California Cooperative
Snow Surveys
Bulletin 120-90

State of California
The Resources Agency

Department of
Water Resources

Water Conditions in California

Report 1 — February 1, 1990

Gordon K. Van Vleck
Secretary for Resources
The Resources Agency

George Deukmejian
Governor
State of California

David N. Kennedy
Director
Department of Water Resources

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor

The Resources Agency
GORDON K. VAN VLECK, Secretary for Resources

Department of Water Resources
DAVID N. KENNEDY, Director

ROBERT G. POTTER
Deputy Director

JOHN P. CAFFREY
Chief Deputy Director

LAWRENCE A. MULLNIX
Deputy Director

SUSAN N. WEBER
Chief Counsel

Division of Flood Management

George Qualley ..... Chief
Maurice Roos ..... Chief, Flood Hydrology and Water Supply Branch

Prepared by

Jack G. Pardee ..... Senior Engineer, W.R.
Gary Hester ..... Senior Engineer, W.R.
Frank Gehrke ..... Associate Engineer, W.R.
Robert R. Newton ..... Associate Engineer, W.R.
David M. Hart ..... Water Resources Engineering Associate
Matthew S. Colwell ..... Assistant Engineer, W.R.
Geno Young ..... Water Resources Technician II
Patrick M. Armstrong ..... Lead Snow Gauger
David D. Sharp ..... Lead Snow Gauger
Murton A. Stewart ..... Lead Snow Gauger
Susan A. Burak ..... Lead Snow Gauger
Mead Hargis ..... Snow Gauger
Nick Hartzell ..... Snow Gauger
K. Jay Jensen ..... Snow Gauger
James D. King ..... Snow Gauger
Susan S. King ..... Snow Gauger

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
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

J.G. Boswell Company
Kaweah River Association
Kings River Water Association
St. Johns River Association
Tule River Association
U.S. Tungsten Corporation

Public Utilities

Pacific Gas and Electric Company
Southern California Edison Company

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

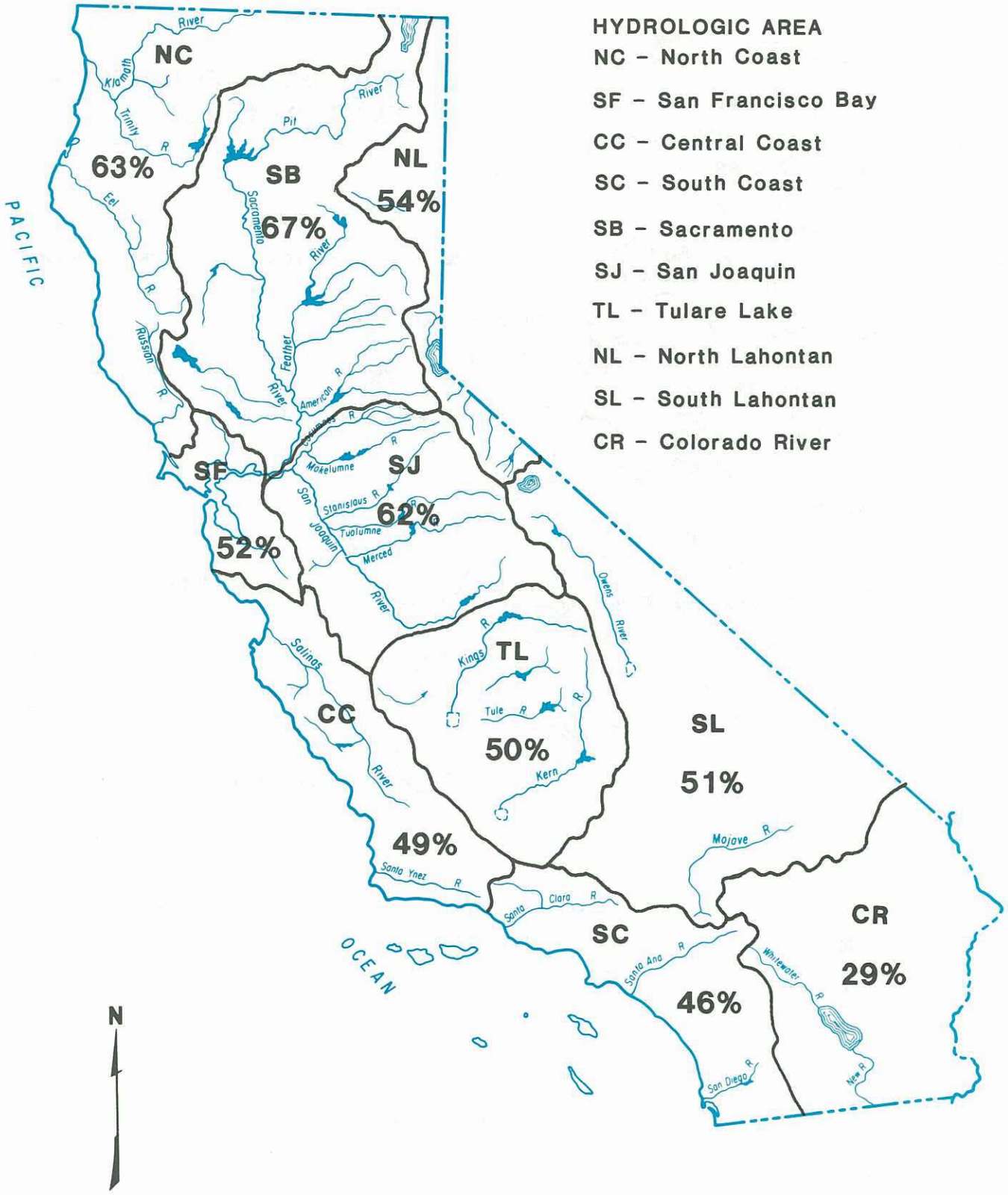
U.S. Department of Agriculture
Forest Service(14 National Forests)
Pacific Southwest Forest and Range
Experiment Station
Soil Conservation Service
U.S. Department of Commerce
National Weather Service
U.S. Department of Interior
Bureau of Reclamation
Geological Survey, Water Resources
Division
National Park Service(3 National Parks)
U.S. Department of Army
Corps of Engineers

