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# WATER SUPPLY OUTLOOK FOR MONTANA

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MAY 20 1977



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF  
MAY 1, 1977

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*COVER PHOTO: SNOW COURSE MEASUREMENTS BY A SURVEY TEAM IN UTAH'S WASATCH RANGE.*  
ORC-254-10

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, 6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



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# MONTANA'S MOUNTAIN SNOWPACK BELOW NORMAL



Based on snow surveys records of past years, we can expect streamflows to decrease to well below normal levels this year after the main snowmelt period has passed.

Irrigators who depend on natural streamflows (no stored water) and who have the later water rights on a stream, may wish to consider some of the following alternatives and adjust their operations to a short water supply.

1. Take land out of production for land leveling or summer fallow.
2. Plant early maturing crops.
3. Cut small grains or millet for hay.
4. Defer new plantings of grasses and hay crops until a more favorable water supply year.
5. Take advantage of any alfalfa or clover seed production opportunities to supplement income.
6. Make arrangements early if additional pasture or winter feed will be needed.
7. Reduce livestock inventory to balance with available feed.
8. Plan to harvest only one crop of alfalfa or graze early and plow down for green manure where recommended.
9. Keep large income producing crops on most productive land.
10. Improve irrigation water distribution systems wherever possible.
11. Use the most efficient irrigation practices possible.



CONTACT YOUR LOCAL SOIL CONSERVATION DISTRICT  
FOR ADDITIONAL ASSISTANCE





MONTANA WATER SUPPLY OUTLOOK  
May 1, 1977

SNOTEL IS HERE

Radio telemetry has been installed at ten SNOTEL (snow telemetry) sites in Montana. Western Union and Soil Conservation Service are proceeding with the installation of twenty additional sites. Data on snow water equivalent, air temperature and total precipitation are being transmitted using meteor burst communications. Daily reports are being received in the Snow Survey office in Bozeman. Additional information on the status of sites and their data will be reported in the May 15 Water Supply Outlook.

\* \* \* \* \*

\* April was not a good precipitation month. Snowfall and precipitation were below average. Snowmelt is occurring at most elevations. Snow at many snow courses has completely melted and many streams have already, or are in the process of reaching their peak snow melt runoff.

\* Dry soils have absorbed much of this early snowmelt. Streamflow levels will be much lower than normal for the remainder of the season. Irrigation water supplies from natural streamflow will be in short supply by mid-June on many streams.

\* \* \* \* \*

COLUMBIA RIVER DRAINAGE

Snow. Snowfall during April was below average. Climatological stations also report valley precipitation was about one-half of normal. Melt has started at all snow courses. Many snow courses are bare and mountain soils are drying. According to record this is the earliest many Montana snow courses have become bare. The current snowpack is about 20 to 40 percent of average.

Streamflow. Earlier than normal melt coupled with low snowpack has resulted in a worsening of the water supply outlook. Provisional streamflow data indicates runoff during April was 75 to 90 percent of average on the Flathead Tributaries and 45 to 65 percent of average on other drainages. Most of the streams reached snowmelt peak in early May. The Bitterroot should reach it's snow melt peak around mid-May.

Streamflow will become quite low by mid-June. Most streams in the Clark Fork drainage are forecast to have the lowest or near lowest runoff of record for the next five months. Runoff in the Flathead is expected to be slightly greater than the low years of the early 1940's. The streamflow will be similar to, or less than 1973 which is the most recent dry year. Irrigation water supplies on streams not having stored water will be in short supply after mid-June. Even irrigation supplies from reservoirs will be much less than normal.

#### MISSOURI RIVER BASIN

Snow. All snow courses showed decreases in water content during April. Snowfall was below average in the mountains and melt has started earlier than usual. Valley precipitation has also been below average for April. Many snow courses have become bare earlier than normal. Mountain soils are drying from warm temperatures and lack of snow or rain.

The present snowpack is about 15 to 45 percent of average in Missouri headwaters and along the Continental Divide. Small mountain ranges in Central Montana have 60 to 80 percent of the average May 1 snowpack.

Streamflow. Early melt and low winter snowpack have deteriorated the water supply outlook.

Runoff during April, based on preliminary data was about 50 percent of average in the Beaverhead, 75 to 80 percent of average on the Big Hole, Jefferson and Sun Rivers. The Madison River had about average April runoff while the Gallatin flow was a little above average. The inflow to Clark Canyon reservoir is forecast to be less than 10 percent of average for the next five months. Most other Missouri River streams are forecast between 30 and 60 percent average runoff. Exceptions are streams in Central Montana where streamflow should be 80 to 90 percent average.

Except for streamflow in the central part of Montana, the forecasted runoff for the May through September period is the lowest or near the lowest of record.

The Madison and many smaller streams have already reached their peak snowmelt runoff. The Big Hole, Jefferson, Missouri and major streams flowing into the Missouri with headwaters on the Continental Divide are expected to reach their snowmelt peak early in May. The Gallatin River should reach it's snowmelt peak by mid-May.

Irrigation water will be in short supply by mid-June on all streams not having stored water.

#### YELLOWSTONE RIVER BASIN

Snow. Snowfall during April was below average. Melt has depleted the snowpack at almost all snow courses in the basin. The only snow courses showing an increase during the month are Picket Pin Upper, Cole Creek, Grizzly Peak and Timberline Creek, all near Red Lodge.

Snow at almost all snow courses in Yellowstone National Park has melted. Precipitation at most valley climatic stations was below average for April. Mountain soils are drying from warm temperatures and the lack of snow and rain.

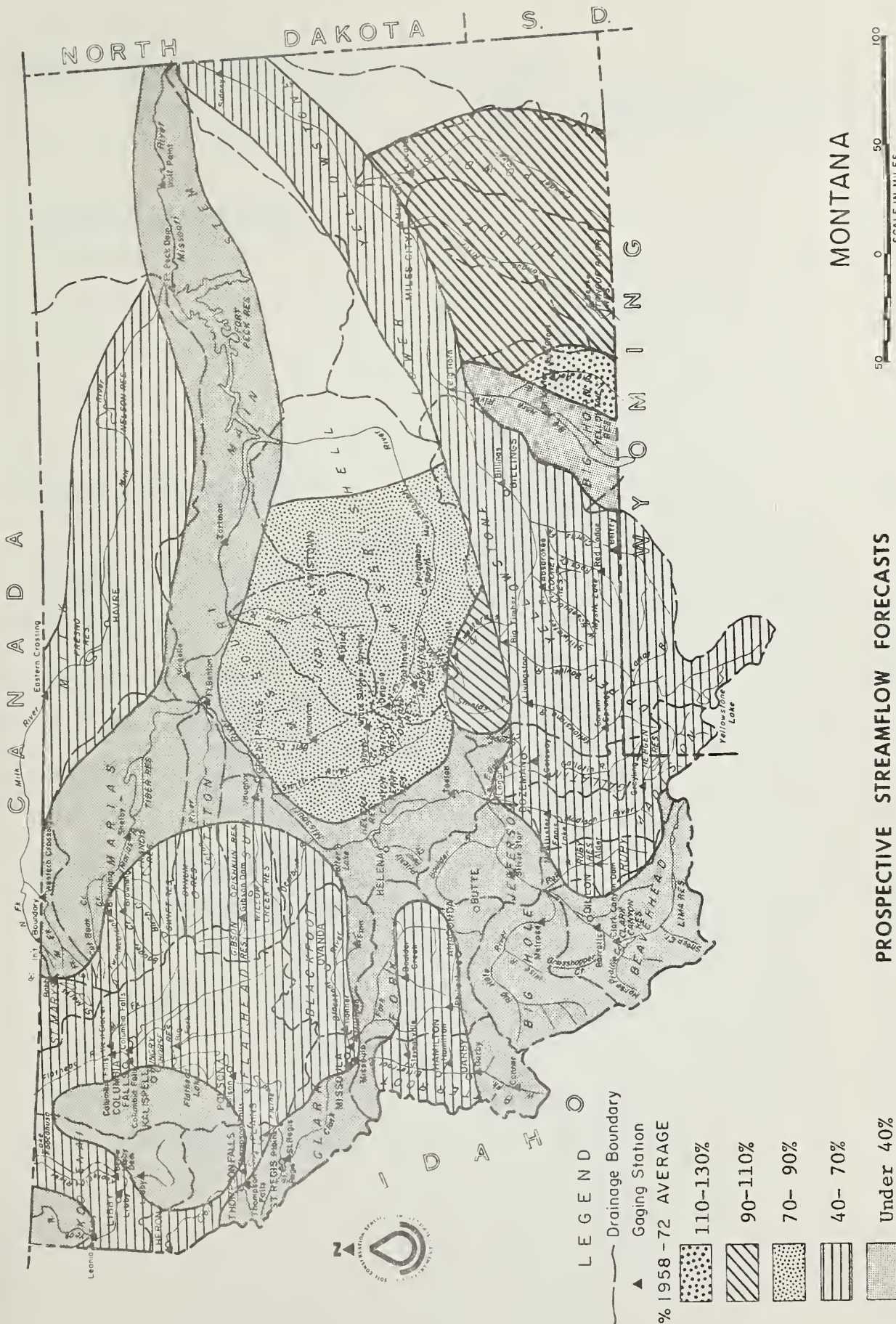
The snowpack is 40 to 60 percent of average in the Yellowstone and Bighorn River headwaters. Snowpack in the north end of the Bighorn mountains continues to be above average.

Streamflow. Early melt and lack of winter snowpack have lowered the available water supply. Runoff during April was generally 60 to 80 percent average on Yellowstone tributaries above the Bighorn and average or above on the Bighorn tributaries.

Streamflow for the next five months is forecast at about one-half of average on the Yellowstone River and its tributaries. The Bighorn is forecast to be about one-fourth of average while the Little Bighorn should produce above average runoff.

Most streams in the Yellowstone drainage are forecast to have the lowest or near lowest runoff of record. Many smaller streams have already reached their peak snowmelt runoff. The major streams are expected to reach their peak snowmelt runoff by mid-May.

Irrigation water will be in short supply by mid-June on smaller tributaries and by late June or early July on larger streams.



**PROSPECTIVE STREAMFLOW FORECASTS**  
AS OF  
May 1, 1977

MONTANA



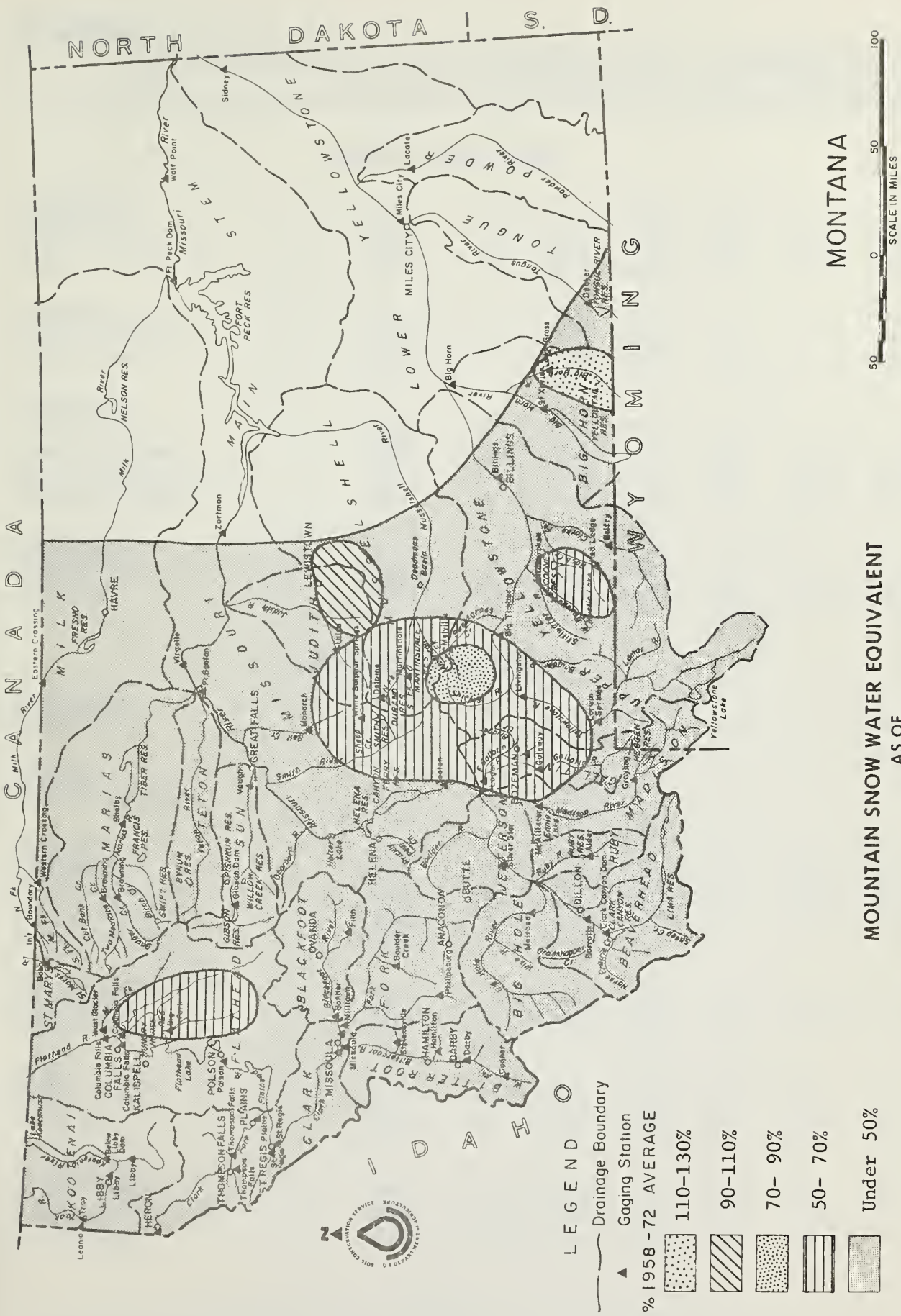


**SUMMARY of SNOW MEASUREMENTS** (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
<u>COLUMBIA RIVER DRAINAGE</u>			
Kootenai	41	33	36
Flathead	21	43	41
Upper Clark Fork	30	19	23
Lower Clark Fork	13	29	31
Bitterroot	12	25	31
<u>MISSOURI RIVER DRAINAGE</u>			
Jefferson	45	19	25
Madison	20	18	23
Gallatin	17	41	47
Missouri Main Stem	12	37	44
Judith-Musselshell	11	75	70
Marias-Teton-Sun	7	15	14
Milk	2	6	4
<u>YELLOWSTONE RIVER DRAINAGE</u>			
Yellowstone (above Bighorn)	27	38	47
Bighorn	17	49	62
Little Bighorn	7	115	120
Tongue	9	93	102
Powder	3	37	49
<u>SASKATCHEWAN RIVER DRAINAGE</u>			
Bow	-	-	-
St. Mary's	7	35	33







MONTANA



MOUNTAIN SNOW WATER EQUIVALENT

AS OF  
May 1, 1977

LEGEND

— Drainage Boundary

▲ Gaging Station

% 1958-72 AVERAGE

110-130%

90-110%

70-90%

50-70%

Under 50%



# SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

## COLUMBIA RIVER BASIN

### Kootenai

Baree Trail	3800	48	7.5	4-29	6.6	6.4	6.6
Murphy Lake R. S.	3000	48	22.6	5-1	19.5	20.6	21.8
Raven	3050	48	23.0	4-29	14.0	16.9	18.8

### Flathead

Desert Mountain	5600	54	8.4	4-29	9.2	9.0	8.6
Marias Pass	5250	54	6.5	4-23	6.4	6.4	6.2

### Clark Fork

Black Pine	7100	48	10.0	5-1	9.1	8.5	7.8
Lubrecht Forest	4100	48	26.8	-	-	-	-
Seeley Lake R. S.	4030	48	11.9	5-5	10.3	12.6	11.8
Skalkaho Summit	7260	48	10.8	4-29	9.3	10.2	10.0

### Bitterroot

Gibbons Pass	7100	48	7.1	4-28	4.0	5.4	5.5
Lolo Pass	5250	48	10.6	4-28	8.1	7.6	7.2

## MISSOURI RIVER BASIN

### Beaverhead

Lakeview	6700	48	15.3	4-30	15.2	18.5	14.0
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### Madison

West Yellowstone	6700	48	6.5	5-5	3.0	3.4	3.2
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### Gallatin

Bridger Bowl	7250	48	17.0	4-27	16.1	15.4	16.0
College Site No. 2	4860	48	17.7	4-29	16.2	19.6	16.5
Lick Creek	6860	48	18.8	4-28	14.4	14.8	17.2
Twenty-One Mile	7150	48	10.0	-	-	-	-

### Missouri Main Stem

Kings Hill	7420	48	11.8	4-27	6.0	8.6	7.2
Stemple Pass	6350	48	5.9	4-29	5.4	5.1	5.0

### Milk

Beaver Creek	3950	48	20.9	4-30	10.4	10.0	15.0
Rocky Boy	4700	36	10.1	4-30	9.3	9.6	9.7

### Yellowstone

Battle Ridge	6020	48	17.6	4-27	12.7	13.3	14.7
Northeast Entrance	7350	48	9.4	-	-	-	-
PMC Dryland	3700	48	20.7	4-29	5.4	8.6	-



**RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH**

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average

COLUMBIA RIVER BASIN

Kootenai	Koocanusa	5,694.0	2,291.0	135.0	-
Flathead	Hungry Horse	3,428.0	2,288.0	2,031.0	2,006.0
	Flathead Lake	1,791.0	877.4	1,067.0	977.9
	Camas (4)	45.2	17.6	25.2	32.5
	Mission Valley (8)	100.3	67.2	64.8	44.0
Clark Fork	Georgetown Lake	31.0	29.0	25.6	23.1
	Lower Willow Creek	4.9	3.2	2.9	2.4
	Nevada Creek	12.6	-	12.8	10.0
	Noxon Rapids	334.6	314.0	262.1	138.4
Bitterroot	Como	34.9	-	25.8	19.0
	Painted Rocks	31.7	14.2	32.4	25.9

MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	257.2	179.6	176.9	148.9
	Lima	84.0	65.6	66.9	51.5
Ruby	Ruby	38.8	-	36.2	35.0
Madison	Hebgen Lake	337.5	270.9	195.6	212.6
	Ennis Lake	41.0	35.6	35.0	36.6
Gallatin	Middle Creek	8.0	6.7	4.4	4.5
Missouri	Canyon Ferry	2,043.0	1,552.0	1,449.0	1,552.0
	Hauser & Helena	61.9	60.5	62.5	59.3
	Lake Helena	10.4	10.7	10.7	9.6
	Holter Lake	81.9	81.1	79.7	70.6
	Smith River	10.6	-	11.1	8.9
	Bair	7.0	-	7.1	6.3
	Martinsdale	23.1	-	18.1	10.4
	Deadman's Basin	72.2	40.1	-	53.0
	Fort Peck Lake	18,910.0	15,880.0	17,440.0	13,470.0
Sun	Gibson	99.0	76.5	61.8	48.8
	Willow Creek	32.2	27.2	29.8	23.4
	Pishkun	32.0	31.4	30.1	23.1
Marias	Lower Two Medicine	11.9	-	-	-
	Four Horns	19.2	-	-	-
	Swift	30.0	22.4	22.9	20.6
	Lake Frances	111.9	77.1	95.1	84.6
	Tiber	1,347.0	492.5	545.6	611.2
Milk	Beaver Creek	3.5	2.8	2.7	-
	Fresno	127.2	68.6	124.9	106.5
	Nelson	66.8	45.2	51.8	46.8
	Lake Sherburne	66.2	23.2	41.0	20.7
Yellowstone	Mystic Lake	21.0	0.0	1.9	3.1
	Tongue River	68.0	-	36.6	35.2
	Cooney	27.4	20.2	16.0	16.7
Bighorn	Bighorn Lake	1,356.0	888.4	771.4	783.9



**PEAK FLOWS** (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET)	
	Forecast Range	Average

COLUMBIA RIVER DRAINAGE

Blackfoot River near Bonner	2,000 - 6,000	9,902
Clark Fork River above Missoula	3,000 - 8,000	16,531
Bitterroot River near Darby	1,500 - 3,000	6,650
Clark Fork River below Missoula	8,000 - 15,000	32,373
Clark Fork River at St. Regis	12,000 - 20,000	41,080
N. Fork Flathead near Columbia Falls	7,000 - 12,000	23,167
N. Fork Flathead near West Glacier	9,000 - 14,000	25,020

MISSOURI RIVER DRAINAGE

Big Hole River near Melrose	1,000 - 3,000	8,009
Jefferson River at Silver Star	2,000 - 4,000	8,810
Gallatin River near Gateway	2,500 - 3,500	5,369
Gallatin River near Logan	2,000 - 3,500	5,324
Missouri River at Toston	5,000 - 8,000	18,005
Belt Creek near Monarch	500 - 1,500	1,742
Marias River near Shelby	500 - 3,000	12,720
S. Fork Musselshell above Martinsdale	300 - 650	745

YELLOWSTONE RIVER DRAINAGE

Yellowstone River at Livingston	10,000 - 14,000	20,560
Boulder River near Big Timber	2,000 - 3,500	5,100
Stillwater River near Absarokee	2,000 - 4,000	6,261
Clarks Fork River near Belfry	3,500 - 5,500	7,342
Rock Creek near Red Lodge	300 - 600	1,067
Yellowstone River at Billings	20,000 - 28,000	39,188

\*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range.





# STREAMFLOW FORECASTS

BASIN STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRES FEET	
	Thousand Acres Feet	Percent of Average		Last Year	Average

## COLUMBIA RIVER BASIN

KOOTENAI RIVER					
Libby (near)(2)	3,500	50	May-Sept	7,455	6,981
Below Libby Dam	2,950	50	May-July	5,706	5,941
	2,300	51	May-June	4,036	4,535
FISHER RIVER					
Libby (near)	70.0	34	May-Sept		205
	60.0	31	May-July		188
YAAK RIVER					
Troy (near)	160	35	May-Sept		451
	150	35	May-July		428
KOOTENAI RIVER					
Leonia (at)(2)	4,300	52	May-Sept		
	3,550	50	May-July		
	2,750	49	May-June		
INFLOW MOULTON RESERVOIR					
Butte (near)(million gallons)	60	32	May-June	355	186
WARM SPRINGS CREEK AT MEYERS DAM					
Anaconda (near)(3)	21.0	43	May-Sept	61.1	48.9
	17.0	43	May-July	48.1	39.5
FLINT CREEK					
Southern Cross (near)(4)	5.3	36	May-Sept	28.6	14.9
	4.5	35	May-July	23.2	12.7
FLINT CREEK					
Boulder Creek (below)(5)	29.0	45	May-Sept		64.0
	22.0	45	May-July		48.5
INFLOW LOWER WILLOW CREEK RESERVOIR					
Hall (near)(6)	3.8	28	May-Sept	22.7	13.5
	3.5	27	May-July	21.4	12.8
MIDDLE FORK ROCK CREEK					
Philipsburg (near)	30.0	42	May-Sept		72.0
	27.0	42	May-July		64.6
NEVADA CREEK					
Finn (near)	4.0	23	May-Sept		17.4
	3.5	22	May-July		15.8

(2) Adjusted for storage in Lake Kooconusa.

(3) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.

(4) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.

(5) Sum Flint Creek at Maxville and Boulder Creek at Maxville.

(6) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.



# STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average

## COLUMBIA RIVER BASIN (Continued)

BLACKFOOT RIVER					
Bonner (near)	400	44	May-Sept		905
	340	42	May-July		809
	290	42	May-June		688
CLARK FORK RIVER					
Milltown (above)(7)	290	43	May-Sept		681
	230	40	May-July		578
	180	38	May-June		479
CLARK FORK RIVER					
Missoula (above)	690	44	May-Sept	2,231	1,586
	570	41	May-July	1,970	1,387
	470	40	May-June	1,688	1,167
WEST FORK BITTERROOT RIVER					
Conner (near)(8)	57.0	36	May-Sept		159
	50.0	35	May-July		142
BITTERROOT RIVER					
Darby (near)	200	38	May-Sept	728	529
	180	37	May-July	650	486
	155	37	May-June	558	424
SKALKAHO CREEK					
Hamilton (near)	24.5	46	May-Sept		53.6
	21.0	45	May-July		46.7
BURNT FORK CREEK					
Stevensville (near)(9)	16.5	50	May-Sept		33.3
	14.0	48	May-July		29.0
BITTERROOT RIVER					
Missoula (at)(10)	490	36	May-Sept		1,375
	430	34	May-July		1,261
	380	35	May-June		1,084
CLARK FORK RIVER					
Missoula (below)	1,180	40	May-Sept		2,961
	1,000	38	May-July		2,648
	850	38	May-June		2,251
CLARK FORK RIVER					
St. Regis (at)	1,500	38	May-Sept	5,278	3,941
	1,280	36	May-July	4,663	3,521
	1,050	35	May-June	3,953	2,996
NORTH FORK FLATHEAD RIVER					
Columbia Falls (near)	970	54	May-Sept		1,809
	850	52	May-July		1,631
	725	53	May-June		1,369

(7) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.

(8) Adjusted for storage in Painted Rocks Reservoir.

(9) Adjusted for diversion into Sunset Highline Canal.

(10) Difference in observed flow Clark Fork above and below Missoula.



# STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average

## COLUMBIA RIVER BASIN (Continued)

<b>MIDDLE FORK FLATHEAD RIVER</b>					
West Glacier (near)	1,100	63	May -Sept	1,784	1,740
	1,000	63	May -July	1,581	1,591
	850	64	May -June	1,259	1,337
<b>SOUTH FORK FLATHEAD RIVER</b>					
Columbia Falls (near)	1,320	62	May -Sept	2,177	2,120
	1,200	61	May -July	2,033	1,982
	1,060	61	May -June	1,726	1,726
<b>FLATHEAD RIVER</b>					
Columbia Falls (at) (11)	3,450	60	May -Sept	6,037	5,785
	3,200	60	May -July	5,428	5,305
	2,750	61	May -June	4,452	4,514
<b>SWAN RIVER</b>					
Big Fork (near)	365	59	May -Sept		622
	320	60	May -July		535
<b>FLATHEAD RIVER</b>					
Polson (near)(12)	3,800	56	May -Sept	7,178	6,838
	3,520	56	May -July	6,334	6,271
	3,000	57	May -June	5,151	5,303
<b>CLARK FORK RIVER</b>					
Plains (near)(12)	5,500	49	May -Sept	12,597	11,182
	4,850	48	May -July	11,110	10,103
	4,000	47	May -June	9,139	8,515
<b>THOMPSON RIVER</b>					
Thompson Falls (near)	80.0	35	May -Sept		229
	65.0	32	May -July		200
<b>PROSPECT CREEK</b>					
Thompson Falls (at)	43.0	37	May -Sept		116
	38.0	36	May -July		107
<b>CLARK FORK RIVER</b>					
Whitehorse Rapids (at)(13)	6,000	49	May -Sept		12,349
	5,250	47	May -July		11,118
	4,350	46	May -June		9,358

(11) Adjusted for storage in Hungry Horse Reservoir.

(12) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

(13) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake, and Noxon Rapids Reservoirs.



STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average

MISSOURI RIVER BASIN

BEAVERHEAD RIVER					
Grant (near)(14)	7.0	7	May-Sept	187	106
	5.0	6	May-July	145	88.3
RUBY RIVER					
Alder (near)	39.0	46	May-Sept		84.5
	30.0	43	May-July		70.0
BIG HOLE RIVER					
Melrose (near)	190	29	May-Sept		665
	180	29	May-July		611
BIRCH CREEK					
Glen (near)	5.6	43	May-Sept		13.1
	4.4	40	May-July		10.9
BOULDER RIVER					
Boulder (near)	31.0	39	May-Sept	132	80.5
	30.0	39	May-July	120	76.2
WILLOW CREEK					
Harrison (near)	3.0	18	May-Sept		16.8
	2.5	17	May-July		14.9
MADISON RIVER					
Grayling (near)(15)	225	53	May-Sept	523	425
	155	49	May-July	398	319
MADISON RIVER					
McAllister (near)(16)	400	54	May-Sept	897	734
	290	52	May-July	696	558
GALLATIN RIVER					
Gateway (near)	300	59	May-Sept		507
	250	59	May-July		422
INFLOW MIDDLE CREEK RESERVOIR					
Bozeman (near)(17)	17.5	66	May-Sept		26.5
	14.7	65	May-July		22.7
HYALITE CREEK					
Bozeman (near)(18)	27.3	66	May-Sept		41.5
	23.0	65	May-July		35.5
GALLATIN RIVER					
Logan (at)	220	44	May-Sept		505
	175	42	May-July		420

(14) Adjusted for storage in Lima and Clark Canyon Reservoirs.

(15) Adjusted for storage in Hebgen Lake.

(16) Adjusted for storage in Hebgen and Ennis Lakes.

(17) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above Reservoir.

(18) Adjusted for storage in Middle Creek Reservoir.





# STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRES FEET	
	Thousand Acres Feet	Percent of Average		Last Year	Average

## MISSOURI RIVER BASIN (Continued)

MISSOURI RIVER					
Toston (at)(19)	700	33	May-Sept	3,012	2,104
	530	30	May-July	2,663	1,781
SHEEP CREEK					
White Sulphur Springs (near)	17.2	88	May-Sept	22.2	19.5
	14.6	87	May-July	18.9	16.8
SUN RIVER					
Gibson Dam (at)(20)	240	43	May-Sept	649	556
	210	41	May-July	590	507
BELT CREEK					
Monarch (near)	98.0	85	May-Sept		115
	90.0	86	May-July		105
MISSOURI RIVER					
Fort Benton (at)(21)	1,250	39	May-Sept		3,227
	920	35	May-July		2,660
TWO MEDICINE CREEK					
Browning (near)(22)	120	53	May-Sept		226
	110	52	May-July		213
BADGER CREEK					
Browning (near)	64.0	54	May-Sept		119
	52.0	51	May-July		102
MARIAS RIVER					
Shelby (near)(23)	145	30	May-Sept		486
	140	30	May-July		465
MISSOURI RIVER					
Virgelle (at)(24)	1,400	37	May-Sept		3,799
	1,060	33	May-July		3,199
SOUTH FORK JUDITH RIVER					
Utica (near)	11.1	80	May-Sept		13.9
	10.1	80	May-July		12.7
MISSOURI RIVER					
Landusky (near)(24)	1,500	36	May-Sept		4,150
	1,170	33	May-July		3,512

(19) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

(20) Adjusted for storage in Gibson Reservoir and diversions.

(21) Adjusted for storage in Canyon Ferry Reservoir.

(22) Adjusted for storage in Two Medicine Reservoir and diversions into Two Medicine Canal.

(23) Adjusted for storage in Two Medicine, Four Horns, Lake Frances, and Swift Reservoir.

(24) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.



# STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR		FORECAST PERIOD	PAST RECORD	
	FORECAST			THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average	Last Year	Average	

## MISSOURI RIVER BASIN (Continued)

<b>NORTH FORK MUSSELSHELL RIVER</b>					
Delpine (near)	4.0	78	May -Sept		5.1
	3.3	79	May -July		4.2
<b>SOUTH FORK MUSSELSHELL RIVER</b>					
Martinsdale (above)	34.5	78	May -Sept		44.5
	33.0	79	May -July		41.7
<b>MISSOURI RIVER</b>					
Fort Peck Dam (below)(25)	1,350	34	May -Sept		3,936
	1,050	31	May -July		3,407
<b>MILK RIVER</b>					
Eastern Crossing (at)	155	70	May-Sept		221
<b>MISSOURI RIVER</b>					
Wolf Point (near)(25)	1,450	35	May -Sept		4,105
	1,100	31	May -July		3,567
<b>MISSOURI RIVER</b>					
Williston, N.D. (near)(31)	4,150	40	May -Sept		10,352
	3,600	41	May -July		8,787

## SASKATCHEWAN RIVER BASIN

<b>ST. MARY RIVER</b>					
Babb (near)(32)	285	61	May -Sept		468
	240	60	May -July		399

(25) Adjusted for storage in Canyon Ferry, Tiber, and Fort Peck Reservoirs.

(31) Adjusted for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill, Boysen and Yellowtail Reservoirs. Sum Yellowstone River near Sidney and Missouri River near Culbertson.

(32) Adjusted for storage in Lake Sherburne.



# STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average
<u>YELLOWSTONE RIVER BASIN</u>					
YELLOWSTONE RIVER					
Corwin Springs (at)	1,080	56	May -Sept	2,378	1,915
	900	57	May -July	2,002	1,581
YELLOWSTONE RIVER					
Livingston (near)	1,250	56	May -Sept		2,212
	1,000	55	May -July		1,821
BOULDER RIVER					
Big Timber (at)	195	53	May -Sept		367
	180	53	May -July		338
STILLWATER RIVER					
Absarokee (near)(26)	310	54	May -Sept		571
	260	55	May -July		474
CLARKS FORK RIVER					
Belfry (near)	320	55	May -Sept		586
	300	57	May -July		525
ROCK CREEK					
Red Lodge (near)	56.0	52	May -Sept	130	108
	41.0	50	May -July	102	81.7
INFLOW COONEY RESERVOIR					
Boyd (near)(27)	20.0	44	May -Sept		45.1
	16.0	46	May -July		34.7
YELLOWSTONE RIVER					
Billings (at)	2,100	52	May -Sept	5,391	4,016
	1,800	53	May -July	4,556	3,383
BIGHORN RIVER					
St. Xavier (near)(28)	450	26	May -Sept	1,925	1,724
	430	27	May -July	1,694	1,581
LITTLE BIGHORN RIVER					
Lodgegrass (near)(29)	165	124	May -Sept		133
	145	126	May -July		115
YELLOWSTONE RIVER					
Miles City (at)(30)	2,750	46	May -Sept		5,931
	2,350	46	May -July		5,108
YELLOWSTONE RIVER					
Sidney (near)(30)	2,800	46	May -Sept		6,138
	2,400	48	May -July		5,367

(26) Adjusted for storage in Mystic Lake.

(27) Sum of Red Lodge Creek above Reservoir and Willow Creek near Boyd.

(28) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake and Yellowtail

(29) Sum Little Bighorn below Pass Creek and Lodgegrass Creek near Wyola.

(30) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.



## SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
ABUNDANCE LAKE	8800	4/29	30	11.8	35.2	23.0
AMBROSE	6480	4/28	4	1.6	17.4	13.9
ARCH FALLS	7350	4/28	22	8.1	19.8	16.2
BALD EAGLE PEAK	5700	4/28	59	28.8	67.7	69.3
BALD RIDGE	7500	4/29	20	7.8	15.7	14.6
BANFIELD MOUNTAIN	5600	4/27	14	5.6	26.3	23.7
BANFIELD MOUNTAIN PILLOW	5600	4/27	SP	.4	21.9	20.9
BAREE CREEK	5500	4/28	39	18.7	56.2	49.6
BAREE MIDWAY	4600	4/28	31	12.2	37.1	35.1
BAREE TRAIL	3800	4/28	0	.0	.3	1.2
BASIN CREEK	7180	4/28	17	5.3	17.8	-
BASSOO PEAK	5150	4/28	0	.0	5.1	8.5
BATTLE RIDGE	6020	4/27	0	.0	3.9	5.4
BEAGLE SPRINGS	8850	5/01	0	.0	-	-
BEAR BASIN	8150	4/27	35	13.2	29.0	24.9
BEAR MOUNTAIN (ID)	5400	4/27	48	23.0	-	68.8
BEAR PAW SKI AREA	5200	4/30	0	.0	-	7.2
BIG COULEE	5100	4/28	15	7.3	4.1	-
BIG CREEK	6750	4/27	71	32.1	48.3	54.5
BIG SKY	7700	4/27	24	9.1	21.8	20.4
BIG SKY MEADOW	6350	4/27	0	.0	8.2	3.8
BIG SNOWY	7150	4/28	58	25.0	22.2	24.9
BIG SPRINGS (ID)	6500	5/02	0	.0	20.3	-
BLACK BEAR	7950	4/29	17	7.7	54.6	-
BLACK BEAR PILLOW	7950	4/29	SP	9.1	43.7	-
BLACK MOUNTAIN	7750	4/26	14	5.0	-	-
BLACK PINE	7100	4/26	14	5.0	21.1	14.3
BLACK PINE PILLOW	7100	4/27	SP	6.9	24.0	15.2
BLOODY DICK	7600	4/28	8	2.3	21.2	14.2
BLOODY DICK PILLOW	7600	4/28	SP	1.0	-	-
BOOTS SOTS	8000	4/29	9	3.0	12.0	-
BOULDER MOUNTAIN	7950	4/26	32	11.6	28.6	22.2
BOULDER MOUNTAIN PILLOW	7950	4/26	SP	12.0	-	-
BOX CANYON	6670	5/02	0	.0	18.0	-
BOX CANYON PILLOW	6670	5/02	SP	.0	-	-
BOXELDER CREEK	5100	4/30	0	.0	-	-
BRANHAM LAKES	8850	4/29	37	14.4	43.0	36.6
BRIDGER BOWL	7250	4/27	41	18.9	35.7	35.1
BRIDGER BOWL PILLOW	7250	4/27	SP	17.2	35.7	34.0
BRISTOW CREEK	3900	4/27	0	.0	.4	2.3
BRUSH CREEK TIMBER	5000	4/28	0	.0	8.1	8.2
BULL MOUNTAIN	6600	4/29	0	.0	5.4	-
CABIN CREEK	5200	4/27	0	.0	.0	2.2
CALL ROAD	8050	5/01	14	4.4	17.6	13.9
CALVERT CREEK	6450	4/27	0	.0	14.0	9.2
CALVERT CREEK PILLOW	6450	4/27	SP	.0	5.1	-
CAMP MISERY	6400	4/27	90	41.3	51.2	52.3
CAMP SENIA	7890	4/29	15	5.0	12.6	9.8

Average based On 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.

