

HIGHLIGHTS FOR AUGUST 2019

MONTANA AREA OFFICE

Precipitation during August was varied in the Upper Missouri River basin, ranging from 75 percent of average at Clark Canyon Reservoir to 114 percent of average at Canyon Ferry Reservoir. Inflows were varied ranging from 43 percent of average at Tiber Reservoir to 106 percent of average at Canyon Ferry Reservoir. Reservoir storage is above average, and ranges from 149 percent of average at Clark Canyon Reservoir to 107 percent of average at Tiber Reservoir.

For the Milk River Basin, precipitation was above average, ranging from 108 percent of average at Sherburne Reservoir to 132 percent of average at Fresno Reservoir. The inflows were below average, ranging from 76 percent of average at Sherburne Reservoir to 85 percent of average at Fresno Reservoir. End-of-month storage ranges from 76 percent of average at Sherburne Reservoir to 145 percent of average at Nelson Reservoir.

August precipitation was 86 percent of average at Yellowtail Dam. Inflows were 135 percent of average. Storage was above normal at 113 percent of average.

WYOMING AREA OFFICE

August precipitation was varied in the Bighorn River Basin. August precipitation ranged from 66 percent of average at Boysen Reservoir to 101 percent of average at Bull Lake Reservoir. Reservoir inflow in the Bighorn basin was above average, ranging from 99 percent of average at Bull Lake Reservoir to 121 percent of average at Buffalo Bill Reservoir. Storage in the Bighorn Basin is above average, ranging from 104 percent of average at Buffalo Bill Reservoir to 120 percent of average at Bull Lake Reservoir.

Precipitation during August was below average in the North Platte River Basin, ranging from 23 percent of average at Seminoe Reservoir to 93 percent of average at Guernsey Reservoir. Inflows were varied, ranging from zero at Pathfinder and Guernsey Reservoirs to 174 percent of average Seminoe Reservoir. Reservoir storage is above average, and ranges from 106 percent of average at Guernsey Reservoir to 178 percent of average at Pathfinder Reservoir.

DAKOTAS AREA OFFICE

August precipitation was above average in the Heart River Basin with 81 and 102 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 90 percent of average at Belle Fourche Reservoir to 186 percent of average at Jamestown Reservoir.

August inflows in the Heart River basin were below average, with zero at Dickinson and 32 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were mostly above average, ranging from zero at Keyhole Reservoir to 457 percent of average at Angostura Reservoir. The James and Grand River basins exhibited varied inflows, with zero at Shadehill Reservoir and 107 percent of average at Jamestown Reservoir.

Reservoir storage in the Heart River basin finished the month near average; 126 percent of average for Dickinson Reservoir, and 95 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of August, ranging from 115 percent of

average at Deerfield Reservoir to 263 percent of average at Belle Fourche Reservoir. Storage at Shadehill and Jamestown Reservoirs was about average for the end of August, 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 August. Willow Creek and Lake Granby Reservoirs reported the lowest precipitation at 23 percent of average, while Lake Estes Reservoir had the highest at 75 percent of average.

Inflows were above average over the CBT during August. The inflow to Lake Granby Reservoir was the lowest at 112 percent of average. The inflow to Green Mountain Reservoir was the highest at 129 percent of average.

The Lake Granby storage of 511,900 AF on August 31 was 61,800 AF above average and 32,700 AF lower than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 165 and 139 percent of average, respectively. The August end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoirs was 892,300 AF; 149,900 AF above average.

Precipitation was below average over the Fryingpan-Arkansas Project (Fry-Ark) during August. The Pueblo Reservoir weather station reported the lowest precipitation at 30 percent of average, while Ruedi Reservoir had the highest at 81 percent of average.

Native inflows were above average over the Fry-Ark during August. The inflow to Turquoise Reservoir was the lowest at 97 percent of average, while Pueblo Reservoir had the highest with 129 percent of average.

Reservoir storage is above average for the Fry-Ark. Ruedi Reservoir is the lowest at 105 percent of average. Pueblo Reservoir is the highest at 138 percent of average. The total August end-of-month storage in the four reservoirs is 565,200 AF, 117 percent of average.

