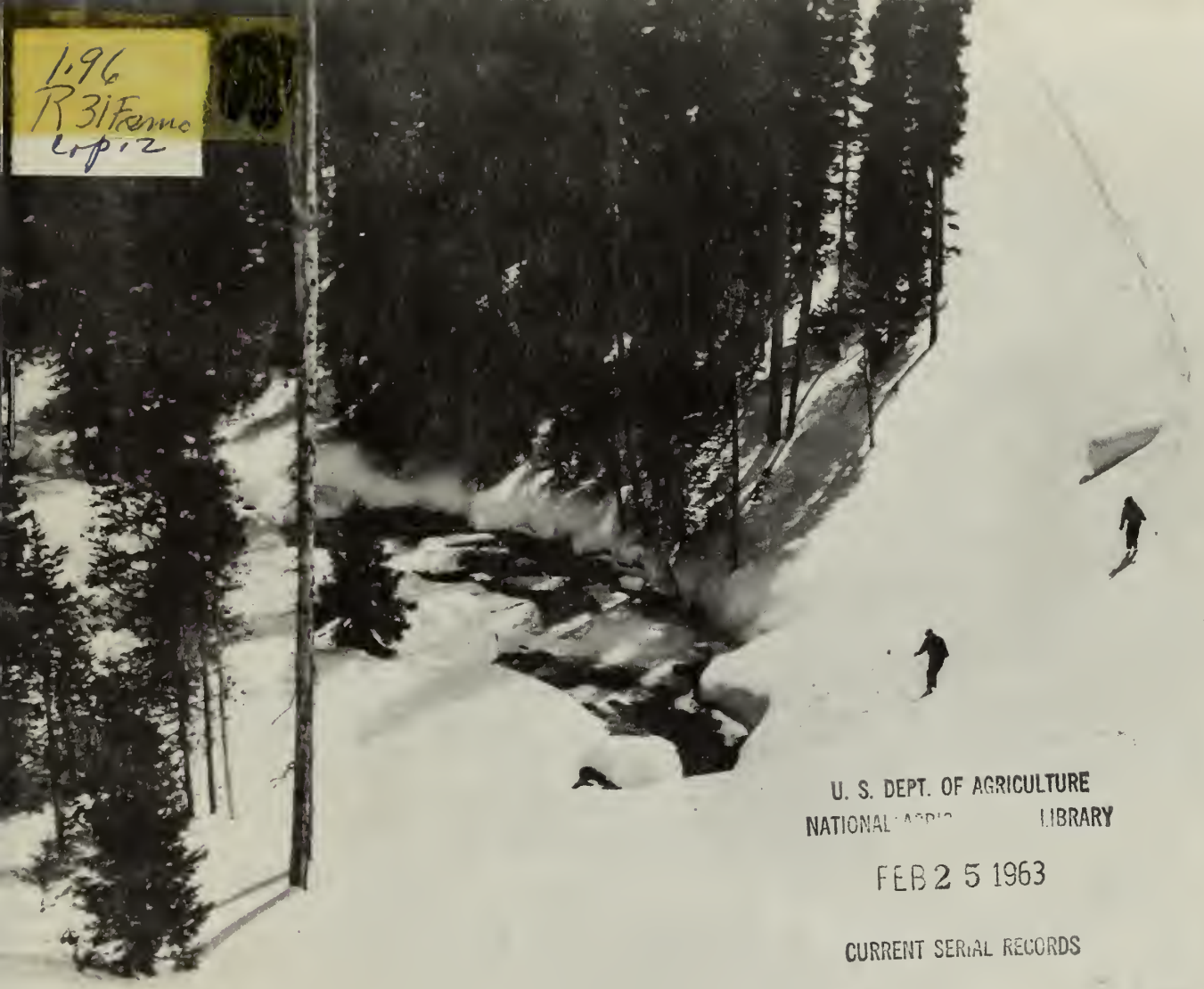



# WATER SUPPLY OUTLOOK
and
# FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
# for
# MONTANA

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE.
and
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 on the last page of this report

AS OF
**JAN. 1, 1963**

*To Recipients of Water Supply Outlook 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. 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 advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 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.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

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. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

## PUBLISHED BY SOIL CONSERVATION SERVICE

| REPORTS | ISSUED | LOCATION | COOPERATING WITH |
|---|---|---|---|
| **RIVER BASINS** | | | |
| Western United States | Monthly (Feb.-May) | Portland, Oregon | All Cooperators |
| **STATES** | | | |
| 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.<br>Ariz. Agr. Exp. Station |
| Colorado and New Mexico | Monthly (Feb.-May) | Fort Collins, Colorado | Colo. State University<br>Colo. State Engineer<br>N. Mex. State Engineer |
| Idaho | Monthly (Jan.-June) | Boise, Idaho | Idaho State Reclamation Engineer |
| Montana | Monthly (Jan.-June) | Bozeman, Montana | Mont. Agr. Exp. Station |
| Nevada | Monthly (Jan.-May) | Reno, Nevada | Nevada Dept. of Conservation and Natural Resources - Division of Water Resources |
| Oregon | Monthly (Jan.-June) | Portland, Oregon | Oreg. State University<br>Oregon State Engineer |
| Utah | Monthly (Jan.-June) | Salt Lake City, Utah | Utah State Engineer |
| Washington | Monthly (Feb.-June) | Spokane, Washington | Wn. State Dept. of Conservation |
| Wyoming | Monthly (Feb.-June) | Casper, Wyoming | Wyoming State Engineer |

## PUBLISHED BY OTHER AGENCIES

| REPORTS | ISSUED | AGENCY |
|---|---|---|
| British Columbia | Monthly (Feb.-June) | Water Rights Br., Dept. of Lands, Forests and Natural Resources, Parliament Bldg., Victoria, B.C., Canada |
| California | Monthly (Feb.-May) | Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif. |

# WATER SUPPLY OUTLOOK

# FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

# for

# MONTANA

Report Prepared
By

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Acting Snow Survey Supervisor

Soil Conservation Service
Snow Survey Section
Box 855, Bozeman, Montana

Issued By

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Soil Conservation Service
Bozeman, Montana

J. A. Asleson
Director
Montana Agricultural
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## TABLE OF CONTENTS

MONTANA
WATER SUPPLY OUTLOOK
as of
January 1, 1963

The water supply outlook for the coming irrigation season is Poor. Snow surveys made near the first of January indicate the mountain snow pack is much below average. Below average streamflow can be expected next spring and summer unless precipitation in the next three months is 120 to 150 percent above average.