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## SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
					Last Year	Average
NAME	Elevation					
CANYON (WY)	7750	5/02	0	.0	21.0	16.0
CARROT BASIN	9000	4/27	40	17.2	46.6	43.4
CARROT BASIN PILLOW	9000	4/27	SP	15.4	38.4	-
CEDAR GROVE	4100	4/28	0	.0	10.8	6.8
CHESSMAN RESERVOIR	6200	4/30	0	.0	5.0	2.5
CHICKEN CREEK	4060	4/25	0	.0	-	-
CLOVER MEADOW	8600	5/01	24	8.0	26.0	20.8
COLE CREEK	7850	4/25	43	15.5	30.2	-
COLE CREEK PILLOW	7850	4/25	SP	13.1	26.7	-
COLLEY CREEK	6300	4/28	0	.0	7.7	-
COMBINATION	5600	4/26	0	.0	6.4	5.9
COMBINATION PILLOW	5600	4/26	SP	.0	6.0	-
COOKE STATION	8150	4/29	28	10.0	30.4	22.0
COPPER BOTTOM	5200	4/28	0	.0	7.5	6.6
COPPER BOTTOM PILLOW	5200	4/28	SP	.0	13.5	-
COPPER CAMP	6950	4/28	22	8.2	36.8	36.6
COPPER CAMP PILLOW	6950	4/28	SP	8.7	45.3	-
COPPER CREEK	5700	4/28	0	.0	12.1	12.4
COPPER LAKE CREEK	6100	4/28	10	3.6	25.1	25.5
COPPER MOUNTAIN	7700	4/29	0	.0	15.5	12.5
COTTONWOOD CREEK	5400	4/29	0	.0	-	-
COYOTE HILL	4200	4/26	2	.6	1.9	3.5
CRYSTAL LAKE	6100	4/28	30	12.9	7.3	16.2
DAD CREEK LAKE	8400	5/01	14	3.4	24.0	17.6
DAISY PEAK	7600	4/27	6	2.0	14.7	12.4
DALY CREEK	5780	4/26	14	4.6	18.0	-
DARKHORSE LAKE	8600	4/29	32	13.6	43.0	29.4
DAVIS CREEK	5400	4/26	13	4.9	24.5	24.2
DEADMAN CREEK	6450	4/27	17	6.4	8.8	10.6
DEADMAN CREEK PILLOW	6450	4/27	SP	6.0	6.0	8.2
DESERT MOUNTAIN	5600	4/29	15	5.9	16.6	15.2
DEVILS SLIDE	8100	4/28	48	18.8	32.5	28.6
DISCOVERY BASIN	7050	4/26	8	2.5	12.4	-
DIVIDE	7800	5/01	0	.0	13.2	11.5
DIVIDE PILLOW	7800	5/01	SP	4.5	13.2	-
DIX HILL	6400	5/01	0	.0	6.0	-
EAST FORK R.S.	5400	4/29	0	.0	.0	-
ELK HORN SPRINGS	7800	5/01	0	.0	14.3	9.1
ELK PEAK	8000	4/28	36	14.4	23.2	22.1
EMERY CREEK	4350	4/29	0	.0	11.1	-
EMERY CREEK PILLOW	4350	4/29	SP	.0	-	-
FATTY CREEK	5500	4/27	42	15.5	23.4	25.0
FISH CREEK	8000	4/28	20	6.0	20.1	-
FISHER CREEK	9100	4/29	55	22.8	53.2	42.4
FISHER CREEK PILLOW	9100	4/29	SP	22.4	50.2	38.9
FLEECER RIDGE	7500	4/29	1	.4	16.3	-
FOOLHEN	8280	4/29	18	7.4	27.5	19.9
FOUR MILE	6900	4/29	1	.3	13.8	8.8
FOURTH OF JULY	3450	4/27	0	.0	-	-
FRED BURR PASS	8000	4/27	32	11.8	38.3	32.6

Average based On 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.



## SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
FRIDAY HILL	4620	4/27	0	.0	-	-
FROHNER MEADOWS	6480	4/27	0	.0	8.7	-
FROHNER MEADOWS PILLOW	6480	4/25	SP	3.8	8.7	-
GARVER CREEK	4250	4/26	0	.0	3.9	5.4
GARVER CREEK PILLOW	4250	4/26	SP	1.1	3.0	5.1
GIBBONS PASS	7100	4/28	12	4.5	30.1	24.2
GOAT MOUNTAIN	7000	4/28	1	.1	10.8	10.9
GOLD STONE	8100	4/28	20	6.9	27.4	19.4
GRASSHOPPER	7000	4/28	3	1.4	5.6	5.9
GRAVE CREEK	4300	4/25	9	3.8	15.7	16.3
GRAVE CREEK PILLOW	4300	4/25	SP	.5	10.0	-
GRIFFIN CREEK DIVIDE	5150	4/28	0	.0	6.4	8.6
GRIZZLY PEAK	8400	4/25	43	16.0	26.5	21.1
HALVERSON CREEK (ID)	4850	4/27	36	18.0	-	49.7
HAND CREEK	5030	4/28	0	.0	8.1	-
HAND CREEK PILLOW	5030	4/28	SP	.9	-	-
HAWKINS LAKE	6450	4/26	33	13.1	41.0	35.4
HAWKINS LAKE PILLOW	6450	4/26	SP	14.2	40.7	33.2
HEART LAKE TRAIL	4800	4/28	10	3.3	20.9	19.0
HEBGEN DAM	6550	4/27	2	.6	14.3	6.6
HELL ROARING DIVIDE	5770	5/02	28	12.6	33.2	34.3
HERRIG JUNCTION	4850	4/25	24	9.0	-	-
HIGHWOOD DIVIDE	5650	4/28	0	.0	-	-
HIGHWOOD STATION	4600	4/28	0	.0	3.8	-
HOLBROOK	4530	4/26	2	.4	3.4	1.9
HOOD MEADOW	6600	4/28	17	6.4	17.1	11.6
HOODOO BASIN	6000	4/28	48	20.6	63.8	55.2
HOODOO BASIN PILLOW	6000	4/30	SP	16.2	56.2	55.5
HOODOO CREEK	5900	4/28	42	18.4	56.4	52.2
ICEBERG LAKE #3	5600	4/28	28	12.9	35.9	33.5
INDEPENDENCE	7850	5/02	11	4.0	24.9	19.8
INTERGAARD	6450	4/29	0	.0	14.7	9.1
ISLAND PARK (ID)	6310	5/02	0	.0	17.4	10.2
JAHNKE LAKE TRAIL	7200	4/28	1	.4	16.4	8.3
JOHNSON PARK	6450	4/27	0	.0	2.6	3.5
JOSEPHINE LOWER #9	4900	4/27	11	4.4	17.6	18.9
KEELER CREEK	3300	4/27	0	.0	-	.6
KING CREEK SADDLE	4550	4/27	0	.0	-	-
KING SPRINGS	4150	4/27	0	.0	-	-
KINGS HILL	7500	5/02	29	12.3	19.0	17.1
KIWANIS CAMP	3720	4/30	0	.0	-	-
LAKE CAMP (WY)	7850	5/02	0	.0	8.9	8.4
LAKE CREEK	6100	4/28	0	.0	6.0	2.7
LAKEVIEW CANYON	6930	4/28	0	.0	13.6	12.2
LAKEVIEW RIDGE	7400	4/28	0	.0	12.8	10.0
LEMHI PASS	7480	5/01	0	.0	14.4	-
LEMHI RIDGE	8100	5/01	0	.0	16.6	-
LEMHI RIDGE PILLOW	8100	5/01	SP	1.6	19.6	-
LICK CREEK	6860	4/28	12	4.0	13.4	11.1
LICK CREEK PILLOW	6860	4/28	SP	3.3	12.1	10.7

Average based on 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.



## SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
LITTLE PARK	7400	4/27	30	11.3	22.7	18.3
LOGAN CREEK	4300	4/28	0	.0	1.6	2.7
LOLO PASS (ID)	5230	4/27	23	8.0	36.6	32.3
LOLO PASS PILLOW	5230	4/30	SP	.7	-	-
LONE MOUNTAIN	8880	4/27	27	10.8	32.1	30.6
LOOKOUT (ID)	5250	4/28	23	8.3	38.2	37.7
LOST HORSE	5940	4/27	37	15.0	46.8	34.3
LOST SOUL	4800	4/27	0	.0	11.4	8.9
LOWER TWIN	7900	4/29	22	8.8	31.1	26.0
LUBRECHT FLUME	4800	5/02	0	.0	-	.0
LUBRECHT FLUME PILLOW	4800	5/02	SP	.0	-	.0
LUBRECHT FOREST # 3	5450	5/02	0	.0	2.5	4.0
LUBRECHT FOREST # 4	4650	5/02	0	.0	-	.4
LUBRECHT FOREST # 6	4040	5/02	0	.0	-	.0
LUPINE CREEK (WY)	7300	5/02	0	.0	13.8	7.7
MADISON PLATEAU	7750	4/30	0	.0	31.8	22.4
MADISON PLATEAU PILLOW	7750	4/30	SP	4.6	32.8	23.7
MANY GLACIER	4960	5/02	1	.2	-	-
MANY GLACIER PILLOW	4960	5/02	SP	.5	-	-
MARIAS PASS	5250	4/28	3	.9	14.8	19.3
MAYNARD CREEK	6210	4/27	32	12.1	20.7	21.8
MAYNARD CREEK PILLOW	6210	4/27	SP	8.4	14.9	14.1
MEADOW CREEK PILLOW	4000	5/02	SP	.4	.0	-
MIDDLE MILL CREEK	7850	4/29	11	3.8	21.0	18.4
MILL CREEK	7500	4/28	21	8.2	13.8	16.5
MINERAL CREEK	4000	5/04	0	.0	10.3	14.1
MISSION MOUNTAIN	5050	4/27	0	.0	-	-
MONUMENT PEAK	8800	5/02	47	15.6	41.8	31.6
MOULTON RESERVOIR	6850	4/28	0	.0	-	-
MOUNT ALLEN # 7	5700	4/27	51	21.4	46.1	50.1
MOUNT LOCKHART	6400	5/02	15	5.4	29.8	25.4
MOUNT LOCKHART PILLOW	6400	5/02	SP	4.5	30.0	23.5
MUDD LAKE	7650	4/27	14	5.2	23.8	23.5
NEWTON MOUNTAIN	5600	4/27	33	12.9	-	-
NEZ PERCE CAMP	5580	4/29	10	4.8	14.5	12.5
NEZ PERCE CAMP PILLOW	5580	4/29	SP	4.0	-	-
NEZ PERCE CREEK	6500	4/29	0	.0	5.7	3.5
NEZ PERCE PASS	6570	4/29	5	2.1	21.4	15.6
NOISY BASIN	6040	4/27	89	40.4	48.8	-
NOISY BASIN PILLOW	6040	4/27	SP	35.0	45.2	-
NOISY CREEK	3600	4/27	0	.0	.0	-
NORRIS BASIN (WY)	7500	5/02	0	.0	14.6	8.0
NORTH FK. ELK CREEK	6250	5/02	0	.0	13.4	11.8
NORTH FK. ELK CREEK PILL	6250	5/02	SP	.0	13.4	11.5
NORTH FORK JOCKO	6330	4/27	62	28.7	51.9	51.3
NORTH MEADOW	7500	4/29	3	.6	16.2	11.5
NORTHEAST ENTRANCE	7400	5/02	0	.0	13.0	7.8
NORTHEAST ENTRANCE PILL.	7400	5/01	SP	.0	13.6	8.2
NOTCH	8500	5/01	29	10.8	23.6	18.5
OLD FAITHFUL (WY)	7360	5/02	0	.0	19.2	-

Average based On 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.



## SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
OPHIR PARK	7150	5/01	14	4.9	26.8	-
PALISADE CREEK	8250	4/27	30	11.6	39.0	34.2
PETERSON MEADOWS	7200	4/27	8	2.7	18.5	11.9
PETERSON MEADOWS PILLOW	7200	4/27	SP	5.1	18.9	-
PICKET PIN LOWER	6200	4/28	0	.0	2.0	-
PICKET PIN MIDDLE	7250	4/28	0	.0	21.4	-
PICKET PIN UPPER	8100	4/28	40	14.0	36.0	-
PICNIC GROUNDS	6200	4/29	0	.0	3.8	2.8
PIEGAN PASS # 6	5500	4/27	41	16.5	39.8	43.1
PIPESTONE PASS	7200	4/29	0	.0	12.1	6.1
POORMAN CREEK	5100	4/28	20	8.8	35.0	33.2
POORMAN CREEK PILLOW	5100	4/28	SP	10.1	34.0	31.4
PORCUPINE	6500	4/29	15	5.8	9.2	8.0
PORCUPINE PILLOW	6500	4/29	SP	.8	-	-
POTOMAGETON PARK	7150	4/27	0	.0	15.9	12.0
PTARMIGAN #8	5800	4/28	41	16.3	43.7	42.0
RED MOUNTAIN	6000	5/02	0	.0	22.3	21.0
ROCK CREEK	5600	4/28	26	10.4	4.8	10.4
ROCK CREEK MEADOWS	8160	4/29	44	14.5	28.8	-
ROCKER PEAK	8000	4/25	19	5.8	23.2	18.0
ROCKER PEAK PILLOW	8000	4/25	SP	10.5	24.8	20.1
ROCKY BOY	4700	5/01	0	.0	.0	1.5
ROCKY BOY PILLOW	4700	5/01	SP	.0	.0	2.9
SACAJAWEA	6550	4/27	20	9.2	18.9	14.3
SADDLE MOUNTAIN	7940	4/28	26	10.2	35.7	28.8
SADDLE MOUNTAIN PILLOW	7940	4/28	SP	11.6	37.9	30.2
SAWTELL MOUNTAIN (ID)	8710	5/02	8	5.5	36.8	38.1
SENTINEL CREEK	8300	4/28	21	8.0	28.9	26.1
SHOWER FALLS	8100	4/28	50	20.3	35.3	28.7
SHOWER FALLS PILLOW	8100	4/28	SP	21.4	36.4	32.2
SILVER RUN	6630	4/26	8	2.7	5.4	-
SILVER RUN PILLOW	6630	4/26	SP	.6	-	-
SKALKAHO SUMMIT	7260	4/29	23	9.4	35.1	28.0
SKALKAHO SUMMIT PILLOW	7260	4/29	SP	5.9	-	-
SLAG-A-MELT LAKE	8750	4/29	23	10.2	40.9	29.1
SLIDE ROCK MOUNTAIN	7100	4/27	22	7.8	26.6	20.0
SMUGGLER MINE	6960	4/29	0	.0	12.3	11.6
SOUTH FORK SHIELDS	8100	4/29	54	23.2	33.2	30.0
SPUR PARK	8000	4/27	44	18.0	26.0	26.0
SPUR PARK PILLOW	8100	4/27	SP	20.2	27.8	25.8
STAHL PEAK	6050	4/26	57	23.2	44.5	44.3
STAHL PEAK PILLOW	6050	4/25	SP	19.3	32.9	-
STEMPLE PASS	6600	5/02	5	1.5	15.0	11.9
STORM LAKE	7780	5/02	0	.0	22.7	17.4
STRYKER BASIN	6180	4/25	49	20.2	-	-
STUART MILL	6500	4/29	0	.0	7.2	6.7
SUCKER CREEK	3960	4/30	0	.0	-	-
SUGARLOAF	7350	4/29	0	.0	-	-
SYLVAN PASS (WY)	7100	5/02	0	.0	18.3	11.1
TARGHEE PASS (ID)	7000	5/02	0	.0	15.9	15.4

Average based On 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.





