

Arizona Water Supply Outlook

and

Federal-State-Private Cooperative Snow Surveys

Issued by

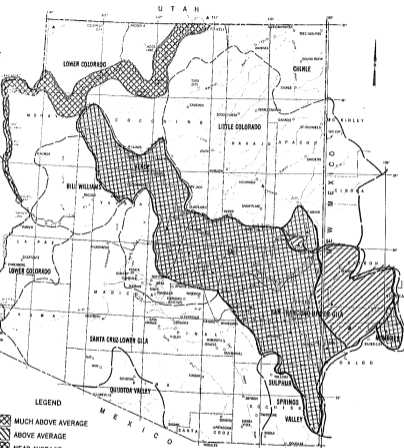
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LEGEND

-  MUCH ABOVE AVERAGE
-  ABOVE AVERAGE
-  NEAR AVERAGE
-  BELOW AVERAGE
-  MUCH BELOW AVERAGE
-  NOT FORECAST

FORECAST POINT

WATERSHED BOUNDARY

SUB-WATERSHED BOUNDARY

STREAMFLOW PROSPECTS ARIZONA

0 25 50 75 100 MI

0 50 100 150 KM

Date compiled by SCS
Field Personnel.

GENERAL OUTLOOK

SUMMARY:

Surface water supplies could be variable in Arizona and western New Mexico if the current weather patterns hold. While storage in major reservoirs is generally above average, streamflow forecasts for the January-May period call for only 40% to 75% of average runoff. The Salt River is forecast at 48%, the Verde River at 39%, and Tonto at 21%. Total inflow to Salt River Project is forecast at 365,000 acre feet. The San Francisco River is forecast at 73% at Glenwood and 69% at Clifton. On the Gila River runoff is expected to be 70% at Gila, 65% at Virden, 60% at the Head of Safford Valley, and 64% at Calva. Inflow to Carlos is forecast at 100,000 acre feet. The Little Colorado River should produce 50% of average inflow to Lake with 74% of average flow at Greer. The Mimbres River is forecast to run 54% of average. Inflow to Lake Powell on the Colorado River is forecast to be 10,600,000 acre feet, or 142% of average.

SNOWPACK:

The snowpack is below average in almost all areas. Snow data collected near January 1 showed the snow water equivalent to be 53% of average on the Salt River, 84% on the Verde River, 50% on the San Francisco-Gila basin, 60% on the upper Little Colorado, and 25% on the Mimbres watershed. The areas running above average are the Grand Canyon at 120% and the San Francisco Peaks at 172%. The Chuska Mountains are estimated to be about 175% of average.

PRECIPITATION:

Precipitation for the total October-December period has ranged from 93% on the Salt River basin to 156% on the Mimbres watershed. October precipitation ran from 81% on the Lower Colorado River area of northwest Arizona to 300% on the Mimbres. Western New Mexico stations received the greatest amounts in October. In November, the storms produced more in Arizona and precipitation ranged from 100% on the Mimbres to 298% on the Verde River basin. It was November precipitation that established the snowpack. December was very dry, ranging from 14% of average on the Verde and Mimbres watersheds to 44% on the Lower Colorado area.

OIRS:

Major reservoirs reported generally above average storage for January 1. A combined storage of 1,670,000 acre feet was reported by Salt River Project at 83% of capacity. San Carlos was 89% full with 830,000 acre feet. Lake Pleasant contained 82,000 acre feet at 52% of capacity. Lake Powell, Mead, Mohave, and Havaasu on the Colorado River held 48,693,000 acre feet at 91% of capacity. Lyman Lake held 22,500 acre feet and Showlow Lake, 2,200 acre feet. Near Prescott, Watson Lake contained 3,500 acre feet and Willow Lake 3,700 acre feet.

FLOW:

With the exception of the Verde River and Tonto Creek, most major streams had near to above average runoff in October and November. December was a very dry month and streamflow declined to well below average.

