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**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
for  
**MONTANA & NORTHERN WYOMING**

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE.  
and  
MONTANA AGRICULTURAL EXPERIMENT STATION

||||||| AS OF |||||||  
**JAN. 1, 1962**

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, U.S. Geological Survey, National Park Service, State Engineers of Montana and Wyoming and other Federal, State, and private organizations.

U. S. DEPT. OF AGRICULTURE  
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# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## *To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:*

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

### PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
<b>RIVER BASINS</b>			
COLORADO AND STATE OF UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER AND OTHER AGENCIES
COLUMBIA	MONTHLY (JAN.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
UPPER MISSOURI AND STATE OF MONTANA	MONTHLY (FEB.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
WEST-WIDE	OCT. 1, APR. 1, MAY 1	PORTLAND, OREGON	ALL COOPERATORS
<b>STATES</b>			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. AGR. EXP. STATION COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IOAHO	MONTHLY (FEB.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
NEVAOA	MONTHLY (JAN.-MAY)	RENO, NEVAOA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	ORE. AGR. EXP. STATION OREGON STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

*Copies of these various reports may be secured from:*

Head, Water Supply Forecasting Section  
Soil Conservation Service  
P.O. Box 4170, Portland 8, Oregon

### PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	COMPTROLLER, WATER RIGHTS BR., DEPT. OF LANDS AND FORESTS, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, SACRAMENTO, CALIF.

FEDERAL-STATE-PRIVATE COOPERATIVE  
SNOW SURVEYS AND WATER SUPPLY FORECASTS  
for  
MONTANA AND NORTHERN WYOMING  
(Upper Missouri and Upper Columbia River Basins)

Report Prepared  
By

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Soil Conservation Service  
Snow Survey Section  
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Director  
Montana Agricultural  
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Bozeman, Montana



MONTANA  
WATER SUPPLY OUTLOOK  
as of  
January 1, 1962

\* \* \* \* \*  
\*  
\* The Water Supply Outlook on January 1, 1962 is much \*  
\* better than last year and 20 to 40 percent above \*  
\* average. Snow surveys made at forty key stations \*  
\* indicate at this early date a good water supply is \*  
\* in the making. \*  
\* Reservoir storage generally is good for January 1. \*  
\* Soil moisture is considerably higher than last year.\*  
\* \* \* \* \*

SNOW COVER

Flathead River Basin

The January first snowpack measured at five courses in the Flathead River basin is 162 percent of last year and 134 percent of the average January first water content.

Clark Fork River Basin

Snowpack measured at six courses in the Clark Fork River basin is 151 percent of last year and 140 percent of the average January first water content.

Jefferson River above Sappington

January first water content at five snow courses measured in the Jefferson River is 121 percent of average and 36 percent more than last year.

Madison-Gallatin River Basin

January first snowpack measured at eight snow courses in the Madison-Gallatin River basin is 162 percent of last year and 134 percent of the average January first water content.

