

HIGHLIGHTS FOR JULY 2019

MONTANA AREA OFFICE

Precipitation during July was varied in the Upper Missouri River basin, ranging from 84 percent of average at Clark Canyon Reservoir to 128 percent of average at Canyon Ferry Reservoir. Inflows were varied ranging from 55 percent of average at Tiber Reservoir to 105 percent of average at Canyon Ferry Reservoir. Reservoir storage is above average, and ranges from 106 percent of average at Canyon Ferry Reservoir to 130 percent of average at Clark Canyon Reservoir.

For the Milk River Basin, precipitation was below average, ranging from 40 percent of average at Fresno Reservoir to 77 percent of average at Sherburne Reservoir. The inflows were below average, ranging from 62 percent of average at Sherburne Reservoir to 82 percent of average at Fresno Reservoir. End-of-month storage ranges from 106 percent of average at Sherburne Reservoir to 152 percent of average at Nelson Reservoir.

July precipitation was 147 percent of average at Yellowtail Dam. Inflows were 169 percent of average. Storage was above normal at 113 percent of average, ending the month with a small fraction of the flood pool filled.

WYOMING AREA OFFICE

July precipitation was varied in the Bighorn River Basin. July precipitation ranged from 82 percent of average at Bull Lake Reservoir to 101 percent of average at Boysen Reservoir. Reservoir inflow in the Bighorn basin was above average, ranging from 120 percent of average at Bull Lake Reservoir to 156 percent of average at Buffalo Bill Reservoir. Storage in the Bighorn Basin is above average, ranging from 106 percent of average at Buffalo Bill Reservoir to 116 percent of average at Bull Lake Reservoir.

Precipitation during July was varied in the North Platte River Basin, ranging from 33 percent of average at Seminoe Reservoir to 117 percent of average at Guernsey Reservoir. Inflows were varied, ranging from zero at Pathfinder Reservoir to absurdly high percentage values at Glendo and Guernsey Reservoirs. Glendo and Guernsey typically have inflows less than zero during July but had inflows of 5,200 acre-feet and 8,900 acre-feet respectively. Reservoir storage is above average, and ranges from 110 percent of average at Guernsey Reservoir to 169 percent of average at Pathfinder Reservoir.

DAKOTAS AREA OFFICE

July precipitation was above average in the Heart River Basin with 116 and 103 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and James River basins precipitation was varied, ranging from 66 percent of average at Shadehill Reservoir to 261 percent of average at Deerfield Reservoir.

July inflows in the Heart River basin were below average, with zero at Dickinson and 35 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were above average, ranging from 378 percent of average at Belle Fourche Reservoir to an absurdly high percent of average at Keyhole Reservoir. Keyhole normally has less than zero inflow but received 5141 acre-feet this July. The James and Grand River basins exhibited varied inflows, with 190 percent of average at Jamestown Reservoir and 85 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 96 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of July, ranging from 105 percent of average at Angostura Reservoir to 227 percent of average at Keyhole Reservoir. Storage at Shadehill and Jamestown Reservoirs was varied for the end of July, displaying 109 percent and 92 percent of average, respectively.

EASTERN COLORADO AREA OFFICE

Precipitation was below average over the Colorado-Big Thompson Project (CBT) during July. Green Mountain Reservoir reported the lowest precipitation at 33 percent of average, while Lake Estes Reservoir had the highest at 119 percent of average.

Inflows were above average over the CBT during July. The inflow to Lake Estes Reservoir was the lowest at 163 percent of average. The inflow to Willow Creek Reservoir was the highest at 220 percent of average.

The Lake Granby storage of 534,600 AF on July 31 was 89,600 AF above average and 30,300 AF lower than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 133 and 145 percent of average, respectively. The July end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoirs was 947,900 AF; 171,500 AF above average.

Precipitation was below average over the Fryingpan-Arkansas Project (Fry-Ark) during July. The Ruedi Reservoir weather station reported the lowest precipitation at 29 percent of average, while Lake Estes Reservoir had the highest at 119 percent of average.

Native inflows were above average over the Fry-Ark during July. The inflow to Twin Lakes Reservoir was the lowest at 171 percent of average, while Turquoise Reservoir had the highest with 239 percent of average.

Reservoir storage is above average for the Fry-Ark. Turquoise Reservoir is the lowest at 102 percent of average. Pueblo Reservoir is the highest at 136 percent of average. The total July end-of-month storage in the four reservoirs is 595,400 AF, 115 percent of average.