Other Cooperative Programs

Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

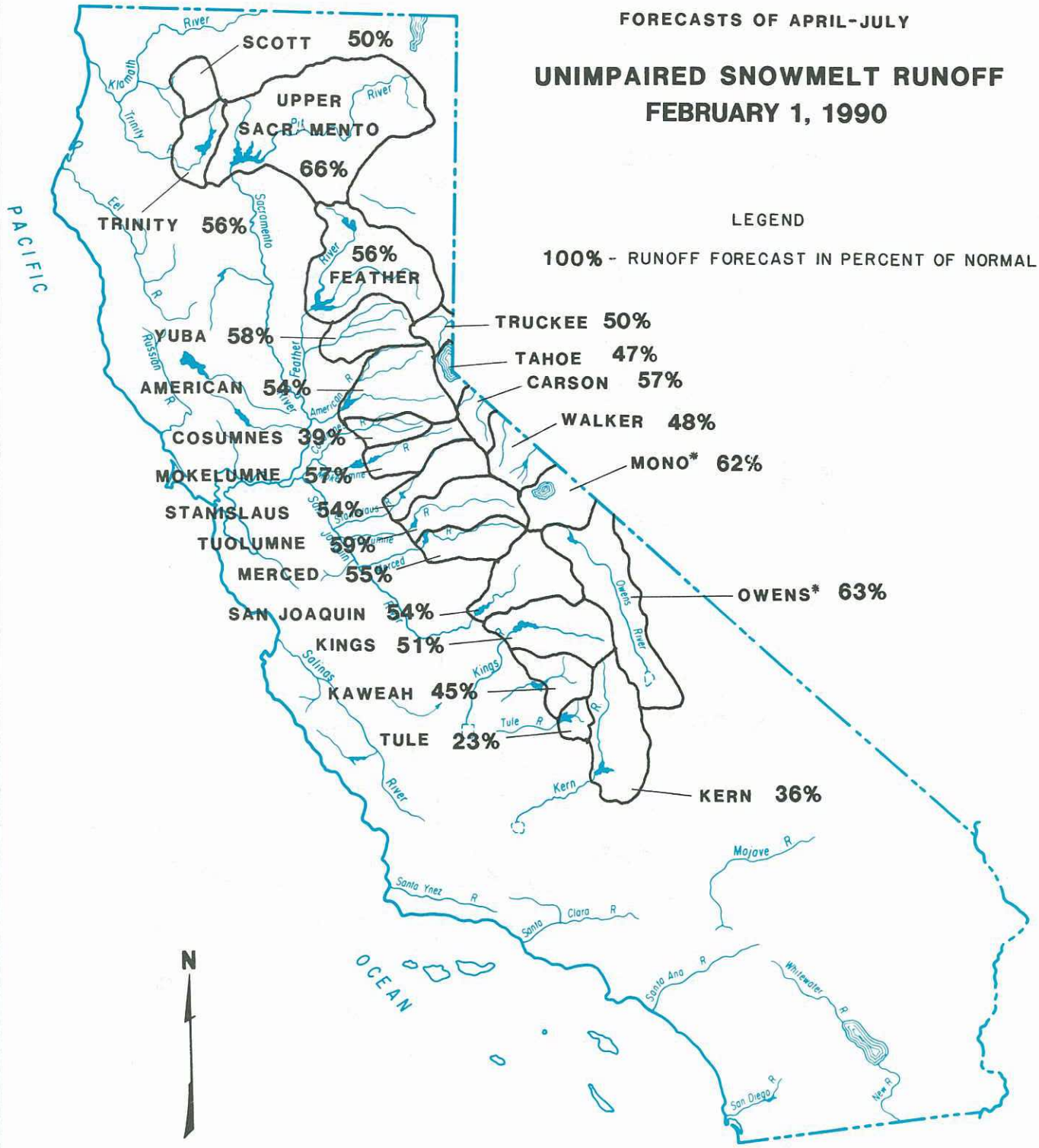
SEASONAL PRECIPITATION IN PERCENT OF AVERAGE TO DATE

OCT. 1, 1989 TO JAN. 31, 1990



FORECASTS OF APRIL-JULY

UNIMPAIRED SNOWMELT RUNOFF
FEBRUARY 1, 1990



*FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES FOR THE PERIOD OF APRIL THROUGH SEPTEMBER

SUMMARY OF WATER CONDITIONS

February 1, 1990

After three consecutive below average years and one of the driest Decembers on record, Californians anxiously watched January's weather in hopes that it would be wet. Hopes were dashed when the month produced slightly below average amounts of rain and snow. All indicators of water supply adequacy are now much below average.

FORECASTS of runoff reflect the dry conditions of the past three months and are now considerably below average throughout the State. They range from a low of about a quarter of average to a high near two-thirds of average.

SNOWPACK figures are also disappointing. Statewide, the pack is holding slightly under half average water content for this date. Snowpack water content is about 30 percent of its April 1 average. By this date, we should have 65 to 70 percent of the total season water accumulation.

PRECIPITATION statewide is less than two-thirds of average. The wettest region, the Sacramento Basin, has had only about two-thirds of average precipitaton since October 1, while the Colorado River area, the driest region, has had less than a third of its average rainfall during the same period. January rainfall, statewide, was about 90 percent of average.

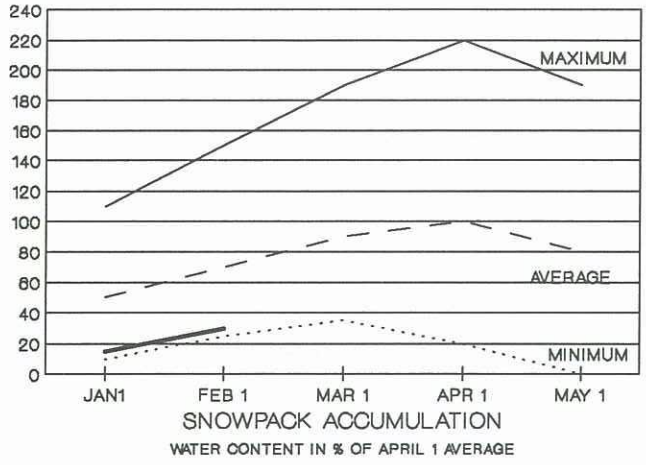
RUNOFF amounts to date reflect the below normal rainfall and snow conditions. For the State as a whole, runoff is only about 40 percent of average. The wetter areas seem to be the Sierra east slope streams. Stream flows in coastal areas from the San Francisco Bay area southward are down to a mere trickle with seasonal runoff less than 10 percent in several of the selected indicator streams. The important Sacramento Basin has produced less than half its usual runoff since the start of the water year.

RESERVOIR STORAGE figures are somewhat more encouraging than other water supply statistics. Statewide, our reservoirs are holding about three-quarters of average for this date. South Coastal reservoirs have near average amounts. The reservoirs of the Central Coast, Tulare Lake and North Lahontan regions, on the other hand, are storing far below normal amounts. Pine Flat Reservoir on the Kings River is storing only 16 percent of average for this date.

SUMMARY OF WATER CONDITIONS

IN PERCENT OF AVERAGE

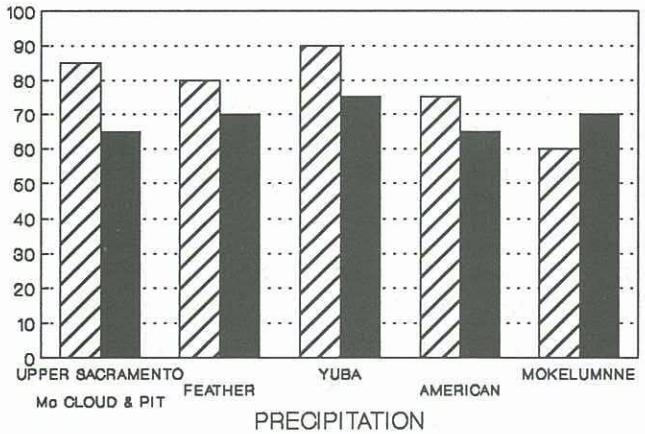
HYDROGRAPHIC AREA	PRECIPITATION OCTOBER 1 TO DATE	SNOW WATER CONTENT	RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	RUNOFF APR-JULY FORECAST	WATER YEAR FORECAST
NORTH COAST	65	40	75	35	55	45
SAN FRANCISCO BAY	50	--	75	15	--	--
CENTRAL COAST	50	--	20	10	--	--
SOUTH COAST	45	--	100	15	--	--
SACRAMENTO BASIN	65	45	75	45	60	55
SAN JOAQUIN BASIN	60	50	75	35	55	50
TULARE LAKE BASIN	50	45	35	35	45	45
NORTH LAHONTAN	55	50	25	60	55	55
SOUTH LAHONTAN	50	45	70	60	65	60
COLORADO RIVER	30	--	--	--	--	--
STATEWIDE	60	45	75	40	55	50



SNOWPACK ACCUMULATION
WATER CONTENT IN % OF APRIL 1 AVERAGE

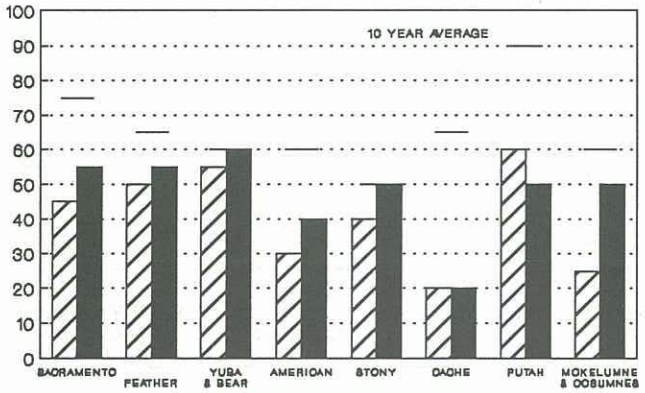
SACRAMENTO BASIN

SNOWPACK - First of the month measurements made at 71 snow course indicate a basin wide snow water equivalent of 9.5 inches. This is 45 percent of the average for this date and 29 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 15.9 inches of water.