Observed Streamflow - January 1, 1986

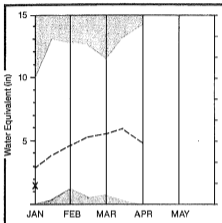
1985 Streamflow - % of Average

<u>Stream</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
San Francisco - Glenwood	149	131	---
San Francisco - Clifton	171	95	47
Gila - Gila	500	98	---
Gila - Virden	644	158	72
Gila - Solomon	348	144	58
Gila - Calva	375	229	105
Salt - Roosevelt	97	149	69
Verde - abv. Horseshoe	65	182	70
Tonto Cr. - Roosevelt	44	560	33

All streamflow forecasts are coordinated between the Soil Conservation Service and the National Weather Service. All averages and percentages of average are based on the 20 year period 1961-1980.

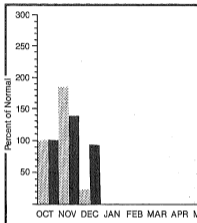
Salt River Basin

Mountain snowpack* (Inches)



*Based on selected stations

Precipitation* (percent of normal)



*Based on selected stations

Maximum Average
 Minimum Current

Monthly precipitation Year to date precipitation

WATER SUPPLY

OUTLOOK:

January-May run of average and precipitation since December was very close to average. October, 149% in River Project reservoirs. 1.5 acre feet at 85% with 82,000 acre

For further information, contact the Service office.

SALT RIVER BASIN

STREAMFLOW FORECASTS

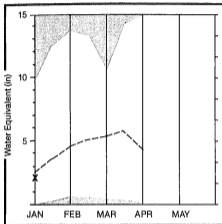
FORECAST PERIOD	20 YR. AVE. (1000MF)	HIST PROBABLE (1000MF)	HIST PROBABLE (X AVE.)	REAS. MAX. (X AVE.)	REAS. MIN. (X AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
sevelt	JUN-MAY	466	225	48	112	14			
	JANUARY	53	25	47	269	18			
sevelt	JUN-MAY	96.8	20	20	87	4			
	JANUARY	20	3	15	180	5			

RESERVOIR STORAGE (1000MF)				WATERSHED BENCHMARK ANALYSIS			
USEABLE CAPACITY	THIS YEAR	USEABLE STORAGE		WATERSHED	NO. COURSES AVE-D	THIS YEAR AS % OF LAST YR. AVERAGE	
		THIS YEAR	LAST YEAR AVE.			LAST YR.	AVERAGE
1709.5	1571.4	1448.3	1115.0	SALT RIVER	8	34	53
157.6	107.5	82.4	67.9				


These diversions or changes in reservoir storage, 11-80 period.

Verde River Basin

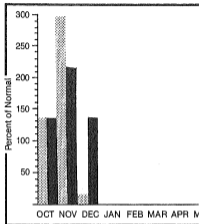
Mountain snowpack* (inches)



*Based on selected stations

Maximum  Average 
 Minimum  Current 

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation  Year to date precipitation 

WATER SUPPLY

OUTLOOK:

January 1, 1986

The Verde River is forecast to run only 39% of average over the January-May period. Inflow to Lake Mary is expected to be near 5700 acre feet. Granite Creek and Willow Creek are forecast to produce only 900 and 800 acre feet respectively. Total precipitation since October 1 has been 134% of average, but December was only 14%. Observed flow on the Verde was 65% of average in October, 182% in November, and 70% in December. The January 1 snowpack was 84% of average. Salt River Project reservoirs on the Verde River held 222,000 acre feet at 72% of capacity. Watson Lake held 3500 acre feet and Willow Lake 3700 acre feet.

For further information contact your local Soil Conservation Service office.

VERDE RIVER BASIN

STREAMFLOW FORECASTS

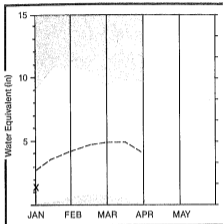
FORECAST PERIOD	30 YR. AVE. (1000MF)	MOST PROBABLE (1000MF)	MOST PROBABLE (% AVE.)	REG. MAX. (% AVE.)	REG. MIN. (% AVE.)	PEAK FLOW (CFD)	PEAK DATE	LOW FLOW (CFD)	LOW DATE
Karseshas									
JAN-MAY	308.6	120	38	143	19				
JANUARY	48	20	41	118	29				
JUN-MAY	---	8.9							
JUN-MAY	---	8.8							
JUN-MAY	---	5.7							

