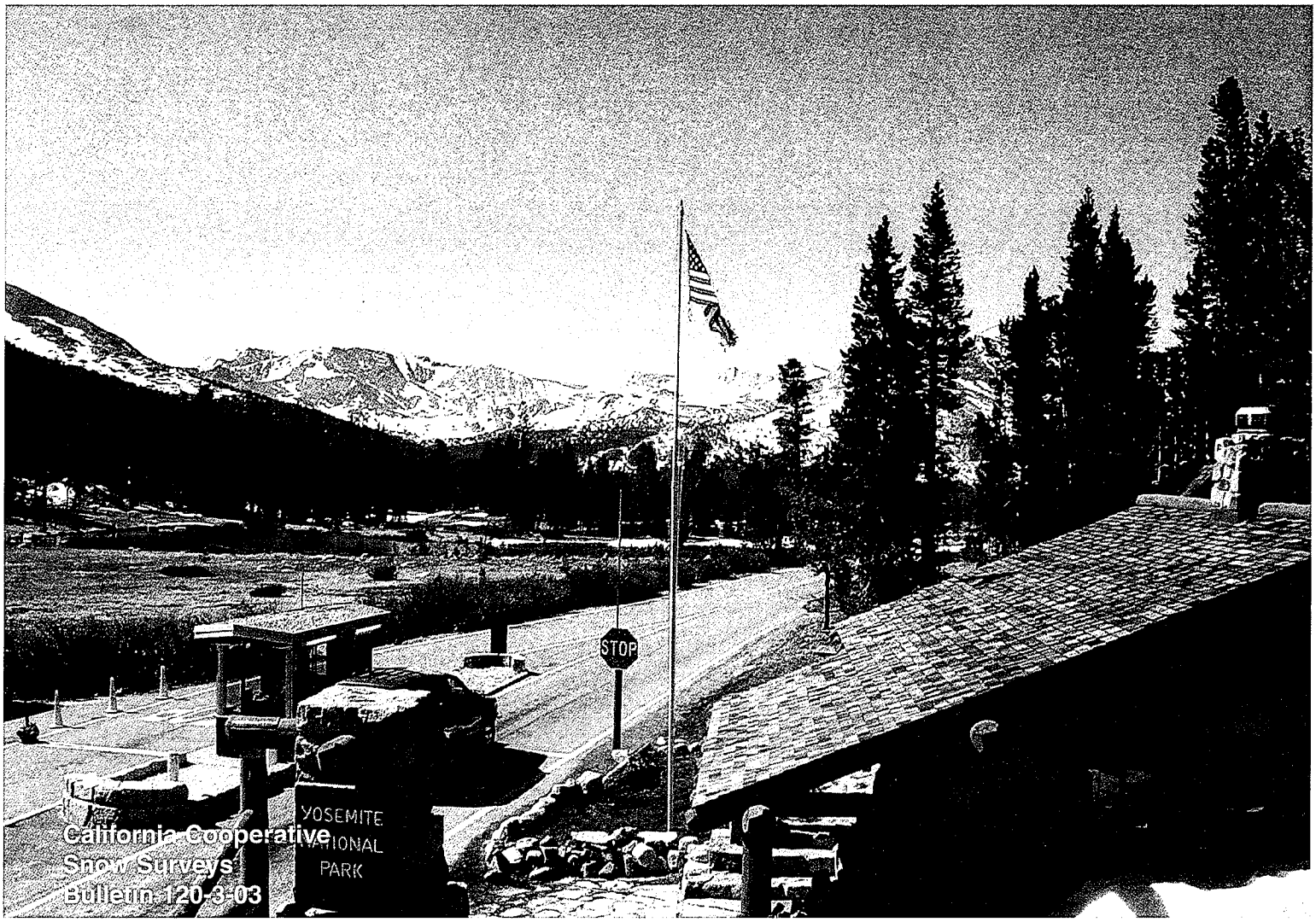


California Cooperative
Snow Surveys
Bulletin 120-3-03

State of California
The Resources Agency

Department of
Water Resources

Water Conditions in California

Report 3 April 1, 2003

Gray Davis
Governor
State of California

Mary D. Nichols
Secretary for Resources
The Resources Agency

Thomas M. Hannigan
Director
Department of Water Resources

STATE OF CALIFORNIA
Gray Davis, Governor

THE RESOURCES AGENCY
Mary D. Nichols, Secretary for Resources

Department of Water Resources
Thomas M. Hannigan
Director

Tom Glover
Deputy Director

Stephen W. Verigin
Acting Chief Deputy Director

Jonas M. Minton
Deputy Director

L. Lucinda Chipponeri
Assistant Director for Legislation

Peggy Bernardy
Chief Counsel

Division of Flood Management

Stein Buer.....Chief, Division of Flood Management
Maury Roos.....State Hydrologist
Gary Hester.....Chief, Hydrology and Flood Operations
Gary B. Bardini.....Chief Forecaster

Prepared by

Frank Gehrke.....Chief, Snow Surveys
J. Pierre Stephens.....Senior Engineer,W.R.
Edward Diamond.....Engineer, W.R.
David Rizzardo.....Engineer, W.R.
Stephen Nemeth.....Assistant Engineering Specialist, W.R.
David M. Hart.....Water Resources Engineering Associate

COOPERATING AGENCIES

Public Agencies
Buena Vista Water Storage District
East Bay Municipal Utility District
Eldorado Irrigation 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
San Joaquin Exchange Contractors Water Association
South San Joaquin Irrigation District
Tri–Dam Project
Truckee River Basin Water Commission
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency
Private Organizations
J.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
  Scripps Institution of Oceanography
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

April 1, 2003

This has been an unusual year. Total precipitation since the beginning of the water year has been about average, but the snowpack is only about 65 percent of normal with only light amounts in the lower portion of the snow zone. Instead of the normal 10 percent gain in snowpack during March there was a net loss of about 5 percent. Water supplies in the northern end of the State are near average, except in the upper Klamath basin, but supplies from the southern Sierra will be tight and require more use of stored water.

Forecasts of April through July runoff have been lowered another 10 percent to 65 percent of average due to the reduced snowpack. There is a pronounced gradient from the northwest to the south, especially on the west slope of the Sierra. Water year forecasts have also been reduced about 5 percent and are now projected at nearly 80 percent.

Snowpack water content overall actually decreased 5 percent during March, primarily from some early melting near the end of the month. The pack is about 65 percent of average for this date compared to 95 percent last year.

Precipitation during March was about 90 percent of average statewide, slightly above on the North Coast and in the South Coast region, but considerably under average in the Central Coast and central Sierra. Seasonal precipitation is near 100 percent of average overall compared to 85 percent one year ago.

Runoff so far is about 95 percent of average, compared to 80 percent at this time last year. The North Coast is above average while most of the remainder of California is below normal. March runoff was only about 75 percent of average. Estimated runoff of the 8 major rivers of the Sacramento and San Joaquin River regions was 2.5 million acre-feet during March.

Reservoir Storage continues to be the bright spot and is 100 percent of normal for this time, and just slightly more than last year. Amounts in the north tend to be above average whereas many reservoirs in the south, as well as the Sierra east side, are considerable below normal.