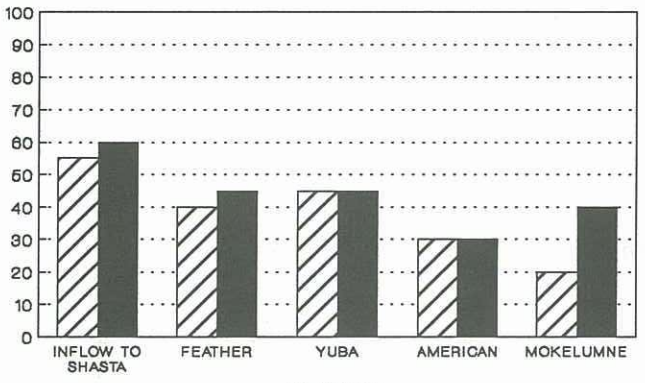
PRECIPITATION
OCTOBER 1 TO DATE IN % OF AVERAGE

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the Sacramento Basin was 67 percent of normal. Precipitation last month was about 88 percent of the monthly average. Seasonal precipitation at this time last year stood at 79 percent of normal.



RESERVOIR STORAGE
CONTENTS OF MAJOR RESERVOIRS IN PERCENT OF CAPACITY

RESERVOIR STORAGE - First of the month storage in 43 reservoirs was 8.4 million acre-feet which is 77 percent of average. About 52 percent of available capacity was being used. Storage in these reservoirs was about 69 percent of average at this time last year.

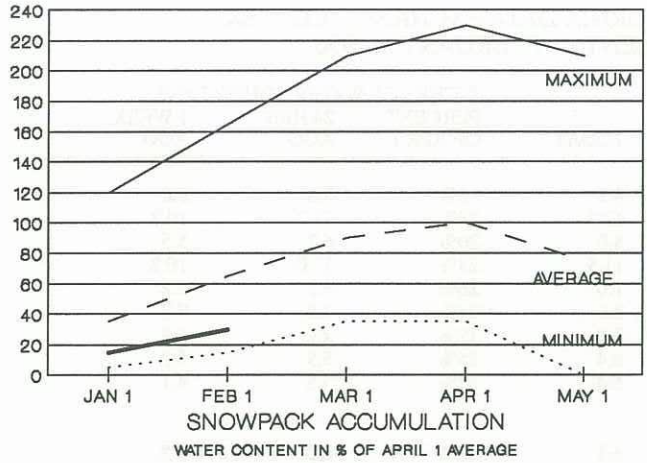


RUNOFF
OCTOBER 1 TO DATE IN % OF AVERAGE

LAST YEAR THIS YEAR

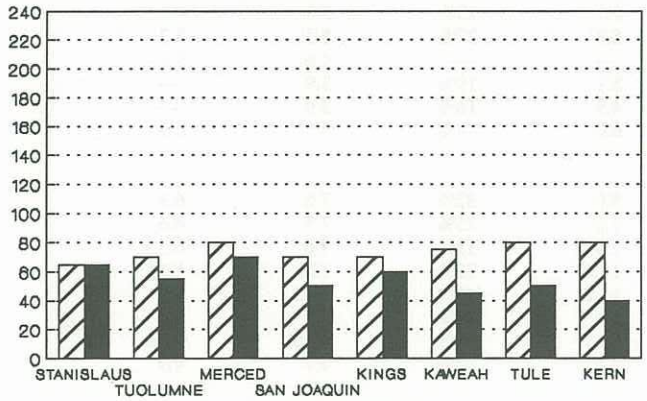
RUNOFF - Seasonal runoff from streams draining into the basin totaled 2.7 million acre-feet which is 46 percent of average for this period. Last year runoff for the same period was 46 percent of average.

The Sacramento River Index for the year is forecast at 10.8 million acre-feet assuming median conditions for the remainder of the year. This classifies the year as "dry" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board's Decision 1485.



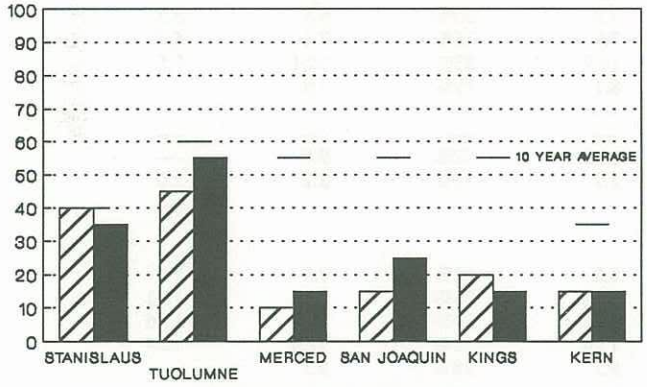
SNOWPACK ACCUMULATION

WATER CONTENT IN % OF APRIL 1 AVERAGE



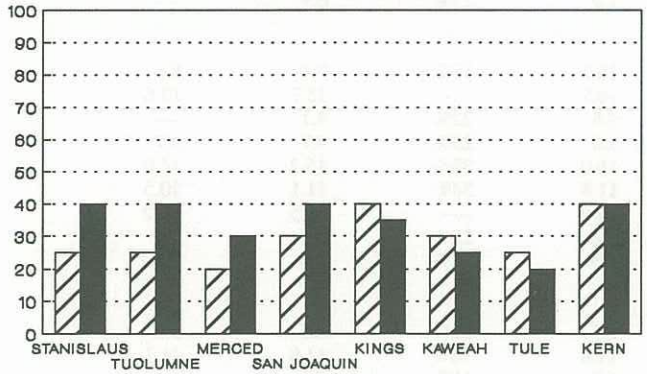
PRECIPITATION

OCTOBER 1 TO DATE IN % OF AVERAGE



RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS IN PERCENT OF CAPACITY



RUNOFF

OCTOBER 1 TO DATE IN % OF AVERAGE

LAST YEAR THIS YEAR

SAN JOAQUIN AND TULARE LAKE BASINS

SNOWPACK - First of the month measurements made at 65 San Joaquin Basin snow course indicate a basin wide snow wter equivalent of 9.8 inches which is 48 percent of average for this date and 31 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 16.4 inches of water.

At the same time, 42 Tulare Lake Basin courses indicated a basin wide snow water equivalent of 6.9 inches which is 45 percent of the average for this date. Last year at this time, the Basin was holding 11.8 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin Basin was 62 percent of normal. Precipitation last month was 77 percent of the monthly average. Seasonal precipitation at this time last year stood at 70 percent of normal.

Seasonal precipitation on the Tulare Lake Basin was 50 percent of normal. Precipitation last month was 94 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 33 San Joaquin Basin reservoirs was 5.1 million acre-feet which is 75 percent of average. About 44 percent of available capacity was being used. Storage in these reservoirs at this time last year was 63 percent of average.

First of the month storage in 6 Tulare Lake Basin reservoirs was 280 thousand acre-feet which is 37 percent of average. About 14 percent of available capacity was being used. Storage in these reservoirs at this time last year was 42 percent of average.

RUNOFF - Seasonal runoff of streams draining into the San Joaquin Basin totaled 415 thousand acre-feet which is 36 percent of average for this period. Last year, runoff for this same period was 23 percent of average.

Seasonal runoff of streams draining into the Tulare Lake Basin totaled 137 thousand acre-feet which is 33 percent of average for this period. Last year, runoff for this same period was 39 percent of average.