RESERVOIR STORAGE (1000MF)				WATERSHED SNOWPACK ANALYSIS				
RESERVOIR	USABLE CAPACITY	%% USABLE STORAGE		WATERSHED	NO. COLUMBS AVE.S	THIS YEAR AS % OF		
		THIS YEAR	LAST YEAR			LAST YR.	AVERAGE	
SYSTEM	309.6	216.5	222.4	106.0	VERDE RIVER	10	38	84
	4.7	4.6	3.5	2.2	SAN FRANCISCO PEAKS	4	99	172
	6.1	4.2	3.7	2.1				

upstream diversions or changes in reservoir storage, 1961-60 period.

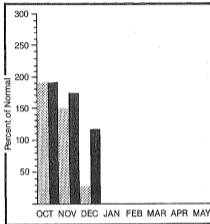
San Francisco - Upper Gila River Basin

Mountain snowpack* (inches)




*Based on selected stations

Precipitation* (percent of normal)



*Based on selected stations

Maximum  Average 
 Minimum  Current 

Monthly precipitation  Year to date precipitation 

WATER SUPPLY

OUTLOOK:

January 1, 1986

January-May streamflow forecasts are below average on the San Francisco and Gila Rivers. Runoff is forecast to be 69% of average at Clifton, 65% at Virden, and 62% at the Head of Safford Valley. Inflow to San Carlos reservoir at Calva is forecast at 100,000 acre feet or 64% of average. Total October-December precipitation was 118% of average while December itself was only 30%. Snow water equivalent on January 1 was only 50% of average. Streamflow at Solomon was 348% of average in October, 144% in November, and 58% in December. Storage in San Carlos reservoir was 830,000 acre feet at 89% of capacity. Painted Rock reservoir held 28,000 acre feet.

For further information contact your local Soil Conservation Service office.

SAN FRANCISCO - UPPER GILA RIVER BASIN

STREAMFLOW FORECASTS

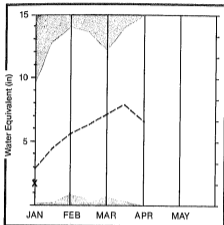
POINT	FORECAST PERIOD	20 YR.	NOST	NOST	REAS.	REAS.	PEAK	PEAK	LOW	LOW
		AVE. (1000AF)	PROBABLE (1000AF)	PROBABLE (% AVE.)	MAX. (% AVE.)	MIN. (% AVE.)	FLOW (CFS)	DATE	FLOW (CFS)	DATE
CO RIVER at Glenwood	JAN-MAY	41	30	73	178	12				
CO RIVER at Clifton	JAN-MAY	94	45	69	229	13				
R at Dila	JAN-MAY	69	49	69	162	21				
R at Virden	JAN-MAY	92	60	65	163	16				
t near Solomon	JAN-MAY	200	123	61	226	13				
	JANUARY	34	15	44	161	23				
l at Calva	JAN-MAY	156	100	64	219	5				

RESERVOIR STORAGE (1000AF)				WATERSHED SNOWPACK ANALYSIS				
RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE		WATERSHED	NO. COURSES AVE. 0	THIS YEAR AS % OF		
		THIS YEAR	LAST YEAR AVE.			LAST YR.	AVERAGE	
	935.0	924.6	930.3	233.0	SAN FRANCISCO/GILA RIVER	7	29	52
CK DAM	2492.0	96.0	26.1	-----				

and for upstream diversions or changes in reservoir storage.
is for 1961-80 period.

Little Colorado River Basin

Mountain snowpack* (Inches)



*Based on selected stations

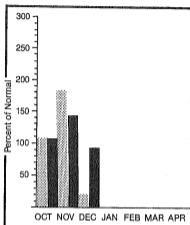
Maximum

Average

Minimum

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

WATER SUPPLY

January 1, 1986

OUTLOOK:

Runoff on the upper Little Colorado River is forecast to be 50% of average at Lyman reservoir and 74% at Greer over the January-June period. Precipitation has averaged 96% since October 1, but only 21% in December. The January 1 snowpack was rated at 62% of average. The Chuska Mountains are estimated to be about 175% of average. Reservoir storage January 1 was 22,500 acre feet in Lyman reservoir and 2200 acre feet in Showlow Lake.