Snow surveys made near the first of January in the Flathead River basin indicate the water stored in the snow pack is 36 percent of last year and 50 percent of the 1943-57 average.

In the Clark Fork River drainage the snow pack water content is 38 percent of last year and 53 percent average.

One snow course, Gibbons Pass, measured in the Bitterroot drainage is 73 percent of last year and 64 percent average.

East of the Continental divide the snow water content on the headwaters of the Missouri River is 40 percent of last year and 52 percent average.

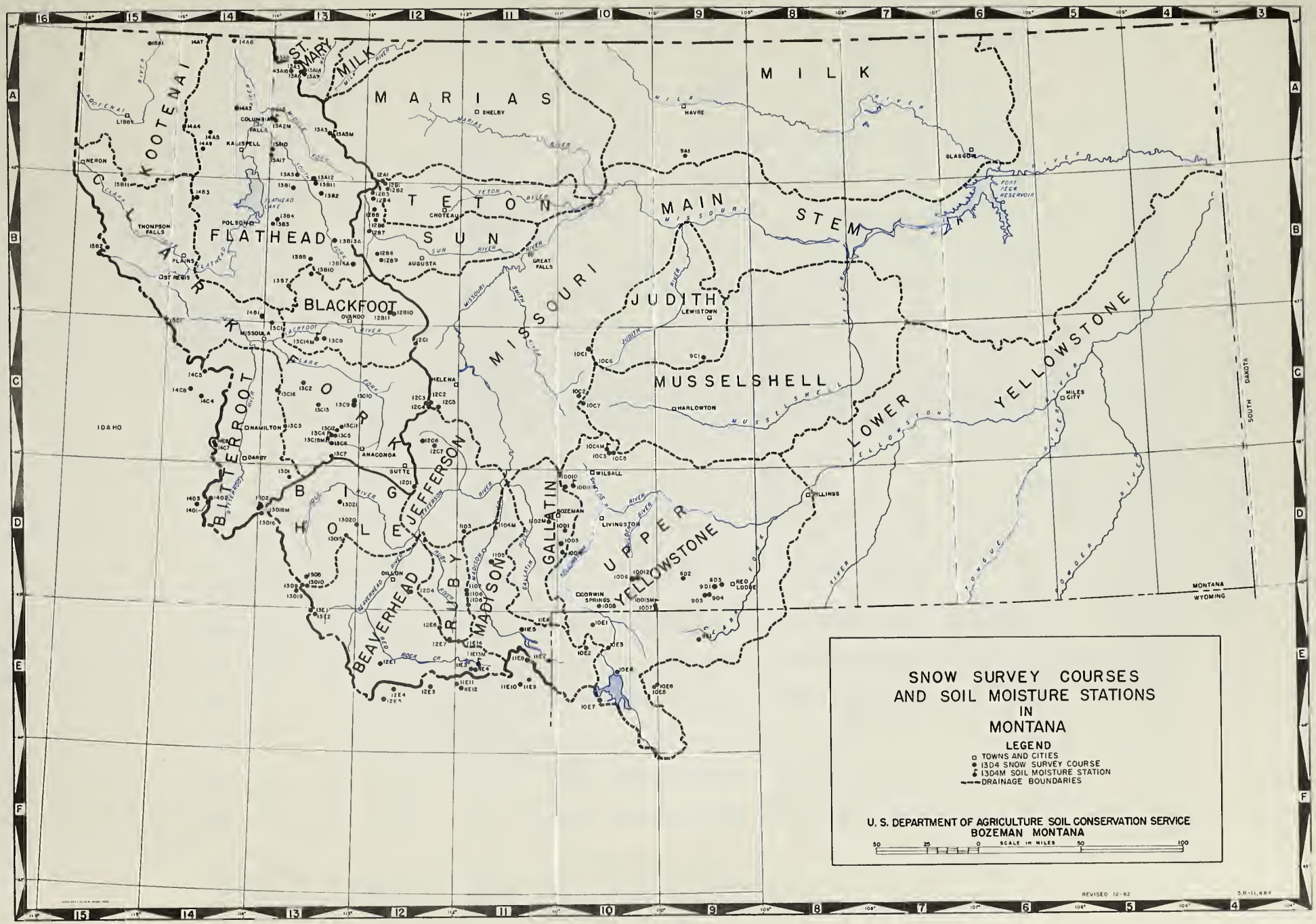
Four snow courses measured on the Main Stem of the Missouri River have a water content that is 52 percent of last year and 52 percent average.

In the Yellowstone River headwaters the snow pack is 46 percent of last year and 61 percent average.

Mountain soil moisture is generally near or above average for this time of year with the exception of extreme northern portion of the State where below average conditions exist. Mild fall weather and generally near average fall precipitation have increased moisture content of the mountain soils, offsetting somewhat the low snow pack.

Storage in irrigation reservoirs is generally near average with the exception of the Sun, Marias, Teton and Milk River drainages where storage is slightly below average.

