35.9	42.7	119%	42.8	43.6
BETA	DWR	7600	----	40.4	----	40.4	40.9
FORNI RIDGE	USBR	7600	37.0	40.2	109%	40.2	40.2
SILVER LAKE	USBR	7100	22.7	30.2	133%	30.2	31.2
CENT SIERRA SNOW LAB	USFS	6950	33.6	42.2	126%	42.5	43.9
HUYSINK	USBR	6600	42.6	----	----	----	----
VAN VLECK	SMUD	6700	35.9	----	----	----	----
ROBBS SADDLE	SMUD	5900	21.4	29.5	138%	29.6	30.5
GREEK STORE	USBR	5600	21.0	33.3	158%	33.3	34.3
BLUE CANYON	USBR	5280	9.0	5.7	63%	6.1	10.2
ROBBS POWERHOUSE	SMUD	5150	5.2	9.8	188%	10.0	11.5
MOKEL. & STANIS. RIV							
DEADMAN CREEK	USBR	9250	37.2	32.5	87%	32.5	32.3
HIGHLAND MEADOW	USBR	8800	47.9	48.8	102%	48.8	48.0
GIANELLI MEADOW	USBR	8350	55.5	49.4	89%	49.4	49.6
LOWER RELIEF VALLEY	DWR	8100	41.2	47.5	115%	46.8	46.8
BLUE LAKES	SCS	8000	33.1	36.7	111%	36.6	36.6
MUD LAKE	SMUD	7900	44.9	55.2	123%	55.0	53.0
STANISLAUS MEADOW	USBR	7750	47.5	53.5	113%	53.6	53.2
BLOODS CREEK	USBR	7200	35.5	60.5	170%	60.5	60.0
BLACK SPRINGS	USBR	6500	32.0	53.9	168%	53.9	54.6
TUOLUMNE & MERCED R.							
DANA MEADOWS	DWR	9800	27.7	29.8	108%	29.8	29.8
SLIDE CANYON	DWR	9200	----	43.2	----	43.2	43.2
SNOW FLAT	DWR	8700	44.1	48.0	109%	48.0	47.0 <sup>r</sup>
TUOLUMNE MEADOWS	DWR	8600	22.6	20.2	89%	20.3	20.4
HORSE MEADOW	DWR	8400	48.6	45.1	93%	45.1	44.4
OSTRANDER LAKE	DWR	8200	34.8	39.9	115%	39.9	39.9
PARADISE	DWR	7650	----	44.4	----	44.4	43.8
GIN FLAT	DWR	7050	34.2	30.8	90%	30.8	31.1
LOWER KIBBIE	DWR	6600	27.4	27.0	99%	27.0	27.6
SAN JOAQUIN RIVER							
VOLCANIC KNOB	USBR	10100	30.1	29.4	98%	28.8	28.8
AGNEW PASS	USBR	9450	32.3	33.7	104%	33.0	31.7
KAISER POINT	USBR	9200	37.8	----	----	----	----
GREEN MOUNTAIN	USBR	7900	30.8	----	----	----	----

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER  
TELEMETERED SNOW WATER EQUIVALENTS - March 1, 1995