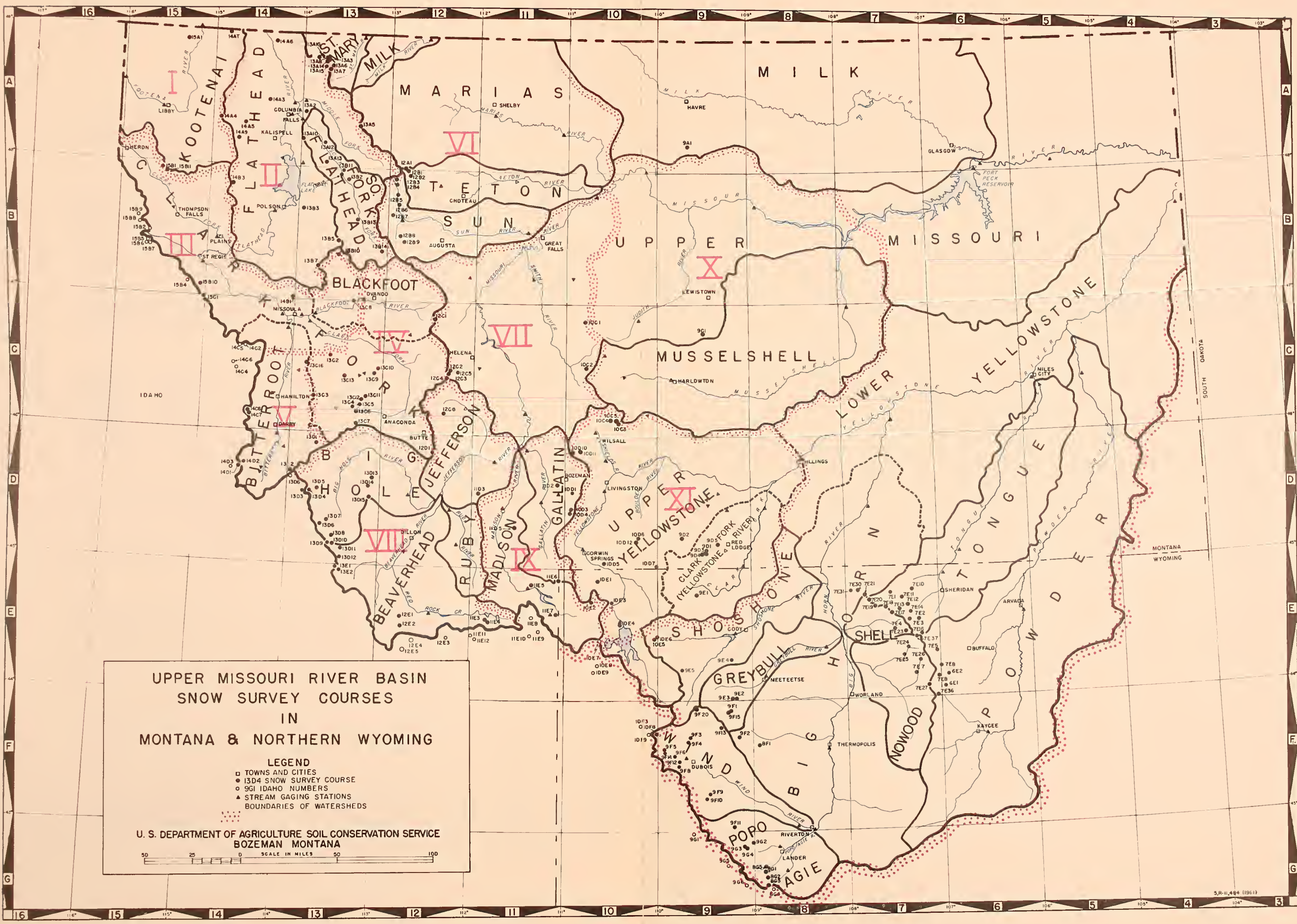
Yellowstone River Basin

Snow measurement at five courses on January first in the Yellowstone River basin is 72 percent more than last year and 138 percent of the average snowpack.









UPPER MISSOURI RIVER BASIN  
 SNOW SURVEY COURSES  
 IN  
 MONTANA & NORTHERN WYOMING

- LEGEND
- TOWNS AND CITIES
  - 13D4 SNOW SURVEY COURSE
  - 9GI IDAHO NUMBERS
  - ▲ STREAM GAGING STATIONS
  - ⋯ BOUNDARIES OF WATERSHEDS