Storage in power reservoirs is generally near or above average.


KOOTENAI
ST. MARY
MILK
MARIAS
MILK
TETON
MAIN STEM
FLATHEAD
SUN
BLACKFOOT
JUDITH
MISSOURI
MUSSELSHELL
LOWER YELLOWSTONE
BITTERROOT
BIG HOLE
JEFFERSON
BEAVERHEAD
RUBY
MADISON
GALLATIN
UPPER YELLOWSTONE
IDAHO
SOUTH DAKOTA
MONTANA
WYOMING
SNOW SURVEY COURSES
AND SOIL MOISTURE STATIONS
IN
MONTANA
LEGEND
TOWNS AND CITIES
1304 SNOW SURVEY COURSE
1304M SOIL MOISTURE STATION
DRAINAGE BOUNDARIES
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA
SCALE IN MILES
REVISED 12-62
SR-11,484

# INDEX TO MONTANA SNOW COURSES AND SOIL MOISTURE STATIONS

INDEX TO MONTANA SNOW COURSES AND SOIL MOISTURE STATIONS

| Drainage Basin & Course Name | Number | Elev. | Location Sec. Lat. | Twp. | Range Long. | Record Began | Measuring Dates 1/ | Measured By 2/ |
|---|---|---|---|---|---|---|---|---|
| | | | COLUMBIA RIVER BASIN | | | | | |
| KOOTENAI RIVER | | | | | | | | |
| Baree Creek | 15B11 | 5500 | 6 | 25N | 30W | 1937 | 4,5,5½ | 2 |
| Brush Creek | 14A4 | 5000 | 13 | 30N | 26W | 1937 | 3,4,5 | 1,2 |
| Red Mountain | 15A1 | 6000 | 4 | 36N | 29W | 1937 | 3,4,5,5½,6 | 1,2 |
| Wessel Olvide | 14A7 | 5450 | 8 | 37N | 24W | 1937 | 3,4,5,5½,6 | 1,2 |
| FLATHEAD RIVER | | | | | | | | |
| Basin Creek | 13B1LA | 5000 | 11 | 19N | 12W | 1951 | 2,3,4,5 | 1 |
| Bassoo Peak | 14B3 | 5150 | 11 | 24N | 25W | 1960 | 3,4,5 | 1,5 |
| Big Creek | 13B3 | 6750 | 7 | 22N | 18W | 1941 | 3,4,5 6 | 1,5 |
| Camp Misery | 13A17 | 6400 | 30 | 28N | 18W | 1962 | 3,4,5 | 1,2 |
| Desert Mountain | 13A2 | 5600 | 24 | 31N | 19W | 1937 | 1,2,3,4,5 6 | 1,2 |
| Patty Creek | 13B4 | 5500 | 4 | 22N | 18W | 1962 | 3,4,5, 6 | 1,5 |
| Griffin Creek Olvide | 14A9 | 5150 | 11 | 28N | 25W | 1960 | 3,4,5 | 1,5 |
| Hell Roaring Olvide | 14A3 | 5770 | 35 | 32N | 22W | 1942 | 3,4,5,5½,6 | 1 |
| Holbrook | 13B13A | 4530 | 18 | 21N | 13W | 1951 | 2,3,4,5 | 1 |
| Kishenehn | 12A6 | 3886 | 14 | 37N | 22W | 1954 | 3,4 | 6 |
| Logan Creek | 14A5 | 4300 | 34 | 30N | 24W | 1937 | 3,4,5 | 1,2 |
| Marias Pass | 13A5 | 5250 | 34 | 30N | 14W | 1934 | 1,2,3,4,5 | 3 |
| Mineral Creek | 13A16 | 4000 | 29 | 35N | 17W | 1939 | 3,4 | 6 |
| North Fork Jocko | 13B7 | 6330 | 3 | 17N | 17W | 1941 | 3,4,5,5½,6 | 1,5 |
| Quintonkon | 13A13 | 3800 | 11 | 26N | 17W | 1951 | 4 | 1,2 |
| Spotted Bear Mt. | 13B2 | 7000 | 23 | 25N | 15W | 1948 | 1,2,3,4,5 | 1,2 |
| Strawberry Lake | 13A10 | 6500 | 11 | 28N | 19W | 1948 | 3,4,5 | 1 |
| Trinkus Lake | 13B1 | 6500 | 9 | 25N | 17W | 1948 | 3,4,5 | 1 |
| Trout Lake | 13A12 | 3600 | 21 | 28N | 17W | 1948 | 1,2,3,4,5 | 1,2 |
| Twin Creeks | 13B11 | 3580 | 14 | 26N | 16W | 1951 | 3,4,5 | 1,2 |
| Upper Holland Lake | 13B5 | 7000 | 28 | 20N | 16W | 1948 | 3,4,5 | 1 |
| CLARK FORK RIVER | | | | | | | | |
| Black Pine | 13C13 | 7100 | 23 | 8N | 15W | 1959 | 3,4,5 | 1 |
| Copper Creek | 12B10 | 5700 | 1 | 15N | 9W | 1962 | 3,4 | 1 |
| Cotter Mine | 12B11 | 6250 | 2 | 15N | 9W | 1962 | 3,4 | 1 |
| Coyote Hill | 13B10 | 4200 | 12 | 18N | 16W | 1947 | 1,2,3,4,5 | 1,2 |
| El Corado Mine | 13C9 | 7800 | 23 | 8N | 12W | 1949 | 3,4 | 1 |
| Fred Burr Pass | 13C11 | 8000 | 12 | 6N | 13W | 1957 | 3,4,5 | 1 |