## SNOW

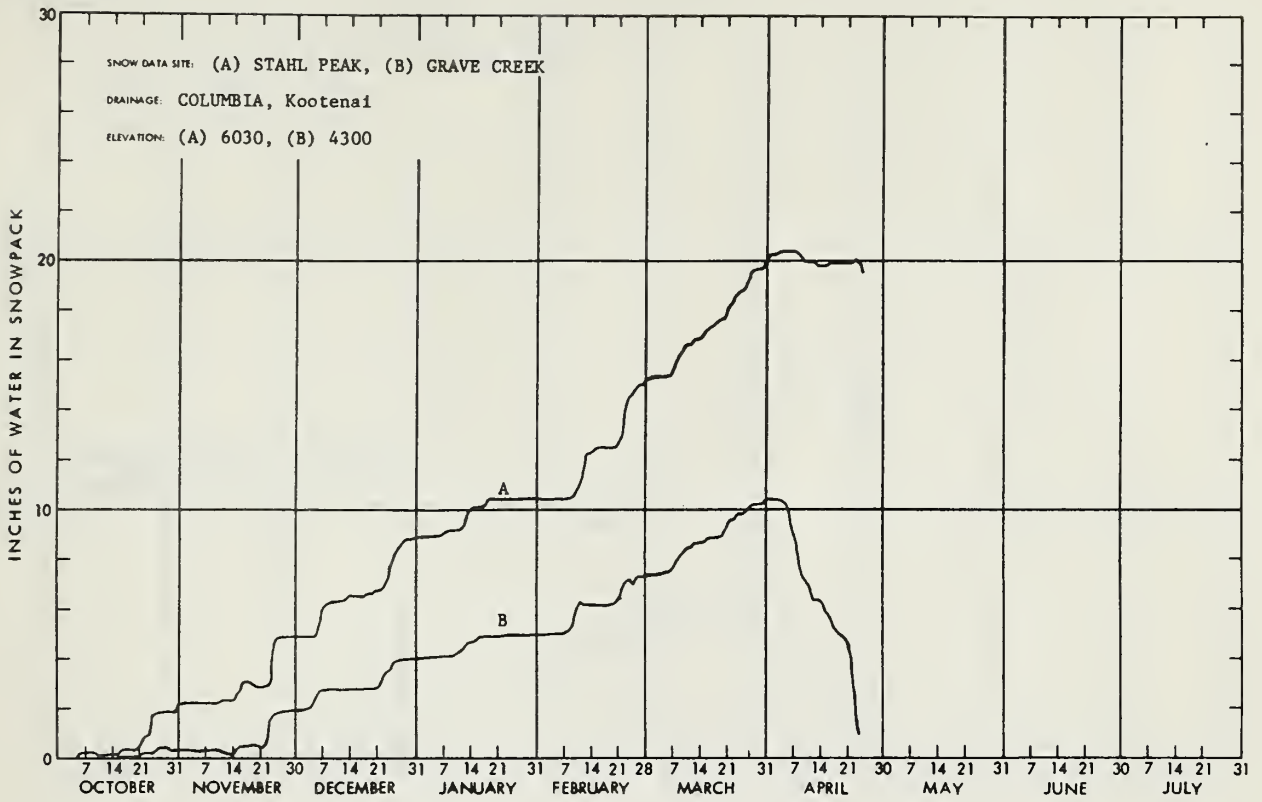
DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
TAYLOR ROAD	4080	4/30	0	.0	-	-
TEN MILE LOWER	6600	4/30	0	.0	10.8	6.0
TEN MILE MIDDLE	6800	4/30	6	1.4	19.4	13.8
TEN MILE UPPER	8000	4/30	10	3.3	22.6	17.1
TEPEE CREEK	8000	4/28	15	5.0	21.0	18.0
TEPEE CREEK PILLOW	8000	4/28	SP	3.6	16.7	-
TIMBERLINE CREEK	8850	4/29	33	12.0	24.1	19.8
TRAIL CREEK	7090	5/01	0	.0	14.6	-
TV MOUNTAIN	6800	5/03	10	3.4	25.0	21.9
TWELVEMILE CREEK	5600	4/27	6	2.4	23.3	15.6
TWELVEMILE CREEK PILLOW	5600	4/27	SP	4.5	20.4	14.5
TWENTY-ONE MILE	7150	4/27	4	1.2	21.8	17.6
TWIN LAKES	6510	4/27	48	20.9	57.0	46.8
TWIN LAKES PILLOW	6400	4/27	SP	19.2	54.1	44.8
VALLEY VIEW (ID)	6500	5/02	0	.0	16.0	14.2
WALDRON	5600	5/02	0	.0	3.8	7.5
WALDRON PILLOW	5600	5/02	SP	.0	8.2	10.2
WEASEL DIVIDE	5450	4/27	31	13.7	36.9	37.2
WEST YELLOWSTONE	6700	4/27	1	.1	15.2	7.2
WEST YELLOWSTONE PILLOW	6700	5/01	SP	.0	10.7	6.5
WHISKEY CREEK	6800	4/30	0	.0	26.4	20.3
WHISKEY CREEK PILLOW	6800	4/30	SP	.5	22.6	-
WHITE ELEPHANT (ID)	7700	5/02	0	.0	30.2	-
WHITE MILL	8700	4/29	39	14.4	38.6	30.0
WHITE MILL PILLOW	8700	5/03	SP	11.4	34.7	-
WHITE PINE RIDGE	8850	5/01	0	.0	12.6	5.0
WILLOW CREEK	6500	4/25	2	.5	6.7	-
WOLVERINE (WY)	7650	4/28	0	.0	18.8	-
WRONG CREEK	5700	4/26	0	.0	10.6	11.9
WRONG RIDGE	6800	4/26	21	7.4	23.7	22.2

## LATE ARRIVING DATA

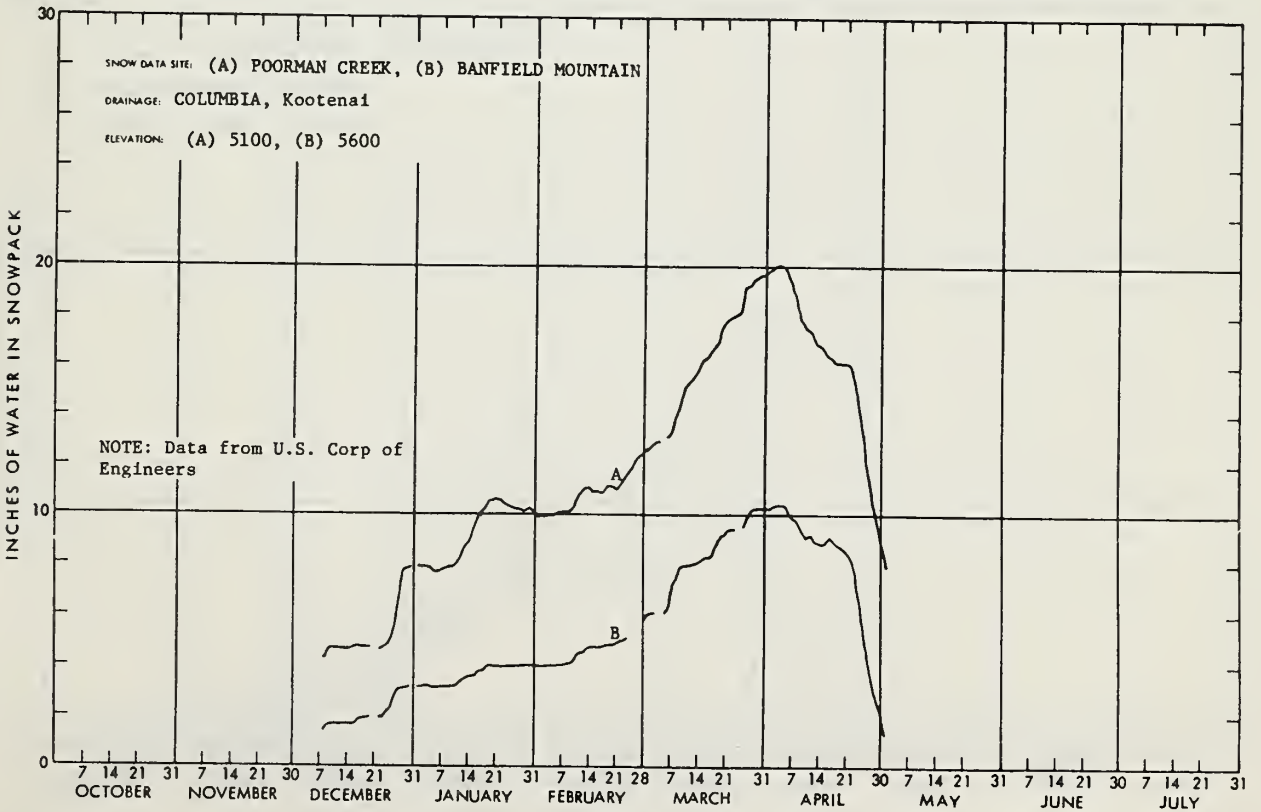
East Boulder S	9250	5/5	29	9.5A	42.5	-
Picket Pin D	9450	5/5	33	11.0A	42.5	-
Placer Basin F	8800	5/5	51	20.5A	34.0	-
Star Lake E	9650	5/5	43	27.0A	54.0	-
Stuart Mountain	7400	5/5	21	6.8	38.3	35.8

Average based On 1958-72 period. A - Aerial observation; water content estimated.  
 SP - Snow Pillow observation; water content only.



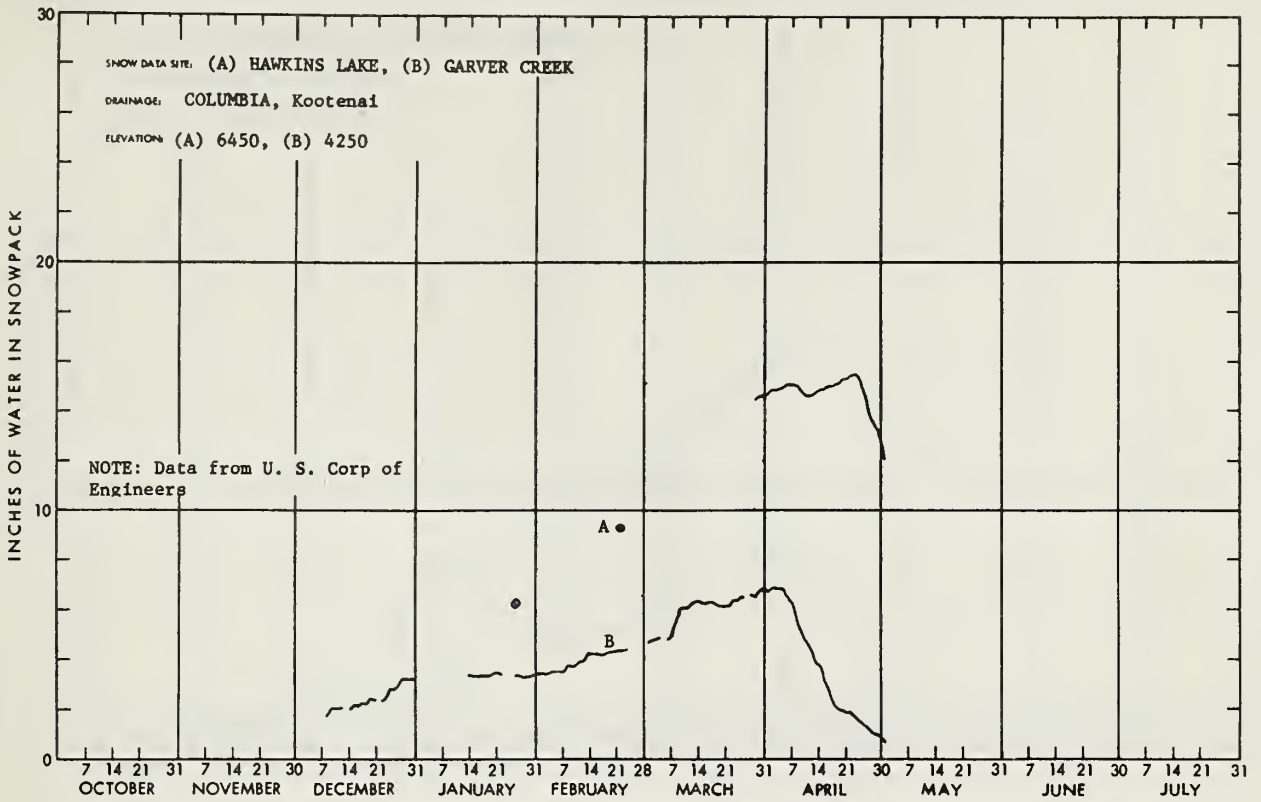


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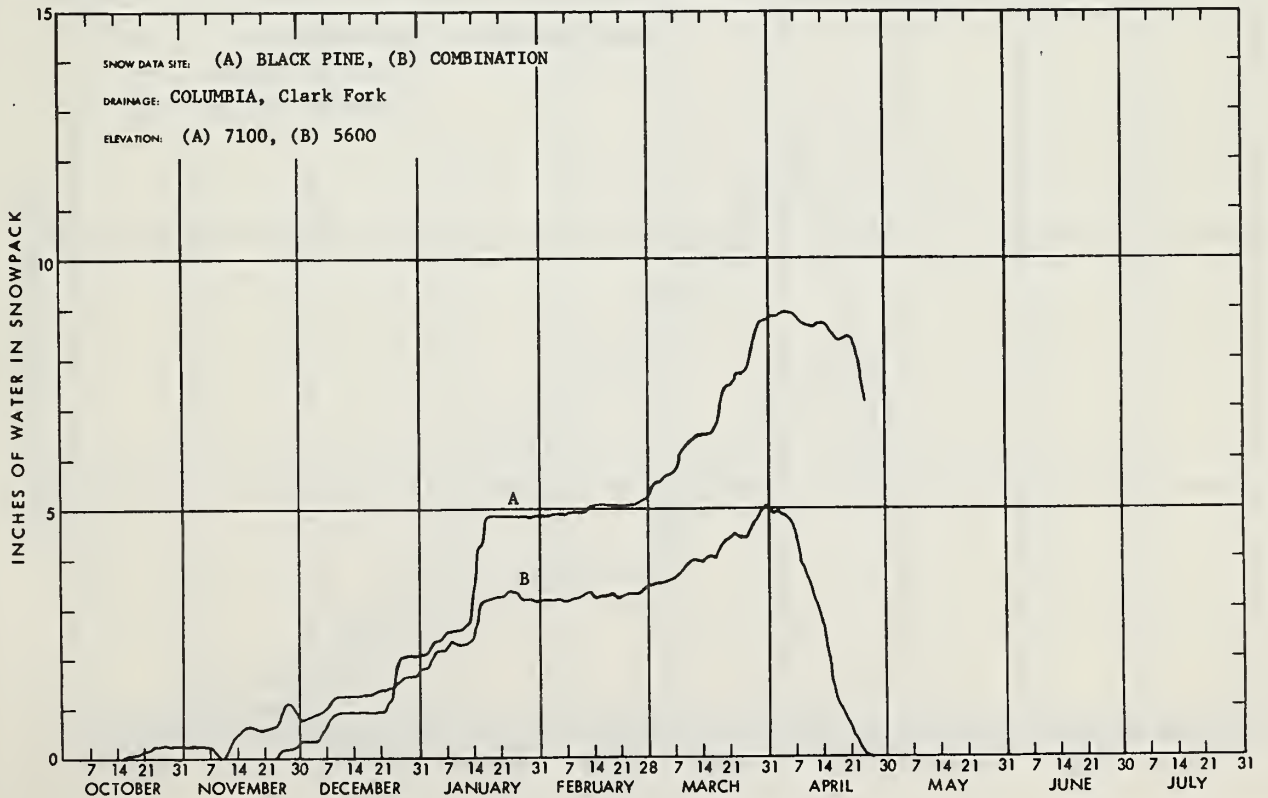


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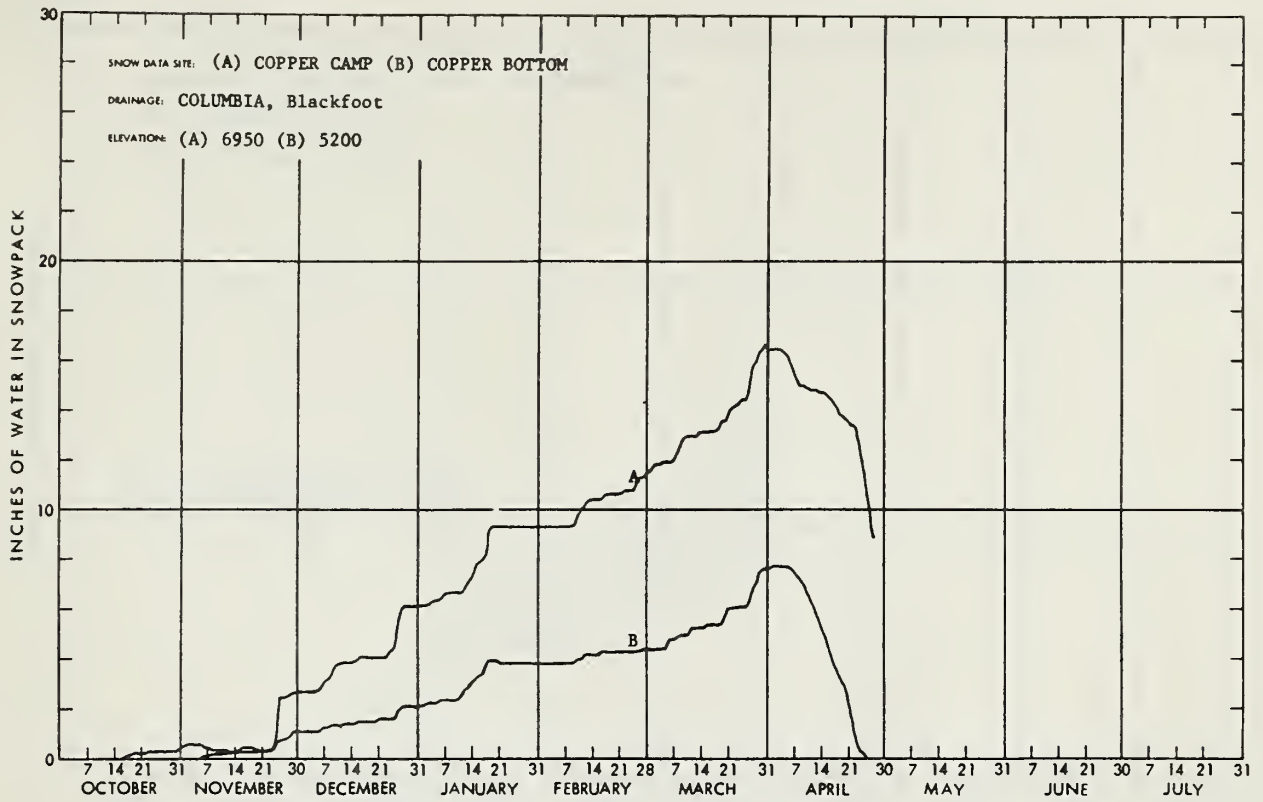


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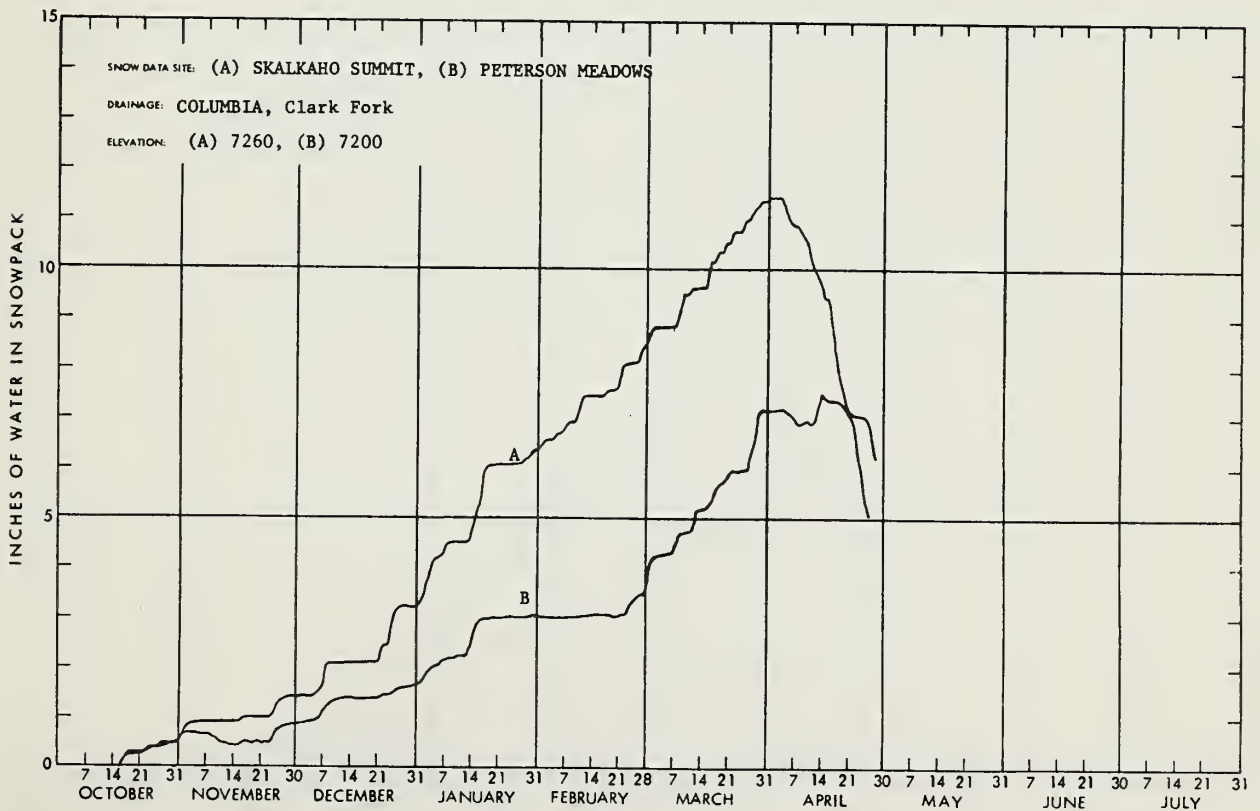