NEBRASKA-KANSAS AREA OFFICE

July precipitation was above average in the Republican River Basin, ranging from 76 percent of average at Keith Sebelius Reservoir to 270 percent of average at Harry Strunk Reservoir. Inflows were varied and ranged from 8 percent of average at Bonny Reservoir to 520 percent of average at Harlan County Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 42 percent of average at Enders Reservoir to 197 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was below average, ranging from 34 percent of average at Webster Reservoir to 59 percent of average at Kirwin Reservoir. The inflows were above average, ranging from 100 percent of average at Webster Reservoir to 147 percent of average at

Glen Elder Reservoir. End-of-month storage ranges from 133 percent of average at Glen Elder Reservoir to 215 percent of average at Kirwin Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was above average, ranging from 45 percent of average at Cedar Bluff Reservoir to 227 percent of average at Davis Creek Reservoir. The inflows were above average, ranging from 31 percent of average at Cedar Bluff Reservoir to 273 percent of average at Box Butte Reservoir. End-of-month storage ranges from 94 percent of average at Cedar Bluff Reservoir to 212 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

July precipitation was below average over the Arkansas River Basin, ranging from zero at Norman Reservoir to 72 percent of average at Sanford Reservoir. Inflows were below average, ranging from 9 percent of average at Norman Reservoir to 47 percent of average at Sanford Reservoir. Storage in the Arkansas River basin is above average and ranges from 100 percent of average at Norman Reservoir to 122 percent of average at Cheney Reservoir.

For the Red River Basin, the July precipitation was below average, ranging from 29 percent of average at Altus Reservoir to 74 percent of average at Mountain Park Reservoir. The inflows ranged from zero at Mountain Park Reservoir to 220 percent of average at Altus Reservoir. Storage in the Red River basin ranges from 104 percent of average at McGee Creek Reservoir to 130 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was varied, ranging from 43 percent of average at Foss Reservoir to 129 percent of average at Twin Buttes Reservoir. The inflows were varied, ranging from 12 percent of average at Choke Canyon Reservoir to 416 percent of average at Twin Buttes Reservoir. Storage in these basins ranges from 73 percent of average at Choke Canyon Reservoir to 203 percent of average at Twin Buttes Reservoir.

CORPS OF ENGINEERS REPORT

Widespread and heavy rainfall in the upper Missouri River basin (above Sioux City) resulted in another month of above average runoff. Areas of Montana, Wyoming, South Dakota, and Nebraska received two to three times normal precipitation during July.

July runoff in the upper basin was 7.0 million acre feet (MAF), which is 213% of average. The average July runoff is 3.3 MAF. Runoff remained particularly high in the reaches from Garrison Dam in North Dakota to Sioux City, Iowa, which ranged between three to seven times average.

The 2019 upper basin runoff forecast is 52.9 MAF. If realized, this runoff total will be the second highest runoff in 121 years of record-keeping, only surpassed by 2011 (61.0 MAF) and exceeding 49.0 MAF observed in 1997. Total upper basin runoff through July 31 was 45.3 MAF, exceeding the total upper basin runoff in 2018 of 42.1 MAF.

System storage was 68.0 MAF as of August 1, occupying 11.9 MAF of the 16.3 MAF flood control zone. System storage, which normally peaks in early July, peaked at 68.5 MAF on July 20. Garrison is currently in its exclusive flood control zone while Fort Peck and Oahe are slightly below their respective exclusive flood control zones. As a result of the high reservoir levels and the forecast above-average runoff during the summer and fall, releases from all

System projects will be above average for the next several months, and possibly as late as November, to ensure evacuation of all stored flood waters.

Reservoir Forecasts

- **Gavins Point Dam**
 - Average releases past month – 70,000 cfs
 - Current release rate – 70,000 cfs
 - Forecast release rate – 70,000 cfs
 - End-of-July reservoir level – 1206.6 feet
 - Forecast end-of-August reservoir level – 1206.6 feet
- **Fort Randall Dam**
 - Average releases past month – 63,500 cfs
 - End-of-July reservoir level – 1361.3 feet (down 1.7 feet from June)
 - Forecast end-of-August reservoir level – 1356.1 feet
 - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point.
- **Big Bend Dam**
 - Average releases past month – 51,900 cfs
 - Forecast average release rate – 56,300 cfs
 - Forecast reservoir level – 1420.0 feet
- **Oahe Dam**
 - Average releases past month – 55,500 cfs
 - Forecast average release rate – 56,500 cfs
 - End-of-July reservoir level – 1617.0 feet (rising 0.3 foot during July)
 - Forecast end-of-August reservoir level – 1615.3 feet
- **Garrison Dam**
 - Average releases past month – 46,400 cfs
 - Current release rate – 46,000 cfs
 - Forecast average release rate – 46,000 cfs
 - End-of-July reservoir level – 1851.7 feet (falling 0.2 foot during July)
 - Forecast end-of-August reservoir level – 1848.0 feet
- **Fort Peck Dam**
 - Average releases past month – 12,900 cfs
 - Current release rate – 15,000 cfs
 - Forecast average release rate – 15,000 cfs
 - End-of-July reservoir level – 2246.2 feet (down 0.2 foot from June)
 - Forecast end-of-August reservoir level – 2244.0 feet

The six mainstem power plants generated 1,490 million kWh of electricity in July. Typical energy generation for July is 951 million kWh. The power plants are projected to generate 13.1 billion kWh of electricity this year, 139 percent of the long-term average, 9.4 billion kWh.