| Gold Creek Lake | 13C10 | 7200 | 14 | 8N | 12W | 1949 | 3,4 | 1 |
| Hoodoo Creek | 15C1 | 6200 | 9 | 14N | 27W | 1937 | 3,4,5 | 1,2 |
| Intergeard | 13C4 | 6450 | 6 | 5N | 13W | 1936 | 2,3,4 | 4 |
| Lubrecht Forest #6 | 13C8 | 4040 | 11 | 13N | 14W | 1951 | 1,2,3,4,5 | 8 |
| Red Lion | 13C12 | 7000 | 27 | 6N | 13W | 1958 | 3,4,5 | 1 |
| Skalkaho Summit | 13C3 | 7259 | 30 | 6N | 17W | 1937 | 3,4,5,5½,6 | 1 |
| Slide Rock Mt. | 13C2 | 7160 | 35 | 10N | 16W | 1937 | 3,4,5 | 1 |
| Southern Cross | 13C5 | 6500 | 8 | 5N | 13W | 1936 | 2,3,4 | 4 |
| Storm Lake | 13C7 | 7780 | 19 | 4N | 13W | 1939 | 1,2,3,4,5 | 1 |
| Stuart Mill | 13C6 | 6500 | 19 | 5N | 13W | 1936 | 2,3,4 | 4 |
| T.V. Mountain | 14B1 | 6800 | 33 | 15N | 19W | 1956 | 1,2,3,4,5 | 1 |
| BITTERROOT RIVER | | | | | | | | |
| Ambrose | 13C16 | 6475 | 28 | 9N | 18W | 1960 | 3,4,5 | 1 |
| East Fork R.S. | 1301 | 5400 | 16 | 2N | 17W | 1937 | 3,4 | 1 |
| Gibbons Pass | 1302 | 7100 | 4 | 2S | 19W | 1934 | 1,2,3,4,5,5½,6 | 1,3 |
| Lost Horse | 14C7 | 5940 | 5 | 4N | 23W | 1960 | 3,4,5 | 1 |
| Nez Perce Camp | 14D2 | 5580 | 19 | 1S | 23W | 1937 | 3,4,5 | 1 |
| Nez Perce Pass | 14D1 | 6575 | 25 | 1S | 24W | 1937 | 3,4,5 | 1 |
| Twin Lakes | 14C8 | 6510 | 32 | 5N | 23W | 1960 | 3,4,5 | 1 |
| | | | SASKATCHEWAN RIVER BASIN | | | | | |
| ST. MARY RIVER | | | | | | | | |
| Iceberg Lake #3 | 13A3 | 5600 | 34 | 36N | 16W | 1922 | 5 | 3,9 |
| Josephine Lower #9 | 13A14 | 4900 | 10 | 35N | 16W | 1955 | 5 | 3,9 |
| Mount Allen #7 | 13A7 | 5700 | 22 | 35N | 16W | 1922 | 5 | 3,9 |
| Piegen Pass #6 | 13A6 | 5500 | 15 | 35N | 16W | 1922 | 5 | 3,9 |
| Ptarmigan #8 | 13A8 | 5800 | 32 | 36N | 16W | 1937 | 5 | 3,9 |
| | | | MISSOURI RIVER BASIN | | | | | |
| BEAVERHEAD RIVER | | | | | | | | |
| Bloody Dick | 13010 | 7600 | 12 | 8S | 16W | 1948 | 3,4 | 1 |
| Carter Creek | 12D4 | 7400 | 22 | 8S | 7W | 1963 | 3,4 | 1 |
| Gold Stone | 13D9 | 8100 | 11 | 8S | 16W | 1948 | 3,4 | 1 |
| Lakeview Canyon | 11E4 | 6930 | 26 | 14S | 2W | 1948 | 3,4,5 | 10 |
| Lakeview Ridge | 11E3 | 7400 | 27 | 14S | 2W | 1948 | 3,4,5 | 10 |
| Lemhi Pass | 13E1 | 7480 | 9 | 10S | 15W | 1948 | 3,4 | 1 |
| Trail Creek | 13E2 | 7090 | 15 | 10S | 15W | 1948 | 3,4 | 1 |
| White Pine Ridge | 12E1 | 8850 | 18 | 14S | 9W | 1948 | 3,4,5 | 1 |
| RUBY RIVER | | | | | | | | |
| Clover Meadow | 11D8 | 8600 | 28 | 9S | 2W | 1963 | 3,4,5 | 1 |
| Olvide | 12E7 | 7900 | 14 | 12S | 4W | 1963 | 3,4,5 | 1 |
| Notch | 12E6 | 8500 | 18 | 1S | 4W | 1963 | 3,4,5 | 1 |
| BIG HOLE RIVER | | | | | | | | |
| Abundance Lake | 13D20 | 8800 | 7 | 3S | 12W | 1963 | 3,4,5 | 1 |
| Darkhorse Lake | 13D19 | 8600 | 4 | 8S | 16W | 1963 | 3,4,5 | 1 |
| Elk Horn Springs | 13D15 | 8600 | 15 | 4S | 12W | 1935 | 3,4,5 | 3 |
| Foolhan | 13D21 | 8500 | 14 | 1S | 13W | 1963 | 3,4,5 | 1 |
| Jahnke Creek | 13D8 | 7340 | 25 | 7S | 16W | 1948 | 3,4 | 1 |
| JEFFERSON RIVER | | | | | | | | |
| Berry Meadow | 12C7 | 7300 | 17 | 5N | 5W | 1962 | 3,4 | 1 |
| Picnic Grounds | 12C6 | 6500 | 10 | 5N | 6W | 1941 | 2,3,4 | 4 |
| Pipestone Pass | 12D1 | 7200 | 10 | 1N | 7W | 1938 | 1,2,3,4,5 | 1 |