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE  
 BOZEMAN MONTANA

50 25 0 SCALE IN MILES 50 100

# INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin & Course Name	Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Mees. By	Drainage Basin & Course Name	Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Mees. By	Drainage Basin & Course Name	Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Mees. By
<b>COLUMBIA RIVER BASIN</b>									<b>MISSOURI RIVER BASIN</b>									MISSOURI RIVER BASIN (Continued) (WYOMING)								
<b>ROCKY MOUNTAIN RIVER</b>									<b>BEAVERHEAD RIVER</b>									<b>WIND RIVER</b>								
Baree Creek	15811	5500	6	25N	30W	1937	4,5,5 $\frac{1}{2}$	2	Bloody Dick	13D10	7600	12	8S	16W	1948	3,4	1	Big Horn	9F12	8800	36	42N	109W	1955	2,3,4,5	1
Brush Creek	1444	5000	13	30N	26W	1937	3,4,5	1	Gold Stone	13D9	8100	11	8S	16W	1948	3,4	1	Burrows Creek	9F14	8800	15	43N	107W	1948	2,3,4,5	1
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5,5 $\frac{1}{2}$	1	Lakeview Canyon	11E4	6930	26	14S	2W	1948	3,4,5	10	Dinwoodie	9F10	10000	9	38N	105W	1948	2,3,4,5	1,5
Wassal Divide	14A7	5450	8	37N	24W	1937	3,4,5,5 $\frac{1}{2}$	1	Lakeview Ridge	11E3	7400	27	14S	2W	1948	3,4,5	10	Oinwoodie Glaciers	9F17	10500	3	38N	106W	1959	2,3,4	1
<b>FLATHEAD RIVER</b>									<b>SIG NOLE RIVER</b>									<b>POPO AGIE RIVER</b>								
Basin Creek	13814A	5000	11	19N	12W	1951	2,3,4,5	1	Anderson Meadow	13014	7000	18	3S	12W	1948	3,4	1	Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	1
Bessoo Peak	14B3	5150	11	24N	25W	1960	3,4,5	1,5	Selow Sig Nole Pass	1304	6900	24	3S	18W	1948	3,4	1	Bruce's Camp	8G5	6500	24	32N	101W	1955	2,3,4	1
Big Creek	1383	6750	7	22N	18W	1941	3,4,5	6	Sig Nole Pass	1303	7240	28	3S	18W	1948	3,4	1	Nobbs's Park	9G3	10000	22	2S	3W	1948	2,3,4,5	1,5
Desert Mountain	13A2M	5600	24	31N	19W	1937	1,2,3,4,5	1,2	East Boundary	1305	6700	22	3S	17W	1948	3,4	1	Mosquito Park	9G4	9500	23	2S	3W	1940	2,3,4,5	1
Griffin Creek Glvide	14A9	5150	11	28N	25W	1960	3,4,5	1,5	Elk Horn Springs	13015	8450	15	4S	12W	1935	3,4,5	3	Sawmill Glede	8G1	8500	3	31N	101W	1939	2,3,4,5	1
Ball Roaring Glvide	14A3	5770	35	32N	22W	1942	3,4,5	1	Jehnu Creek	1308	7340	25	7S	16W	1948	3,4	1	South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	1
Bolbrook	13813A	4530	18	21N	13W	1951	2,3,4,5	1	Miser Forks	1306	7300	24	6S	17W	1948	3,4	1	St. Lawrence R.S.	9F11	9000	26	1N	4W	1940	2,3,4,5	1,5
Kishanahn	14A6	3886	14	37N	22W	1954	3,4	6	Miser Lake	1307	6720	10	6S	16W	1945	3,4	1	Trout Creek	9G2	8400	5	2S	2W	1948	2,3,4,5	1,5
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	1	Wise River	13013	6300	15	2S	12W	1948	3,4	1	Twenty Lakes	9G7	10500	2	1S	5W	1959	2,3,4	1