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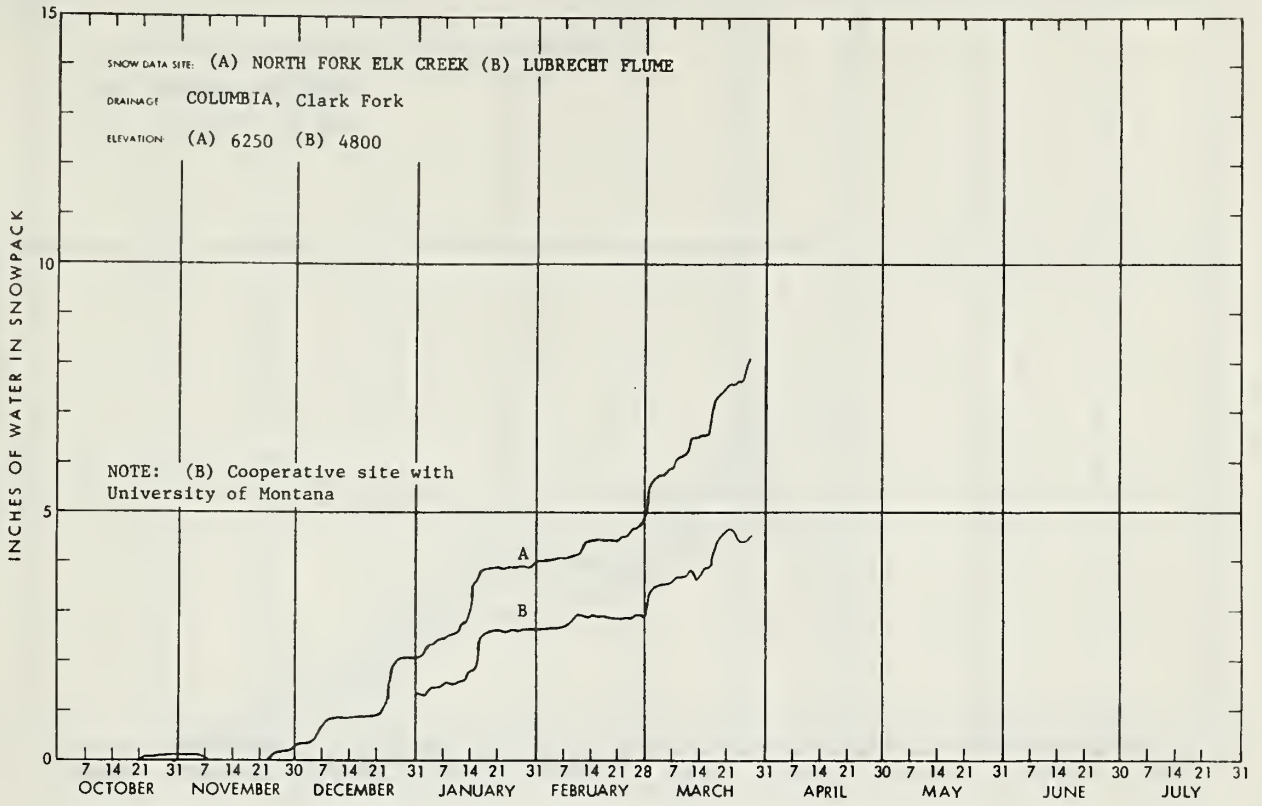
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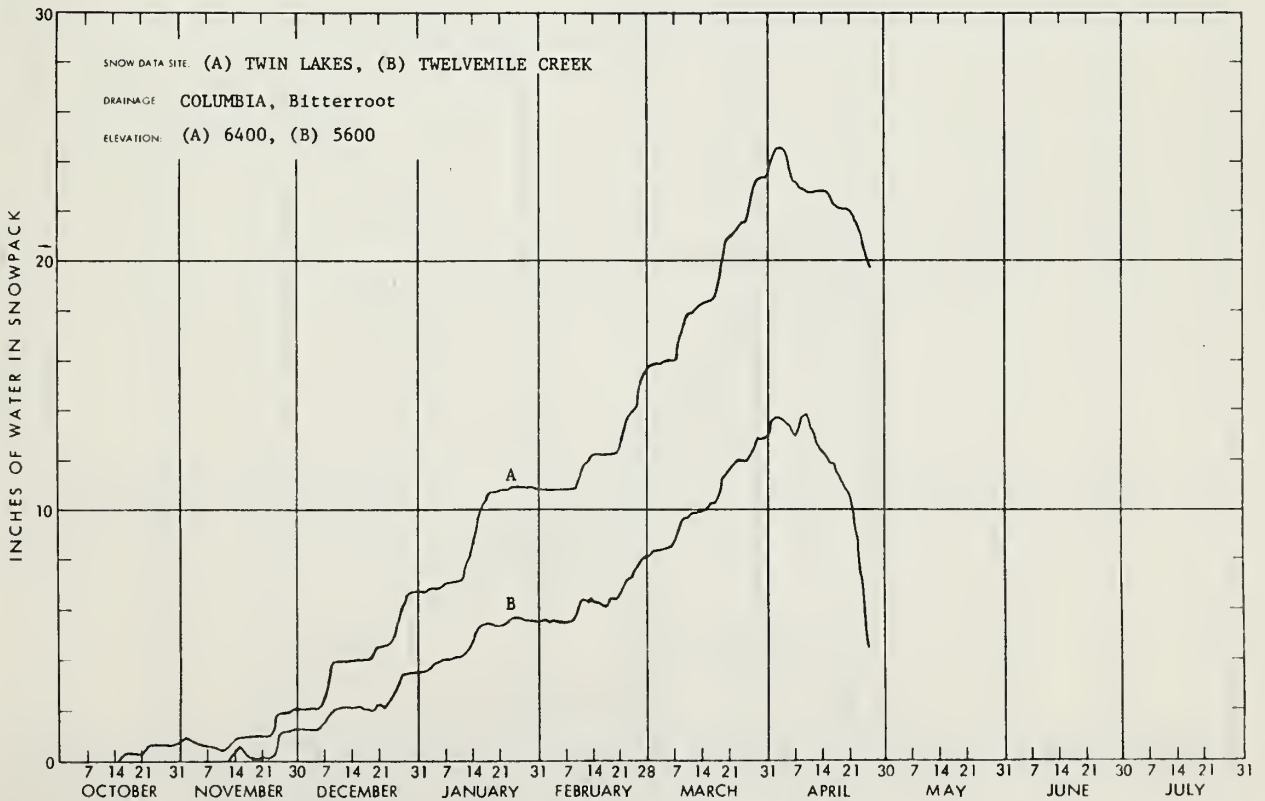
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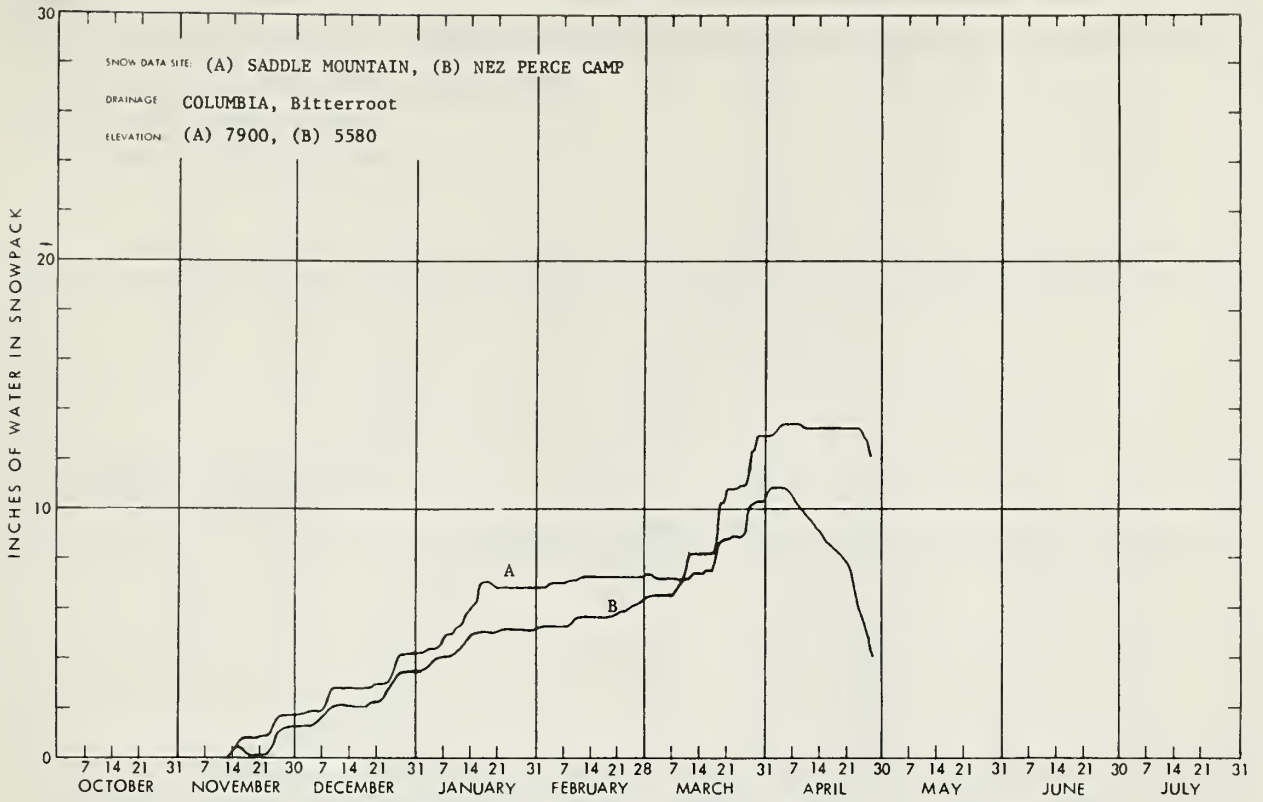




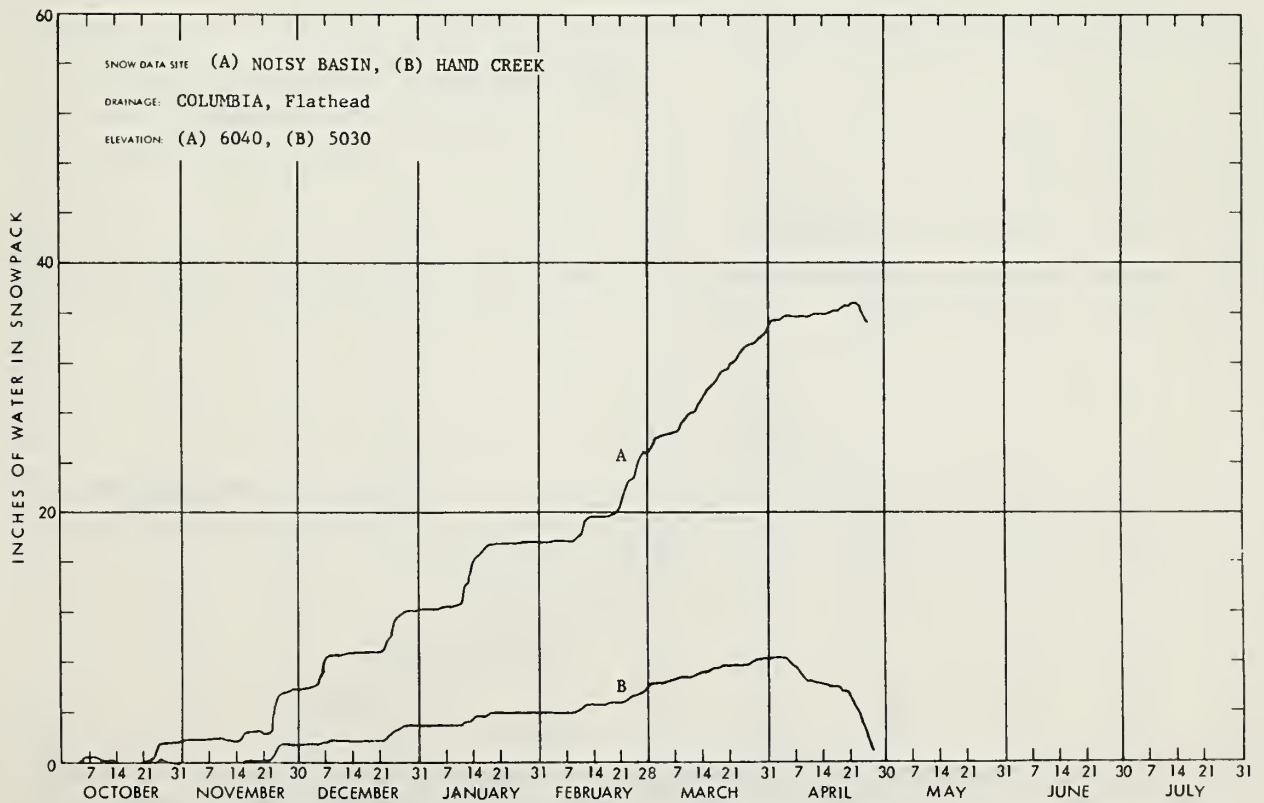
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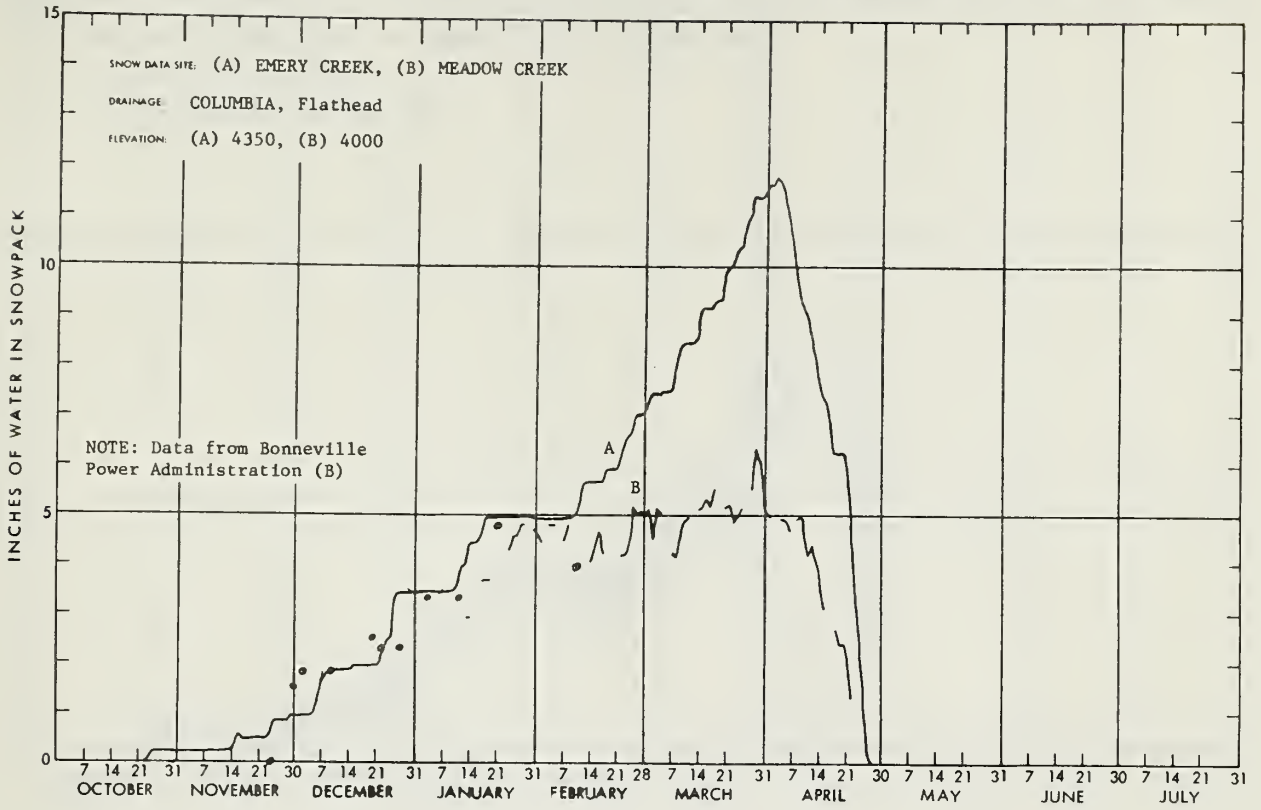