For further information contact your local Soil Conservation Service office.

LITTLE COLORADO RIVER BASIN

STREAMFLOW FORECASTS

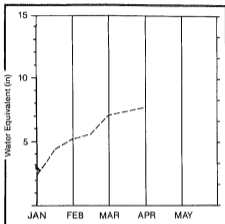
POINT	FORECAST	20 YR.	HIST	HIST	REAS.	REAS.	PEAK	PEAK	LOW	LOW
	PERIOD	AVE. (1000CFS)	PROBABLE (1000CFS)	PROBABLE (% AVE.)	MAX. (% AVE.)	MIN. (% AVE.)	FLOW (CFS)	DATE	FLOW (CFS)	DATE
COLORADO RIVER at Greer	JAN-JUN	8.0	6.5	73	101	45				
COLORADO RIVER ab Lyman Res	JAN-JUN	14.2	7.4	52	162	21				
COLORADO RIVER at Hoodruff	NOV-JUN	17.3	15	86	231	5				

RESERVOIR STORAGE (1000CFS)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USABLE CAPACITY	** USEABLE STORAGE **		AVERAGE	WATERSHED	NO. COURSES AVE. 0	THIS YEAR AS % OF	
		THIS YEAR	LAST YEAR				LAST YR.	AVERAGE
RESERVOIR	---	24.4	22.5	---	LITTLE COLORADO RIVER	5	34	61
LAKE	5.1	5.1	2.2	---	CHUSA MOUNTAINS	0	0	0

Adjusted for upstream diversions or changes in reservoir storage.
 Data is for 1961-88 period.

Lower Colorado River Basin

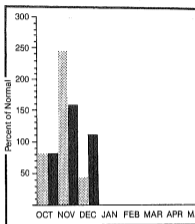
Mountain snowpack* (inches)



*Based on selected stations

Maximum _____ Average - - - - -
 Minimum _____ Current _____

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation [stippled bar] Year to date precipitation [solid black bar]

WATER SUPPLY

OUTLOOK:

January 1, 1986

Inflow to Lake Powell on the Colorado River is forecast to be 10,600,000 acre feet or 142% of average over the period April through July. The April-June forecast for the Virgin River at Littlefield is for 69% of average flow. Precipitation in northwestern Arizona ran 112% of average for October through December. December was only 44% of average. The January 1 snowpack was rated at 120% of average, mainly in the area of the Grand Canyon. Combined storage in Lakes Powell, Mead, Mohave, and Havasu was 48,692,600 acre feet on January 1 at 91% of capacity. Water releases at Parker Dam were reported to be 21,900 cubic feet per second near January 1.

For further information contact your local Soil Conservation Service office.

LOWER COLORADO RIVER BASIN

STREAMFLOW FORECASTS

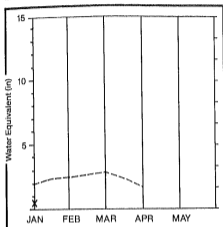
GAGING POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	HIST PROBABLE (1000AF)	HIST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFD)	PEAK DATE	LOW FLOW (CFD)	LOW DATE
	RIVER near Littlefield	APR-JUN	42	42.5	68	132	27			
to LAKE FOWELL	APR-JUL	7462	10400	142	192	99				

RESERVOIR STORAGE (1000AF)				WATERSHED SNOWPACK ANALYSIS				
RESERVOIR	USEABLE CAPACITY	%% USEABLE STORAGE		WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF		
	THIS YEAR	LAST YEAR	AVE.			LAST YR.	AVERAGE	
RAMBU	619.4	381.3	388.6	546.0	LOWER COLORADO RIVER	2	53	122
HAVE	1810.0	1523.0	1422.0	1405.0				
AD	26135.0	24070.0	23683.0	18176.0				
WELL	25002.0	22465.0	22999.0	12625.0				

ected for upstream diversions or changes in reservoir storage.