Mariss Pass	13A5M	5250	34	30N	14W	1934	1,2,3,4,5	3	<b>JEFFERSON RIVER</b>									<b>BIG HORN RIVER</b>								
Minerel Creek	13A16	4000	29	35N	17W	1939	3,4	6	Picnic Grounds	1206	6500	10	5N	6W	1941	2,3,4	4	Five-Springs Falls	7E31	7500	19	56N	92W	1956	2,3,4,5	1
North Fork Joeko	13B7	6330	3	17N	17W	1941	3,4,5	6	Pipestone Pass	1201	7200	10	1N	7W	1938	1,2,3,4,5	1	Kirwin	9F19	11000	13	43N	104W	1960	2,3,4	1
Quintonon	13A13	3800	11	26N	17W	1951	2	1,2	<b>MADISON RIVER</b>									<b>SHOSHONE RIVER</b>								
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	1,2,3,4,5	1,2	Nehgan Dam	11E5	6550	22	11S	3E	1934	1,2,3,4,5	3	Medicine Wheel	7E30	9000	24	56N	92W	1956	2,3,4,5	1
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5	2	Jack Creek	1105	7600	13	6S	1E	1961	3,4	1	Owl Creek	8E1	8700	36	43N	101W	1948	2,3,4,5	1
Trinkus Lake	1381	6500	9	25N	17W	1948	3,4,5	2	Norris Basin	10E2	7500	44 <sup>0</sup> 44'	110 <sup>0</sup> 42'	1936	1,2,3,4,5	6	Wood River #2	9F15	8000	28	46N	103W	1956	2,3,4,5	1	
Trout Lake	13A12M	3600	21	28N	17W	1948	1,2,3,4,5	1,2	North Meadow	11D3	7500	23	3S	3W	1961	3,4	1	Timber Creek #2	9E3	8800	25	47N	103W	1955	2,3,4,5	1
Twin Creeks	13811	3580	14	26N	16W	1951	3,4,5	1,2	West Yellowstone	11E7	6700	34	13S	5W	1934	1,2,3,4,5	3	Frontier Needle	9F20	10000	20	46N	106W	1961	2,3,4	1
Upper Holland Lake	1385	7000	28	20N	16W	1948	3,4,5	2	<b>GALLATIN RIVER</b>									<b>NOWOOD CREEK</b>								
<b>CLARK FORK RIVER</b>									<b>MISSOURI RIVER MAIN STEM</b>									<b>Cold Springs Camp</b>								
Black Pine	13C13	7100	23	8N	15W	1959	3,4	1	Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	3	Medicine Lodge Lakes	7E24	9500	7	51N	87W	1956	2,3,4,5	1
Coyote Hill	13810	4200	12	18N	16W	1947	1,2,3,4,5	1,2	Crystel Lake	9E1	6100	19	12N	18E	1941	3,4	1	Onion Gulch	7E27	8100	31	48N	85W	1956	2,3,4,5	1
El Dorado Mine	13C9	7800	23	8N	12W	1949	3,4	1	Grashopper	10C2	7000	19	9N	8E	1938	3,4	1	Tensleep Lake	7E26	9075	33	50N	86W	1956	2,3,4,5	1
Fred Burr Pass	13C11	8000	12	6N	13W	1957	3,4	1	Kings Mill	10C1	7950	35	13N	7E	1934	3,4,5	3	Tryrell R.S.	7E35	8300	30	49N	86W	1956	2,3,4,5	1
Freezeout Pass	15810	6800	21	15N	27W	1937	4,5	1,2	Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7	<b>SHELL CREEK</b>								
Gold Creek Lake	13C10	7200	14	8N	12W	1949	3,4	1,2	Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3	Bald Mountain	7E21	9600	33	56N	91W	1956	2,3,4,5	1
Scodoo Creek	15C1	6200	9	14N	27W	1937	3,4,5	1,2	Ten Mile Creek L.	12C2	6250	13	8N	6W	1935	1,2,3,4,5	3	Granite Pass	7E17	8950	19	54N	88W	1956	2,3,4,5	1
Intergeard	13C4	6450	6	5N	15W	1936	2,3,4	4	Ten Mile Creek M.	13C3	6800	13	8N	6W	1935	1,2,3,4,5	3	Ranger Creek	7E4	8800	32	53N	88W	1935	2,3,4,5	1