SUMMARY OF WATER CONDITIONS
IN PERCENT OF AVERAGE

HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	April 1 SNOW WATER CONTENT	April 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	115	95	105	110	95	100
SAN FRANCISCO BAY	110	--	90	105	--	--
CENTRAL COAST	95	--	95	80	--	--
SOUTH COAST	100	--	80	45	--	--
SACRAMENTO RIVER	100	65	95	95	70	85
SAN JOAQUIN RIVER	80	60	100	60	60	60
TULARE LAKE	95	60	85	85	60	65
NORTH LAHONTAN	90	70	45	75	65	65
SOUTH LAHONTAN	120	85	95	70	80	75
COLORADO RIVER-DESERT	80	--	--	--	--	--
STATEWIDE	100	65	100	95	65	80

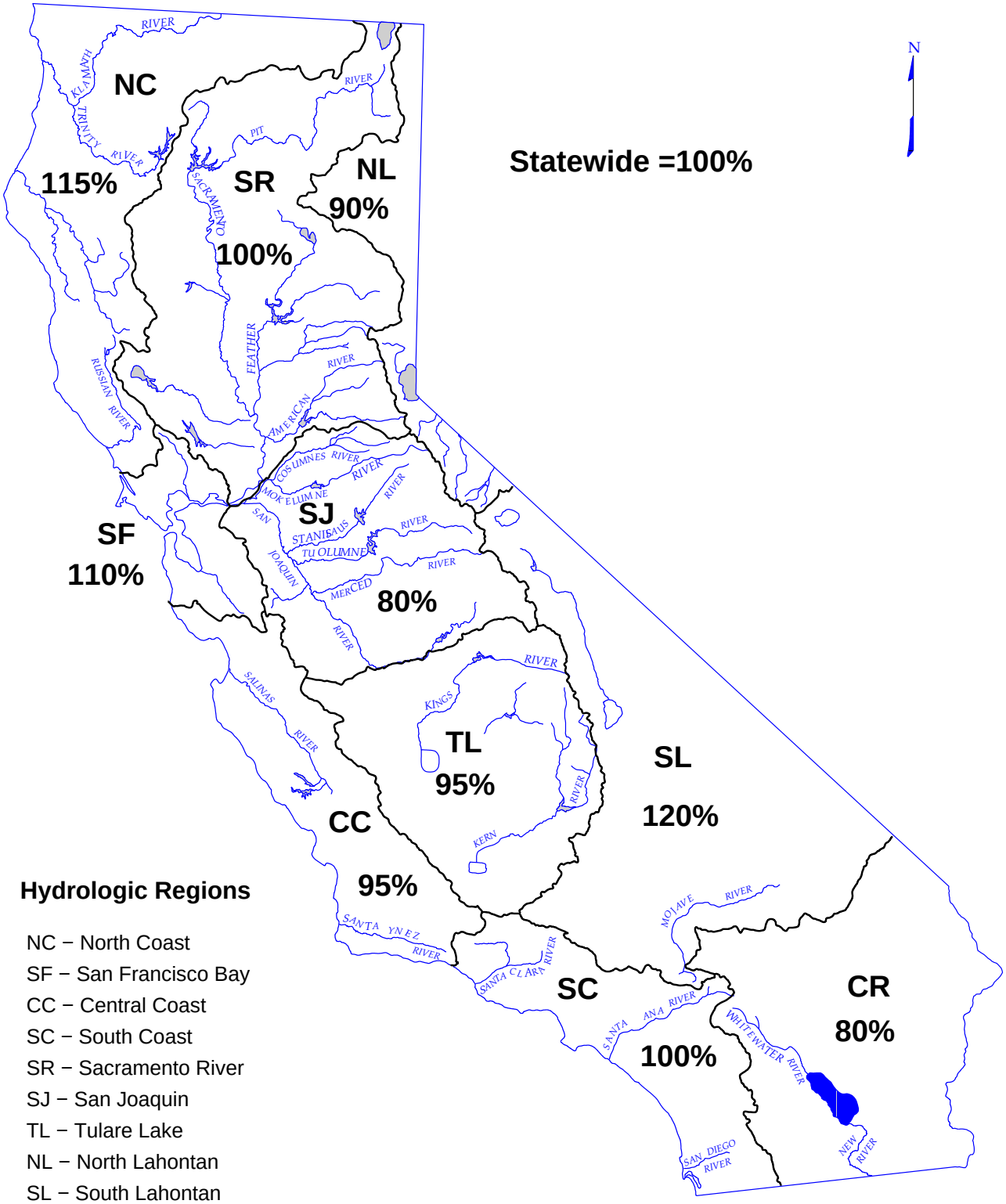
DEPARTMENT OF WATER RESOURCES

CALIFORNIA COOPERATIVE SNOW SURVEYS

SEASONAL PRECIPITATION

IN PERCENT OF AVERAGE TO DATE

October 1, 2002 through March 31, 2003

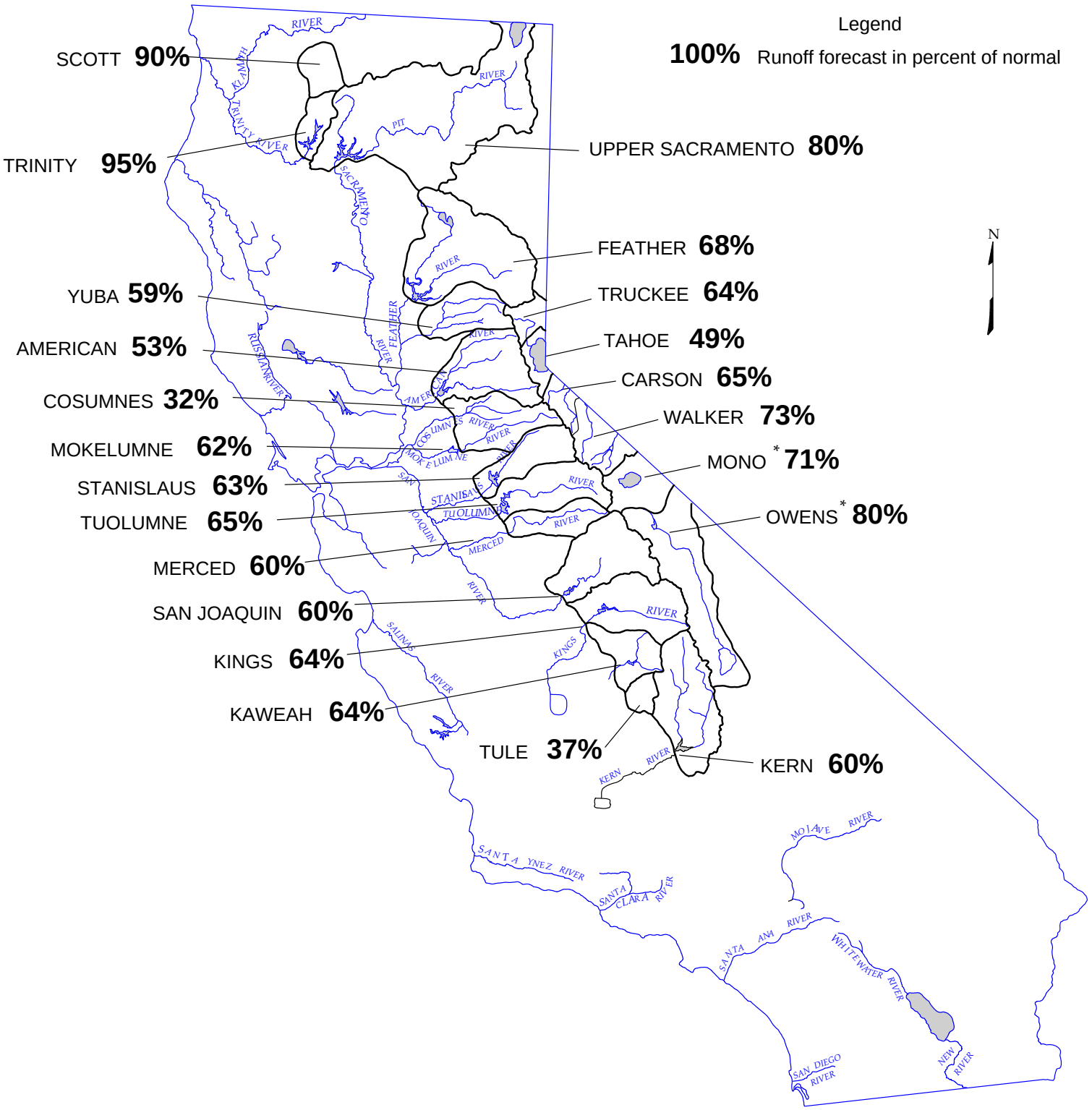


Hydrologic Regions

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

DEPARTMENT OF WATER RESOURCES
CALIFORNIA COOPERATIVE SNOW SURVEYS
FORECAST OF APRIL – JULY
UNIMPAIRED SNOWMELT RUNOFF
April 1, 2003



