

HIGHLIGHTS FOR MAY 2019

MONTANA AREA OFFICE

Precipitation during May was varied in the Upper Missouri River basin, ranging from 32 percent of average at Clark Canyon Reservoir to 145 percent of average at Tiber Reservoir. Inflows were also varied ranging from 88 percent of average at Clark Canyon Reservoir to 166 percent of average at Tiber Reservoir. Reservoir storage is above average, and ranges from 98 percent of average at Clark Canyon Reservoir to 125 percent of average at Lake Elwell Reservoir.

For the Milk River Basin, precipitation was varied, ranging from 89 percent of average at Fresno Reservoir to 124 percent of average at Sherburne Reservoir. The inflows were varied, ranging from 74 percent of average at Fresno Reservoir to 95 percent of average at Sherburne Reservoir. End-of-month storage ranges from 125 percent of average at Nelson Reservoir to 165 percent of average at Sherburne Reservoir.

May precipitation was 138 percent of average at Yellowtail Dam. Inflows were 121 percent of average. Storage was normal at 104 percent of average.

WYOMING AREA OFFICE

May precipitation was below average in the Bighorn River Basin. May precipitation ranged from 63 percent of average at Bull Lake Reservoir to 95 percent of average at Buffalo Bill Reservoir. Reservoir inflow in the Bighorn basin was varied, ranging from 71 percent of average at Bull Lake Reservoir to 110 percent of average at Boysen Reservoirs. Storage in the Bighorn Basin is above average, ranging from 92 percent of average at Buffalo Bill Reservoir to 113 percent of average at Bull Lake Reservoir.

Precipitation during May was above average in the North Platte River Basin, ranging from 129 percent of average at Guernsey Reservoir to 176 percent of average at Pathfinder Reservoir. Inflows were above average, ranging from 97 percent of average at Seminoe Reservoir to 131 percent of average at Pathfinder Reservoir. Reservoir storage is above average, and ranges from 93 percent of average at Guernsey Reservoir to 132 percent of average at Pathfinder Reservoir.

DAKOTAS AREA OFFICE

May precipitation was above average in the Heart River Basin with 130 and 127 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and James River basins precipitation was above average, ranging from 67 percent of average at Jamestown Reservoir to 198 percent of average at Keyhole Reservoir.

May inflows in the Heart River basin were average, with 101 percent of average inflow at Dickinson and 102 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were above average, ranging from 113 percent of average at Belle Fourche Reservoir to 459 percent of average at Keyhole Reservoir. The James and Grand River basins exhibited above average inflows, with 138 percent of average at Jamestown Reservoir and 248 percent of average at Shadehill Reservoir.

Reservoir storage in the Heart River basin finished the month near average; 127 percent of average for Dickinson Reservoir, and 100 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of May, ranging from 112 percent of

average at Angostura Reservoir to 262 percent of average at Keyhole Reservoir. Storage at Shadehill and Jamestown Reservoirs was varied for the end of May, displaying 118 percent and 83 percent of average, respectively.

EASTERN COLORADO AREA OFFICE

Precipitation was varied over the Colorado-Big Thompson Project (CBT) during May. The Green Mountain Reservoir weather station reported the highest precipitation at 148 percent of average, while Willow Creek and Granby Reservoirs had the lowest at 57 percent of average.

Inflows were below average over the CBT during May. The inflow to Lake Granby Reservoir was the lowest at 65 percent of average. The inflow to Willow Creek Reservoir was the highest at 106 percent of average.

The Lake Granby storage of 375,700 AF on May 31 was 3,600 AF above average and 117,200 AF lower than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 107 and 109 percent of average, respectively. The May end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoirs was 713,200 AF; 24,600 AF above average.

Precipitation was above average over the Fryingpan-Arkansas Project (Fry-Ark) during May. The Twin Lakes Reservoir weather station reported the lowest precipitation at 93 percent of average, while Ruedi Reservoir had the highest at 206 percent of average.

Native inflows were below average over the Fry-Ark during May. The inflow to Twin Lakes Reservoir was the lowest at 46 percent of average, while Turquoise had the highest with 77 percent of average.

Reservoir storage is varied for the Fry-Ark. Turquoise Reservoir is the lowest at 52 percent of average. Pueblo Reservoir is the highest at 125 percent of average. The total May end-of-month storage in the four reservoirs is 424,500 AF, 92 percent of average.

NEBRASKA-KANSAS AREA OFFICE

May precipitation was above average in the Republican River Basin, ranging from 109 percent of average at Bonny Reservoir to 239 percent of average at Keith Sebelius Reservoir. Inflows were varied and ranged from 25 percent of average at Bonny Reservoir to 520 percent of average at Keith Sebelius Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 32 percent of average at Enders Reservoir to 175 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was above average, ranging from 148 percent of average at Kirwin Reservoir to 229 percent of average at Glen Elder Reservoir. The inflows were well above average, ranging from 372 percent of average at Kirwin Reservoir to 521 percent of average at Glen Elder Reservoir. End-of-month storage ranges from 155 percent of average at Glen Elder Reservoir to 223 percent of average at Webster Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was above average, ranging from 149 percent of average at Box Butte Reservoir to 236 percent of average at Cedar

Bluff Reservoir. The inflows were above average, ranging from 72 percent of average at Davis Creek Reservoir to 343 percent of average at Cedar Bluff Reservoir. End-of-month storage ranges from 87 percent of average at Cedar Bluff and Davis Creek Reservoirs to 137 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

May precipitation was above average over the Arkansas River Basin, ranging from 120 percent of average at Norman Reservoir to 352 percent of average at Sanford Reservoir. Inflows were above average, ranging from 172 percent of average at Sanford Reservoir to 639 percent of average at Cheney Reservoir. Storage in the Arkansas River basin is above average and ranges from 110 percent of average at Sanford Reservoir to 164 percent of average at Cheney Reservoir.