Lubrecht Forest #6	13C8	4040	11	13N	14W	1951	1,2,3,4,5	8	Ten Mile Creek, U.	12C4	8000	19	8N	5W	1935	1,2,3,4,5	3	Shell Creek	7E23	9600	12	52N	88W	1956	2,3,4,5	1
Red Lion	13C12	7000	27	6N	13W	1958	3,4	1	<b>SUN-TETON-MARIAS RIVERS</b>									<b>TONGUE RIVER</b>								
Skakabo Summit	13C3	7259	30	6N	17W	1937	3,4	1	Benchmark	1288	5500	9	20N	10W	1948	3,4	1	Beever Tongue Div.	7E20	9200	12	56N	91W	1956	2,3,4,5	1
Slide Rock Mt.	13C2	7100	35	10N	16W	1937	3,4	1	Cabin Creek	1286	5400	33	23N	10W	1949	3,4	1	Big Goose #2	7E32	7700	4	53N	86W	1955	2,3,4,5	1
Southern Cross	13C5	6500	8	5N	13W	1936	2,3,4	4	Five-Bull	1289	5600	36	20N	10W	1948	3,4	1	Bone Springs Div.	7E18	9200	32	55N	89W	1956	2,3,4,5	1
Storm Lake	13C7	7780	19	4N	13W	1939	1,2,3,4,5	1	Freight Creek	12A1	6000	13	26N	10W	1948	3,4	1	Burgess R.S. #2	7E33	7900	36	56N	89W	1955	2,3,4,5	1
Stuart Mill	13C6	6500	19	5N	13W	1936	2,3,4	4	Gates Park	12B5	5300	31	24N	10W	1949	3,4	1	Dome Lake #2	7E34	8800	11	53N	87W	1950	2,3,4,5	1
T.V. Mountain	14B1	6800	33	15N	19W	1956	1,2,3,4,5	1	Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	1	Doze Lake #2	7E14	9300	32	55N	87W	1956	2,3,4,5	1
<b>BITTERROOT RIVER</b>									<b>Weldron Creek</b>									<b>Glenn Creek</b>								
Ambrose	13C16	6475	28	9N	18W	1960	3,4,5	1	West Fork	12B1	6000	6	25N	9W	1948	3,4	1	Sibley Lake	7E11	8000	10	55N	88W	1956	2,3,4,5	1
East Fork R.S.	1301	5400	16	2N	17W	1937	3,4	1	Wrong Creek	12B4	5700	32	25N	10W	1949	3,4	1	Sucker Creek	7E12	9000	19	55N	87W	1956	2,3,4,5	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	1,3	Wrong Ridge	12B3	6800	17	25N	10W	1949	3,4	1	Steamboat Point	7E10	7500	32	56N	87W	1956	2,3,4,5	1
Lolo Pass	14C5	5230	11	10N	24W	1937	3,4,5	1,2	<b>MILK RIVER (Canada)</b>									<b>Wood Rock G.S.</b>								
Lost Horse	14C7	5940	5	4N	23W	1960	3,4,5	1	Cress Day	10AA2	3450	49 <sup>0</sup> -19'	110 <sup>0</sup> -14'-15"	1953	4	9	Geneva Pass	7E37	10600	30	52N	86W	1961	2,3,4,5	1	
Nez Perce Camp	14C2	5580	19	1S	23W	1937	3,4,5	1	Cypress Park	9AA1	4000	49 <sup>0</sup> -39'	109 <sup>0</sup> -31'-00"	1953	4	9	<b>POWDER RIVER</b>									
Nez Perce Pass	14D1	6575	25	1S	24W	1937	3,4,5	1	Elkwater	10AA1	4100	49 <sup>0</sup> -40'	110 <sup>0</sup> -15'-16"	1953	4	9	Beer Trep	7F1	8000	10	45N	85W	1960	2,3,4,5	1	
Twin Lakes	14C8	6510	32	5N	23W	1960	3,4,5	1	Val Marie	7AA1	2700	40 <sup>0</sup> -19'	107 <sup>0</sup> -43'-44"	1953	4	9	Canyon Creek	7F2	7400	16	43N	86W	1960	2,3,4,5	1	
<b>SASKATCHEWAN RIVER BASIN</b>									<b>UPPER YELLOWSTONE RIVER</b>									<b>Clouds Peak</b>								
<b>ST. MARY</b>									<b>Bald Ridge</b>									<b>Muddy Creek G.S.</b>								
Iceberg Lake #3	13A3	5600	34	36N	16W	1922	5	3,9	Camp Senis	9D1	7890	2	4N	10E	1961	3,4,5	1	Munkres Pass	7E8							