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

APRIL 1, 2003 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL 50 Yr Avg (2)	Max of Record	Min of Record	FORECAST Apr-Jul Forecasts	Pct of Avg	80 % Probability Range (1)
SACRAMENTO RIVER						
Upper Sacramento River						
Sacramento River at Delta above Shasta Lake (3)	299	711	39	240	80%	
McCloud River above Shasta Lake	400	850	185	330	83%	
Pit River near Montgomery Creek + Squaw Creek	1,090	2,098	480	850	78%	
Total Inflow to Shasta Lake	1,849	3,525	726	**1,480**	80%	1,150 - 2,120
Sacramento River above Bend Bridge, near Red Bluff	2,521	5,075	943	**2,000**	79%	1,520 - 2,920
Feather River						
Feather River at Lake Almanor near Prattville (3)	333	675	120	240	72%	
North Fork at Pulga (3)	1,028	2,416	243	710	69%	
Middle Fork near Clio (4)	86	518	4	55	64%	
South Fork at Ponderosa Dam (3)	110	267	13	65	59%	
Feather River at Oroville	1,870	4,676	392	**1,270**	68%	940 - 1,990
Yuba River						
North Yuba below Goodyears Bar (3)	286	647	51	170	59%	
Inflow to Jackson Mdws and Bowman Reservoirs (3)	112	236	25	70	63%	
South Yuba at Langs Crossing (3)	233	481	57	140	60%	
Yuba River near Smartville plus Deer Creek	1,044	2,424	200	**620**	59%	420 - 990
American River						
North Fork at North Fork Dam (3)	262	716	43	130	50%	
Middle Fork near Auburn (3)	522	1,406	100	280	54%	
Silver Creek Below Camino Diversion Dam (3)	173	386	37	90	52%	
American River below Folsom Lake	1,282	3,074	229	**680**	53%	470 - 1,160
SAN JOAQUIN RIVER						
Cosumnes River at Michigan Bar	130	363	8	**42**	32%	20 - 95
Mokelumne River						
North Fork near West Point (5)	437	829	104	270	62%	
Total Inflow to Pardee Reservoir	469	1,065	102	**290**	62%	220 - 420
Stanislaus River						
Middle Fork below Beardsley Dam (3)	334	702	64	210	63%	
North Fork Inflow to McKays Point Dam (3)	224	503	34	140	63%	
Stanislaus River below Goodwin Reservoir (7)	716	1,710	116	**450**	63%	340 - 660
Tuolumne River						
Cherry Creek & Eleanor Creek near Hetch Hetchy (3)	322	727	97	210	65%	
Tuolumme River near Hetch Hetchy (3)	606	1,392	153	420	69%	
Tuolumne River below La Grange Reservoir (7)	1,230	2,682	301	**800**	65%	650 - 1,090
Merced River						
Merced River at Pohono Bridge (3)	362	888	80	240	66%	
Merced River below Merced Falls (7)	633	1,587	123	**380**	60%	310 - 560
San Joaquin River						
San Joaquin River at Mammoth Pool (6)	1,014	2,279	235	630	62%	
Big Creek below Huntington Lake (6)	95	264	11	50	53%	
South Fork near Florence Lake (6)	202	511	58	130	64%	
San Joaquin River inflow to Millerton Lake	1,262	3,355	262	**760**	60%	600 - 1,030
TULARE LAKE						
Kings River						
North Fork Kings River near Cliff Camp (3)	239	565	50	150	63%	
Kings River below Pine Flat Reservoir	1,234	3,113	274	**790**	64%	650 - 1,040
Kaweah River below Terminus Reservoir	290	814	62	**185**	64%	150 - 265
Tule River below Lake Success	65	259	2	**24**	37%	16 - 49
Kern River						
Kern River near Kernville (3)	373	1,203	83	240	64%	
Kern River inflow to Lake Isabella	470	1,657	84	**280**	60%	230 - 380

(1) See inside back cover for definition
(2) All 50 year averages are based on years 1951-2000 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

APRIL 1, 2003 FORECASTS
WATER YEAR UNIMPAIRED RUNOFF

Unimpaired Runoff in 1,000 Acre-Feet (1)														
HISTORICAL			**DISTRIBUTION**								**FORECAST**			
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)	
888	1,965	165												
1,234	2,353	557												
3,217	5,150	1,484												
6,194	10,796	2,479	2,575	480	695	550	420	280	230	410	**5,640**	91%	5,260	- 6,370
8,990	17,180	3,294	4,385	750	1,015	760	580	370	290	530	**8,680**	97%	8,100	- 9,750
780	1,269	366												
2,417	4,400	666												
219	637	24												
291	562	32												
4,775	9,492	994	1,590	370	565	600	390	180	100	145	**3,940**	83%	3,590	- 4,710
564	1,056	102												
181	292	30												
379	565	98												
2,459	4,926	369	675	175	265	290	230	80	20	15	**1,750**	71%	1,550	- 2,140
616	1,234	66												
1,070	2,575	144												
318	705	59												
2,830	6,382	349	490	160	265	310	270	90	10	5	**1,600**	57%	1,390	- 2,100
409	1,253	20	43	17	25	25	12	4	1	1	**128**	31%	105	- 185
626	1,009	197												
774	1,800	129	80	35	55	110	140	35	5	0	**460**	59%	390	- 600
471	929	88												
1,196	2,952	155	140	55	95	180	190	70	10	5	**745**	62%	640	- 970
461	1,147	123												
770	1,661	258												
1,974	4,631	383	225	65	125	260	350	170	20	15	**1,230**	62%	1,070	- 1,540
461	1,020	92												
1,014	2,787	150	105	35	65	140	160	70	10	5	**590**	58%	520	- 780
1,337	2,964	308												
112	298	14												
248	653	71												
1,851	4,642	362	175	60	110	240	290	180	50	25	**1,130**	61%	960	- 1,430
284	607	58												
1,736	4,287	386	175	55	105	220	330	200	40	25	**1,150**	66%	1,010	- 1,430
460	1,402	94	87	20	40	65	70	40	10	6	**338**	73%	300	- 430
153	615	16	43	8	16	12	7	3	2	1	**92**	60%	80	- 120
558	1,577	163												
741	2,318	175	140	30	45	90	90	75	25	25	**520**	70%	460	- 630

* Unimpaired runoff in prior months based on measured flows

(7) Forecast point names based on USGS gage names. Stanislaus below Goodwin also known as inflow to New Melones, Tuolumne River below La Grange also known as inflow to Don Pedro, Merced River below Merced Falls also known as inflow to McClure.

APRIL 1, 2003 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL 50 Yr Avg (2)	Max of Record	Min of Record	FORECAST Apr-Jul Forecasts	Pct of Avg
NORTH COAST					
Trinity River					
Trinity River at Lewiston Lake	660	1,593	80	**630**	95%
Scott River					
Scott River near Fort Jones	200	400	30	**180**	90%
Klamath River					
Total inflow to Upper Klamath Lake (3)	515	939	149	**290**	56%
NORTH LAHONTAN					
Truckee River					
Lake Tahoe to Farad accretions	272	713	52	**175**	64%
Lake Tahoe Rise (assuming gates closed, in feet)	1.4	5.4	0.2	**0.7**	49%
Carson River					
West Fork Carson River at Woodfords	55	135	12	**35**	63%
East Fork Carson River near Gardnerville	190	407	43	**125**	66%
Walker River					
West Walker River below Little Walker, near Coleville	153	330	35	**120**	78%
East Walker River near Bridgeport	65	209	7	**40**	61%
SOUTH LAHONTAN					
Owens River					
Total tributary flow to Owens River (4)	235	579	96	**188**	80%

(1) See inside back cover for definition

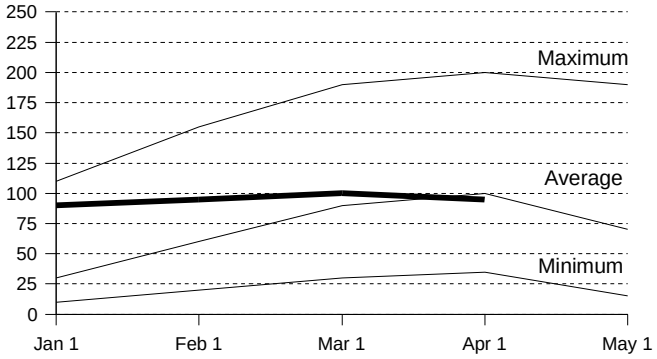
(2) All 50 year averages are based on years 1951-2000 unless otherwise noted

(3) Forecast by U.S. Natural Resources Conservation Service and National Weather Service California-Nevada River Forecast Center, April through September forecast, 30 year average based on years 1971-2000.