BASIN NAME STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
TAMARACK SUMMIT	USBR	7600	30.5	36.6	120%	36.6	37.4
CHILKOOT MEADOW	USBR	7150	38.0	43.9	116%	44.1	45.5
HUNTINGTON LAKE	USBR	7000	20.1	29.7	148%	29.7	29.9
GRAVEYARD MEADOW	USBR	6900	18.8	---	---	---	---
POISON RIDGE	USBR	6900	28.9	36.4	126%	36.6	38.8
KINGS RIVER							
BISHOP PASS	DWR	11200	---	---	---	---	---
CHARLOTTE LAKE	DWR	10400	---	25.9	---	25.4	25.3
STATE LAKES	COE	10400	29.0	---	---	---	---
MITCHELL MEADOW	COE	10375	32.9	32.8	100%	32.8	32.9
BLACKCAP BASIN	USBR	10300	34.3	37.9	111%	37.3	36.6
UPPER BURNT CORRAL	DWR	9700	34.6	41.8	121%	41.8	41.8
WEST WOODCHUCK MDW	COE	9100	32.8	35.7e	109%	35.7	36.1
BIG MEADOWS	DWR	7600	25.9	21.2	82%	21.2	21.8
KAWEAH & TULE RIVERS							
QUAKING ASPEN	DWR	7200	21.0	30.1	143%	30.2	30.7
GIANT FOREST	COE	6400	10.0	10.8	108%	10.8	13.3
KERN RIVER							
UPPER TYNDALL CREEK	COE	11500	27.7	---	---	---	---
CRABTREE	DWR	10700	19.8	15.7	79%	15.7	15.7
CHAGOOPA PLATEAU	DWR	10300	21.8	22.9	105%	22.9	22.9
PASCOES	COE	9150	24.9	35.8e	144%	35.8	36.0
TUNNEL	DWR	8950	15.6	17.2	111%	17.2	17.2
WET MEADOW	COE	8900	30.3	---	---	---	---
CASA VIEJA MDW	DWR	8400	20.9	20.3	97%	19.7	19.7
BEACH MEADOW	DWR	7650	11.0	11.9	108%	11.9	13.7
SURPRISE VALLEY AREA							
DISMAL SWAMP	SCS	7050	29.2	25.6	88%	25.3	25.7
TRUCKEE RIVER							
MOUNT ROSE SKI AREA	SCS	8850	38.5	48.8	127%	48.7	48.3
INDEPENDENCE LAKE	SCS	8450	41.4	47.7	115%	47.7	47.7
BIG MEADOWS	SCS	8700	25.7	23.6	92%	23.6	24.5
SQUAW VALLEY GOLD C	SCS	7800	46.5	69.8	150%	69.9	71.1
INDEPENDENCE CAMP	SCS	7000	21.8	23.8	109%	23.9	24.4
INDEPENDENCE CREEK	SCS	6500	12.7	.0	0%	16.8	18.0
LAKE TAHOE BASIN							
HEAVENLY VALLEY	SCS	8800	28.1	---	---	---	---
HAGANS MEADOW	SCS	8000	16.5	18.9	115%	18.6	20.4
MARLETTE LAKE	SCS	8000	21.1	---	---	30.8	31.1
ECHO PEAK	SCS	7800	39.5	50.0	127%	50.1	53.2
RUBICON NO. 2	SCS	7500	29.1	30.6	105%	30.6	30.8
WARD CREEK NO. 3	SCS	6750	39.4	38.8	98%	38.6	39.2
TAHOE CITY CROSS	SCS	6750	---	17.5	---	17.8	19.6
FALLEN LEAF LAKE	SCS	6300	7.0	6.4	91%	6.5	8.9
CARSON RIVER							
EBBETTS PASS	SCS	8700	38.8	39.4	102%	39.4	40.0
POISON FLAT	SCS	7900	16.2	19.4	120%	19.4	19.6
WALKER RIVER							
VIRGINIA LAKES RIDGE	SCS	9200	20.3	18.0	89%	17.9	17.8
LOBDELL LAKE	SCS	9200	17.3	16.6	96%	16.5	16.1
SONORA PASS BRIDGE	SCS	8750	26.0	26.3	101%	26.2	26.4
LEAVITT MEADOWS	SCS	7200	8.0	10.7	134%	10.6	12.7
OWENS RIVER/MONO LK.							
GEM PASS	LADWP	10750	31.7	47.1	148%	45.7	45.7
SAWMILL MEADOW	DWR	10300	19.4	14.1	73%	14.1	14.8
COTTONWOOD LAKES	LADWP	10200	11.6	8.3	71%	8.6	9.8
BIG PINE #3	LADWP	9800	17.9	15.1	84%	15.1	15.7
SOUTH LAKE	LADWP	9600	16.0	15.8	99%	15.8	15.7
MAMMOTH PASS (6T)	USBR	9500	42.4	42.7	101%	42.5	42.5
MAMMOTH PASS (RP)	USBR	---	---	44.3	---	44.1	44.1
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		

### March 1 Statewide Conditions



\*\*\*\*\* SNOWLINES \*\*\*\*\*

**WESTERN SNOW CONFERENCE** The 63rd annual meeting of the Western Snow Conference is being held April 17-20 in Reno, NV. The conference theme is "Improving Resource Management Using Snow Hydrology". The gathering will be at the Nuggett in Sparks, NV just outside Reno. The meeting promises many interesting papers and is a chance to meet people from other states and countries involved in the snow business. Contact Frank Gehrke at (916) 653-8255 or [gridley@water.ca.gov](mailto:gridley@water.ca.gov) if you need more information.

**NEW DELTA WATER QUALITY OBJECTIVES** The State Water Resources Control Board has established new water quality objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and refers to the Bulletin 120 series as the source of the classification. New indices were developed as a measure of water availability and to set water quality objectives according to water year classification. Weighting factors for April through July and antecedent water conditions are included in the formula to account for the relative hydrologic importance.

Definitions for these new measures are on the inside back cover of Bulletin 120.

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 1941-1990 (50 years, except for data sites established after 1941).

PRECIPITATION - Averages are based on April 1 data for the period 1941-1990 (50 years, except for data sites established after 1941).

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 1941-1990. For more details contact California Cooperative Snow Surveys, P.O. Box 942836, Sacramento, CA 94236-0001, (916) 653-8255 or [gridley@water.ca.gov](mailto: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.

On the front cover: The Central Sierra Snow Lab near Donner Summit is the site of a cooperative study between the U.S. Forest Service, Pacific Southwest Forest and Range Experiment Station, the Natural Resources Conservation Service and the California Cooperative Snow Surveys Program of the Department of Water Resources to determine differences between the stainless steel "California" pillow and the new hypalon rubber pillow. Three installations of each type of pillow were installed in late 1994.

Photo by Dave Hart

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

# FIRST CLASS

