HIGHLIGHTS FOR APRIL 2019

MONTANA AREA OFFICE

Precipitation during April was above average in the Upper Missouri River basin, ranging from 129 percent of average at Clark Canyon Reservoir to 159 percent of average at Canyon Ferry Reservoir. Inflows were above average ranging from 100 percent of average at Gibson Reservoir to 183 percent of average at Canyon Ferry. Reservoir storage is above average, and ranges from 102 percent of average at Canyon Ferry Reservoir to 116 percent of average at Lake Elwell Reservoir.

For the Milk River Basin, precipitation was above average, ranging from 110 percent of average at Fresno Reservoir to 144 percent of average at Sherburne Reservoir. The inflows were varied, ranging from 76 percent of average at Fresno Reservoir to 110 percent of average at Sherburne Reservoir. End-of-month storage ranges from 105 percent of average at Sherburne Reservoir to 129 percent of average at Nelson Reservoir.

April precipitation was 145 percent of average at Yellowtail Dam. Inflows were 109 percent of average. Storage was normal at 96 percent of average.

WYOMING AREA OFFICE

April precipitation was above average in the Bighorn River Basin. April precipitation ranged from 116 percent of average at Bull Lake Reservoir to 123 percent of average at Boysen and Buffalo Bill Reservoirs. Reservoir inflow in the Bighorn basin was above average, ranging from 123 percent of average at Buffalo Bill Reservoir to 157 percent of average at Bull Lake Reservoirs. Storage in the Bighorn Basin is above average, ranging from 101 percent of average at Buffalo Bill Reservoir to 112 percent of average at Bull Lake Reservoir.

Precipitation during April was varied in the North Platte River Basin, ranging from 62 percent of average at Guernsey Reservoir to 132 percent of average at Pathfinder Reservoir. Inflows were above average, ranging from 113 percent of average at Pathfinder Reservoir to 193 percent of average at Guernsey Reservoir. Reservoir storage is above average, and ranges from 94 percent of average at Guernsey Reservoir to 140 percent of average at Seminoe Reservoir.

DAKOTAS AREA OFFICE

For most of North Dakota, April had average temperatures and average precipitation. North Dakota now has 18 percent with abnormally dry conditions, leaving 82% of the state with no drought.

April precipitation was about average in the Heart River Basin with 112 and 97 percent of average precipitation at Dickinson and Heart Butte Dams, respectively. Within the Cheyenne, Grand and James River basins precipitation was varied, ranging from 54 percent of average at Jamestown Reservoir to 166 percent of average at Belle Fourche Reservoir.

April inflows in the Heart River basin were below average, with 25 percent of average inflow at Dickinson and 49 percent of average inflow at Lake Tschida. For the Cheyenne River basin, inflows were mostly above average, ranging from 30 percent of average at Belle Fourche Reservoir to 367 percent of average at Angostura Reservoir. The James and Grand River basins

exhibited above average inflows, with 182 percent of average at Jamestown Reservoir and 192 percent of average at Shadehill Reservoir.

Reservoir storage in the Heart River basin finished the month near average; 126 percent of average for Dickinson Reservoir, and 93 percent of average at Heart Butte Reservoir. Storage in the Cheyenne River basin was above average at the end of April, ranging from 112 percent of average at Deerfield Reservoir to 252 percent of average at Keyhole Reservoir. Storage at Shadehill and Jamestown Reservoirs was above average for the end of April, displaying 116 percent and 129 percent of average, respectively.

EASTERN COLORADO AREA OFFICE

Precipitation was above average over the Colorado-Big Thompson Project (CBT) during April. The Green Mountain Reservoir weather station reported the highest precipitation at 138 percent of average, while Lake Estes Reservoir had the lowest at 106 percent of average.

Inflows were above average over the CBT during April. The inflow to Green Mountain Reservoir was the lowest at 135 percent of average. The inflow to Willow Creek Reservoir was the highest at 191 percent of average.

The Lake Granby storage of 341,900 AF on April 30 was 13,200 AF above average and 78,500 AF lower than one year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 102 and 96 percent of average, respectively. The April end-of-month CBT storage water in Green Mountain, Lake Granby, Carter Lake, and Horsetooth Reservoirs was 630,300 AF; 5,000 AF above average.

Precipitation was varied over the Fryingpan-Arkansas Project (Fry-Ark) during April. The Pueblo Reservoir weather station reported the lowest precipitation at 17 percent of average, while Twin Lakes Reservoir had the highest at 224 percent of average.

Native inflows were mostly above average over the Fry-Ark during April. The inflow to Twin Lakes Reservoir was the lowest at 78 percent of average, while Turquoise had the highest with 270 percent of average.

Reservoir storage is varied for the Fry-Ark. Turquoise Reservoir is the lowest at 65 percent of average. Pueblo Reservoir is the highest at 124 percent of average. The total April end-of-month storage in the four reservoirs is 431,000 AF, 100 percent of average.