(4) Forecast by Department of Water and Power, City of Los Angeles, average based on years 1951-2000.

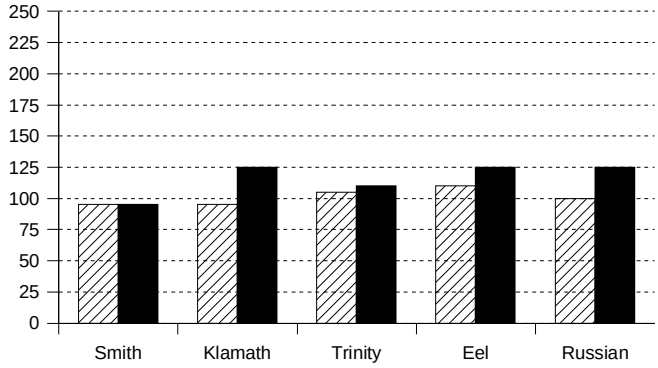
Snowpack Accumulation

Water Content in % of April 1 Average



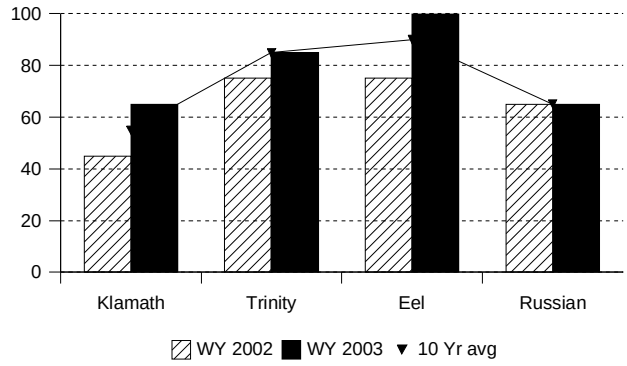
Precipitation

October 1 to date in % of Average



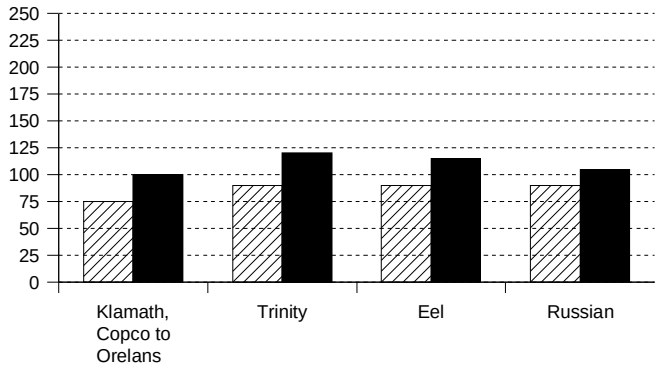
Reservoir Storage

Contents of major reservoirs in % of capacity



Runoff

October 1 to date in % of average



NORTH COAST REGION

SNOWPACK- First of the month measurements made at 18 snow courses indicate an area wide snow water equivalent of 30 inches. This is 95 percent of the April 1 average. Last year at this time the pack was holding 29.9 inches of water.

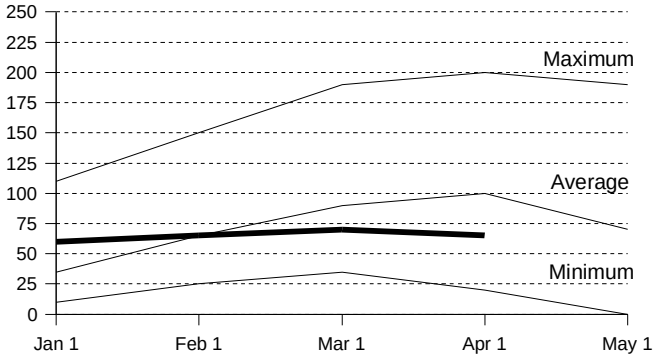
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 115 percent of normal. Precipitation last month was about 110 percent of the monthly average. Seasonal precipitation at this time last year stood at 100 percent of normal.

RESERVOIR STORAGE- First of the month storage in 7 reservoirs was 2.5 million acre-feet which is 105 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 95 percent of average.

RUNOFF -Seasonal runoff of streams draining the area totaled 11 million acre-feet which is 110 percent of the average for this period. Last year, runoff for the same period was 85 percent of average.

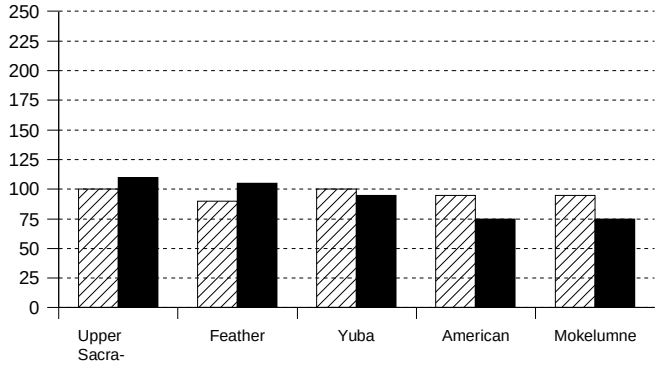
Snowpack Accumulation

Water Content in % of April 1 Average



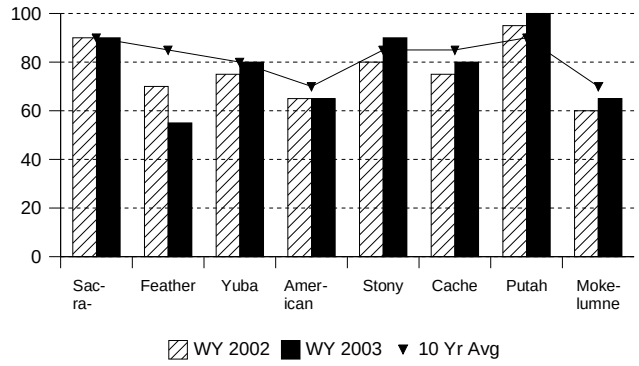
Precipitation

October 1 to date in % of Average



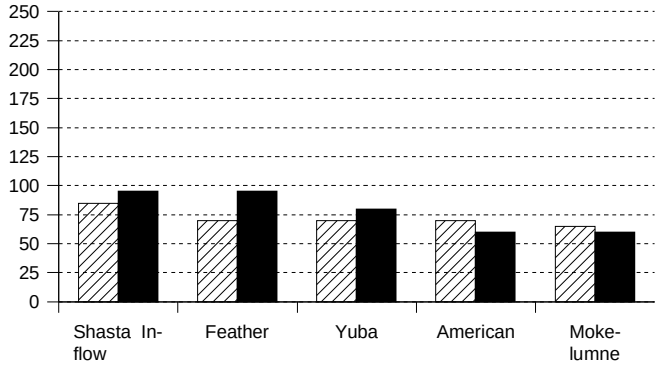
Reservoir Storage

Contents of major reservoirs in % of capacity



Runoff

October 1 to date in % of average



SACRAMENTO RIVER REGION

SNOWPACK- First of the month measurements made at 77 snow courses indicate an area wide snow water equivalent of 21.7 inches. This is 65 percent of the April 1 average. Last year at this time the pack was holding 30.6 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 100 percent of normal. Precipitation last month was about 90 percent of the monthly average. Seasonal precipitation at this time last year stood at 100 percent of normal.

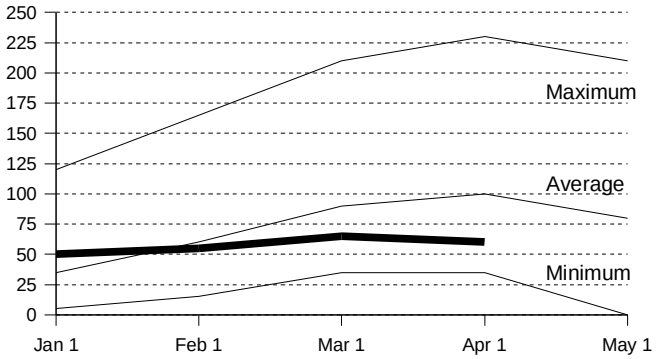
RESERVOIR STORAGE- First of the month storage in 43 reservoirs was 13 million acre-feet which is 105 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 100 percent of average.