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER
TELEMETERED SNOW WATER EQUIVALENTS - FEBRUARY 1, 1990

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	6700	33.0	4.1	12%	3.6	3.0
RED ROCK MOUNTAIN	USBR	6700	44.0	12.3	28%	11.2	10.2
BONANZA KING	USBR	6450	40.5	8.0	20%	6.7	5.5
SHIMMY LAKE	USBR	6200	49.9	11.5	23%	11.0	10.2
MIDDLE BOULDER #3	USBR	6200	27.1	7.0	26%	6.3	6.2
HIGHLAND LAKES	USBR	6030	34.0	8.0	24%	7.6	7.7
SCOTTS MOUNTAIN	USBR	5900	27.0	5.0	19%	4.9	4.8
MUMBO BASIN	USBR	5700	25.8	6.4	25%	5.9	5.3
BIG FLAT	USBR	5100	20.0	6.4	32%	5.8	4.1
SACRAMENTO RIVER							
CEDAR PASS	SCS	7100	18.1	6.5	36%	6.0	5.8
BLACKS MOUNTAIN	DWR	7286	8.6	1.1	13%	1.0	1.7
SAND FLAT	USBR	6750	42.4	5.7	13%	5.5	----
MEDICINE LAKE	USBR	6700	32.7	8.8	27%	8.5	8.2
ADIN MOUNTAIN	SCS	6350	13.6	----	----	4.6	3.9
SNOW MOUNTAIN	USBR	5950	27.0	5.1	19%	3.9	----
SLATE CREEK	USBR	5600	30.0	4.9	16%	3.9	----
STOUTS MEADOW	USBR	5400	42.5	6.0	14%	5.5	3.5
FEATHER RIVER							
KETTLEROCK	DWR	7300	25.5	8.0	32%	7.6	6.8
GRIZZLY	DWR	6900	29.7	7.6	25%	7.3	6.6
PILOT PEAK	DWR	6800	52.6	7.9	15%	7.0	6.5
GOLD LAKE	DWR	6750	36.5	14.0	38%	13.4	12.1
HUMBUG	DWR	6500	28.0	11.2	40%	10.3	9.4
RATTLESNAKE	DWR	6100	14.0	5.6	40%	5.2	5.0
BUCKS LAKE	DWR	5750	44.7	13.7	31%	12.5	10.6
FOUR TREES	DWR	5150	20.0	8.5	43%	7.7	4.9
YUBA & AMERICAN RIV							
SCHNEIDERS	SMUD	8750	34.5	----	----	----	----
CAPLES LAKE COURSE	USBR	7800	30.9	10.2	33%	9.8	8.8
ALPHA	SMUD	7600	35.9	11.5	32%	11.0	----
FORNI RIDGE	USBR	7600	37.0	7.3	20%	6.5	5.7
SILVER LAKE	USBR	7100	22.7	7.9	35%	7.4	6.6
CENT SIERRA SNOW LAB	USFS	6950	33.6	10.9	33%	10.4	8.5
HUYSINK	USBR	6600	42.6	8.1	19%	7.9	----
VAN VLECK	SMUD	6700	35.9	----	----	----	----
ROBBS SADDLE	SMUD	5900	21.4	----	----	----	----
GREEK STORE	USBR	5600	21.0	11.0	52%	9.8	----
BLUE CANYON	USBR	5280	9.0	2.9	32%	2.2	2.0
ROBBS POWERHOUSE	SMUD	5150	5.2	----	----	----	----
MOKEL. & STANIS. RIV							
DEADMAN CREEK	USBR	9250	37.2	8.3	22%	7.9	7.6
HIGHLAND MEADOW	USBR	8800	47.9	16.2	34%	15.6	15.1
GIANELLI MEADOW	USBR	8350	55.5	13.2	24%	12.8	12.6
LOWER RELIEF VALLEY	DWR	8100	41.2	12.4	30%	11.4	10.4
BLUE LAKES	SCS	8000	33.1	9.3	28%	9.7	----
MUD LAKE	SMUD	7900	44.9	----	----	----	----
STANISLAUS MEADOW	USBR	7750	47.5	14.2	30%	13.7	12.2
BLOODS CREEK	USBR	7200	35.5	11.4	32%	10.6	----
BLACK SPRINGS	USBR	6500	32.0	7.9	25%	6.9	----
TUOLUMNE & MERCED R.							
DANA MEADOWS	DWR	9800	27.7	10.2	37%	9.8	8.6
SLIDE CANYON	DWR	9200	----	16.2	----	15.3	13.6
SNOW FLAT	DWR	8700	44.1	9.8	22%	9.1	----
TUOLUMNE MEADOWS	DWR	8600	22.6	5.0	22%	4.7	4.7
HORSE MEADOW	DWR	8400	48.6	16.0	33%	15.2	14.0
OSTRANDER LAKE	DWR	8200	34.8	11.8	34%	11.1	10.5
PARADISE	DWR	7650	----	13.9	----	12.5	11.0
GIN FLAT	DWR	7050	34.2	8.8	26%	8.4	7.0
LOWER KIBBIE	DWR	6600	27.4	8.8	32%	8.0	7.4
SAN JOAQUIN RIVER							
VOLCANIC KNOB	USBR	10100	30.1	6.5	22%	6.5	5.9
AGNEW PASS	USBR	9450	32.3	11.8	36%	11.8	11.1
KAISER POINT	USBR	9300	37.8	6.7	18%	6.1	----
GREEN MOUNTAIN	USBR	7900	30.8	9.5	31%	9.1	----
TAMARACK SUMMIT	USBR	7600	30.5	9.8	32%	9.2	----
CHILKOOT MEADOW	USBR	7150	38.0	14.1	37%	13.6	----

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER
TELEMETERED SNOW WATER EQUIVALENTS - FEBRUARY 1, 1990

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
HUNTINGTON LAKE	USBR	7000	20.1	9.3	46%	8.7	----
GRAVEYARD MEADOW	USBR	6900	18.8	6.1	32%	5.7	----
POISON RIDGE	USBR	6900	28.9	9.3	32%	9.2	----
KINGS RIVER							
BISHOP PASS	DWR	11200	----	9.8	----	9.1	7.8
CHARLOTTE LAKE	DWR	10400	----	5.4	----	5.4	5.0
STATE LAKES	USCE	10300	29.0	5.6	19%	5.6	5.3
MITCHELL MEADOW	USCE	10375	32.9	10.4	32%	10.3	10.1
BLACKCAP BASIN	USBR	10300	34.3	9.8	29%	9.8	8.5
UPPER BURNT CORRAL	DWR	9700	34.6	9.8	28%	9.1	8.5
WEST WOODCHUCK MDW	USCE	9100	32.8	6.9	21%	6.5	5.6
BIG MEADOWS	DWR	7600	25.9	9.1	35%	9.0	9.1
KAWEAH & TULE RIVERS							
QUAKING ASPEN	DWR	7200	21.0	7.6	36%	7.4	----
GIANT FOREST	USCE	6412	10.0	5.6	56%	5.4	5.4
KERN RIVER							
UPPER TYNDALL CREEK USCE	11450	27.7	9.6	35%	9.4	9.1	
CRABTREE	DWR	10700	19.8	4.0	20%	4.0	4.0
CHAGOOPA PLATEAU	DWR	10300	21.8	3.6	17%	3.6	----
PASCOES	USCE	9150	24.9	6.7	27%	6.5	6.0
TUNNEL	DWR	8950	15.6	3.8	24%	4.0	3.8
WET MEADOW	USCE	8900	30.3	7.8	26%	7.8	----
CASA VIEJA MDW	DWR	8400	20.9	6.5	31%	6.5	6.5
BEACH MEADOW	DWR	7630	11.0	1.2	11%	1.1	.0
SURPRISE VALLEY AREA							
DISMAL SWAMP	SCS	7050	29.2	12.6	43%	12.1	10.9
TRUCKEE RIVER							
MOUNT ROSE	SCS	9000	35.9	----	----	----	----
MOUNT ROSE SKI AREA SCS	8850	38.5	12.9	34%	12.8	11.3	
INDEPENDENCE LAKE	SCS	8450	41.4	14.5	35%	14.1	11.8
BIG MEADOWS	SCS	8700	25.7	5.3	21%	5.1	4.1
INDEPENDENCE CAMP	SCS	6500	21.8	6.8	31%	6.7	5.9
INDEPENDENCE CREEK	SCS	6500	12.7	5.8	46%	5.7	4.7
LAKE TAHOE BASIN							
HEAVENLY VALLEY	SCS	8800	28.1	6.8	24%	6.5	6.5
HAGANS MEADOW	SCS	8000	16.5	3.8	23%	3.6	3.3
MARLETTE LAKE	SCS	8000	21.1	6.9	33%	6.7	5.7
ECHO PEAK	SCS	7800	39.5	13.7	35%	----	11.2
RUBICON NO. 2	SCS	7500	29.1	7.3	25%	6.9	5.7
WARD CREEK NO. 3	SCS	6750	39.4	11.5	29%	11.1	9.7
FALLEN LEAF LAKE	SCS	6300	7.0	.5	7%	.1	----
CARSON RIVER							
EBBETTS PASS	SCS	8700	38.8	10.0	26%	9.5	9.2
WET MEADOWS	SCS	8050	38.8	15.0	39%	14.5	13.7
POISON FLAT	SCS	6900	16.2	----	----	----	----
WALKER RIVER							
VIRGINIA LAKES RIDGE	SCS	9200	20.3	4.5	22%	4.4	4.1
LOBDELL LAKE	SCS	9200	17.3	5.0	29%	4.8	4.6
SONORA PASS BRIDGE	SCS	8750	26.0	6.9	27%	6.8	6.2
LEAVITT MEADOWS	SCS	7200	8.0	2.3	29%	2.1	2.0
OWENS RIVER/MONO LK.							
GEM PASS	LADWP	10750	31.7	18.1	57%	17.9	16.1
SAWMILL MEADOW	DWR	10300	19.4	6.4	33%	6.4	6.4
COTTONWOOD LAKES	LADWP	10200	11.6	1.4	12%	1.4	1.7
BIG PINE #3	LADWP	9800	17.9	5.3	30%	5.3	----
SOUTH LAKE	LADWP	9600	16.0	5.8	36%	5.8	5.5
MAMMOTH PASS	DWR	9500	42.4	15.5	37%	15.3	14.9
ROCK CREEK	LADWP	8200	----	4.0	----	3.8	----