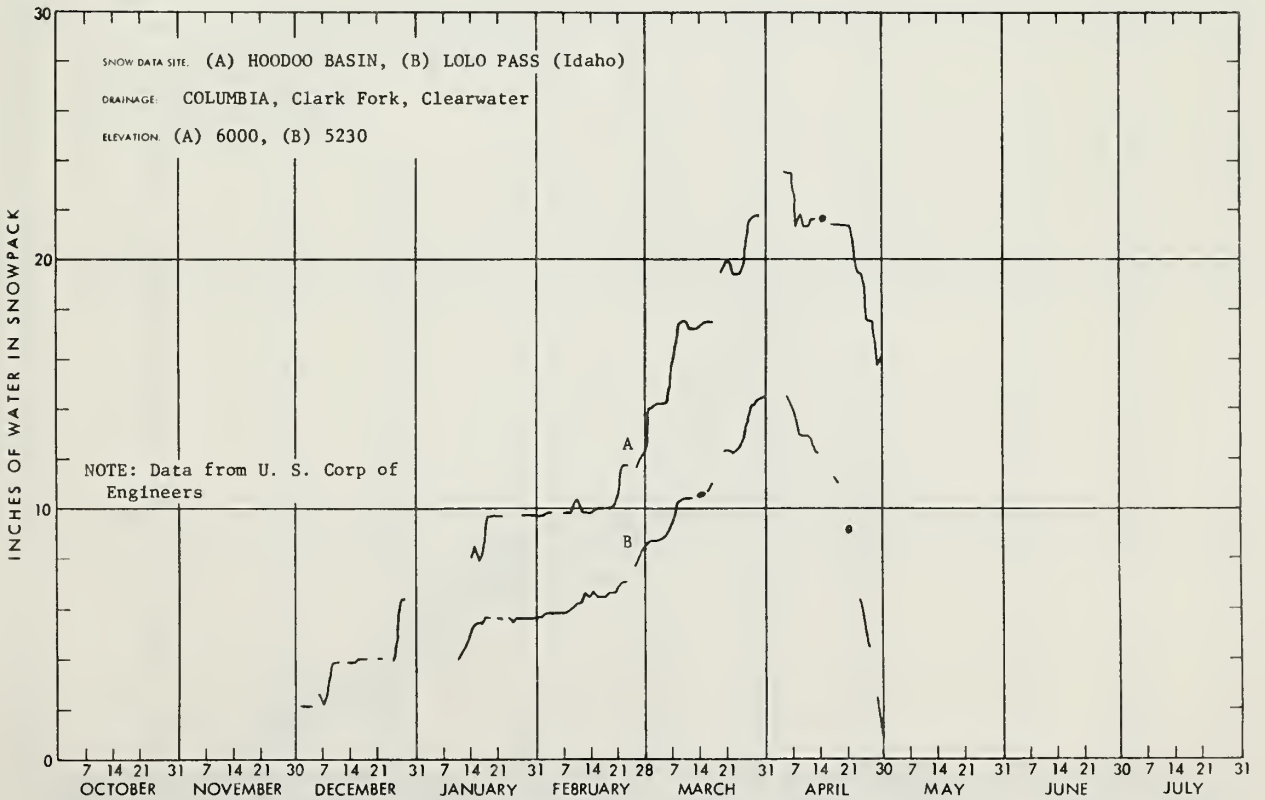
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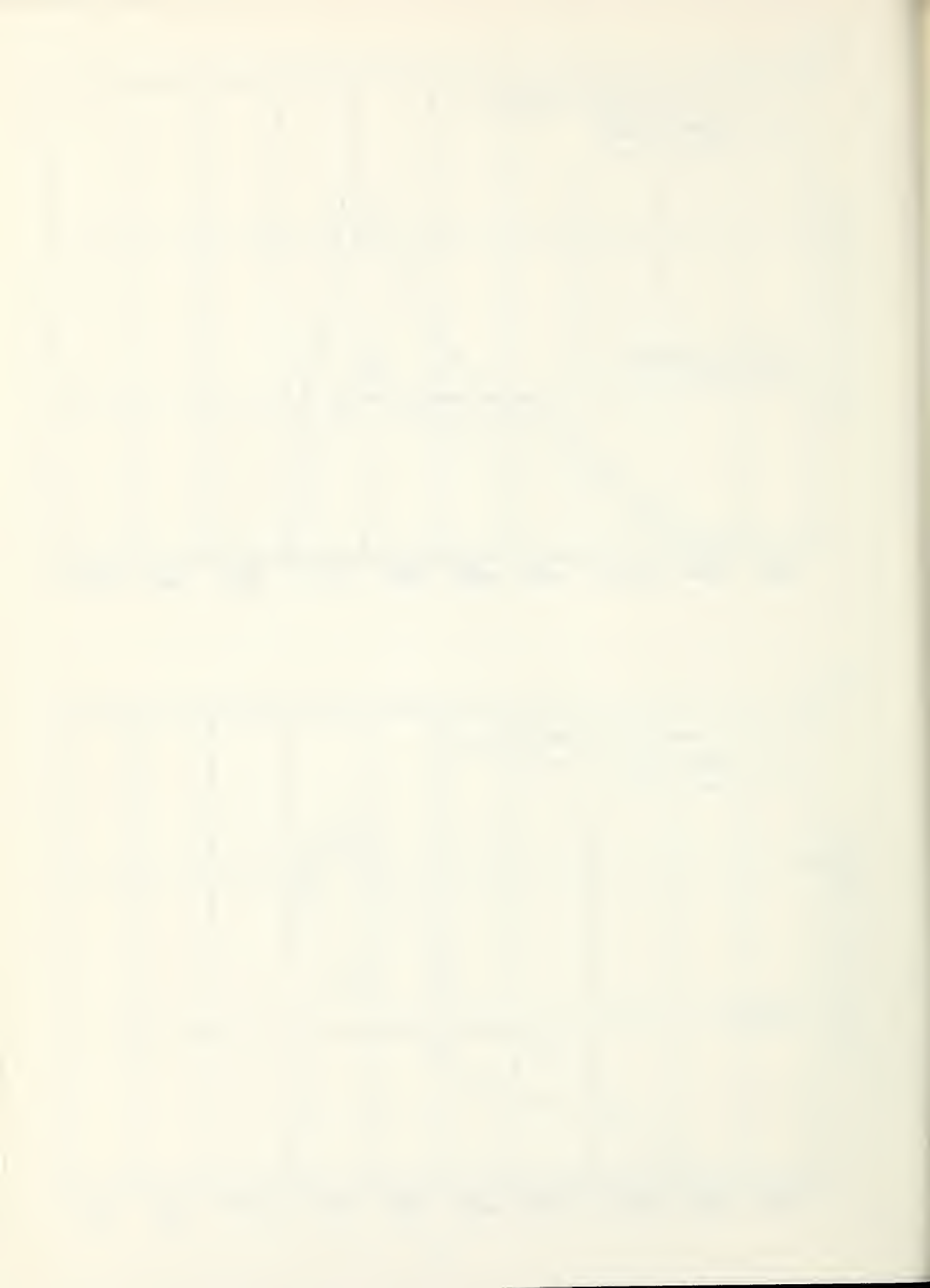


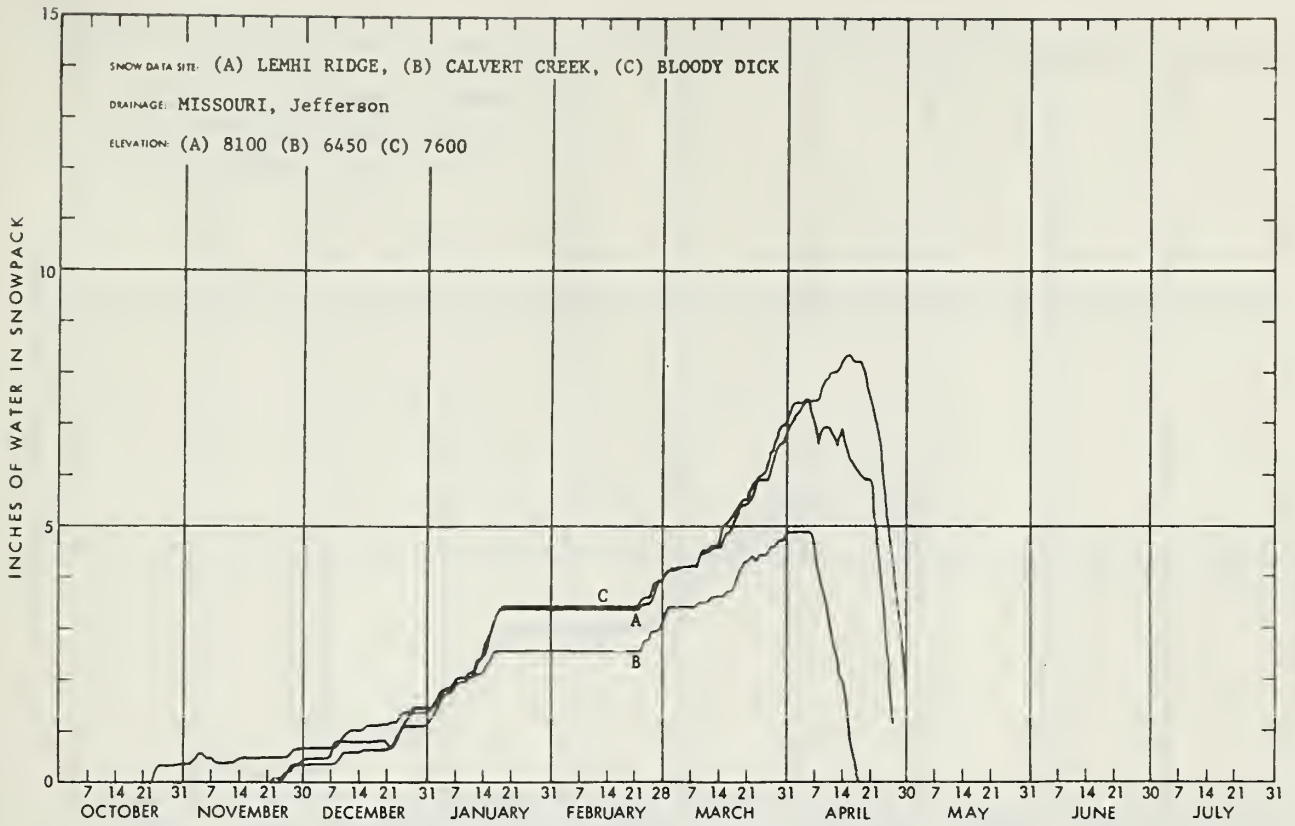




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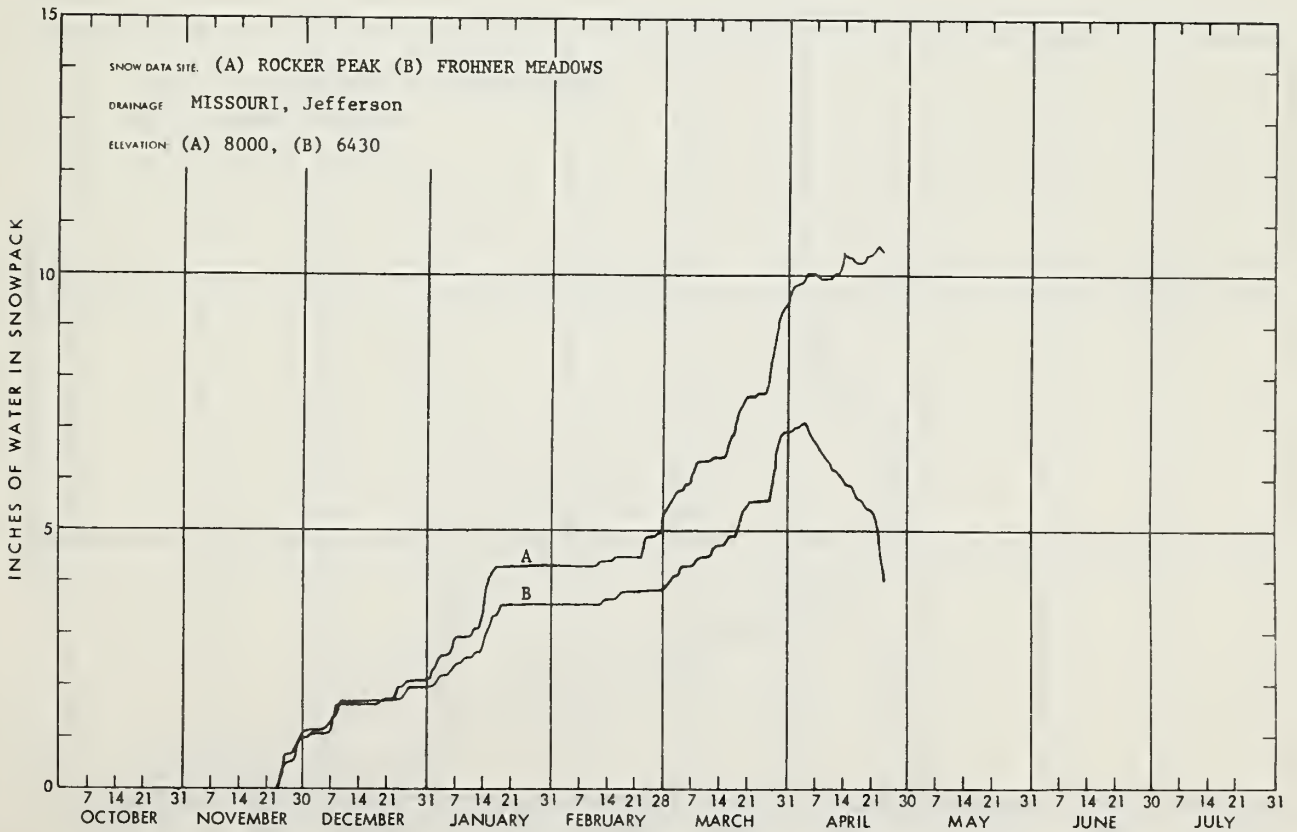






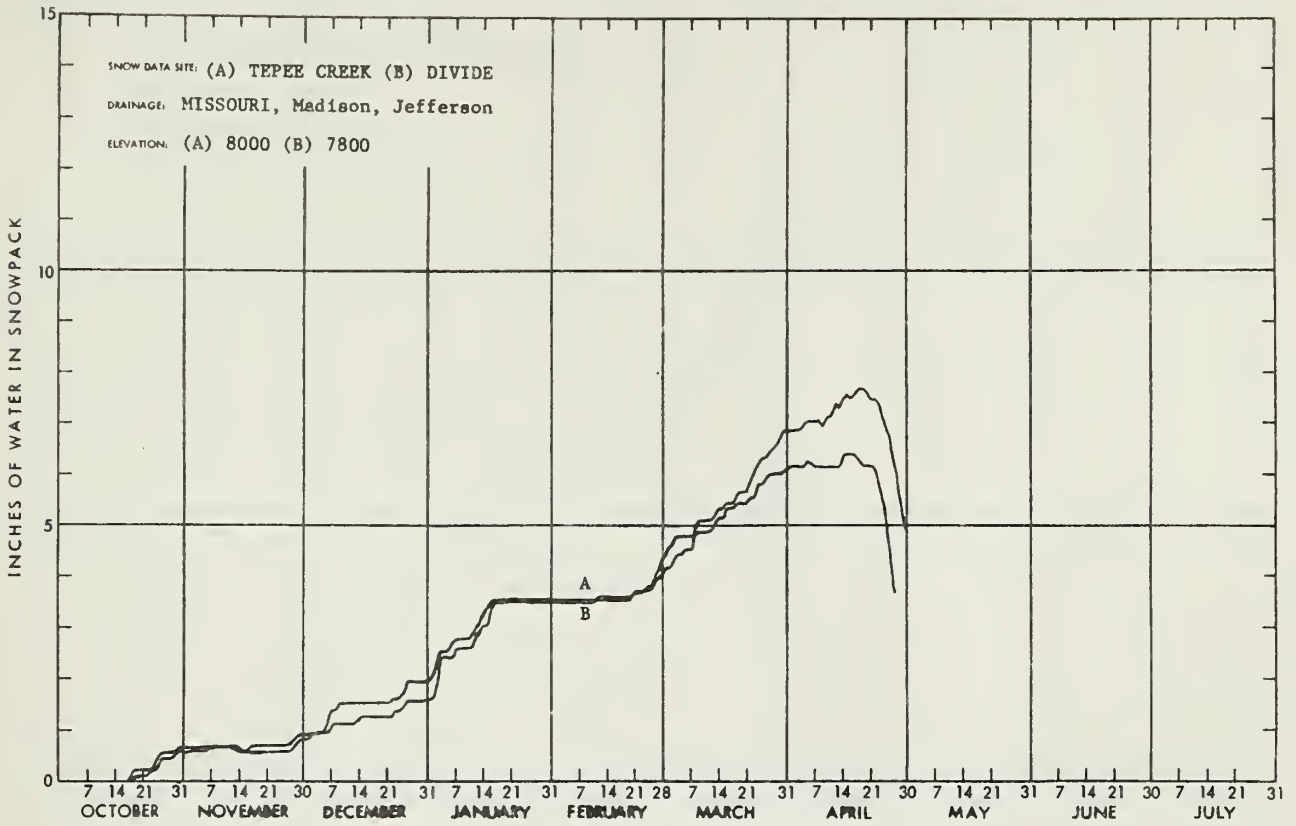
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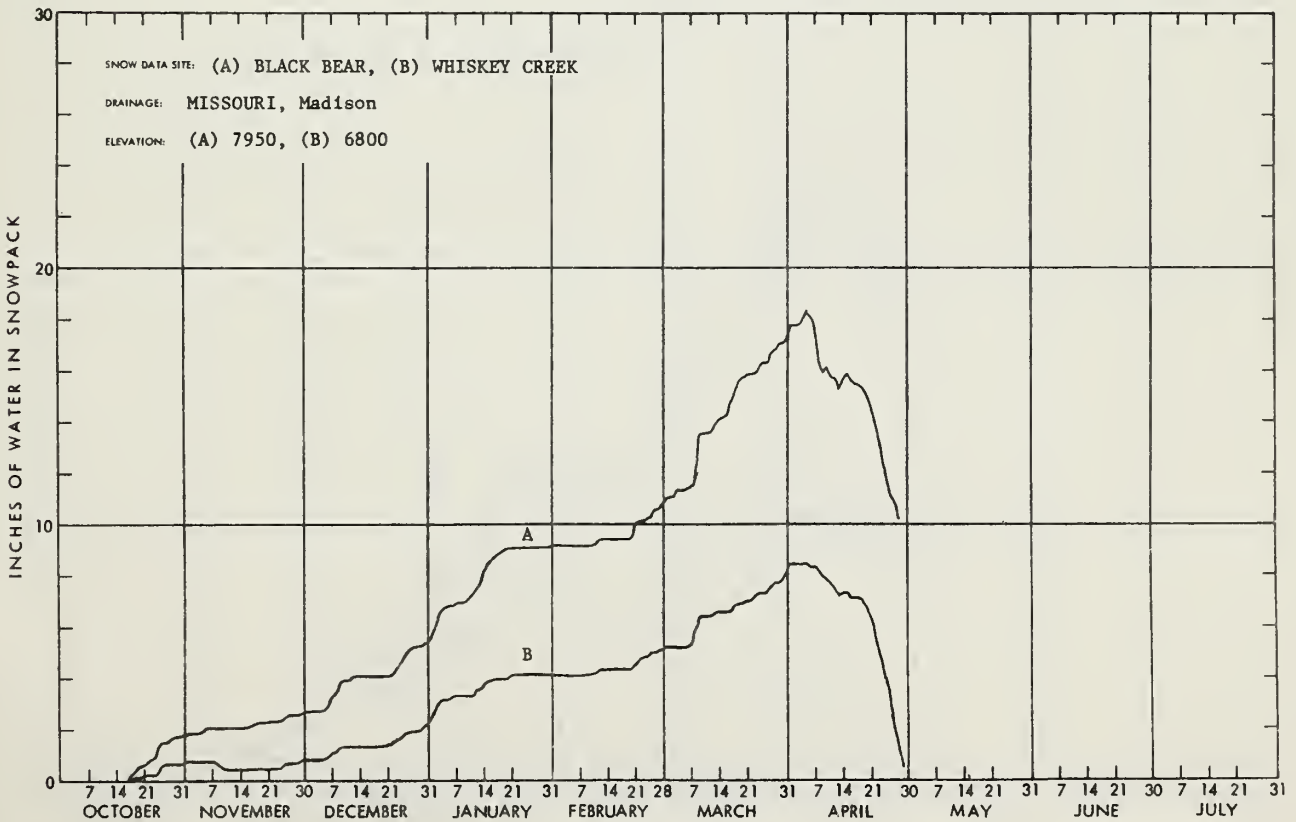