RUNOFF - Seasonal runoff of streams draining the are totaled 10.7 million acre-feet which is 95 percent of average for this period. Last year, runoff for the same period was 80 percent of average.

The **Sacramento Region 40-30-30 Water Supply Index** is forecast to be 6.9 assuming median meteorological conditions for the remainder of the year. This classifies the year as "below normal" in the Sacramento Valley according to the State Water Resources Control Board.

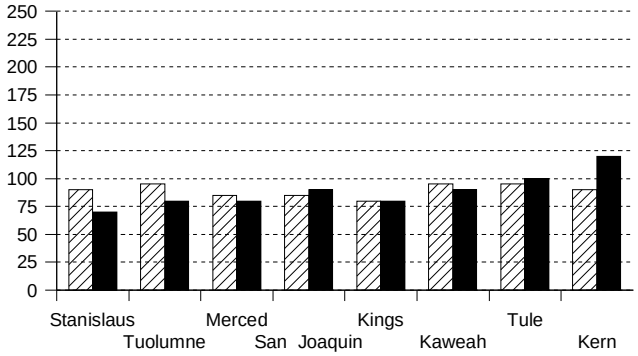
Snowpack Accumulation

Water Content in % of April 1 Average



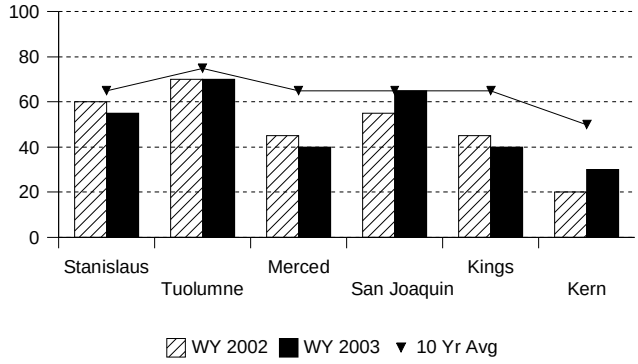
Precipitation

October 1 to date in % of Average



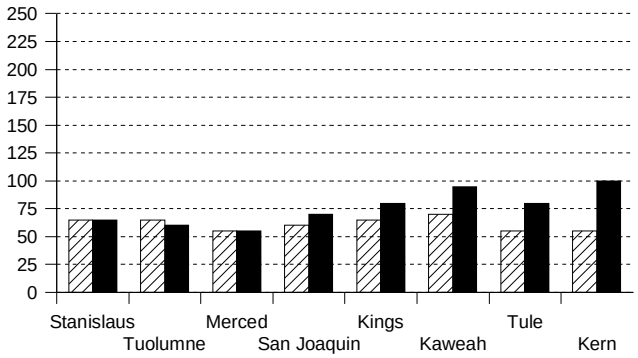
Reservoir Storage

Contents of major reservoirs in % of capacity



Runoff

October 1 to date in % of average



SAN JOAQUIN RIVER AND TULARE LAKE REGIONS

SNOWPACK- First of the month measurements made at 68 **San Joaquin Region** snow courses indicate an area wide snow water equivalent of 20.8 inches. This is 60 percent of the April 1 average. Last year at this time the pack was holding 29.2 inches of water.
At the same time 43 **Tulare Lake Region** snow courses indicated a basin-wide snow water equivalent of 15.1 inches which is 60 percent of the average for April 1. Last year at this time the basin was holding 20.3 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the **San Joaquin Region** was 80 percent of normal. Precipitation last month was about 55 percent of the monthly average. Seasonal precipitation at this time last year stood at 90 percent of normal.
Seasonal precipitation on the **Tulare Lake Region** was 95 percent of normal. Precipitation last month was about 75 percent of the monthly average. Seasonal precipitation at this time last year stood at 85 percent of normal.

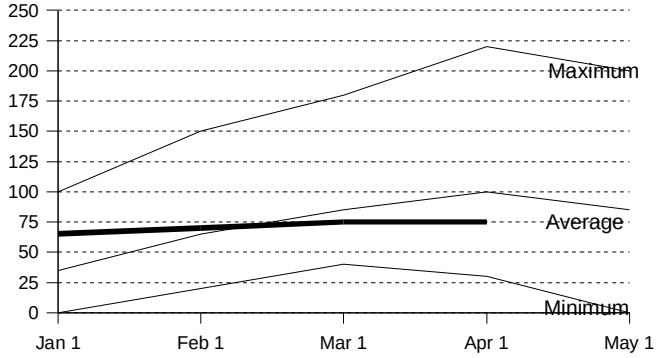
RESERVOIR STORAGE- First of the month storage in 34 **San Joaquin Region** reservoirs was 7.5 million acre-feet which is 100 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 105 percent of average.
First of the month storage in 6 **Tulare Lake Region** reservoirs was 778 thousand acre-feet which is 85 percent of average and about 40 percent of available capacity. Storage in these reservoirs at this time last year was 80 percent of average.

RUNOFF- Seasonal runoff of streams draining the **San Joaquin Region** totaled 1.5 million acre-feet which is 60 percent of average for this period. Last year, runoff for the same period was 65 percent of average. Seasonal runoff of streams draining the **Tulare Lake Basin** totaled 772 thousand acre-feet which is 85 percent of average for this period. Last year runoff for this same period was 65 percent of average.

The **San Joaquin Region 60-20-20 Water Supply Index** is forecast to be 2.2 assuming median meteorological conditions. This classifies the year as "dry" in the San Joaquin Region according to the State Water Resources Control Board.

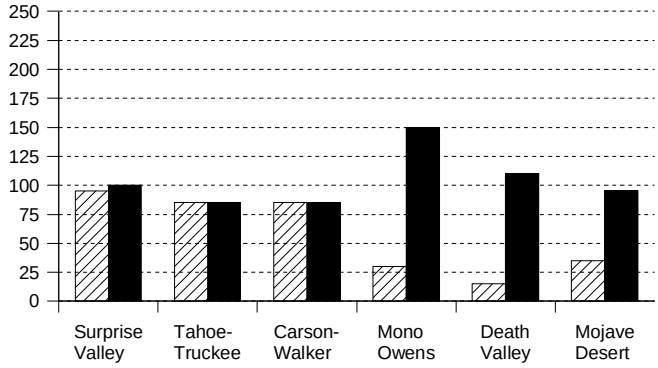
Snowpack Accumulation

Water Content in % of April 1 Average



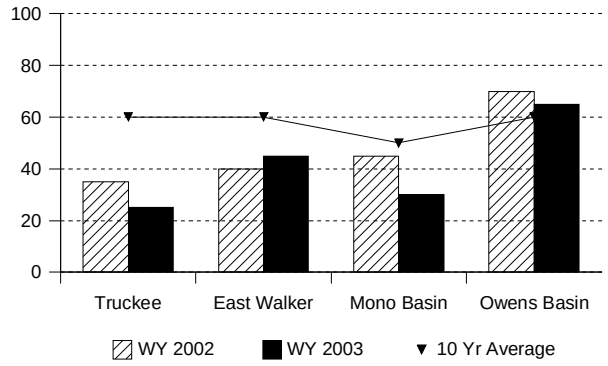
Precipitation

October 1 to date in % of Average



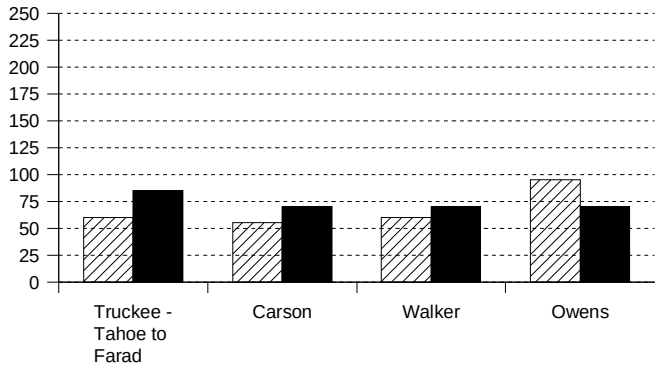
Reservoir Storage

Contents of major reservoirs in % of capacity



Runoff

October 1 to date in % of average



NORTH AND SOUTH LAHONTAN REGIONS

SNOWPACK- First of the month measurements made at 17 **North Lahontan snow** courses indicate an area wide snow water equivalent of 21.1 inches. This is 70 percent of the April 1 average. Last year at this time the pack was holding 25.5 inches of water. At the same time 21 **South Lahontan Region** snow courses indicated a basin-wide snow water equivalent of 16.9 inches which is 85 percent of the average for April 1. Last year at this time the basin was holding 16.6 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the **North Lahontan** was 90 percent of normal. Precipitation last month was about 90 percent of the monthly average. Seasonal precipitation at this time last year stood at 90 percent of normal.
Seasonal precipitation on the **South Lahontan** was 115 percent of normal. Precipitation last month was about 85 percent of the monthly average. Seasonal precipitation at this time last year stood at 25 percent of normal.