For the Red River Basin, the May precipitation was above average, ranging from 90 percent of average at Arbuckle Reservoir to 214 percent of average at Altus Reservoir. The inflows ranged from 131 percent of average at Mountain Park Reservoir to 679 percent of average at Altus Reservoir. Storage in the Red River basin ranges from 101 percent of average at McGee Creek Reservoir to 157 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was above average, ranging from 156 percent of average at Choke Canyon Reservoir to 301 percent of average at Foss Reservoir. The inflows were varied, ranging from 45 percent of average at Nasworthy Reservoir to 365 percent of average at Fort Cobb Reservoir. Storage in these basins ranges from 84 percent of average at Choke Canyon Reservoir to 185 percent of average at Twin Buttes Reservoir, which is at its highest storage content since June 1993.

CORPS OF ENGINEERS REPORT

****Correction:** Average May runoff is 3.3 MAF. It was originally reported as 5.6 MAF. ******

Much-above average runoff in the upper Missouri River basin (above Sioux City, Iowa) extended into May following widespread and heavy rainfall in South Dakota and Nebraska. Additionally, widespread and heavy rainfall in the lower basin, particularly in Kansas, has led to large tributary and Missouri River flows downstream of the six main stem reservoirs on the Missouri River.

May runoff in the upper basin was 8.9 million acre feet (MAF), which is 267 percent of average, the second highest on record; only surpassed by 2011's 9.2 MAF. The average May runoff is 3.3 MAF. Runoff in the Fort Randall Dam to Gavins Point Dam reach during May was 1.4 MAF, which is more than the average annual runoff for that reach.

The high May runoff increased the 2019 upper basin runoff forecast to 50.0 million acre-feet (MAF). If realized, this runoff total would be the second highest runoff in 121 years of record-keeping, only surpassed by 2011 (61.0 MAF) and exceeding the 49.0 MAF observed in 1997.

System releases from Gavins Point Dam are currently 75,000 cfs, which is more than twice the average release for this time of the year. The Corps will maintain Gavins Point releases at this rate to continue evacuating water from Oahe and Fort Randall, which have used much of their flood storage. As a result of the high reservoir levels, the Corps expects that releases from all

System projects will be above average for the next several months, and possibly as late as November.

The Corps has been coordinating with the U.S. Bureau of Reclamation (USBR) regarding the USBR projects in Montana, South Dakota and Wyoming with designated flood control storage. Releases from several of the USBR projects are being adjusted, and flood control storage is being used. This measure provides additional ability to manage the pools at all the mainstem reservoirs during June and July.

Reservoir Forecasts

- **Gavins Point Dam**
 - Average releases past month – 57,400 cfs
 - Current release rate – 75,000 cfs
 - Forecast release rate – 75,000 cfs
 - End-of-May reservoir level – 1,207.6 feet
 - Forecast end-of-June reservoir level – 1,206.0 feet
- **Fort Randall Dam**
 - Average releases past month – 47,800 cfs
 - End-of-May reservoir level – 1,370.2 feet (up 6.7 feet from April)
 - Forecast end-of-May reservoir level – 1,370.2 feet
 - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point.
- **Big Bend Dam**
 - Average releases past month – 41,300 cfs
 - Forecast average release rate – 47,600 cfs
 - Forecast reservoir level – 1,420.0 feet
- **Oahe Dam**
 - Average releases past month – 35,900 cfs
 - Forecast average release rate – 47,000 cfs
 - End-of-May reservoir level – 1,618.8 feet (rising 2.4 feet during May)
 - Forecast end-of-June reservoir level – 1,617.0 feet
- **Garrison Dam**
 - Average releases past month – 23,500 cfs
 - Current release rate – 15,000 cfs
 - Forecast average release rate – 46,000 cfs (late June)
 - End-of-May reservoir level – 1,847.8 feet (rising 1.4 feet during May)
 - Forecast end-of-June reservoir level – 1,851.8 feet
 - Notes: Releases will be stepped up from 15,000 cfs to 46,000 cfs during June.
- **Fort Peck Dam**
 - Average releases past month – 8,200 cfs
 - Current release rate – 9,000 cfs
 - Forecast average release rate – 15,000 cfs (late June)
 - End-of-May reservoir level – 2,243.8 feet (up 3.2 feet from April)
 - Forecast end-of-June reservoir level – 2,247.4 feet

The six mainstem power plants generated 1,025 million kWh of electricity in May. Typical energy generation for May is 790 million kWh. The power plants are projected to generate 13.3 billion kWh of electricity this year, 141 percent of the long-term average, 9.4 billion kWh.