NEBRASKA-KANSAS AREA OFFICE

August precipitation was above average in the Republican River Basin, ranging from 107 percent of average at Harry Strunk Reservoir to 301 percent of average at Bonny Reservoir. Inflows were varied and ranged from 12 percent of average at Enders Reservoir to 224 percent of average at Keith Sebelius Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 57 percent of average at Enders Reservoir to 196 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was above average, ranging from 142 percent of average at Kirwin Reservoir to 270 percent of average at Glen Elder Reservoir. The inflows were above average, ranging from 367 percent of average at Kirwin Reservoir to 1111 percent of average at Webster Reservoir. End-of-month storage ranges from 166 percent of average at Glen Elder Reservoir to 280 percent of average at Webster Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was above average, ranging from 85 percent of average at Box Butte Reservoir to 411 percent of average at Calamus

Reservoir. The inflows were above average, ranging from 80 percent of average at Davis Creek Reservoir to 208 percent of average at Calamus Reservoir. End-of-month storage ranges from 105 percent of average at Cedar Bluff Reservoir to 325 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

August precipitation was above average over the Arkansas River Basin, ranging from 120 percent of average at Norman Reservoir to 229 percent of average at Cheney Reservoir. Inflows were varied, ranging from 40 percent of average at Sanford Reservoir to 178 percent of average at Cheney Reservoir. Storage in the Arkansas River basin is above average and ranges from 105 percent of average at Norman Reservoir to 126 percent of average at Cheney Reservoir.

For the Red River Basin, the August precipitation was above average, ranging from 59 percent of average at Mountain Park Reservoir to 303 percent of average at Arbuckle Reservoir. The inflows ranged from 8 percent of average at McGee Creek Reservoir to 255 percent of average at Arbuckle Reservoir. Storage in the Red River basin ranges from 102 percent of average at McGee Creek Reservoir to 133 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 Missouri River basin above Sioux City, IA (upper basin) resulted in another month of above average runoff. Precipitation during August was more than 150 percent of normal in eastern Montana, portions of North Dakota, much of South Dakota and Nebraska. As a result, the Fort Randall and Gavins Point reaches experienced their wettest Augusts on record, while the Sioux City and Oahe reaches were second and third, respectively.

The 2019 upper basin runoff forecast is 54.6 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. Accumulated runoff in the lower four reaches (Oahe, Fort Randall, Gavins Point, and Sioux City) was 27.3 MAF. In each of the lower four reaches, the observed runoff exceeded the maximum annual runoff with four months of the year remaining to accumulate additional runoff. By the end of 2019, the forecasted runoff in these four reaches is roughly 30.0 MAF, which exceeds the average annual runoff for the entire upper basin.

The Missouri River mainstem reservoir system (System) storage was 65.6 MAF as of September 1, occupying 9.5 MAF of the 16.3 MAF flood control zone. All three of the upper three reservoirs (Fort Peck, Garrison, and Oahe) have fallen out of their exclusive flood control zones but remain high. Releases from all System reservoirs will be much above average for the next several months, and possibly as late as November, to ensure evacuation of all stored flood waters prior to the start of the 2020 runoff season.

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-August reservoir level – 1,206.4 feet
- Forecast end-of-September reservoir level – 1,206.5 feet

▪ Fort Randall Dam

- Average releases past month – 65,300 cfs
- End-of-August reservoir level – 1359.9 feet (down 1.4 feet from July)
- Forecast end-of-September reservoir level – 1,354.3 feet
- Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point. The reservoir is normally drawn down to 1,337.5 feet in the fall to provide space for winter hydropower generation at Oahe and Big Bend. The annual drawdown will continue in October and November.

▪ Big Bend Dam

- Average releases past month – 54,100 cfs
- Forecast average release rate – 56,400 cfs
- Forecast reservoir level – 1,420.0 feet

▪ Oahe Dam

- Average releases past month – 57,000 cfs
- Forecast average release rate – 56,500 cfs
- End-of-August reservoir level – 1,615.7 feet (falling 1.7 feet during August)
- Forecast end-of-September reservoir level – 1,613.4 feet

▪ Garrison Dam

- Average releases past month – 46,300 cfs
- Current release rate – 46,000 cfs
- Forecast average release rate – 42,000 cfs
- End-of-August reservoir level – 1,847.9 feet (falling 3.7 feet during August)
- Forecast end-of-September reservoir level – 1,844.9 feet

▪ Fort Peck Dam

- Average releases past month – 15,100 cfs
- Current release rate – 15,000 cfs
- Forecast average release rate – 14,800 cfs
- End-of-August reservoir level – 2,244.1 feet (down 2.1 feet from July)
- Forecast end-of-September reservoir level – 2,242.2 feet
- Notes: Spillway releases will be increased this month during scheduled maintenance at the powerhouse. Total releases will remain unchanged during the maintenance.

The forecast reservoir releases and elevations discussed above are not definitive. Additional precipitation, lack of precipitation or other circumstances could cause adjustments to the reservoir release rates.

The six mainstem power plants generated a record 1,540 million kWh of electricity in August. Typical energy generation for August is 1,003 million kWh. The power plants are projected to generate 13.4 billion kWh of electricity this year, 143 percent of the long-term average, 9.4 billion kWh.