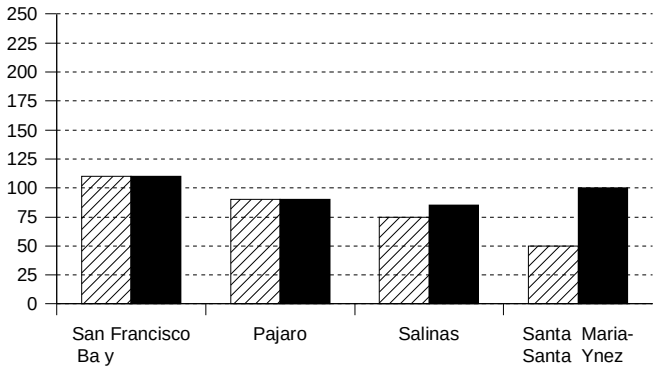
RESERVOIR STORAGE- First of the month storage in 5 **North Lahontan** reservoirs was 271 thousand acre-feet which is 45 percent of average. About 25 percent of available capacity was being used. Storage in these reservoirs at this time last year was 60 percent of average. Lake Tahoe was 0.8 feet above its natural rim on April 1.
First of the month storage in 8 **South Lahontan** reservoirs was 256 thousand acre-feet which is 95 percent of average and about 65 percent of available capacity. Storage in these reservoirs at this time last year was 105 percent of average.

RUNOFF- Seasonal runoff of streams draining the **North Lahontan Region** totaled 231 thousand acre-feet which is 75 percent of average for this period. Last year, runoff for the same period was 60 percent of average.

Seasonal runoff of the Owens River in the **South Lahontan** totaled 48 thousand acre-feet which is 70 percent of average for this period. Last year runoff for this same period was 60 percent of average.

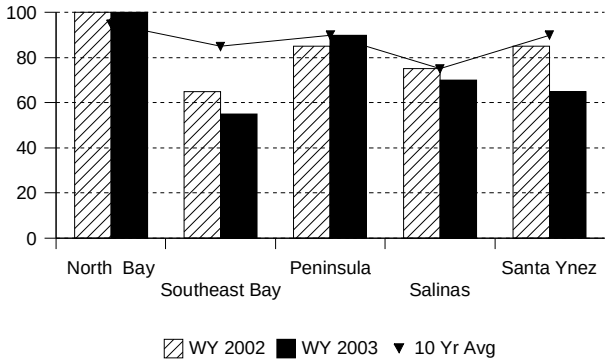
Precipitation

October 1 to date in % of Average



Reservoir Storage

Contents of major reservoirs in % of capacity



Runoff

October 1 to date in % of average

SAN FRANCISCO BAY AND CENTRAL COAST REGIONS

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the **San Francisco Bay Region** was 110 percent of normal. Precipitation last month was about 80 percent of the monthly average. Seasonal precipitation at this time last year stood at 110 percent of normal.

Seasonal precipitation on the **Central Coast Region** was 95 percent of normal. Precipitation last month was about 70 percent of the monthly average. Seasonal precipitation at this time last year stood at 75 percent of normal.

RESERVOIR STORAGE- First of the month storage in 14 **San Francisco Bay Region** reservoirs was 367 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 95 percent of average.

First of the month storage in 6 **Central Coast Region** reservoirs was 670 thousand acre-feet which is 95 percent of average and about 70 percent of available capacity. Storage in these reservoirs at this time last year was 105 percent of average.

RUNOFF- Seasonal runoff of the Napa River in the **San Francisco Bay Region** totaled 71 thousand acre-feet which is 105 percent of average for this period. Last year, runoff for the same period was 90 percent of average.

Seasonal runoff of streams draining the **Central Coast Region** totaled 231 thousand acre-feet which is 80 percent of average for this period. Last year runoff for this same period was 35 percent of average.

SOUTH COAST AND COLORADO RIVER REGIONS

PRECIPITATION - October through March (seasonal) precipitation on the **South Coast Region** is 100 percent of normal. March precipitation was 110 percent of the monthly average. Seasonal precipitation at this time last year was 30 percent of normal. Seasonal precipitation on the **Colorado River-Desert Region** is 80 percent of normal. March precipitation was 125 percent of the monthly average. Seasonal precipitation at this time last year stood at 5 percent of average.

RESERVOIR STORAGE - April 1 storage in 29 major **South Coast Region** reservoirs is 1.2 million acre-feet or 80 percent of average. About 60 percent of available capacity is being used. Storage in these reservoirs at this time last year was 85 percent of average.
On March 31 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 32.6 million acre-feet or about 80 percent of average. About 60 percent of available capacity was in use. Last year at this time, these reservoirs were storing 90 percent of average.

RUNOFF - Seasonal runoff from selected **South Coast Region** streams totaled 17.5 thousand acre-feet which is 45 percent of average. Seasonal runoff from these streams last year was 10 percent of average.

COLORADO RIVER - The April -July inflow to Lake Powell is forecast to be 5.2 million acre-feet, which is 66 percent of average. The April 1 snowpack in the Colorado River basin above Lake Powell is 85 percent of average, highest in the Upper Colorado at 100 percent and lowest in the Animas at 65 percent.

CENTRAL VALLEY PROJECT

As of March 31, 2003, CVP storage was 9.2 million acre-feet, which is a decrease of 0.1million acre-feet compared to one year ago and is approximately 113% of normal for that date.

The Bureau of Reclamation announced updated water year 2003 supply allocations for the CVP contractors on March 18, 2003. Based on a conservative water supply forecast prepared from information available March 1, 2003, and a water year inflow into Shasta Reservoir of 4.8 million acre-feet, CVP water supplies were: Agricultural contractors North of Delta 100% and South of Delta 60%; Urban contractors North of Delta 100% and South of Delta 85%; Sacramento River water rights and San Joaquin Exchange Contractors 100%; Wildlife Refuges 100%; East Side Division Contractors (Stanislaus River) 0%; Friant Contractors 90% of Class 1and 0% of Class 2. Updated allocations will be announced in mid-April. The forecast of CVP operations is available on the Mid-Pacific Region's website at www.mp.usbr.gov.

STATE WATER PROJECT

Total storage in the major SWP reservoirs was about 4.24 MAF on March 31, 2003, compared with 4.11 MAF at this time in 2002. On March 31 storage at Lake Oroville was about 2.62 MAF as compared to about 2.41 MAF last year. The State's share of San Luis Reservoir storage at the end of March was 986 TAF, as compared to about 1.07 MAF at this time last year. The combined storage of SWP's southern reservoirs was about 636 TAF on March 31 as compared to 625 TAF at this time last year.

SWP water deliveries through March 2003 were about 517 TAF. This is a combination of project, transfer, and exchange waters. This was about 24 TAF less than January 2002.