4/Missouri River Basin cont'd

| Drainage Basin & Course Name | Number | Elev. | Location Sec. Lat. | Twp. | Range Long. | Record Began | Measuring Dates 1/ | Measured By 2/ |
|---|---|---|---|---|---|---|---|---|
| MADISON RIVER | | | | | | | | |
| Cell Road | 11D7 | 8050 | 21 | 8S | 2W | 1962 | 3,4,5 | 1 |
| Crockett Lake | 11D6 | 8400 | 20 | 8S | 2W | 1962 | 3,4,5 | 1 |
| Hebgen Dam | 11E5 | 6550 | 22 | 11S | 3E | 1934 | 1,2,3,4,5 | 3 |
| Jack Creek | 11D5 | 6800 | 13 | 6S | 1E | 1961 | 3,4 | 1 |
| North Meadow | 11D3 | 7500 | 23 | 3S | 3W | 1961 | 3,4 | 1 |
| West Yellowstone | 11E7 | 6700 | 34 | 13S | 5W | 1934 | 1,2,3,4,5 | 3 |
| GALLATIN RIVER | | | | | | | | |
| Devil's Slide | 10D4 | 8100 | 14 | 5S | 6E | 1935 | 2,3,4,5, 6 | 1 |
| Hood Meadow | 10D3 | 6600 | 22 | 4S | 6E | 1935 | 2,3,4,5 | 1 |
| New World | 10D1 | 6700 | 24 | 3S | 6E | 1939 | 2,3,4 | 1 |
| Twenty-One Mile | 11E6 | 7150 | 1 | 11S | 5E | 1934 | 1,2,3,4,5 | 3 |
| MISSOURI RIVER MAIN STEM | | | | | | | | |
| Chessman Reservoir | 12C5 | 6200 | 2 | 8N | 5W | 1936 | 1,2,3,4,5 | 3 |
| Crystal Lake | 901 | 6100 | 19 | 12N | 18E | 1941 | 3,4 | 1 |
| Elk Peak | 10C7 | 8000 | 10 | 8N | 8E | 1963 | 3,4 | 1 |
| Grasshopper | 10C2 | 7000 | 19 | 9N | 8E | 1938 | 3,4 | 1 |
| Kings Hill | 10C1 | 7500 | 35 | 13N | 7E | 1934 | 3,4,5 | 3 |
| Rocky Boy | 9A1 | 5200 | 15 | 28N | 16E | 1941 | 3,4 | 7 |
| Stemple Pass | 12C1 | 6900 | 16 | 13N | 7W | 1934 | 3,4,5 | 3 |
| Ten Mile Creek L. | 12C2 | 6250 | 13 | 8N | 6W | 1935 | 1,2,3,4,5 | 3 |
| Ten Mile Creek M. | 12C3 | 6800 | 13 | 8N | 6W | 1934 | 1,2,3,4,5 | 3 |
| Ten Mile Creek U. | 12C4 | 8000 | 19 | 8N | 5W | 1935 | 1,2,3,4,5 | 3 |
| SUN-TETON-MARIAS RIVERS | | | | | | | | |
| Benchmark | 12B8 | 5500 | 9 | 20N | 10W | 1948 | 3,4 | 1 |
| Cabin Creek | 12B6 | 5400 | 33 | 23N | 10W | 1949 | 3,4 | 1 |
| Five-Bull | 12B9 | 5600 | 36 | 20N | 10W | 1948 | 3,4 | 1 |
| Freight Creek | 12A1 | 6000 | 13 | 26N | 10W | 1948 | 3,4 | 1 |
| Gates Park | 12B5 | 5300 | 31 | 24N | 10W | 1949 | 3,4 | 1 |
| Goat Mountain | 12B7 | 7000 | 20 | 22N | 10W | 1934 | 3,4,5 | 3 |
| Waldron Creek | 12B2 | 5600 | 16 | 25N | 9W | 1948 | 3,4 | 1 |
| West Fork | 12B1 | 6000 | 6 | 25N | 9W | 1948 | 3,4 | 1 |
| Wrong Creek | 12B4 | 5700 | 32 | 25N | 10W | 1949 | 3,4 | 1 |
| Wrong Ridge | 12B3 | 6800 | 17 | 25N | 10W | 1949 | 3,4 | 1 |
| JUDITH RIVER | | | | | | | | |
| Spur Park | 10C6 | 8000 | 20 | 12N | 9E | 1963 | 3,4 | 1 |
| UPPER YELLOWSTONE RIVER | | | | | | | | |
| Bald Ridge | 10C5 | 7500 | 11 | 4N | 10E | 1961 | 3,4 | 1 |
| Camp Senia | 901 | 7890 | 2 | 8S | 18E | 1937 | 3,4,5 | 1 |
| Cooke City | 10D7 | 7400 | 25 | 9S | 14E | 1937 | 1,2,3,4,5 | 6 |
| Crevice Mt. | 1005 | 8400 | 22 | 9S | 9E | 1935 | 3,4 | 2 |
| Gertrude Lake | 903 | 9250 | 10 | 8S | 18E | 1961 | 3,4,5 | 1 |
| Grizzly Peak | 905 | 8400 | 26 | 7S | 19E | 1961 | 1,2,3,4,5 | 1 |
| Independence | 10D6 | 8000 | 22 | 7S | 12E | 1940 | 3,4,5 | 1 |
| Monument Peak | 10D12 | 9000 | 22 | 7S | 12E | 1961 | 3,4,5 | 1 |
| Porcupine R.S. | 10C3 | 6500 | 10 | 4N | 10E | 1938 | 3,4 | 1 |
| Timberline Creek | 904 | 8850 | 10 | 8S | 18E | 1961 | 3,4,5 | 1 |
| Sacajewea | 10010 | 6550 | 36 | 2N | 6E | 1960 | 3,4,5 | 1 |
| West Rosebud | 902 | 7500 | 10 | 7S | 16E | 1960 | 3,4 | 4 |
| | | | COLUMBIA RIVER BASIN | | | | | |
| FLATHEAD RIVER | | | | | | | | |
| Desert Mountain | 13A2M | 5600 | 24 | 31N | 19W | 1956 | Monthly | 1 |
| Marias Pass | 13A5M | 5250 | 34 | 30N | 14W | 1950 | Monthly | 1 |
| CLARK FORK RIVER | | | | | | | | |
| Georgetown Lake | 13C15M | 6450 | 6 | 5N | 13W | 1962 | Monthly | 1 |
| Lubrecht Forest | 13C14M | 4100 | 11 | 13N | 15W | 1961 | Monthly | 8 |
| BITTERROOT RIVER | | | | | | | | |
| Gibbons Pass | 13018M | 7100 | 4 | 2S | 19W | 1962 | Monthly | 1 |
| | | | MISSOURI RIVER BASIN | | | | | |
| BEAVERHEAD RIVER | | | | | | | | |
| Lakeview | 11E13M | 6700 | 23 | 14S | 2W | 1962 | Monthly | 10 |
| MADISON RIVER | | | | | | | | |
| Red Bluff | 11D4M | 4800 | 7 | 3S | 1E | 1961 | Monthly | 7 |
| GALLATIN RIVER | | | | | | | | |
| Collage Site | 11D2M | 4856 | 18 | 2S | 5E | 1956 | Monthly | 1 |
| YELLOWSTONE RIVER | | | | | | | | |
| Battle Ridge | 10D11M | 6020 | 32 | 2N | 7E | 1960 | Monthly | 1 |
| Northeast Entrance | 10013M | 7350 | 33 | 9S | 14E | 1962 | Monthly | 6 |
| Shields River | 10C4M | 5850 | 3 | 4N | 10E | 1960 | Monthly | 1 |