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

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS FEBRUARY 1, 1990

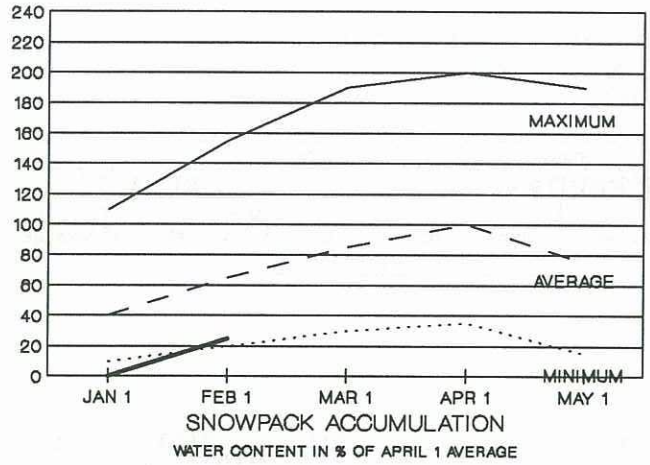
DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet					
	HISTORICAL			FORECASTS		
	50 Year Average	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average	80% Prob. Range
SACRAMENTO RIVER BASIN						
Upper Sacramento River						
Sacramento River at Shasta Lake (2)	304	702	39	170	56	
McCloud River at Shasta Lake(2)	430	850	185	290	67	
Pit River at Shasta Lake(2)	1,075	1,796	480	760	71	
Total inflow to Shasta Lake(1)	1,880	3,189	726	1,240	66	800-2,120
Sacramento River above Bend Bridge, near Red Bluff	2,569	4,674	943	1,620	63	1,100-2,900
Feather River						
Feather River at Lake Almanor near Pratville (2)	345	675	120	220	64	
North Fork at Pulga (2)	1,080	2,416	243	630	58	
Middle Fork near Clio (3)	86	518	4	30	35	
South Fork at Ponderosa Dam (2)	116	267	13	65	56	
Total inflow to Oroville Reservoir	1,971	4,676	392	1,100	56	500-2,180
Yuba River						
North Yuba below Goodyears Bar (2)	298	647	51	180	60	
Inflow to Jackson Mdws and Bowman Reservoirs (2)	115	236	25	70	61	
South Yuba at Langs Crossing (2)	232	481	57	150	65	
Yuba River at Smartville	1,107	2,424	200	640	58	310-1,280
American River						
North Fork at North Fork Dam (2)	274	716	43	140	51	
Middle Fork near Auburn (2)	548	1,406	100	350	64	
Silver Creek below Camino Diversion Dam (2)	178	386	37	120	67	
Total inflow to Folsom Reservoir	1,366	3,074	229	740	54	320-1,550
Sacramento River at Sacramento						
SAN JOAQUIN RIVER BASIN						
Cosumnes River at Michigan Bar	140	363	8	55	39	15-155
Mokelumne River						
North Fork near West Point (4)	437	829	104	260	59	
Total inflow to Pardee Reservoir	490	1,065	102	280	57	140-530
Stanislaus River						
Middle Fork below Beardsley Dam (2)	352	702	64	210	60	
Total inflow to Melones Reservoir	753	1,710	116	410	54	190-790
Tuolumne River						
Cherry Creek and Eleanor Creek near Hetch Hetchy (2)	322	727	97	200	62	
Tuolumne River near Hetch Hetchy (2)	618	1,392	153	400	65	
Total inflow to Don Pedro Reservoir	1,254	2,682	301	740	59	420-1,270
Merced River						
Merced River at Pohono Bridge (2)	371	888	80	230	62	
Total inflow to Exchequer Reservoir	654	1,587	123	360	55	180-680
San Joaquin River						
San Joaquin River at Mammoth Pool (2)	1,014	2,279	235	590	58	
Big Creek below Huntington Lake (2)	95	264	11	50	53	
South Fork near Florence Lake (2)	202	511	58	130	64	
Total inflow to Millerton Lake	1,296	3,355	262	700	54	360-1,250
San Joaquin River near Vernalis						
TULARE LAKE BASIN						
Kings River						
North Fork Kings River near Cliff Camp (2)	243	565	50	130	53	
Total inflow to Pine Flat Reservoir	1,266	3,114	273	640	51	340-1,170
Kaweah River at Terminus Reservoir	303	814	61	135	45	75-225
Tule River at Success Reservoir	70	256	2	16	23	8-85
Kern River						
Kern River near Kernville (2)	389	1,203	83	140	36	
Total inflow to Isabella Reservoir	492	1,657	84	175	36	110-390

(1) All 50-year averages are based on data for water years 1936-1985 except:
(2) 45-year average based on years 1936-80. (4) 36-year average based on years 1936-71.
(3) 44-year average based on years 1936-79. (5) See inside back cover for definition of unimpaired runoff and 80 percent probability ranges.

FORECASTS OF WATER YEAR UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS FEBRUARY 1, 1990

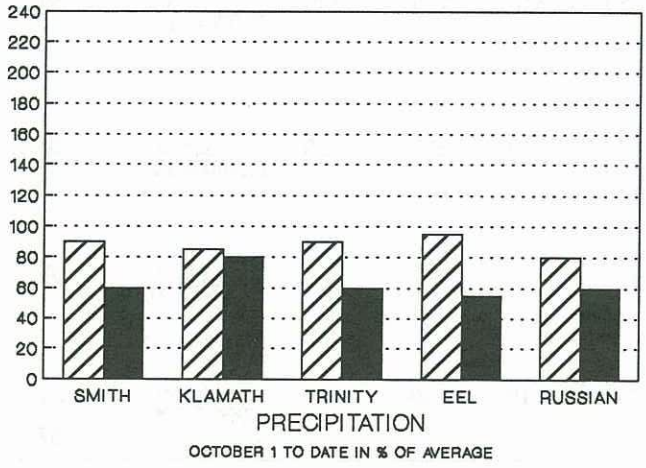
Water Year October through September Unimpaired Runoff in 1,000's Acre-Feet												
HISTORICAL			DISTRIBUTION								FORECASTS	
50 Year Average	Maximum of Record	Minimum of Record	October through January	February	March	April	May	June	July	August and September	Water Year Forecast	Percent of Average
859	1,964	165										
1,286	2,353	577										
3,169	5,150	1,484										
6,090	10,796	2,479	1,180	550	620	460	340	240	200	360	3,950 (3,000-5,700)	65
8,856	17,180	3,294	1,610	750	800	610	450	310	250	440	5,220 (4,000-8,100)	59
786	1,269	366										
2,446	4,400	666										
219	637	24										
292	562	32										
4,754	9,492	994	600	360	440	470	370	160	100	150	2,650 (1,700-4,300)	56
565	1,056	102										
174	292	30										
357	565	98										
2,460	4,926	369	290	200	270	270	270	80	20	30	1,430 (900-2,400)	58
612	1,234	66										
1,066	2,575	144										
314	705	59										
2,837	6,381	349	210	190	290	320	290	110	20	20	1,450 (900-2,700)	51
												57
407	1,253	20	20	20	40	30	20	4	1	0	135 (50-340)	33
626	1,009	197										
776	1,800	129	53	35	60	110	130	35	5	2	430 (240-770)	55
483	929	88										
1,198	2,952	155	80	40	80	160	170	65	15	10	620 (330-1,125)	52
461	1,147	123										
775	1,661	258										
1,951	4,430	383	130	70	130	230	330	160	20	10	1,080 (670-1,760)	55
460	1,020	92										
1,023	2,859	150	50	35	60	120	170	60	10	5	510 (280-880)	50
1,337	2,964	308										
112	298	14										
248	653	71										
1,861	4,642	362	90	45	90	180	300	170	50	35	960 (540-1,640)	52
												53
282	607	58										
1,745	4,294	383	70	40	80	170	270	160	40	30	860 (490-1,510)	49
468	1,402	92	16	14	25	45	60	25	5	5	195 (115-380)	42
159	615	16	6	6	10	10	5	1	0	0	38 (22-116)	24
575	1,577	163										
749	2,309	175	45	15	25	45	65	45	20	20	280 (190-580)	37