Mimbres River Basin

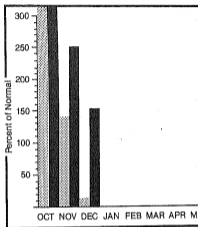
Mountain snowpack* (Inches)



*Based on selected stations

Maximum _____ Average - - - - -
 Minimum _____ Current _____

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation Year to date precipitation

January 1, 1986

WATER SUPPLY

OUTLOOK:

The discharge of the Mimbres River is forecast to be 54% of average for January through May. Although precipitation has averaged 156% since October 1, December precipitation was only 14% of average. The January 1 snowpack was only 25% of average.

For further information contact your local Soil Conservation Service office.

HUMBRES RIVER BASIN

STREAMFLOW FORECASTS

STATION	FORECAST PERIOD	20 YR. AVE. (1000AF)	HIST. PROBABLE (1000AF)	HIST. PROBABLE (X AVE.)	REAS. MAX. (X AVE.)	REAS. MIN. (X AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
near Hombres	JUN-MAY	5.4	2.9	53	155	19				

RESERVOIR STORAGE (1000AF)		WATERSHED SNOWPACK ANALYSIS					
RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE		WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF	
	THIS YEAR	LAST YEAR	AVE.			LAST YR.	AVERAG
				HUMBRES RIVER	3	20	27

For upstream diversions or changes in reservoir storage, for 1941-50 period.

DATA SITES USED TO DETERMINE SNOW PACK WATER EQUIPMENT

SALT RIVER

Baldy
Beaverhead
Coronado Trail
Forest Dale Alternate
Hannagan Meadows
Heber
Maverick Fork
Workman Creek

VERDE RIVER

Baker Butte
Baker Butte #2
Chalender
Copper Basin Divide
Fort Valley
Gaddes Canyon
Happy Jack
Mingus Mountain
Morman Mountain
Mormon Mt. Summit #2
White Horse Lake Jct.
Williams Ski Run

GILA/SAN FRANCISCO RIVER

Beaverhead
Coronado Trail
Frisco Divide
Hannagan Meadows
Signal Peak Snotel
Silver Creek Divide
State Line

LITTLE COLORADO RIVER

Baldy
Cheese Spring
Heber
Nutricos
Promontory Butte

LOWER COLORADO RIVER

Bright Angel
Grand Canyon

SAN FRANCISCO PEAKS

Inner Basin #1
Inner Basin #2
Snow Bowl #1 Alternate
Snow Bowl #2

CHUSKA MOUNTAINS

Bowl Canyon
Tsalle Canyon #1
Tsalle Canyon #2
Wheatfields
Whiskey Creek

MIMBRES RIVER

Emory Pass #2
McKnight Cabin
Signal Peak Snotel

STATIONS USED TO DETERMINE PERCENT OF NORMAL PRECIPITATION

SALT RIVER

Alpine R.S.
Baldy Snotel
Black River Pumps
Buck Spring Snotel
Coronado Trail Snotel
Hannagan Meadows Snotel
Heber Snotel
Maverick Fork Snotel
Pleasant Valley R.S.
Promontory Snotel
Sierra Ancha
Tonto Fish Hatchery
Wildcat Snotel
Workman Creek Snotel

LITTLE COLORADO RIVER

Baldy Snotel
Buck Spring Snotel
Flagstaff
Heber Snotel
Holbrook
Mormon Mountain Snotel
Promontory Snotel
Springerville
Tuba City
Window Rock

LOWER COLORADO RIVER

Bright Angel
Colorado City
Fredonia
Grand Canyon
Kingman
Page
Williams

VERDE RIVER

Ashfork
Baker Butte Snotel
Beaver Creek R.S.
Copper Basin Divide
Flagstaff
Fort Valley
Fry Snotel
Happy Jack
Mingus Mountain
Mormon Mountain Snotel
Payson R.S.
Prescott
Sugar Loaf Snotel
White Horse Lake Snotel

GILA/SAN FRANCISCO RIVER

Alpine R.S.
Beaverhead R.S.
Clifton
Coronado Trail Snotel
Frisco Divide Snotel
Hannagan Meadows Snotel
Lookout Mountain Snotel
Luna R.S.
Reserve R.S.
Safford Exp. Farm
Signal Peak Snotel
Silver City
Silver Creek Divide Snotel
Fort Bayard

MIMBRES RIVER

Mimbres R.S.
Signal Peak Snotel