1/ Numerals 1,2,3,4,5,5½,6 refer to January 1, February 1, March 1, April 1, May 1, May 15 and June 1.

2/ Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. Montana State Forestry School
9. Dominion Water & Power Bureau
10. U. S. Fish and Wildlife Service

M - Soil Moisture
A - Aerial Marker

USGS SCS LINCOLN NEBR 1963

# SOIL MOISTURE DATA

AS OF JULY 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| | | | COLUMBIA RIVER BASIN | | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 6/29 | 7.1 | - | 8.5 |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | 6/25 | 5.2 | 3.4 | 5.1 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 7/5 | 7.3 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 6/27 | 6.3 | - | - |
| | | | MISSOURI RIVER BASIN | | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 6/29 | 12.8 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 7/1 | 1.1 | - | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 6/29 | 10.1 | 6.9 | 9.0 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 6/29 | 15.6 | 9.9 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 6/30 | 8.1 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 6/29 | 13.8 | 8.6 | - |

** Average for period of record

1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF AUGUST 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| | | | | COLUMBIA RIVER BASIN | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 8/1 | 5.1 | - | 6.6 |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | 7/27 | 3.6 | 3.0 | 3.8 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 8/6 | 4.4 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 7/30 | 5.9 | - | - |
| | | | | MISSOURI RIVER BASIN | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 7/31 | 9.8 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 8/3 | 1.4 | 1.1 | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 8/3 | 10.0 | 4.9 | 6.9 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 7/30 | 10.8 | 7.2 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 8/2 | 8.7 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 7/30 | 9.4 | 6.4 | - |

** Average for period of record.
1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF SEPTEMBER 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| **COLUMBIA RIVER BASIN** | | | | | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 9/2 | 4.8 | 4.4 | 4.6 |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | 8/25 | 3.2 | 3.0 | 3.7 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 9/4 | 2.6 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 8/30 | 5.0 | - | - |
| **MISSOURI RIVER BASIN** | | | | | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 8/30 | 7.0 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 9/4 | 1.7 | 1.1 | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 8/31 | 8.5 | 4.0 | 6.0 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 8/31 | 8.3 | 5.9 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 9/3 | 6.9 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 8/31 | 7.3 | 5.9 | - |

** Average for period of record

1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF OCTOBER 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| | | | | COLUMBIA RIVER BASIN | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 10/1 | 4.0 | 4.9 | 5.7 |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | 9/27 | 3.2 | 3.6 | 3.8 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 10/1 | 2.3 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 9/27 | 4.5 | - | - |
| | | | | MISSOURI RIVER BASIN | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 10/2 | 5.8 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 10/13 | 1.2 | 3.2 | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 9/28 | 7.8 | 9.1 | 6.4 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 9/28 | 7.5 | 9.3 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 9/29 | 7.5 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 9/28 | 7.1 | 7.5 | - |

** Average for period of record.
1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF NOVEMBER 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| | | | COLUMBIA RIVER BASIN | | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 11/1 | 6.4 | - | - |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | - | - | 5.1 | 4.7 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 11/7 | 3.3 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 10/31 | 6.1 | - | - |
| | | | MISSOURI RIVER BASIN | | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 10/31 | 5.8 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | - | - | 2.7 | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 10/26 | 7.8 | 9.6 | 7.4 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 10/30 | 13.5 | 12.7 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 11/1 | 7.7 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 10/30 | 8.4 | 7.7 | - |

** Average for period of record.

1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF DECEMBER 1, 1962

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| | | | COLUMBIA RIVER BASIN | | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | - | - | - | - |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | - | - | 5.3 | 4.9 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 12/3 | 3.5 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 11/29 | 6.1 | - | - |
| | | | MISSOURI RIVER BASIN | | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 11/30 | 5.5 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 11/24 | 2.1 | - | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 11/30 | 11.8 | 10.1 | 8.4 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 11/30 | 14.4 | 13.2 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 12/1 | 7.5 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 11/30 | 8.6 | 11.6 | - |