AVAILABLE SOIL MOISTURE  
As of  
January 1, 1962

Drainage Basin and Station	Station No.	Elev.	Soil Profile in Inches		Date	Soil Moisture Content in Inches About 1/1/62			
			Depth	Cap.		1962	1961	1960	Avg.
<u>GALLATIN</u>									
College Site	11D2M	4856	54	14.5	12/29	10.7	7.1	10.3	7.8
<u>MADISON</u>									
Red Bluff	11D4M	4900	40	4.7	1/3	2.8	1.2	-	-
<u>SHIELDS</u>									
Battle Ridge	10D11M	6020	48	15.4	12/30	13.0	10.7	-	-
Shields River	10C4M	5850	48	20.8	12/30	12.8	10.9	-	-
<u>FLATHEAD</u>									
Desert Mountain	13A2M	5600	54	8.4		N.R.	6.0	7.7	6.7
Marias Pass	13A5M	5250	54	6.5		N.R.	4.1	5.7	4.6
Spotted Bear R.S.	13B15M	3700	28	6.2	12/28	5.8	4.9	5.9	5.4
Trout Lake	13A12M	3600	54	12.7	12/29	13.0	12.4	11.9	11.7

AVAILABLE SOIL MOISTURE  
As of  
October 1, 1961

Drainage Basin and Station	Station No.	Elev.	Soil Profile in Inches		Date	Soil Moisture Content in Inches About 10/1/61			
			Depth	Cap.		1961	1960	1959	Avg.
<u>GALLATIN</u>									
College Site	11D2M	4856	54	14.5	9/29	9.1	5.8	8.6	5.8
<u>MADISON</u>									
Red Bluff	11D4M	4900	40	4.7	9/22	3.2	-	-	-
<u>SHIELDS</u>									
Battle Ridge	10D11M	6020	48	15.4	9/30	9.3	10.6	-	-
Shields River	10C4M	5850	48	20.8	9/30	8.7	11.5	-	-
<u>FLATHEAD</u>									
Desert Mountain	13A2M	5600	54	8.4	10/5	4.9	4.5	7.2	5.8
Marias Pass	13A5M	5250	54	6.5	9/26	3.6	2.8	4.9	3.8
Spotted Bear R.S.	13B15M	3700	28	6.2	10/5	4.4	0.9	5.2	3.1
Trout Lake	13A12M	3600	54	12.7	10/5	7.8	6.9	9.8	7.7



# SNOW SURVEY DATA

AS OF JANUARY 1, 1962

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

## COLUMBIA RIVER BASIN

### FLATHEAD RIVER

13A2M	Desert Mountain	5600	1/2	35	9.5	6.0	6.4*
13A5M	Marias Pass	5250	1/3	36	9.9	6.2	8.1
13A13	Quintonkon	3800	12/28	39	9.4	-	-
13B2	Spotted Bear Mountain	7000	12/28	38	9.4	5.6	7.7*
13A12M	Trout Lake	3600	12/29	38	10.4	4.6	7.7*
13B11	Twin Creeks	3580	12/26	35	8.4	5.8	5.3*

### CLARK FORK RIVER

13B10	Coyote Hill	4200	1/2	30	8.2	3.6	5.0*
15B2	Lookout	5250	1/2	77	22.8	15.8	16.5*
13C8	Lubrecht Forest #6	4040	1/4	18	4.4	1.6	1.5*
13C7	Storm Lake	7780	12/27	28	6.3	5.4	6.6*
14B1	TV Mountain	6800	12/28	45	11.3	8.7	8.3*

### BITTERROOT RIVER

13D2	Gibbons Pass	7100	12/29	46	11.0	9.2	12.7*
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# SNOW SURVEY DATA

AS OF JANUARY 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

## MISSOURI RIVER BASIN

### BEAVERHEAD RIVER

12E3	Camp Creek	6800	12/29	22	5.0	2.6	4.2*
11E12	Kilgore	6200	12/29	26	6.1	3.6	4.6*
12E4	Irving Creek	7035	12/29	14	3.4	2.0	-
12E5	Webber Creek	6700	12/29	14	2.9	2.0	-

