

## **HIGHLIGHTS FOR FEBRUARY 2019**

### **MONTANA AREA OFFICE**

February was one of the coldest months of record in Montana. Temperatures ranged from slightly below normal in the southwest to 28 degrees below normal in the northern areas. The statewide composite average precipitation of 1.52 inches was .87 inches above normal and the second largest amount for February.

Precipitation during February was above average in the Upper Missouri River basin, ranging from 329 percent of average at Lake Elwell Reservoir to 630 percent of average at Canyon Ferry Reservoir. Inflows were varied ranging from 52 percent of average at Lake Elwell Reservoir to 110 percent of average at Clark Canyon. Reservoir storage is above average, and ranges from 96 percent of average at Canyon Ferry Reservoir to 113 percent of average at Lake Elwell Reservoir.

For the Milk River Basin, the precipitation was above average, ranging from 182 percent of average at Sherburne Reservoir to 286 percent of average at Fresno Reservoir. The inflows were below average, ranging from 64 percent of average at Sherburne Reservoir to 9 percent of average at Fresno Reservoir. End-of-month storage ranges from 85 percent of average at Sherburne Reservoir to 120 percent of average at Nelson Reservoir.

February precipitation was 163 percent of average at Yellowtail Dam. Inflows were 106 percent of average. Storage was normal at 95 percent of average.

### **WYOMING AREA OFFICE**

February precipitation was varied in the Bighorn River Basin. February precipitation ranged from 43 percent of average at Bull Lake and Boysen Reservoirs to 223 percent of average at Buffalo Bill Reservoir. Reservoir inflow in the Bighorn basin was varied, ranging from 75 percent of average at Bull Lake Reservoir to 103 percent of average at Boysen and Buffalo Bill Reservoirs. Storage in the Bighorn Basin is above average, ranging from 104 percent of average at Boysen Reservoir to 105 percent of average at Buffalo Bill and Bull Lake Reservoirs.

Precipitation during February was below average in the North Platte River Basin, ranging from 20 percent of average at Guernsey Reservoir to 67 percent of average at Pathfinder and Glendo Reservoirs. Inflows were varied, ranging from 55 percent of average at Glendo Reservoir to 97 percent of average at Pathfinder Reservoir. Reservoir storage is above average, and ranges from 98 percent of average at Glendo Reservoir to 121 percent of average at Seminoe Reservoir.

### **DAKOTAS AREA OFFICE**

For all of North Dakota, February had way below average temperatures and above average precipitation. North Dakota now has 100 percent of the state with no drought or abnormally dry conditions. There was one record broken for the month of February as reported by the National Weather Service in Bismarck. On February 8 a record low temperature of -43 degrees was broken at Williston.

February precipitation was varied in the Heart River Basin with zero and 156 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and

James River basins precipitation was varied, ranging from 25 percent of average at Jamestown Reservoir to 250 percent of average at Deefield Reservoir.

February inflows in the Heart River basin were below average, with 11 percent of average inflow at Dickinson and 31 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were varied, ranging from 18 percent of average at Belle Fourche Reservoirs to 161 percent of average at Pactola Reservoir. The James and Grand River basins exhibited below average inflows, with 30 percent of average at Jamestown Reservoir and 65 percent of average at Shadehill Reservoir.

Reservoir storage in the Heart River basin finished the month above average; 140 percent of average for Dickinson Reservoir, and 105 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of February, ranging from 112 percent of average at Deerfield Reservoir to 223 percent of average at Keyhole Reservoir. Storage at Shadehill and Jamestown Reservoirs was above average for the end of February, displaying 124 percent and 111 percent of average, respectively.

#### **EASTERN COLORADO AREA OFFICE**

Precipitation was varied over the Colorado-Big Thompson Project (CBT) during February. The Lake Estes weather station reported the lowest precipitation at 48 percent of average, while Green Mountain Reservoir had the highest at 98 percent of average.

Inflows were near average over the CBT during February. The inflow to Willow Creek Reservoir was the lowest at 83 percent of average. The inflow to Lake Granby Reservoir was the highest at 103 percent of average.

The Lake Granby storage of 363,300 AF on February 28 was 13,000 AF above average and 100,500 AF lower than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 98 and 86 percent of average, respectively. The February end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoirs was 610,900 AF; 29,000 AF below average.

Precipitation was varied over the Fryingpan-Arkansas Project (Fry-Ark) during February. The Pueblo Reservoir weather station reported the lowest precipitation at 76 percent of average, while Twin Lakes Reservoir had the highest at 175 percent of average.

Native inflows were varied over the Fry-Ark during February. The inflow to Twin Lakes Reservoir was the lowest at zero, while Turquoise had the highest with 323 percent of average.

Reservoir storage is varied for the Fry-Ark. Turquoise Reservoir is the lowest at 67 percent of average. Pueblo Reservoir is the highest at 108 percent of average. The total February end-of-month storage in the four reservoirs is 430,500 AF, 94 percent of average.

