

HIGHLIGHTS FOR DECEMBER 2019

DAKOTAS AREA OFFICE

December precipitation was below average in the Heart River Basin with zero and 84 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and James River basins precipitation was varied, ranging from 21 percent of average at Pactola Reservoir to 178 percent of average at Angostura Reservoir.

December inflows in the Heart River basin were well above average, with 467 percent of average inflow at Dickinson and 338 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were varied, ranging from zero at Belle Fourche Reservoir to 402 percent of average at Keyhole Reservoir. The James and Grand River basins exhibited above average inflows, exacerbated by unseasonably saturated soils, with 4,132 percent of average at Jamestown Reservoir and 112 percent of average at Shadehill Reservoir.

Reservoir storage in the Heart River basin finished the month above average; 148 percent of average for Dickinson Reservoir, and 106 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of December, ranging from 116 percent of average at Deerfield Reservoir to 272 percent of average at Keyhole Reservoir. Storage at Shadehill and Jamestown Reservoirs was above average for the end of December, showing 113 percent and 274 percent of average, respectively.

EASTERN COLORADO AREA OFFICE

Precipitation was varied over the Colorado-Big Thompson Project (CBT) during December. The Lake Estes Reservoir watershed reported the lowest precipitation at 84 percent of average, while Green Mountain Reservoir had the highest at 150 percent of average.

Inflows were varied over the CBT during December. The inflow to Green Mountain Reservoir was the lowest at 68 percent of average. The inflow to Lake Estes Reservoir was the highest at 107 percent of average.

The Lake Granby storage of 455,500 AF on December 31 was 64,100 AF above average and 32,700 AF higher than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 92 and 148 percent of average, respectively. The December end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoir was 742,200 AF; 81,100 AF above average.

Precipitation was above average over the Fryingpan-Arkansas Project (Fry-Ark) during December. Precipitation at Pueblo Reservoir was the lowest with 84 percent of average, while Turquoise Reservoir received the highest with 174 percent of average.

Native inflows were varied over the Fry-Ark during December. The inflow to Twin Lakes Reservoir was the lowest at zero. The inflow to Turquoise Reservoir was the highest at 507 percent of average.

Reservoir storage is above average for the Fry-Ark. Twin Lakes Reservoir is the lowest at 98 percent of average. Pueblo Reservoir is the highest at 130 percent of average. The total December end-of-month storage in the four reservoirs is 510,600 AF, 112 percent of average.

MONTANA AREA OFFICE

Precipitation during December was below average in the Upper Missouri River basin, ranging from 28 percent of average at Gibson Reservoir to 161 percent of average at Clark Canyon Reservoir. Inflows were above average ranging from 93 percent of average at Clark Canyon Reservoir to 198 percent of average at Lake Elwell. Reservoir storage is about average, and ranges from 95 percent of average at Canyon Ferry Reservoir to 119 percent of average at Lake Elwell Reservoir.

For the Milk River Basin, the precipitation was below average, ranging from 76 percent of average at Fresno Reservoir to 89 percent of average at Sherburne Reservoir. The inflows were varied, ranging from 19 percent of average at Sherburne Reservoir to 250 percent of average at Fresno Reservoir. End-of-month storage ranges from 122 percent of average at Sherburne Reservoir to 174 percent of average at Fresno Reservoir.

December precipitation was 36 percent of average at Yellowtail Dam. Inflows were 127 percent of average. Storage was normal at 102 percent of average.

NEBRASKA-KANSAS AREA OFFICE

December precipitation was above average in the Republican River Basin, ranging from 62 percent of average at Swanson Lake Reservoir to 252 percent of average at Lovewell Reservoir. Inflows were varied and ranged from 11 percent of average at Bonny Reservoir to 274 percent of average at Keith Sebelius Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 40 percent of average at Enders Reservoir to 203 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was above average, ranging from 267 percent of average at Glen Elder Reservoir to 336 percent of average at Kirwin Reservoir. The inflows were well above average, ranging from 280 percent of average at Kirwin Reservoir to 767 percent of average at Webster Reservoir. End-of-month storage ranges from 102 percent of average at Glen Elder Reservoir to 228 percent of average at Webster Reservoir.

For the Smokey Hill, Niobrara, and Lower Platte Basins, precipitation was above average, ranging from 211 percent of average at Davis Creek Reservoir to 383 percent of average at Cedar Bluff Reservoir. The inflows were above average, ranging from 89 percent of average at Davis Creek Reservoir to 474 percent of average at Cedar Bluff Reservoir. End-of-month storage ranges from 77 percent of average at Calamus Reservoir to 229 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

December precipitation was varied over the Arkansas River Basin, ranging from 58 percent of average at Norman Reservoir to 209 percent of average at Sanford Reservoir. Inflows were below average, ranging from 45 percent of average at Norman Reservoir to 118 percent of average at Sanford Reservoir. Storage in the Arkansas River basin is above average and ranges from 108 percent of average at Norman Reservoir to 123 percent of average at Cheney Reservoir.