### JEFFERSON RIVER

12D1	Pipestone Pass	7200	12/26	15	2.8	2.4	2.7*
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### MADISON RIVER

11E9	Big Springs	6500	12/29	49	13.5	6.8	8.2
11E5	Hebgen Dam	6550	12/28	28	5.6	4.2	5.9
11E10	Island Park	6315	12/29	40	10.2	5.5	6.3
10E2	Norris Basin	7500	12/29	27	5.4	4.4	4.6*
11E8	Valley View	6500	12/29	37	9.0	4.8	5.8
11E7	West Yellowstone	6700	12/27	27	6.2	4.4	5.7

### GALLATIN RIVER

11E6	Twenty-One Mile	7150	12/27	42	10.3	7.0	8.6
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### MISSOURI MAIN STEM

12C5	Chessman Reservoir	6200	1/3	9	1.9	0.8	2.2
12C2	Tennile, Lower	6250	12/29	19	3.7	2.6	3.5
12C3	Tennile, Middle	6800	12/29	27	5.4	3.5	5.3
12C4	Tennile, Upper	8000	12/28	30	6.8	4.2	6.7

### UPPER YELLOWSTONE RIVER

10E3	Canyon	7750	12/29	38	8.6	4.9	6.3*
10D7	Cooke City	7400	1/1	25	4.8	3.6	4.0*
9D5	Grizzly Peak	8400	12/29	52	15.0	-	-
10E4	Lake Camp	7850	1/1	29	5.8	3.7	4.8*
10E1	Lupine Creek	7300	12/29	30	8.1	5.0	5.1*
10E7	Thumb Divide	7900	12/29	53	14.7	7.3	10.2*



RESERVOIR STORAGE  
As of  
December 31, 1961

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE - 1000 A. F.		
			1962	1961	1943-57 Average
<u>COLUMBIA RIVER BASIN - MONTANA</u>					
Flathead	Hungry Horse	3,428.0	2,992.0	3,423.0	2,883.0**
	Flathead Lake	1,791.0	1,367.0	1,260.0	1,257.1
	Camas <u>1/</u>	45.2	-	22.1	23.8
	Mission Valley <u>2/</u>	100.3	20.8	26.6	28.2
Clark Fork	Georgetown Lake	31.0	26.0	27.1	25.3
	Noxon	334.0	-	-	-
<u>MISSOURI RIVER BASIN - MONTANA</u>					
Beaverhead	Lima	84.0	-	10.4	32.4
Ruby	Ruby	38.8	-	13.2	22.7**
Madison	Hebgen Lake	345.0	106.8	129.2	240.3
	Ennis Lake	41.0	39.3	39.1	37.6
Gallatin	Middle Creek	8.0	19.6	2.8	3.1**
Missouri	Canyon Ferry	2,043.0	1,382.0	1,553.0	1,682.0**
	Hauser & Helena	61.9	52.0	60.1	54.9
	Lake Helena	10.4	7.0	9.8	8.3**
	Holter Lake	81.9	67.1	54.8	71.6
	Ackley Lake	5.8	-	4.3	4.2
	Durand	7.0	-	3.4	4.3
	Martinsdale	23.1	-	3.7	9.5
	Fort Peck	14,900.0	4,320.0	7,020.0	6,551.0
Sun-Teton	Gibson	105.0	34.0	32.6	55.5
	Willow Creek	32.3	10.3	14.6	18.4
	Pishkun	32.0	17.4	17.2	19.0
Marias	Lower Two Medicine	16.6	0	0	0
	Four Horns	19.2	14.5	14.7	8.6
	Tiber	1,316.0	642.8	622.4	626.2**
	Swift	30.0	15.5	11.3	18.1
Milk	Lake Francis	112.0	74.8	78.3	94.4
	Fresno	127.2	15.9	29.5	66.6
	Nelson	66.8	16.8	43.6	37.2
Yellowstone	Lake Sherburne	66.1	13.0	-	16.3
	Mystic Lake	20.8	13.9	14.9	14.5
	Tongue River	68.0	39.9	6.8	7.9
	Cooney	27.5	15.0	-	8.8

1/ Sum of four small reservoirs on west side of Flathead Lake.