* Unimpaired runoff to date e Estimated
Monthly distributions of runoff forecasts are estimated based on comparisons with previous water years

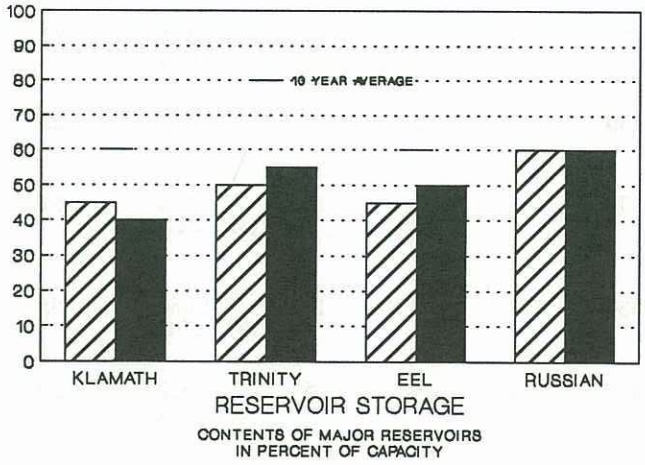


NORTH COAST AREA

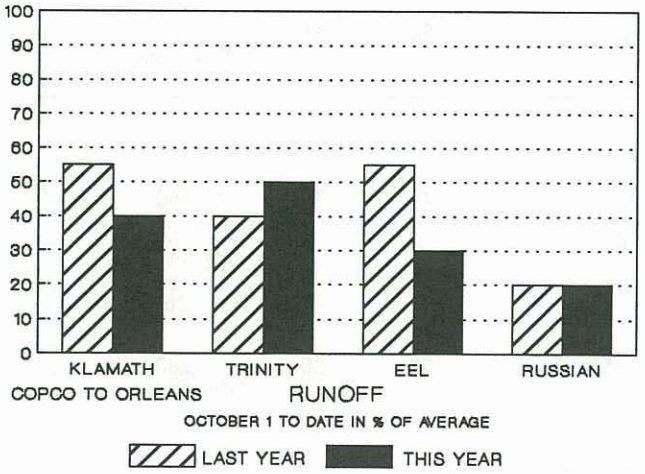
SNOWPACK - First of the month measurements made at 5 snow courses indicate an area wide snow water equivalent of 8.1 inches. This is 38 percent of the average for this date and 25 percent of the seasonal (April 1) average. Last year at this time the pack was holding 15.9 inches of water



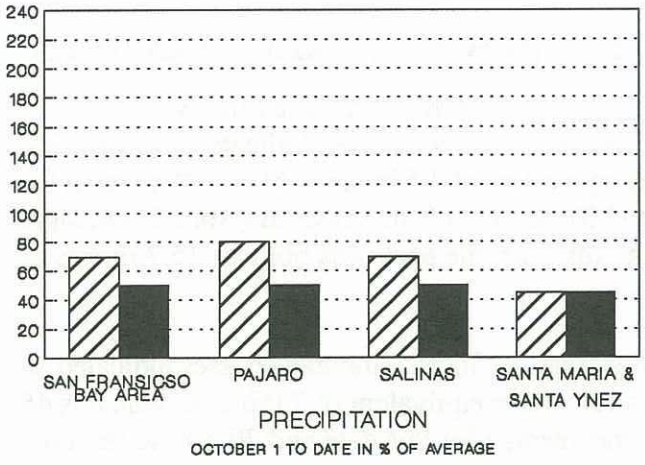
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 63 percent of normal. Precipitation last month was about 108 percent of the monthly average. Seasonal precipitation at this time last year stood at 85 percent of normal.



RESERVOIR STORAGE - First of the month storage in 7 reservoirs was 1.7 million acre-feet which is 76 percent of average. About 53 percent of available capacity was being used. Storage in these reservoirs at this time last year was 74 percent of average.



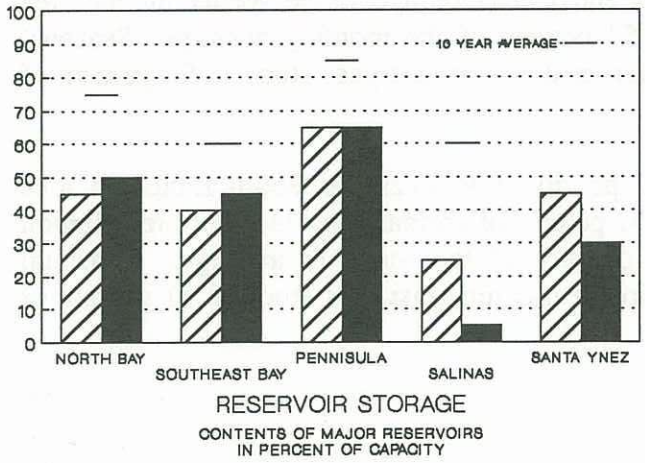
RUNOFF - Seasonal runoff of streams draining the area totaled 1.8 million acre-feet which is 33 percent of average for this period. Last year, runoff for the same period was 52 percent of average.



SAN FRANCISCO AND CENTRAL COAST AREAS

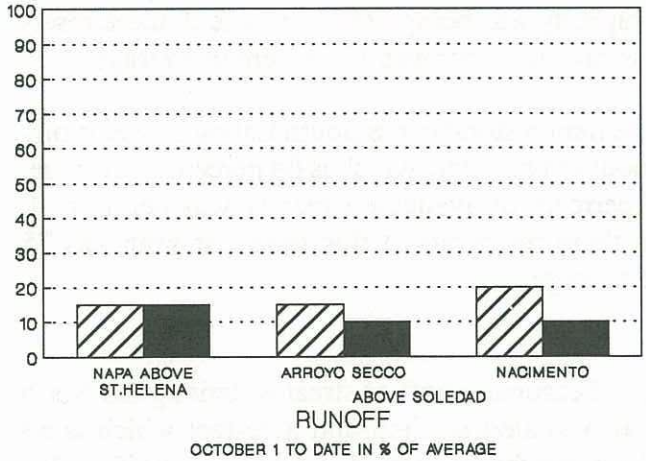
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 52 percent of normal. Precipitation last month was 75 percent of the monthly average. Seasonal precipitation at this time last year stood at 72 percent of normal.

Seasonal precipitation on the Central Coast area averaged 49 percent of normal. Precipitation last month was 76 percent of the monthly average. Seasonal precipitation at this time last year was 70 percent of average.



RESERVOIR STORAGE - First of the month storage in 17 major Bay area reservoirs was 334 thousand acre-feet which is 75 percent of average. About 49 percent of available capacity was being used. Storage in these reservoirs at this time last year was 70 percent of average.

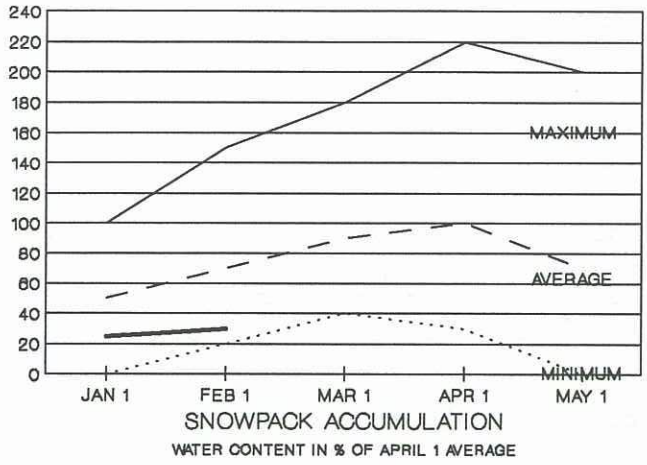
First of the month storage in 6 major Central Coast reservoirs was 120 thousand acre-feet which is 20 percent of average. About 13 percent of available capacity was being used. Storage in these reservoirs at this time last year was 49 percent of average.