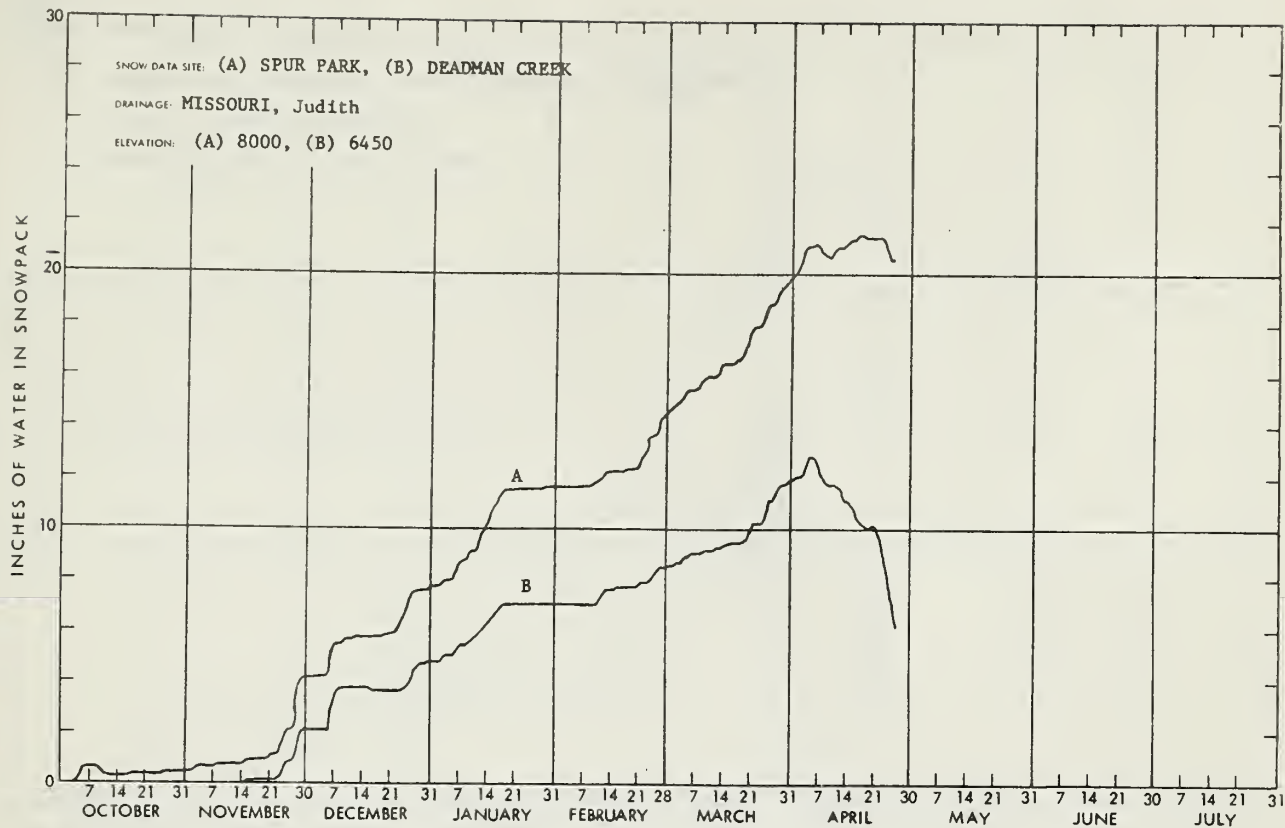




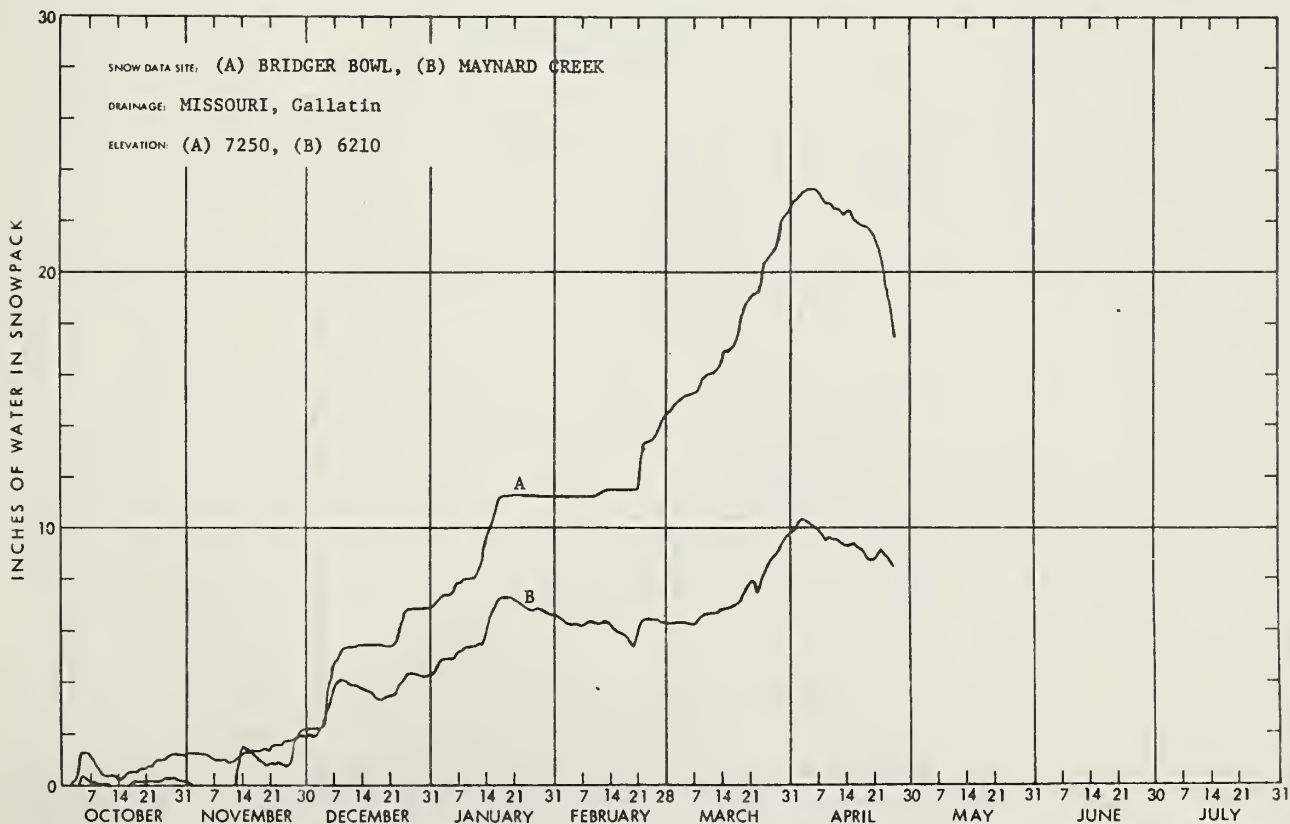
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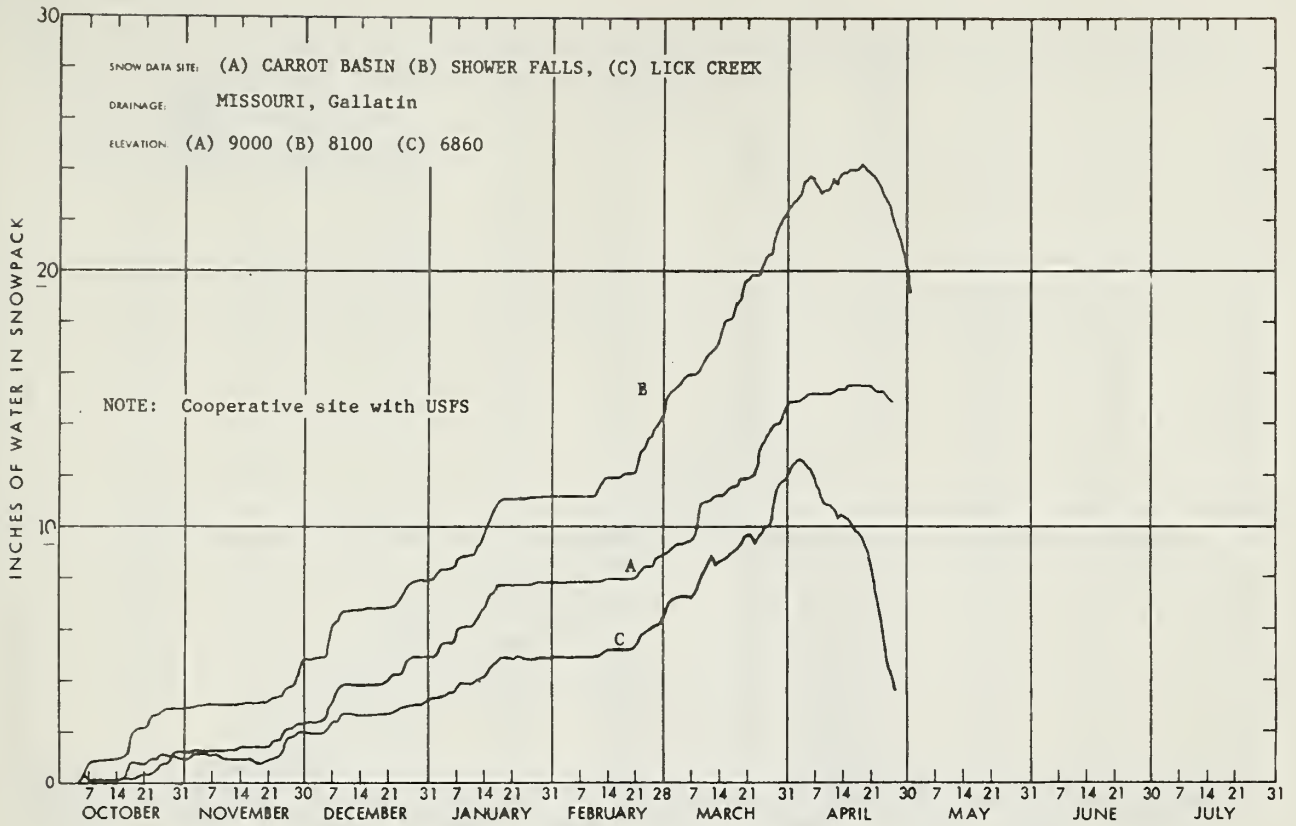




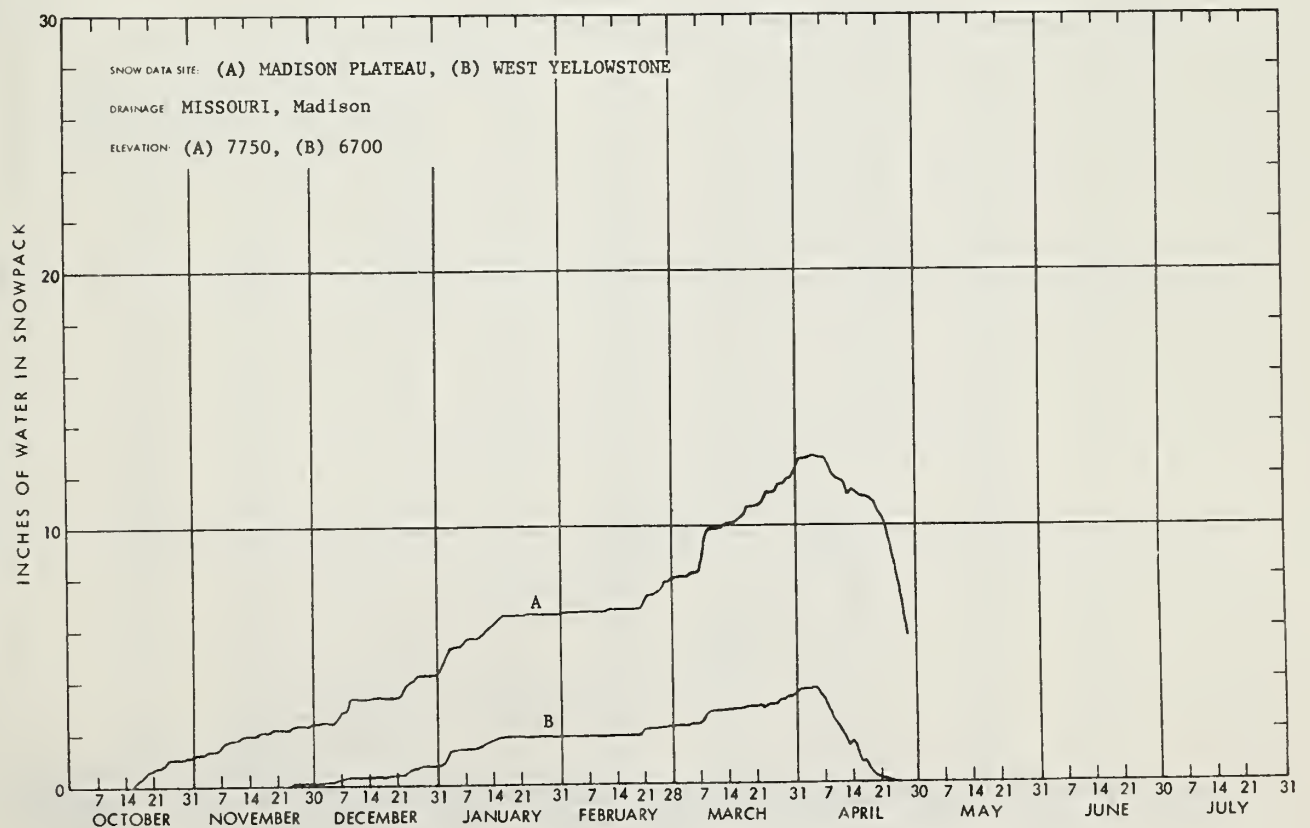
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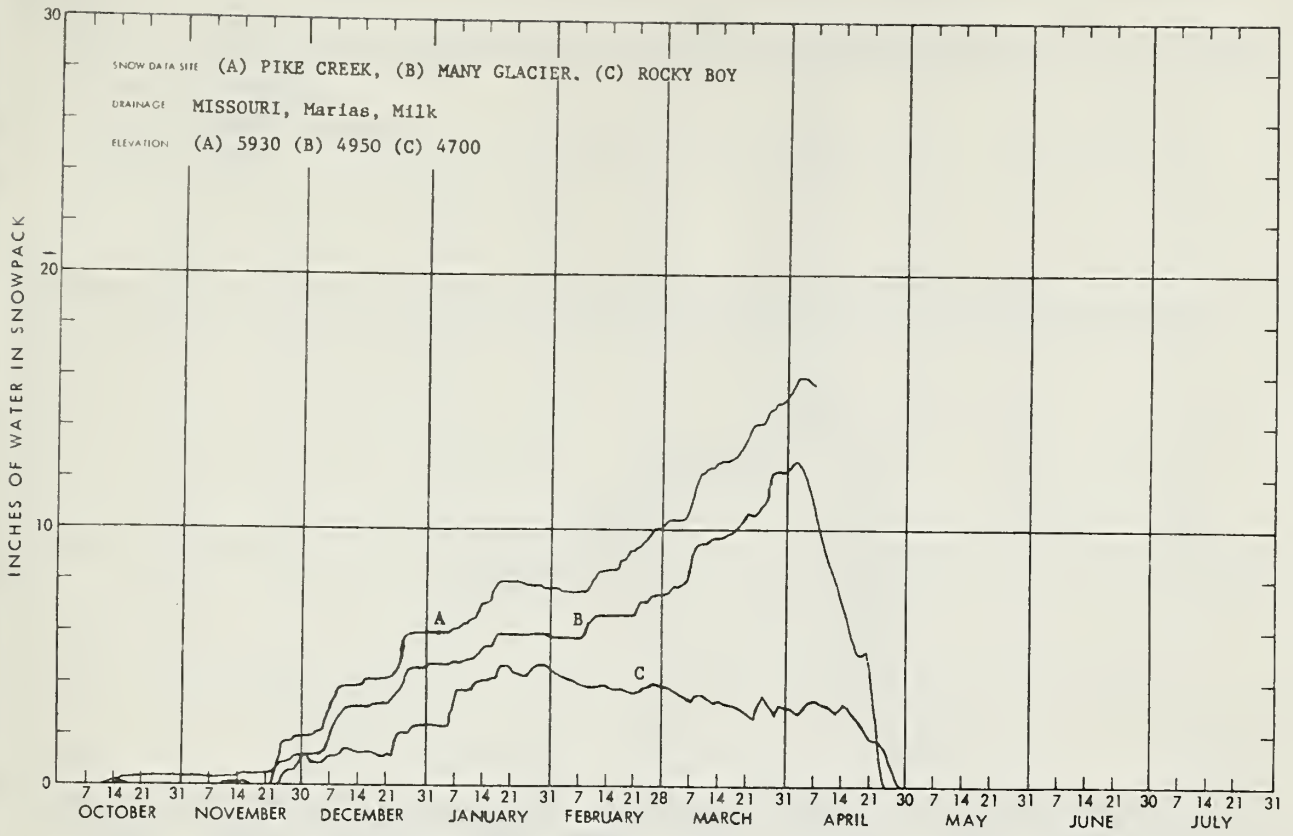