2/ Sum of eight small reservoirs in Mission Valley not including Jocko Lake.

\*\* Average for period of record.



RESERVOIR STORAGE  
As of  
December 31, 1961

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE - 1000 A. F.		
			1962	1961	1943-57 Average
<u>MISSOURI RIVER BASIN - WYOMING</u>					
Wind	Bull Lake	152.0	95.6	57.1	80.4
	Pilot Butte	31.6	8.9	9.6	9.1
	Boysen	560.0AC	179.9	84.7	286.6**
Owl Creek	Anchor	16.5	0	-	-
Shoshone	Buffalo Bill	440.0	255.4	124.4	272.4
Belle Fourche	Key Hole	190.0AC	0	3.2	6.6**
<u>MISSOURI RIVER BASIN - NORTH DAKOTA</u>					
Missouri	Garrison	18,100.0AC	-	5,968.0	-
Heart	E.A.Patterson	5.6AC	2.0	3.5	3.7**
	Lake Tschida	68.7AC	34.8	50.0	52.3**
James	Jamestown	20.0AC	11.6	15.6	-
<u>MISSOURI RIVER BASIN - SOUTH DAKOTA</u>					
Missouri	Oahe	17,000.0AC	-	190.0T	-
	Fort Randall	3,800.0AC	-	2,373.7	1,556.0**
	Gavins Point	320.0AC	-	302.0	-
Grand	Shadehill	84.0AC	83.1	52.3	75.5**
Cheyenne	Angostura	90.0AC	3.4	2.0	43.2**
	Deerfield	15.1AC	3.3	2.1	11.0**
	Pactola	55.0AC	3.1	15.7	-
Belle Fourche	Belle Fourche	185.2AC	14.9	16.1	84.8

\*\* Average for period of record.  
AC Active Capacity USBR, Billings.  
T Total storage.



Agencies Cooperating in Collecting Data Contained  
in this Bulletin

- |   |   |
|---|---|
| U. S. Forest Service<br>Region I, Missoula, Montana   | National Park Service<br>Yellowstone National Park<br>Glacier National Park       |
| U. S. Geological Survey<br>Helena, Montana  | Montana Experiment Station<br>Montana State College<br>Bozeman, Montana           |
| U. S. Army Corps of Engineers<br>Portland, Oregon<br>Seattle, Washington<br>Omaha, Nebraska<br>Riverdale, N. D. | Bonneville Power Administration<br>Portland, Oregon                               |
| U. S. Indian Irrigation Service<br>St. Ignatius, Montana  | Montana State School of Forestry<br>Montana State University<br>Missoula, Montana |
| U. S. Weather Bureau<br>Helena, Montana   | Soil Conservation Service<br>Montana, Wyoming, Idaho                              |
| U. S. Fish & Wildlife Service<br>Red Rock Lakes Refuge<br>Monda, Montana  | Soil Conservation Districts<br>Montana Counties                                   |
| U. S. Bureau of Reclamation<br>Billings, Montana<br>Boise, Idaho  | Johnson Flying Service, Inc.<br>Missoula, Montana                                 |
| Montana Power Company<br>Butte, Montana   | Water Rights Branch<br>Dept. of Lands & Forests<br>Victoria, British Columbia     |
| Agricultural Experiment Station<br>North Montana Branch Station<br>Havre, Montana                               | Department of Northern Affairs<br>& National Resources<br>Calgary, Alberta        |
| Montana State Highway Dept.<br>East Glacier, Montana  |   |

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SOIL CONSERVATION SERVICE  
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FEDERAL - STATE - PRIVATE  
**COOPERATIVE SNOW SURVEYS**

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Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

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*"The Conservation of Water begins  
with the Snow Survey"*