Due to near average conditions in March the Department increased its 2003 allocation from 45% (1.86 MAF) to 50% (2.06 MAF) on March 28, 2003.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON 1946-95 OR PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AT END OF March 2002 1,000 AF	2003 1,000 AF	PERCENT AVERAGE	PERCENT CAPACITY
STATE WATER PROJECT						
Lake Oroville	3,538	2,790	2,415	2,634	94%	74%
San Luis Reservoir (SWP)	1,062	984	1,078	985	100%	93%
Lake Del Valle	77	37	34	37	99%	48%
Lake Silverwood	73	66	72	69	105%	95%
Pyramid Lake	171	164	167	160	98%	94%
Castaic Lake	324	285	264	279	98%	86%
Perris Lake	132	118	122	123	105%	94%
CENTRAL VALLEY PROJECT						
Trinity Lake	2,448	1,961	1,857	2,036	104%	83%
Lake Shasta	4,552	3,705	4,136	4,104	111%	90%
Whiskeytown Lake	241	213	204	207	97%	86%
Folsom Lake	977	622	721	620	100%	63%
New Melones Reservoir	2,420	1,452	1,621	1,425	98%	59%
Millerton Lake	520	348	389	465	133%	89%
San Luis Reservoir (CVP)	971	870	950	969	111%	100%
COLORADO RIVER PROJECT						
Lake Mead	26,159	20,492	19,118	16,820	82%	64%
Lake Powell	25,002	19,064	16,927	13,600	71%	54%
Lake Mohave	1,810	1,679	1,709	1,686	100%	93%
Lake Havasu	619	556	590	541	97%	87%
EAST BAY MUNICIPAL UTILITY DISTRICT						
Pardee Res	198	181	181	179	99%	90%
Camanche Reservoir	417	252	272	304	121%	73%
East Bay (4 res.)	147	135	135	132	97%	89%
CITY AND COUNTY OF SAN FRANCISCO						
Hetch-Hetchy Reservoir	360	130	114	241	185%	67%
Cherry Lake	268	122	192	188	154%	70%
Lake Eleanor	26	12	7	8	66%	30%
Souty Bay/Peninsula (4 res.)	225	180	149	152	85%	68%
CITY OF LOS ANGELES (D.W.P.)						
Lake Crowley	183	128	138	130	102%	71%
Grant Lake	48	28	32	19	67%	39%
Other Aqueduct Storage (6 res.)	83	77	64	64	83%	77%

TELEMETERED SNOW WATER EQUIVALENTS

April 1, 2003

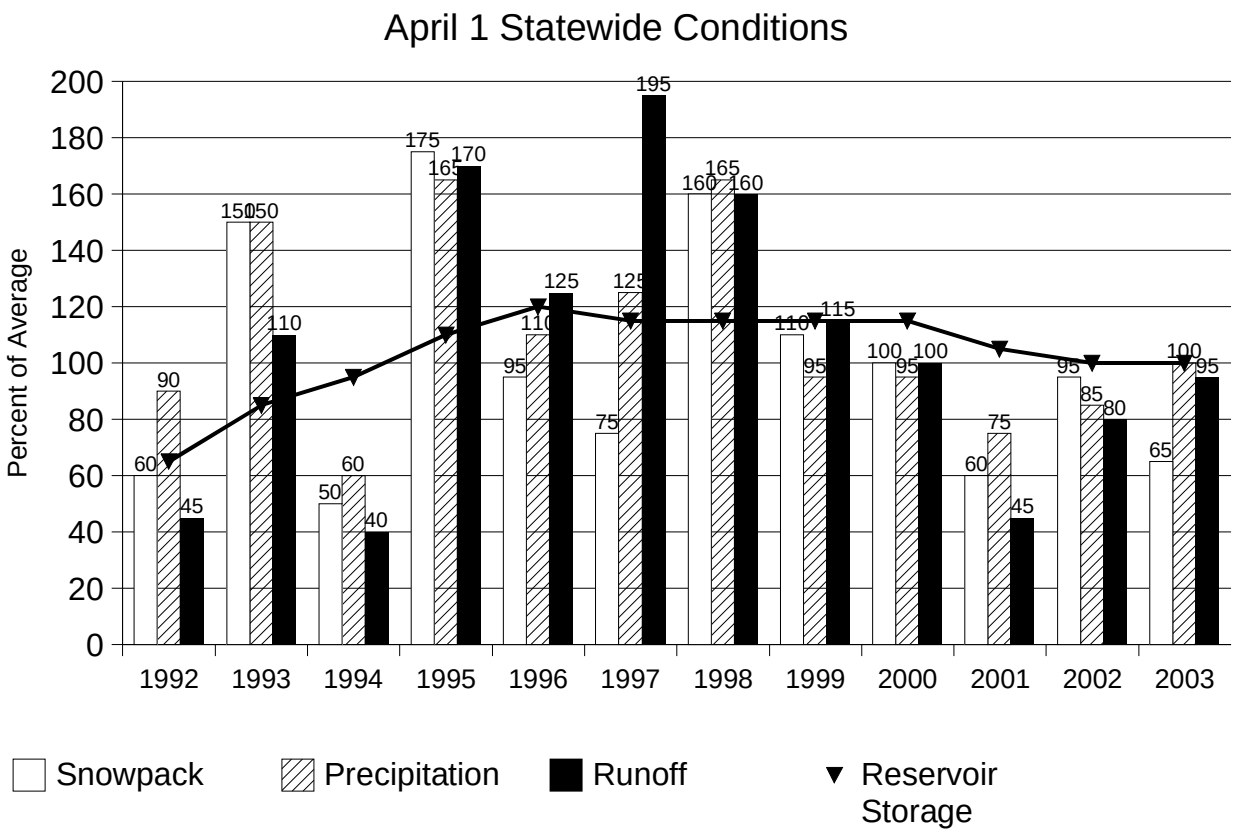
(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME / STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT Apr 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
TRINITY RIVER						
Peterson Flat	7150’	29.2	31.2	106.8	32.0	33.8
Red Rock Mountain	6700’	39.6	54.4	137.5	54.4	57.7
Bonanza King	6450’	40.5	35.6	87.9	36.1	36.7
Shimmy Lake	6400’	40.3	63.8	158.4	64.6	66.5
Middle Boulder 3	6200’	28.3	—	—	—	—
Highland Lakes	6030’	29.9	17.4	58.2	18.5	24.0
Scott Mountain	5900’	16.0	17.6	110.2	18.6	20.9
Mumbo Basin	5650’	22.4	21.6	96.4	22.6	26.4
Big Flat	5100’	15.8	15.9	100.9	16.5	18.7
SACRAMENTO RIVER						
Cedar Pass	7100’	18.1	12.0	66.3	12.1	11.4
Blacks Mountain	7050’	12.7	—	—	—	—
Sand Flat	6750’	42.4	48.9	115.4	49.3	51.8
Medicine Lake	6700’	32.6	34.6	106.1	35.7	37.3
Adin Mountain	6200’	13.6	3.2	23.5	3.6	4.8
Snow Mountain	5950’	27.0	21.5	79.5	22.2	24.3
Slate Creek	5700’	29.0	7.5	25.7	8.2	12.4
Stouts Meadow	5400’	36.0	18.0	49.9	19.2	22.3
FEATHER RIVER						
Kettle Rock	7300’	25.5	17.0	66.8	18.5	20.3
Grizzly Ridge	6900’	29.7	18.5	62.2	19.7	21.5
Pilot Peak	6800’	52.6	10.0	18.9	11.2	15.0
Gold Lake	6750’	36.5	31.3	85.8	31.6	32.4
Humbug	6500’	28.0	38.7	138.1	39.3	41.4
Rattlesnake	6100’	14.0	10.0	71.1	11.2	14.0
Bucks Lake	5750’	44.7	31.0	69.3	31.8	35.0
Four Trees	5150’	20.0	0.0	0.0	0.0	5.4
EEL RIVER						
Noel Spring	5100’	—	0.0	—	0.0	0.0
YUBA & AMERICAN RIVERS						
Lake Lois	8600’	39.5	36.3	92.0	37.1	35.7
Schneiders	8750’	34.5	34.9	101.2	35.6	35.5
Caples Lake	8000’	30.9	18.9	61.3	19.4	20.9
Alpha	7600’	35.9	22.8	63.5	23.6	25.8
Meadow Lake	7200’	55.5	44.6	80.3	45.1	46.9
Silver Lake	7100’	22.7	11.9	52.2	12.9	16.1
Central Sierra Snow Lab	6900’	33.6	24.2	72.0	24.9	29.0
Huysink	6600’	42.6	22.1	51.8	22.4	23.8
Van Vleck	6700’	35.9	24.9	69.3	25.7	28.3
Robbs Saddle	5900’	21.4	6.1	28.5	6.5	9.3
Greek Store	5600’	21.0	12.5	59.4	13.1	15.8
Blue Canyon	5280’	9.0	0.0	0.0	0.0	0.0
Robbs Powerhouse	5150’	5.2	0.0	0.0	0.0	2.3
MOKELUMNE & STANISLAUS RIVERS						
Deadman Creek	9250’	37.2	21.0	56.6	21.0	20.9
Highland Meadow	8700’	47.9	40.4	84.3	41.6	42.3
Gianelli Meadow	8400’	55.5	30.6	55.1	30.6	30.9
Lower Relief Valley	8100’	41.2	33.8	82.0	33.8	35.8
Blue Lakes	8000’	33.1	21.6	65.3	21.8	22.7
Mud Lake	7900’	44.9	36.3	80.8	36.4	36.9
Stanislaus Meadow	7750’	47.5	34.0	71.7	35.5	36.9
Bloods Creek	7200’	35.5	18.4	51.7	18.7	20.4
Black Springs	6500’	32.0	19.0	59.3	19.5	20.9
TUOLUMNE & MERCED RIVERS						
Tioga Pass Entrance	9945’	—	—	—	—	—
Dana Meadows	9800’	27.7	—	—	—	—
Slide Canyon	9200’	41.1	30.8	74.9	30.8	30.8
Lake Tenaya	8150’	33.1	25.6	77.3	26.1	27.4
Tuolumne Meadows	8600’	22.6	13.2	58.4	13.8	15.7
Horse Meadow	8400’	48.6	32.7	67.4	32.7	33.4
Ostrander Lake	8200’	34.8	22.8	65.6	23.5	24.8
Paradise Meadow	7650’	41.3	25.3	61.2	25.9	27.2
Gin Flat	7050’	34.2	18.8	55.0	19.3	21.1
Lower Kibbie Ridge	6700’	27.4	2.7	9.7	3.3	7.0