#### **NEBRASKA-KANSAS AREA OFFICE**

February precipitation was varied in the Republican River Basin, ranging from 33 percent of average at Enders Reservoir to 176 percent of average at Lovewell Reservoir. Inflows were varied and ranged from 15 percent of average at Enders Reservoir to 281 percent of average at Lovewell Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact

compliance, storage ranges from 35 percent of average at Enders Reservoir to 125 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was varied, ranging from 44 percent of average at Glen Elder Reservoir to 155 percent of average at Kirwin Reservoir. The inflows were well above average, ranging from 159 percent of average at Kirwin Reservoir to 405 percent of average at Webster Reservoir. End-of-month storage ranges from 100 percent of average at Glen Elder Reservoir to 202 percent of average at Webster Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was mostly above average but for one site, and ranged from 62 percent of average at Cedar Bluff Reservoir to 148 percent of average at Davis Creek Reservoir. The inflows were above average, ranging from 82 percent of average at Box Butte Reservoir to 528 percent of average at Davis Creek Reservoir. End-of-month storage ranges from 69 percent of average at Cedar Bluff Reservoir to 111 percent of average at Davis Creek Reservoir.

#### **OKLAHOMA-TEXAS AREA OFFICE**

February precipitation was varied over the Arkansas River Basin, ranging from zero at Sanford Reservoir to 84 percent of average at Cheney Reservoir. Inflows were varied, ranging from 56 percent of average at Norman Reservoir to 136 percent of average at Cheney Reservoir. Storage in the Arkansas River basin is above average and ranges from 105 percent of average at Sanford Reservoir to 128 percent of average at Cheney Reservoir.

For the Red River Basin, the February precipitation was varied, ranging from 28 percent of average at Mountain Park Reservoir to 101 percent of average at Arbuckle Reservoir. The inflows ranged from 34 percent of average at Mountain Park Reservoir to 192 percent of average at Arbuckle Reservoir. Storage in the Red River basin ranges from 110 percent of average at McGee Creek Reservoir to 146 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was varied, ranging from 22 percent of average at Nasworthy Reservoir to 205 percent of average at Foss Reservoir. The inflows were varied, ranging from 10 percent of average at Choke Canyon Reservoir to 185 percent of average at Twin Buttes Reservoir. Storage in these basins ranges from 86 percent of average at Choke Canyon Reservoir to 207 percent of average at Twin Buttes Reservoir, which is at its highest storage content since the early 1990s.

#### **CORPS OF ENGINEERS REPORT**

The 2019 runoff forecast in the Missouri River Basin above Sioux City, Iowa, is 28.4 million acre feet (MAF), 112 percent of normal, according to the U.S. Army Corps of Engineers (Corps). The forecast increased about 10 percent from last month due to the continued accumulation of mountain and plains snowpack in the upper basin. As of March 1, the mountain snowpack was 108 percent of average in the reach above Fort Peck and 103 percent of average in the reach from Fort Peck to Garrison. The mountain snowpack increased during February as a result of colder-than-normal temperatures and above-normal precipitation. Normally the mountain snowpack peaks in mid-April.

Plains snowpack is currently heaviest in central and eastern North Dakota and north central and eastern South Dakota. The snowpack's liquid content, or snow water equivalent (SWE), ranges

from 2 to 5 inches. The rest of the upper basin has accumulated 1 to 3 inches of SWE while the lower basin ranges from 0 to 2 inches of SWE. The Corps is cooperating with other agencies to acquire plains snow measurements in the upper basin.

### **Reservoir Forecasts**

- **Gavins Point Dam**
  - Average releases past month – 19,100 cfs
  - Current release rate – 18,000 cfs
  - Forecast release rate – 20,000 cfs this week
  - End-of-February reservoir level – 1,205.9 feet
  - Forecast end-of-March reservoir level – 1,206.0 feet
  - Notes: Due to scheduled maintenance on the hydropower units, releases may be made from both the powerhouse and spillway.
- **Fort Randall Dam**
  - Average releases past month – 17,100 cfs
  - End-of-February reservoir level – 1,350.7 feet (up 6 feet from January)
  - Forecast end-of-March reservoir level – 1,355.2 feet
  - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point.
- **Big Bend Dam**
  - Average releases past month – 20,300 cfs
  - Forecast average release rate – 19,000 cfs
  - Forecast reservoir level – 1,420.0 feet
- **Oahe Dam**
  - Average releases past month – 22,100 cfs
  - Forecast average release rate – 18,400 cfs
  - End-of-February reservoir level – 1,606.8 feet (rising 0.9 feet from January)
  - Forecast end-of-March reservoir level – 1,608.5 feet
  - Notes: River ice conditions continue to be monitored below the dam and releases will be adjusted accordingly to minimize flood risk caused by river ice.
- **Garrison Dam**
  - Average releases past month – 25,900 cfs
  - Current release rate – 20,000 cfs
  - Forecast average release rate – 18,000 cfs
  - End-of-February reservoir level – 1,837.3 feet (down 1.3 feet from January)
  - Forecast end-of-March reservoir level – 1,838.4 feet
  - Notes: River ice conditions continue to be monitored below the dam and releases will be adjusted accordingly to minimize flood risk caused by river ice.
- **Fort Peck Dam**
  - Average releases past month – 12,200 cfs
  - Current release rate – 6,500 cfs (decreased from 12,000 cfs the first week in March)
  - Forecast average release rate – 12,000 cfs
  - End-of-February reservoir level – 2,234.4 feet (down 1 foot from January)
  - Forecast end-of-March reservoir level – 2,235.5 feet

The six mainstem power plants generated 716 million kWh of electricity in February. Typical energy generation for February is 617 million kWh. The power plants are projected to generate 10.0 billion kWh of electricity this year, 106 percent of the long-term average, 9.4 billion kWh.