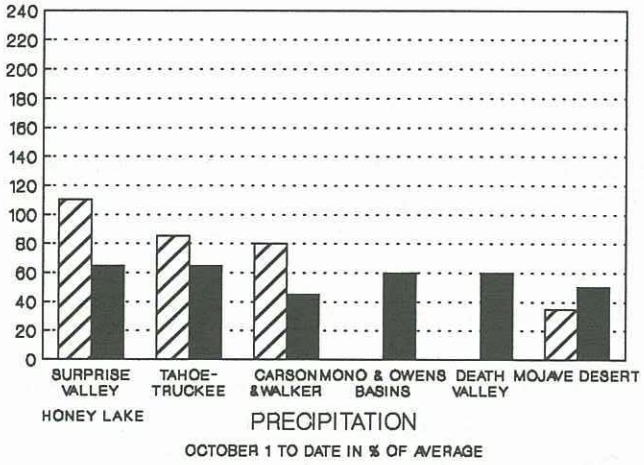


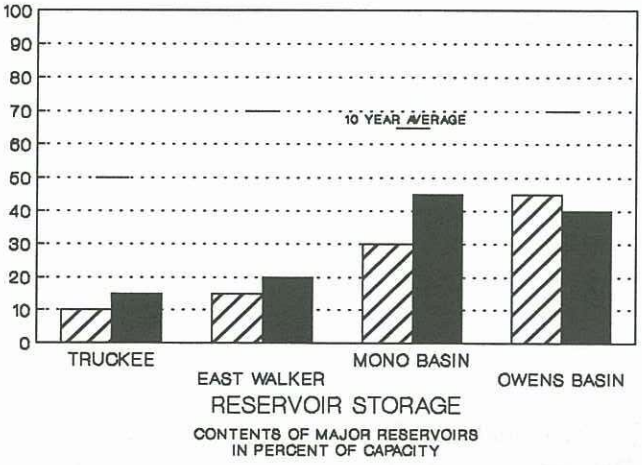
RUNOFF - Seasonal runoff of streams draining the San Francisco Bay area totaled 6 thousand acre-feet which is 16 percent of average for this period. Last year, runoff for this same period was 9 percent of average.

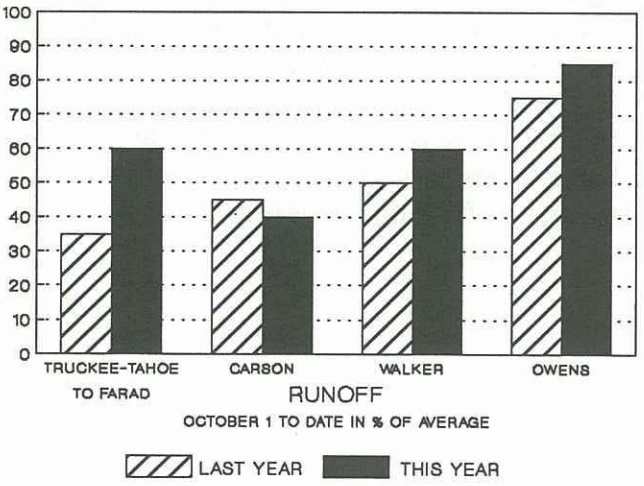
Seasonal runoff of selected Central Coast streams totaled 13 thousand acre-feet which is 9 percent of average for this period. Last year, runoff for this same period was 18 percent of average.

LAST YEAR THIS YEAR









NORTH AND SOUTH LAHONTAN AREA

SNOWPACK - First of the month measurements made at 21 North Lahontan snow courses indicate an area wide snow water equivalent of 7.5 inches which is 48 percent for this date and 31 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 15.7 inches of water.

At the same time, 23 South Lahontan courses indicated an area wide snow water equivalent of 7.0 inches which is 46 percent of the average for this date and 30 off the seasonal average.

PRECIPITATION - Seasonal precipitation (October 1 thorugh the end of last month) over the North Lahontan area averaged 54 percent of the monthly average. Seasonal precipitation at this time last year stood at 94 percent of normal.

Seasonal precipitation over the South Lahontan area averaged 51 percent of normal. Last month's precipitation was 125 percent of the monthly average. Seasonal precipitation at this time last year stood at 51 percent of normal.

RESERVOIR STORAGE - First of the month storage in 5 North Lahontan reservoirs was 155 thousand acre-feet which is 26 percent of average. About 16 percent of available capacity was being used. Storage in these reservoirs at this time last year was 15 percent of average.

First of the month storage in 8 South Lahontan reservoirs was 196 thousand acre-feet which is 68 percent of average. About 49 perrcent of available capacity was being used. Storage in these reservoirs at this time last year was 75 percent of average.

RUNOFF - Seasonal runoff of streams drainng the North Lahontan area totaled 83 thousand acre-feet which is 53 percent of average for this period. Last year, runoff for this same period was 42 percent of average.

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR SELECTED CALIFORNIA STREAMS

FEBRUARY 1, 1990

DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet				
	HISTORICAL			FORECASTS	
	50 Year Average(1)	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average
NORTH COAST AREA					
Trinity River at Lewiston	676	1,593	80	380	56
Scott River at Ft. Jones	200			100	50
Upper Klamath Lake(1)(2)(5)	521			320	61
LAHONTAN AREA					
Truckee River, Lake Tahoe to Farad accretion	278	713	58	140	50
Lake Tahoe Rise in feet (assuming gates closed)	1.5	3.75	0.23	0.7	47
East Carson River near Gardnerville	195	407	43	110	56
West Carson River at Woodfords	55	131	12	32	58
East Walker River near Bridgeport	68	209	7	25	37
West Walker River near Coleville	154	330	35	90	58
Owens River(1)(3)	312	728	131	196	63

(1)Forecast period of April-September

(2)Forecast by U.S. Soil Conservation Service, Portland, Or.

(3)Forecast by Dept. of Water and Power, City of Los Angeles

(4)Inside back cover for definition of unimpaired runoff.

(5)Average period of 25 years

SOUTH COAST AND COLORADO RIVER AREAS

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the South Coast was 46 percent of normal. Precipitation last month was 84 percent of the monthly average. Seasonal precipitation at this time last year stood at 71 percent of normal.

Seasonal precipitation on the Colorado River area was 29 percent of normal. Precipitation last month was 80 percent of the monthly average. Seasonal precipitation at this time last year stood at 62 percent of average.

RESERVOIR STORAGE - First of the month storage in 29 South Coast reservoirs was 1.2 million acre-feet which is 102 percent average. About 61 percent of available capacity was being used. Storage in these reservoirs at this time last year was 113 percent of average.

First of the month combined storage in Lakes Powell, Mead, Mohave and Havasu was 42.5 million acre-feet which is 111 percent of average. About 79 percent of available capacity was being used.

RUNOFF - Seasonal runoff of selected South Coast streams totaled 2.7 thousand acre-feet which is 14 percent of average. Last year, runoff for the same period was 40 percent of average.

UPPER COLORADO

The February 1 snowpack in the Upper Colorado River Basin according to the U.S. Soil Conservation Service was 60 percent of average and ranges from 27 percent in the San Juan basin to 92 percent in the Yanpa River basin.

The April through July inflow to Lake Powell is forecast to be 4.2 million acre-feet which is 52 percent of normal.

CENTRAL VALLEY PROJECT

Water year forecasts for runoff into major CVP storage reservoirs range from 40 percent to 64 percent of average. CVP storage on September 1, 1989 was 5.1 million acre-feet.