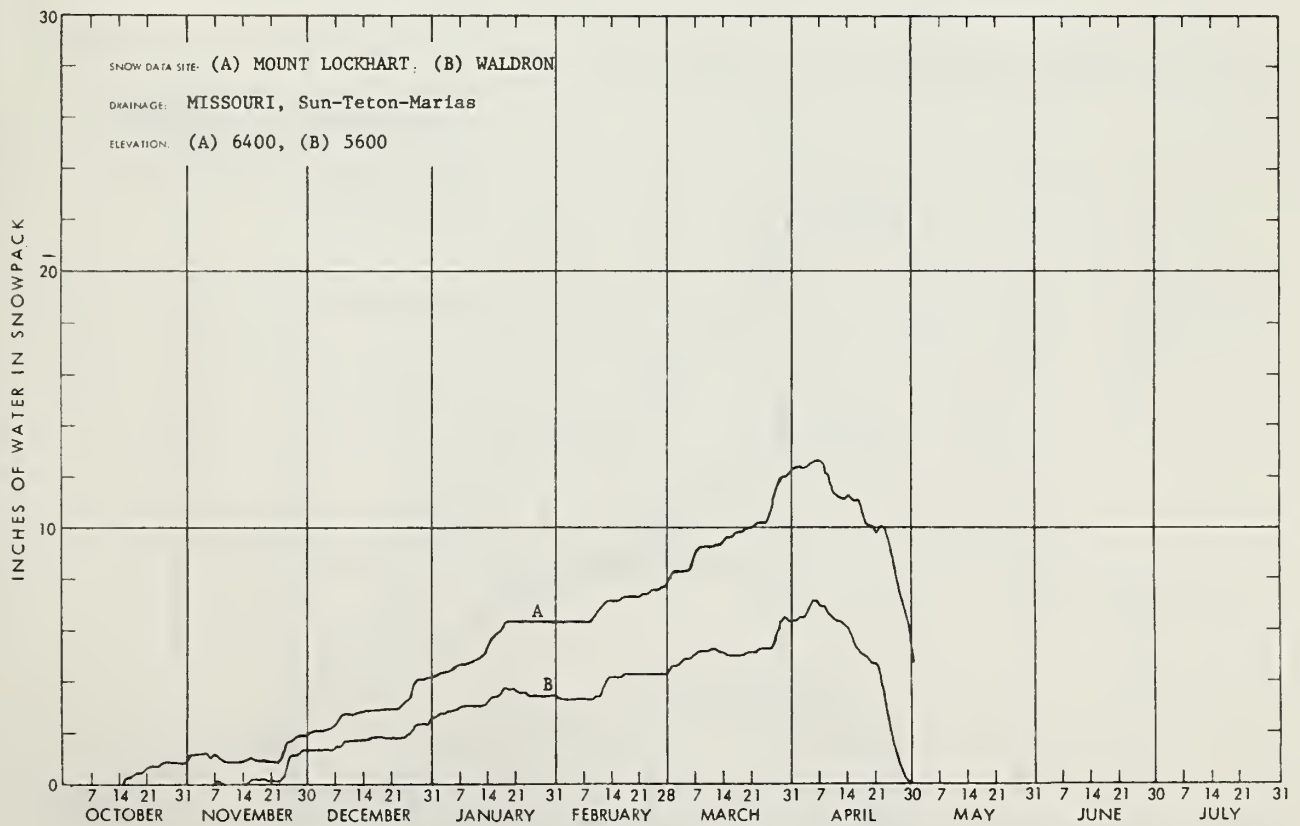
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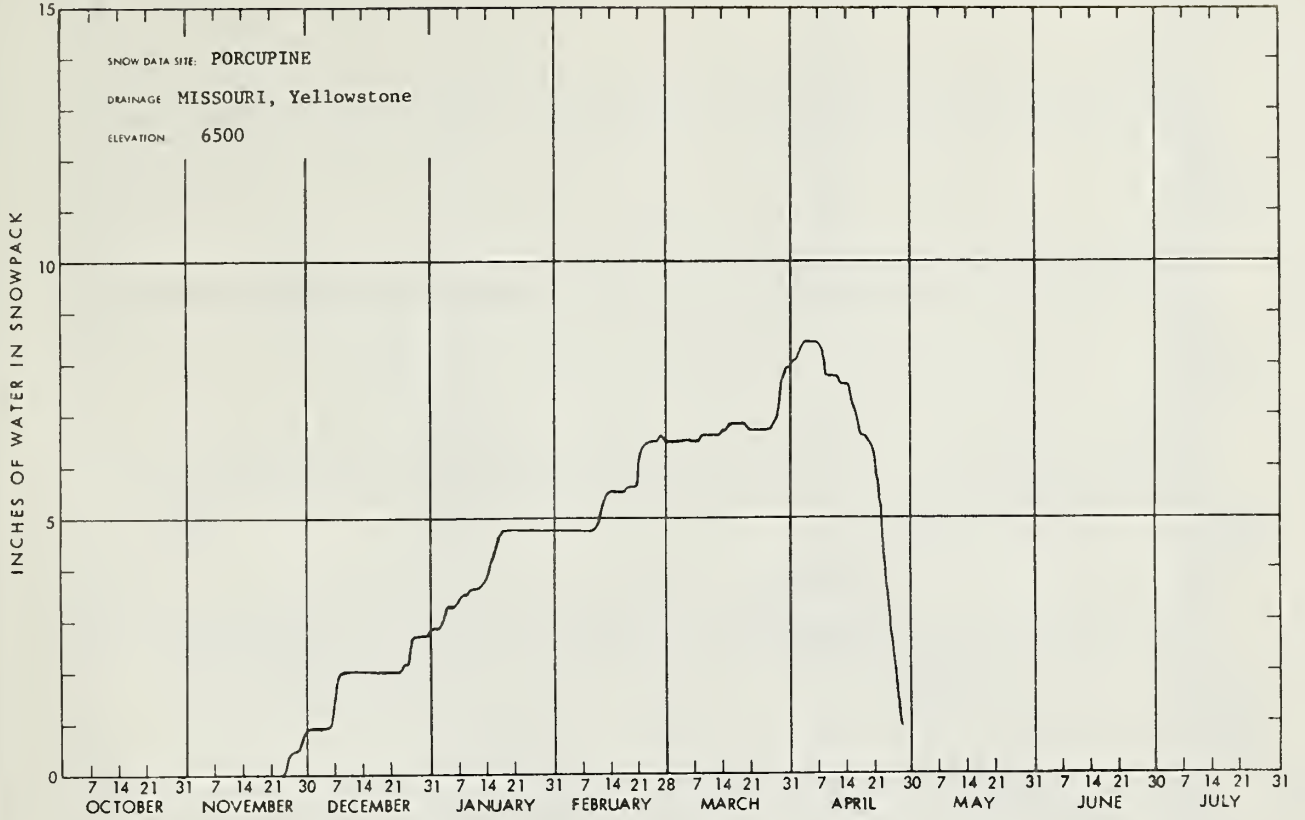


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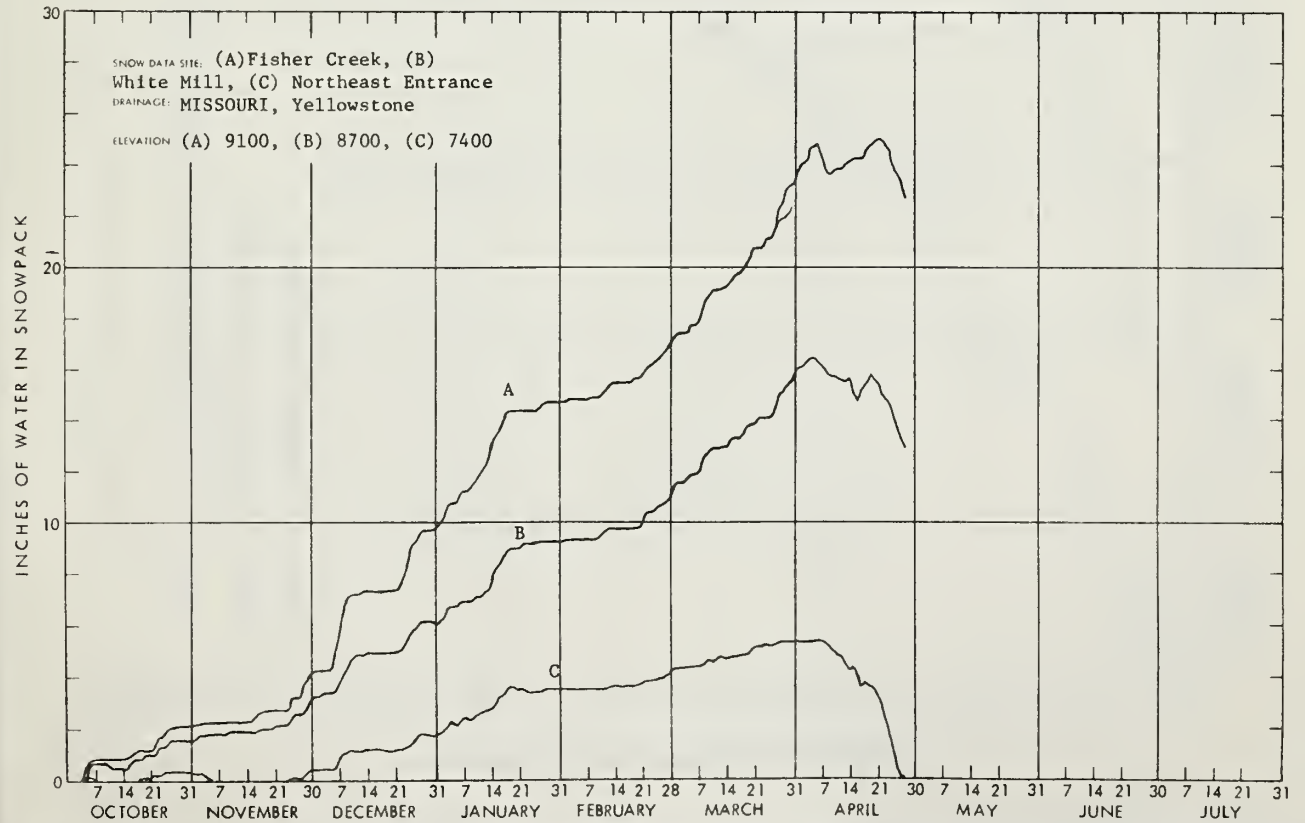




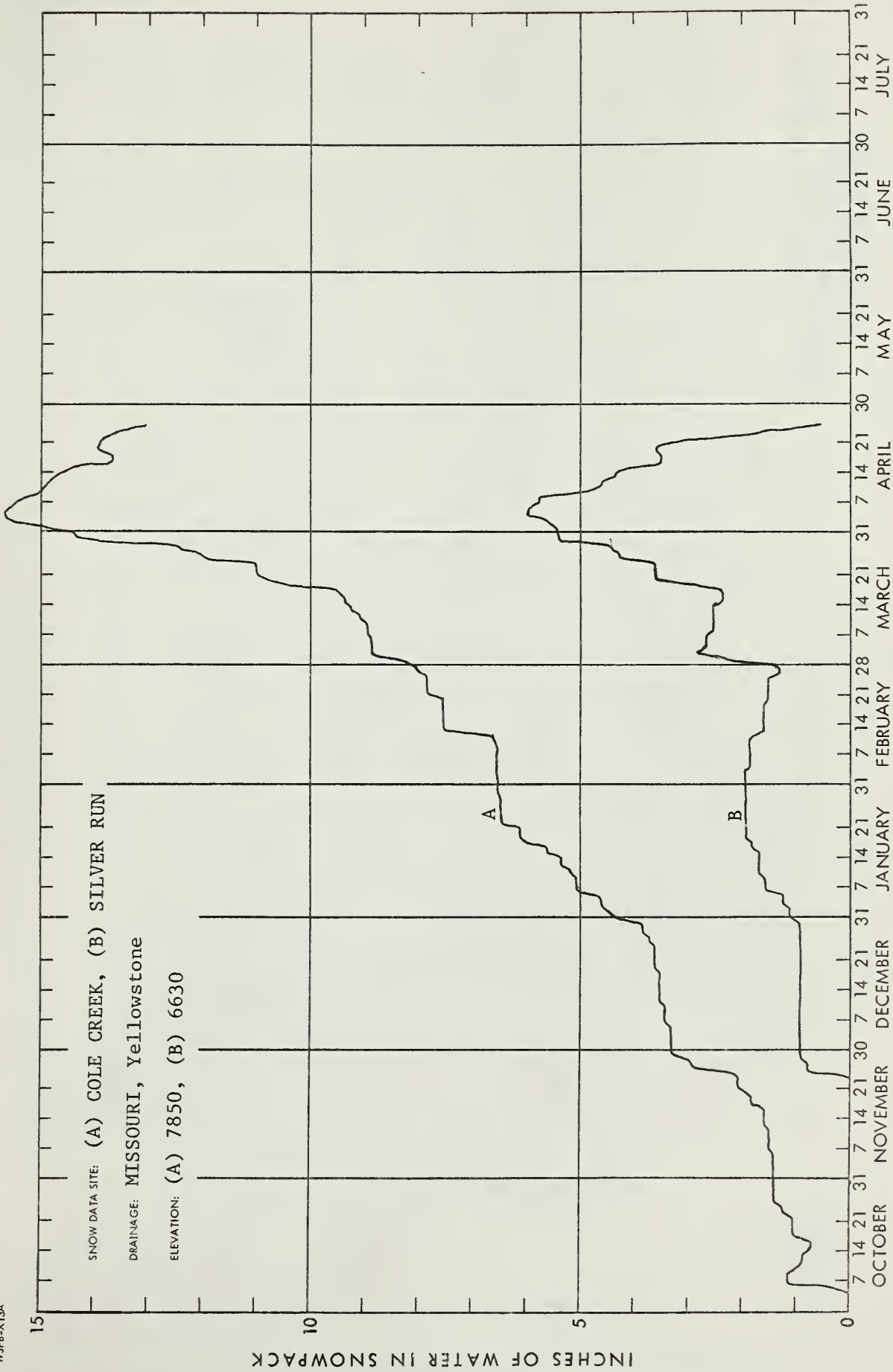




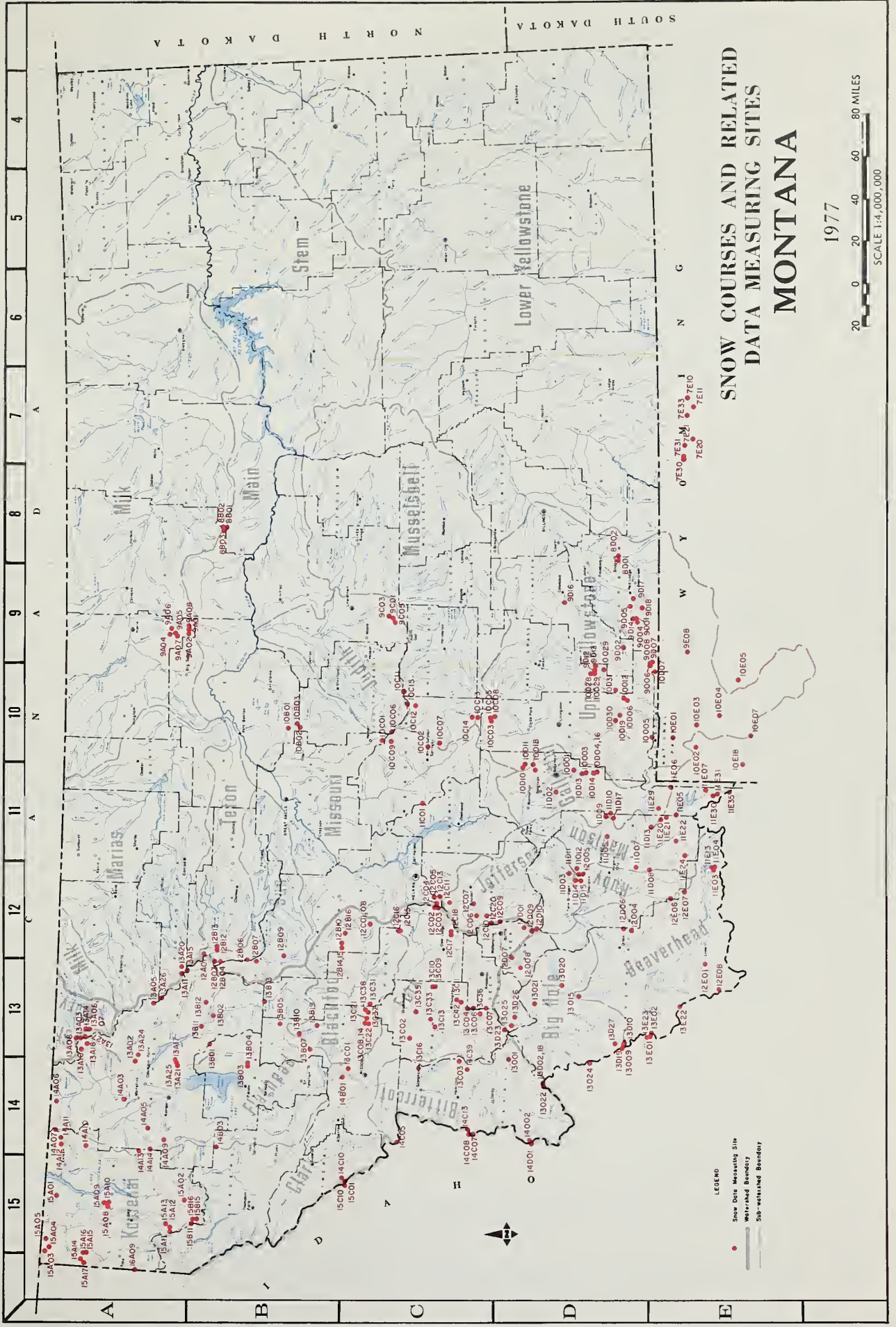
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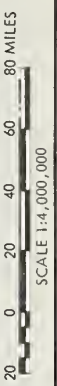






**SNOW COURSES AND RELATED  
DATA MEASURING SITES  
MONTANA**

1977





# Agencies and Organizations Cooperating in Montana Snow Surveys

## GOVERNMENT AGENCIES

### Canada:

Water Survey of Canada, Calgary, Department of the  
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Water Resources Service, Department of Lands, Forests  
and Water Resources, British Columbia  
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### Federal:

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Soil Conservation Service  
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NOAA, National Weather Service  
U.S. Department of the Interior  
Bonneville Power Administration  
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Bureau of Reclamation  
Fish and Wildlife Service  
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National Park Service

## STATE

Montana Association of Conservation Districts  
Montana Department of Fish and Game  
Montana Department of Natural Resources and  
Conservation  
Montana State University - Agricultural Experiment  
Station  
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## PRIVATE

Montana Power Company  
Butte Water Company  
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Other organizations and individuals furnish valuable  
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