For the Red River Basin, the December precipitation was below average, ranging from 35 percent of average at Arbuckle Reservoir to 113 percent of average at Altus Reservoir. The inflows ranged from 35 percent of average at McGee Creek Reservoir to 93 percent of average at Altus Reservoir. Storage in the Red River basin ranges from 91 percent of average at Altus Reservoir to 128 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was varied, ranging from 46 percent of average at Fort Cobb Reservoir to 179 percent of average at Twin Buttes Reservoir. The inflows were varied, ranging from nine percent of average at Choke Canyon Reservoir to 697 percent of average at Nasworthy Reservoir. Storage in these basins ranges from 70 percent of average at Choke Canyon Reservoir to 173 percent of average at Twin Buttes Reservoir.

WYOMING AREA OFFICE

Precipitation during December was above average in the North Platte River Basin, ranging from 74 percent of average at Pathfinder Reservoir to 454 percent of average at Guernsey Reservoir. Inflows were above average, ranging from 94 percent of average at Pathfinder to 200 percent of average at Guernsey Reservoir. Reservoir storage is above average, and ranges from 110 percent of average at Glendo Reservoir to 166 percent of average at Pathfinder Reservoir.

December precipitation was below average in the Bighorn River Basin. December precipitation ranged from 32 percent of average at Boysen Reservoir to 54 percent of average at Buffalo Bill Reservoir. Reservoir inflow in the Bighorn basin was above average, ranging from 88 percent of average at Bull Lake Reservoir to 139 percent of average at Buffalo Bill Reservoir. Storage in the Bighorn Basin is above average, ranging from 110 percent of average at Buffalo Bill Reservoir to 120 percent of average at Bull Lake Reservoir.

CORPS OF ENGINEERS REPORT

The 2019 calendar year runoff was 60.9 million acre feet, the second highest runoff in 121 years of record-keeping (1898-2018), exceeded only by the 61.0 MAF of runoff observed in 2011. As of January 6, the total volume of water stored in the Missouri River Mainstem Reservoir System is 56.8 MAF, occupying 0.7 MAF of the 16.3 MAF combined flood control storage zones.

Current forecasts show that approximately 0.4 MAF of the 2019 runoff will remain in storage. Based on current soil moisture conditions, current plains and mountain snowpack, and long-term temperature and precipitation outlooks, the 2020 calendar year runoff forecast is 36.3 MAF above Sioux City, Iowa, 143 percent of average. Average annual runoff is 25.8 MAF. The runoff forecast will be updated on a monthly basis, and more often if warranted, throughout 2020.

Reservoir Forecasts

▪ Gavins Point Dam

- Average releases past month – 37,700 cfs
- Current release rate – 27,000 cfs (as of January 6)
- Forecast release rate – 30,000 cfs (first week of January)
- End-of-December reservoir level – 1,207.2 feet
- Forecast end-of-January reservoir level – 1,207.5 feet
- Notes: Releases will be increased to 30,000 cfs in January where they will remain for the rest of winter, basin conditions permitting.

- **Fort Randall Dam**
 - Average releases past month – 32,600 cfs
 - End-of-December reservoir level – 1,339.8 feet (up 1.9 feet from November)
 - Forecast end-of-January reservoir level – 1,344.9 feet
 - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point. The reservoir will continue to be refilled throughout the winter.
- **Big Bend Dam**
 - Average releases past month – 30,600 cfs
 - Forecast average release rate – 30,200 cfs
 - Forecast reservoir level – 1,420.5 feet
- **Oahe Dam**
 - Average releases past month – 31,800 cfs
 - Forecast average release rate – 29,900 cfs
 - End-of-December reservoir level – 1,607.9 feet (falling 2.2 feet during December)
 - Forecast end-of-January reservoir level – 1,607.3 feet
- **Garrison Dam**
 - Average releases past month – 20,500 cfs
 - Current release rate – 23,000 cfs
 - Forecast average release rate – 24,500 cfs
 - End-of-December reservoir level – 1,839.2 feet (rising 0.1 foot during December)
 - Forecast end-of-January reservoir level – 1,838.5 feet
 - Notes: Releases will be increased to 24,500 cfs during January once an ice cover is reestablished.
- **Fort Peck Dam**
 - Average releases past month – 13,700 cfs
 - Current release rate – 13,000 cfs
 - Forecast average release rate – 13,000 cfs
 - End-of-December reservoir level – 2,237.1 feet (down 1.8 feet from November)
 - Forecast end-of-January reservoir level – 2,235.7 feet

Hydropower:

The six mainstem power plants generated 919 million kWh of electricity in December. Typical energy generation for December is 684 million kWh. The power plants generated 11.5 billion kWh of electricity this year, 122 percent of the long-term average; 9.4 billion kWh.