** Average for period of record.

1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SOIL MOISTURE DATA

AS OF JANUARY 1, 1963

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| **COLUMBIA RIVER BASIN** | | | | | | | | |
| Flathead | | | | | | | | |
| 13A2M | Desert Mountain | 5600 | 54 | 8.4 | 12/28 | 6.8 | - | 6.7 |
| 13A5M | Marias Pass | 5250 | 54 | 6.5 | 12/30 | 5.5 | 5.6 | 4.7 |
| Clark Fork | | | | | | | | |
| 13C15M | Georgetown Lake | 6450 | 48 | 8.3 | 12/27 | 3.3 | - | - |
| Bitterroot | | | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 12/28 | 5.9 | - | - |
| **MISSOURI RIVER BASIN** | | | | | | | | |
| Beaverhead | | | | | | | | |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 12/31 | 5.5 | - | - |
| Madison | | | | | | | | |
| 10D4M | Red Bluff | 4800 | 40 | 4.7 | 1/4 | 2.6 | 2.8 | - |
| Gallatin | | | | | | | | |
| 11D2M | College Site | 4856 | 54 | 14.5 | 12/28 | 12.3 | 10.7 | 8.3 |
| Yellowstone | | | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 15.4 | 12/31 | 13.8 | 13.0 | - |
| 10D13M | Northeast Entrance | 7350 | 48 | 9.4 | 1/2 | 7.2 | - | - |
| 10C4M | Shields River | 5850 | 48 | 17.8 1/ | 12/31 | 9.2 | 11.8 | - |

** Average for period of record.

1/ Capacity and previously published revised data.



**AVERAGE FOR PERIOD OF RECORD

# SNOW SURVEY DATA

## AS OF JANUARY 1, 1963

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | | | | WATER CONTENT | |
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | LAST YEAR | AVERAGE |
| | **COLUMBIA RIVER BASIN** | | | | | | |
| **FLATHEAD RIVER** | | | | | | | |
| 13A2 | Desert Mountain | 5600 | 12/28 | 18 | 4.0 | 9.5 | 6.4* |
| 13A5 | Marias Pass | 5250 | 1/3 | 23 | 5.8 | 9.9 | 8.1 |
| 13A13 | Quintonkon | 3800 | 1/2 | 7 | 1.8 | 9.4 | - |
| 13B2 | Spotted Bear Mt. | 7000 | 1/3 | 16 | 3.3 | 9.4 | 7.7* |
| 13A12 | Trout Lake | 3600 | 1/2 | 12 | 2.8 | 10.4 | 7.7* |
| 13B11 | Twin Creeks | 3580 | 1/2 | 6 | 1.5 | 8.4 | 5.3* |
| **CLARK FORK RIVER** | | | | | | | |
| 13B10 | Coyote Hill | 4200 | 12/31 | 9 | 1.2 | 8.2 | 5.0* |
| 15B2 | Lookout | 5250 | 12/28 | 33 | 9.0 | 22.9 | 16.4* |
| 13C8 | Lubrecht Forest #6 | 4040 | 12/31 | 0 | 0 | 4.4 | 1.5* |
| 13C7 | Storm Lake | 7780 | 12/27 | 23 | 5.6 | 6.3 | 6.6* |
| 13C1 | Stuart Mountain | 7400 | 12/28 | 26 | 7.4 | - | - |
| 14B1 | TV Mountain | 6800 | 12/29 | 18 | 4.0 | 11.3 | 8.3* |
| **BITTERROOT RIVER** | | | | | | | |
| 13D2 | Gibbons Pass | 7100 | 12/28 | 30 | 8.1 | 11.0 | 12.7* |



NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

# SNOW SURVEY DATA

AS OF JANUARY 1, 1963

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | | | | WATER CONTENT | |
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | LAST YEAR | AVERAGE |
| | **MISSOURI RIVER BASIN** | | | | | | |
| **BEAVERHEAD RIVER** | | | | | | | |
| 12E3 | Camp Creek | 6800 | 12/28 | 11 | 2.2 | 5.0 | 4.2* |
| 11E12 | Kilgore | 6200 | 12/28 | 9 | 2.1 | 6.1 | 4.6* |
| **JEFFERSON RIVER** | | | | | | | |
| 12D1 | Pipestone Pass | 7200 | 12/28 | 13 | 3.0 | 2.8 | 2.7* |
| **MADISON RIVER** | | | | | | | |
| 11E9 | Big Springs | 6500 | 12/30 | 15 | 3.2 | 13.5 | 8.2 |
| 11E5 | Hebgen Dam | 6550 | 1/2 | 11 | 2.2 | 5.6 | 5.9 |
| 11E10 | Island Park | 6315 | 12/30 | 14 | 3.0 | 10.2 | 6.3 |
| 10E2 | Norris Basin | 7500 | 1/2 | 15 | 3.1 | 5.4 | 4.6* |
| 11E8 | Valley View | 6500 | 12/30 | 21 | 4.7 | 9.0 | 5.8 |
| 11E7 | West Yellowstone | 6700 | 1/2 | 12 | 2.3 | 6.2 | 5.7 |
| **GALLATIN RIVER** | | | | | | | |
| 11E6 | Twenty-One Mile | 7150 | 1/2 | 17 | 3.6 | 10.3 | 8.6 |
| **MISSOURI MAIN STEM** | | | | | | | |
| 12C5 | Chessman Reservoir | 6200 | 1/4 | 3 | 0.5 | 1.9 | 2.2 |
| 12C2 | Tenmile, Lower | 6250 | 1/4 | 8 | 1.9 | 3.7 | 3.5 |
| 12C3 | Tenmile, Middle | 6800 | 1/3 | 15 | 3.4 | 5.4 | 5.3 |
| 12C4 | Tenmile, Upper | 8000 | 1/3 | 17 | 4.4 | 6.8 | 6.7 |
| **UPPER YELLOWSTONE RIVER** | | | | | | | |
| 10E3 | Canyon | 7750 | 1/3 | 20 | 4.3 | 8.6 | 6.3* |
| 10D7 | Cooke City | 7400 | 1/2 | 14 | 3.0 | 4.8 | 4.0* |
| 10E6 | East Entrance | 7000 | 12/31 | 16 | 2.5 | 6.0 | 4.7* |
| 9D5 | Grizzly Peak | 8400 | 12/28 | 26 | 6.0 | 15.0 | - |
| 10E4 | Lake Camp #2 | 7850 | 12/31 | 12 | 2.0 | 5.8 | 4.5* |
| 10E1 | Lupine Creek | 7300 | 1/2 | 17 | 3.0 | 8.1 | 5.1* |
| 10E5 | Sylvan Pass | 7100 | 12/31 | 18 | 3.9 | 7.5 | 6.5* |
| 10E7 | Thumb Divide | 7900 | 12/31 | 25 | 6.6 | 14.7 | 10.2* |



NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

# RESERVOIR STORAGE DATA

AS OF DECEMBER 31, 1962

(1000 Acre Feet)

| BASIN | RESERVOIR | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVERAGE |
|---|---|---|---|---|---|
| **COLUMBIA RIVER BASIN** | | | | | |
| Flathead | Hungry Horse | 3,428.0 | 3,155.0 | 2,992.0 | 2,883.0** |
| | Flathead Lake | 1,791.0 | 1,610.0 | 1,367.0 | 1,257.1 |
| | Camas 1/ | 45.2 | 24.8 | 25.4 | 23.8 |
| | Mission Valley 2/ | 100.3 | 25.1 | 20.8 | 28.2 |
| Clark Fork | Georgetown Lake | 31.0 | 27.7 | 26.0 | 25.3 |
| | Noxon | 334.6 | 331.3 | 325.0 | - |
| Bitterroot | Como | 34.9 | 15.0 | - | 9.3 |
| **MISSOURI RIVER BASIN** | | | | | |
| Beaverhead | Lima | 84.0 | N.R. | - | 32.4 |
| Ruby | Ruby | 38.8 | N.R. | 16.2 | 22.7** |
| Madison | Hebgen Lake 3/ | 384.8 | 233.6 | 106.8 | 240.3 |
| | Ennis Lake | 41.0 | 39.4 | 39.3 | 37.6 |
| Gallatin | Middle Creek | 8.0 | 4.1 | 2.0 | 3.1** |
| Missouri | Canyon Ferry | 2,043.0 | 2,015.0 | 1,382.0 | 1,682.0** |
| | Hauser & Helena | 61.9 | 53.6 | 52.0 | 54.9 |
| | Lake Helena | 10.4 | 7.6 | 7.0 | 8.3** |
| | Holter Lake | 81.9 | 73.0 | 67.1 | 71.6 |
| | Smith River | 10.7 | 7.3 | 1.6 | 5.0** |
| | Ackley Lake | 5.8 | N.R. | 1.6 | 3.9 |
| | Durand | 7.0 | 5.3 | 0.8 | 4.3 |
| | Martinsdale | 23.1 | 8.9 | 1.3 | 9.5 |
| | Deadman's Basin | 72.2 | 42.1 | 4.8 | 48.5** |
| | Fort Peck | 19,410.0 | 10,040.0 | 8,820.0 | 11,061.0 |
| Sun-Teton | Gibson | 105.0 | 33.6 | 34.0 | 55.5 |
| | Willow Creek | 32.3 | 25.5 | 10.3 | 18.4 |
| | Pishkun | 32.0 | 18.5 | 17.4 | 19.0 |
| Marias | Lower Two Medicine | 16.6 | N.R. | 0 | 0 |
| | Four Horns | 19.2 | N.R. | 14.0 | 8.6 |
| | Swift | 30.0 | 8.6 | 13.5 | 18.1 |
| | Lake Francis | 112.0 | 65.9 | 74.8 | 94.4 |
| | Tiber | 1,313.0 | 625.5 | 619.0 | 626.2** |
| Milk | Fresno | 127.2 | 36.1 | 15.9 | 66.6 |
| | Nelson | 66.8 | 48.3 | 16.8 | 37.2 |
| | Lake Sherburne | 66.1 | N.R. | 13.0 | 16.3 |
| Yellowstone | Mystic Lake | 20.8 | 14.7 | 13.4 | 14.5 |
| | Tongue River | 68.0 | N.R. | 39.9 | 7.9 |
| | Cooney | 27.5 | 15.0 | 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.
3/ New capacity curve.



NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). **AVERAGE FOR PERIOD OF RECORD

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region I, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska
Riverdale, N. D.

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Fish & Wildlife Service
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

Montana Power Company
Butte, Montana

Agricultural Experiment Station
North Montana Branch Station
Havre, Montana

State Water Conservation Board
Helena, Montana

National Park Service
Yellowstone National Park
Glacier National Park

Montana Experiment Station
Montana State College
Bozeman, Montana

Bonneville Power Administration
Portland, Oregon

Montana State School of Forestry
Montana State University
Missoula, Montana

Soil Conservation Service
Montana, Wyoming, Idaho

Soil Conservation Districts
Montana Counties

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch
Dept. of Lands & Forests
Victoria, British Columbia

Department of Northern Affairs
& National Resources
Calgary, Alberta

State Engineer
Montana and Wyoming

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# COOPERATIVE SNOW SURVEYS

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

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