BASIN NAME		APRIL 1	INCHES OF WATER EQUIVALENT	PERCENT	24 HRS	1 WEEK
STATION NAME	ELEV	AVERAGE	Apr 1	OF AVERAGE	PREVIOUS	PREVIOUS
SAN JOAQUIN RIVER						
Volcanic Knob	10050’	30.1	22.2	73.9	22.2	22.2
Agnew Pass	9450’	32.3	17.2	53.3	17.9	17.9
Kaiser Point	9200’	37.8	22.2	58.9	23.1	24.4
Green Mountain	7900’	30.8	13.9	45.2	14.8	17.3
Tamarack Summit	7550’	30.5	10.9	35.8	11.8	14.6
Chilkoot Meadow	7150’	38.0	16.5	43.5	17.6	20.0
Huntington Lake	7000’	20.1	9.6	47.8	10.2	13.6
Graveyard Meadow	6900’	18.8	3.7	19.8	4.6	8.4
Poison Ridge	6900’	28.9	0.0	0.0	0.0	3.8
KINGS RIVER						
Bishop Pass	11200’	34.0	18.7	55.0	19.4	19.4
Charlotte Lake	10400’	27.5	28.6	103.9	29.0	29.5
State Lakes	10300’	29.0	29.6	102.1	29.8	31.1
Mitchell Meadow	9900’	32.9	31.0	94.2	30.9	30.6
Blackcap Basin	10300’	34.3	23.7	69.1	23.7	23.8
Upper Burnt Corral	9700’	34.6	27.9	80.8	27.9	28.6
West Woodchuck Meadow	9100’	32.8	19.2	58.5	20.1	21.9
Big Meadows	7600’	25.9	9.5	36.6	10.0	12.1
KAWEAH & TULE RIVERS						
Farewell Gap	9500’	34.5	25.4	73.5	25.8	28.0
Quaking Aspen	7200’	21.0	6.2	29.7	6.8	9.8
Giant Forest	6650’	10.0	0.0	0.0	0.0	0.0
KERN RIVER						
Upper Tyndall Creek	11400’	27.7	20.8	75.1	21.0	21.1
Crabtree Meadow	10700’	19.8	15.2	76.9	15.3	16.2
Chagoopa Plateau	10300’	21.8	14.4	66.0	14.4	14.4
Pascoes	9150’	24.9	16.8	67.5	17.1	18.2
Tunnel Guard Station	8900’	15.6	2.5	15.8	3.5	6.6
Wet Meadows	8950’	30.3	—	—	—	—
Casa Vieja Meadows	8300’	20.9	13.1	62.8	13.8	15.7
Beach Meadows	7650’	11.0	0.0	0.0	0.0	0.0
SURPRISE VALLEY AREA						
Dismal Swamp	7050’	29.2	21.3	72.9	21.7	19.9
TRUCKEE RIVER						
Mount Rose Ski Area	8900’	38.5	38.4	99.7	38.4	37.0
Independence Lake	8450’	41.4	43.4	104.8	43.2	42.4
Big Meadows	8700’	25.7	17.3	67.3	17.6	18.9
Squaw Valley	8200’	46.5	48.6	104.5	48.8	49.5
Independence Camp	7000’	21.8	6.2	28.4	6.8	9.8
Independence Creek	6500’	12.7	6.8	53.5	7.2	9.0
Truckee 2	6400’	14.3	12.1	84.6	12.7	14.6
LAKE TAHOE BASIN						
Heavenly Valley	8800’	28.1	19.6	69.8	20.2	21.2
Hagans Meadow	8000’	16.5	8.8	53.3	9.9	12.1
Marlette Lake	8000’	21.1	14.4	68.2	15.0	16.2
Echo Peak 5	7800’	39.5	28.4	71.9	29.3	32.9
Rubicon Peak 2	7500’	29.1	16.3	56.0	16.9	18.3
Tahoe City Cross	6750’	16.0	0.0	0.0	0.0	1.4
Ward Creek 3	6750’	39.4	18.7	47.5	19.8	23.0
Fallen Leaf Lake	6250’	7.0	0.0	0.0	0.0	0.0
CARSON RIVER						
Ebbetts Pass	8700’	38.8	31.3	80.7	32.1	33.0
Poison Flat	7900’	16.2	12.2	75.3	12.8	13.5
Monitor Pass	8350’	—	12.7	—	13.3	14.7
Spratt Creek	6150’	4.5	0.0	0.0	0.0	0.0
WALKER RIVER						
Leavitt Lake	9600’	—	50.2	—	50.2	48.4
Virginia Lakes	9300’	20.3	15.3	75.4	15.3	15.4
Lobdell Lake	9200’	17.3	18.7	108.1	18.8	19.0
Sonora Pass Bridge	8750’	26.0	22.5	86.5	22.3	20.5
Leavitt Meadows	7200’	8.0	0.9	11.2	2.2	4.9
OWENS RIVER/MONO LAKE						
Gem Pass	10750’	31.7	30.4	95.9	30.4	31.7
Sawmill	10200’	19.4	15.3	79.0	15.3	14.0
Cottonwood Lakes	10150’	11.6	12.8	110.0	13.1	14.9
Big Pine Creek	9800’	17.9	12.9	72.3	13.6	13.6
South Lake	9600’	16.0	14.7	91.9	15.3	17.0
Mammoth Pass	9300’	42.4	26.3	62.0	26.3	26.6
Rock Creek Lakes	10000’	14.0	9.9	70.6	10.6	11.3

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%



SNOWLINES

Remember that this year's Western Snow Conference meeting is April 21-24 in Scottsdale, Arizona. For further information regarding the Western Snow Conference contact Frank Gehrke at 916-574-2635 or gridley@water.ca.gov. Registration and program information is available on the web at .http://www.westernsnowconference.org/

Depicted on this month's cover is the eastern entrance to Yosemite National Park.

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 1951–2000 (50 years, except for data sites established after 1951).

PRECIPITATION – Averages are based on April 1 data for the period 1941–1990 (50 years, except for data sites established after 1941). These averages are in the process of being updated.

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(dry) and the 10 percent exceedence level value(wet). 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 1951–2000.

Reservoir storage averages are based on the period from 1951(or beginning of operation) to 2000.

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 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 Sacramento Valley Water Year Hydrologic Classification (40–30–30 Index). The values *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 San Joaquin Valley Water Year Hydrologic Classification (60–20–20 Index). In a similar manner, the values *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.

Runoff of the eight major rivers of the Sacramento and San Joaquin Regions 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