As of January 31, 1990 it had increased to only 5.7 million acre-feet which is 74 percent of normal. The water supply outlook for the CVP is worse than it was one year ago. Although storage is about 0.4 million acre-feet higher than it was on February 1, 1989 the forecasts for CVP reservoirs are down by 1.0 million acre-feet compared to one year ago. The Bureau of Reclamation will advise its water customers by February 15th as to the availability of water deliveries in 1990.

STATE WATER PROJECT

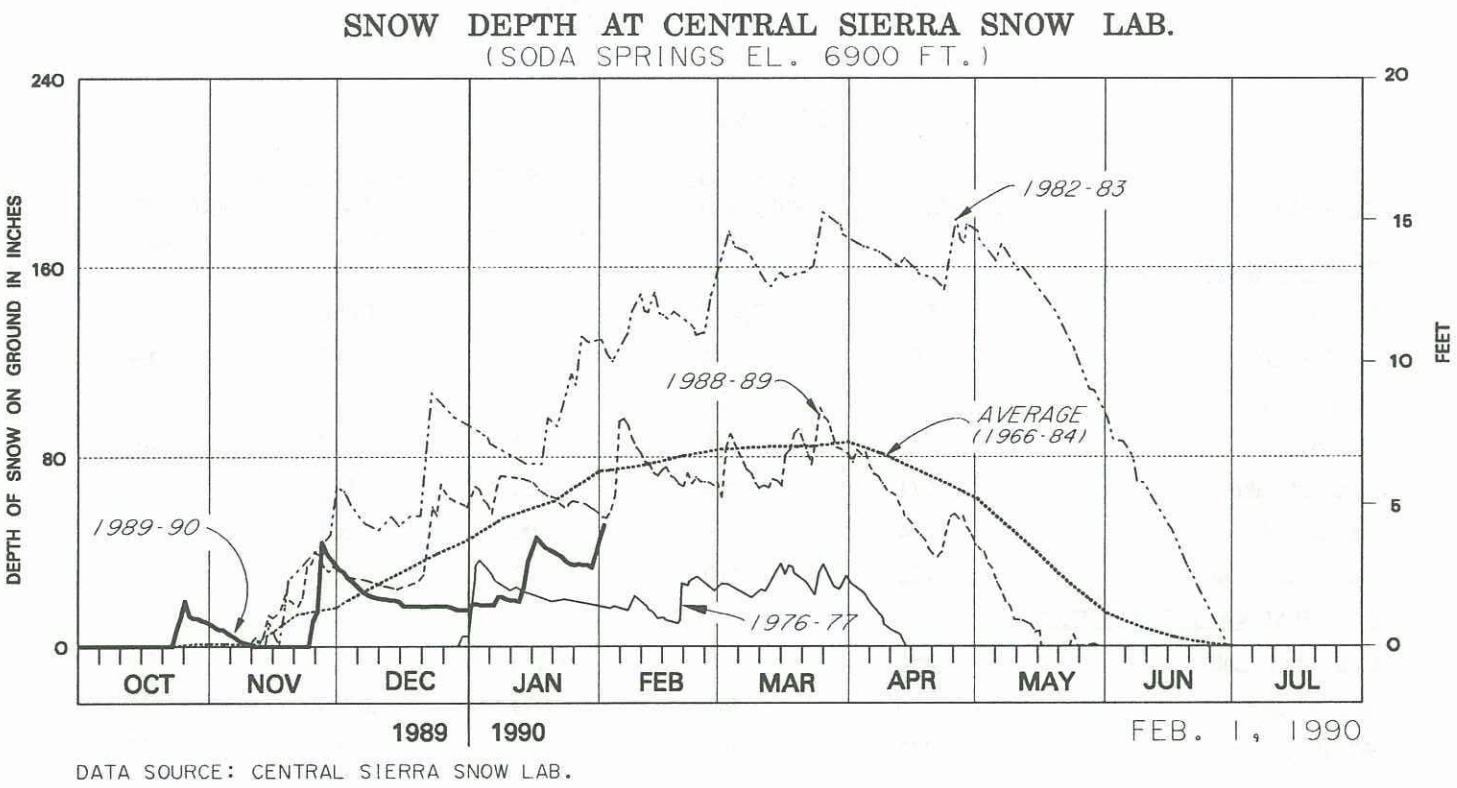
SWP conservation storage (Oroville and San Luis) has increased to 2.7 million acre-feet from its low of 2.4 million acre-feet last fall. Other SWP reservoirs storages total 603 thousand acre-feet (84 percent full). The forecast water supply is sufficient to meet December approved water deliveries of 2.75 million acre-feet, which included a deferral of 28 percent of the requested agricultural entitlement deliveries. With the forecast water supply and the deferred water deliveries, a carryover storage level of 1.7 million acre-feet may occur at the end of the current water year.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AS OFJANUARY 31 1989 1,000 AF	1990 1,000 AF	PERCENT AVERAGE
STATE WATER PROJECT					
Oroville	3,540	2,487	1,700	1,896	76
San Luis SWP	1,060	900	464	790	88
Lake Del Valle	77	30	26	29	96
Silverwood	73	64	72	57	89
Pyramid Lake	171	162	163	162	100
Castaic Lake	324	243	300	261	107
Perris Reservoir	132	110	123	106	97
CENTRAL VALLEY PROJECT					
Clair Engle Lake	2,450	1,853	1,276	1,315	71
Shasta Lake	4,550	3,244	1,879	2,317	71
Whiskeytown	241	208	205	206	99
Folsom	1,010	547	310	340	62
New Melones	2,420	1,559	922	777	50
Millerton Lake	521	309	220	184	60
San Luis CVP	980	740	717	765	103
COLORADO RIVER PROJECT					
Lake Mead	26,300	19,706	23,120	21,663	110
Lake Powell	25,000	16,331	21,416	18,514	113
Lake Mojave	1,810	1,587	1,716	1,761	111
Lake Havasu	619	538	542	543	101
EAST BAY MUNICIPAL UTILITY DISTRICT					
Pardee	210	176	169	186	106
Camanche	432	253	10	189	75
East Bay (4 reservoirs)	151	122	126	123	101
CITY & COUNTY OF SAN FRANCISCO					
Hetch Hetchy	360	146	117	113	78
Cherry Lake	269	105	15	129	123
Lake Eleanor	28	9	12	2	18
South Bay (4 reservoirs)	223	159	114	123	77
CITY OF LOS ANGELES (DWP)					
Crowley Lake (Long Valley Reservoir)	183	130	92	86	66
Grant Lake	48	26	11	22	84
Other Aqueduct Storage (6 reservoirs)	95	66	48	51	77



DATA SOURCE: CENTRAL SIERRA SNOW LAB.

********SNOW LINES**********

THE WESTERN SNOW CONFERENCE will sponsor COPING WITH EXTREMES, a symposium to be held April 17-19, 1990 at the Raddison Hotel in Sacramento, California.

The three day symposium, poster session and field trip will bring together researchers, practitioners and decision makers to discuss problems stemming from extreme hydrologic conditions in the western United States and Canada and our attempts to cope with them.

The field trip will focus on the Sacramento-San Joaquin delta. Tour stops will include the State Water Project's Banks Pumping Plant and Fish Screen facilities and the historic town of Locke. Social activities will include a banquet, spouse's program, riverboat dinner cruise and a hospitality hour.

Make reservations NOW at the Raddison Hotel to assure $55 (single) and $60 (double) room rates. The hotel's telephone number and address are:

(916) 922-2020

500 Leisure Lane

Sacramento, CA 95815

Direct your questions to Neil Berg, U.S. Forest Service, P.O. Box 245, Berkeley, CA 94701, telephone number (415) 486-3456, or to Margaret Hannaford, Sierra Hydrotech, P.O. Box 169, Placerville, CA, 95667, telephone number (916) 622-7155.

FALL REPORT - Preparation of this publication was unavoidably delayed this year but it is currently being printed and should be in the mail soon.

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 date for the period 1936-1985 (50 years, except for data sites estabilshed after 1936).

PRECIPITATION—Averages are based on the period 1931-1980 (50 years)

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 assume 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 state limits eight times out of ten.

Runoff averages for most streams are based on the 50 year period (1936-1985). For more details, contact California Cooperative Snow Surveys, P.O. Box 943836, Sacramento, CA 94236-0001, (916) 445-2196.

On Front Cover

Wind carved snow sculptures

Photo by DWR

State of California—Resources Agency
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

FIRST CLASS