NEBRASKA-KANSAS AREA OFFICE

April precipitation was below average in the Republican River Basin, ranging from 27 percent of average at Lovewell Reservoir to 65 percent of average at Bonny Reservoir. Inflows were varied and ranged from 23 percent of average at Enders Reservoir to 114 percent of average at Keith Sebelius Reservoir. Ignoring Bonny Reservoir, which has been drained for Compact compliance, storage ranges from 31 percent of average at Enders Reservoir to 143 percent of average at Keith Sebelius Reservoir.

For the Solomon Basin, the precipitation was below average, ranging from 16 percent of average at Webster Reservoir to 24 percent of average at Kirwin Reservoir. The inflows were well above

average, ranging from 185 percent of average at Glen Elder Reservoir to 200 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 below average but for one site, ranging from 62 percent of average at Davis Creek Reservoir to 101 percent of average at Box Butte Reservoir. The inflows were above average, ranging from 18 percent of average at Davis Creek Reservoir to 200 percent of average at Webster Reservoir. End-of-month storage ranges from 72 percent of average at Cedar Bluff Reservoir to 129 percent of average at Box Butte Reservoir.

OKLAHOMA-TEXAS AREA OFFICE

April precipitation was above average over the Arkansas River Basin, ranging from 119 percent of average at Sanford Reservoir to 129 percent of average at Cheney Reservoir. Inflows were varied, ranging from 95 percent of average at Sanford Reservoir to 175 percent of average at Norman Reservoir. Storage in the Arkansas River basin is above average and ranges from 103 percent of average at Norman Reservoir to 118 percent of average at Cheney Reservoir.

For the Red River Basin, the April precipitation was above average, ranging from 181 percent of average at McGee Creek Reservoir to 348 percent of average at Altus Reservoir. The inflows ranged from 100 percent of average at McGee Creek Reservoir to 489 percent of average at Mountain Park Reservoir. Storage in the Red River basin ranges from 100 percent of average at McGee Creek Reservoir to 161 percent of average at Mountain Park Reservoir.

For the Nueces, Colorado and Washita Basins, the precipitation was above average, ranging from 162 percent of average at Fort Cobb Reservoir to 271 percent of average at Choke Canyon Reservoir. The inflows were varied, ranging from 36 percent of average at Nasworthy Reservoir to 717 percent of average at Foss Reservoir. Storage in these basins ranges from 83 percent of average at Choke Canyon Reservoir to 168 percent of average at Twin Buttes Reservoir, which is at its highest storage content since the early 1990s.

CORPS OF ENGINEERS REPORT

Much above average runoff continues in the upper Missouri River basin. April runoff in the upper basin, the Missouri River above Sioux City, Iowa, was 7.8 million acre feet (MAF), the third highest April runoff in the 121 years of record. The average April runoff is 2.9 MAF. Runoff in the Gavins Point Dam to Sioux City reach was 2.3 MAF, the second highest April runoff for this reach. The total March-April runoff for the upper basin was 18.7 MAF, which is the highest March-April runoff since record-keeping began in 1898, exceeding the previous record of 15.9 MAF, which occurred in 1952.

The near-record April runoff, which was nearly 3 times average, increased the 2019 upper basin runoff forecast to 42.3 million acre-feet (MAF). If realized, this runoff total will be the third highest runoff in 121 years of record-keeping, only surpassed by 1997 (49.0 MAF) and 2011 (61.0 MAF). Runoff in 2018 was 42.1 MAF, which is currently third highest.

Gavins Point releases are currently 55,000 cfs, which is about 25,000 cfs above average for this time of the year. Gavins Point releases will remain at this rate to continue evacuating water from Oahe and Fort Randall, which are using much of their respective flood storage. The goal is to

reduce the pool levels in Oahe and Fort Randall a few feet to provide flexibility should there be a need to reduce Gavins Point releases for short periods over the remainder of the spring and summer. 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 mountain snowpack has begun melting in the reaches upstream from Fort Peck and Garrison Dams at near-average levels. The mountain snowpack peaked in both reaches; on April 18 in the Fort Peck reach at 105 percent of average and on April 17 in the Fort Peck to Garrison reach at 104 percent of average.

Reservoir Forecasts

- **Gavins Point Dam**
  - Average releases past month – 52,500 cfs
  - Current release rate – 55,000 cfs
  - Forecast release rate – 55,000 cfs
  - End-of-April reservoir level – 1,206.1 feet
  - Forecast end-of-May reservoir level – 1,206.0 feet
- **Fort Randall Dam**
  - Average releases past month – 46,000 cfs
  - End-of-April reservoir level – 1,363.4 feet (down 3.4 feet from March)
  - Forecast end-of-May reservoir level – 1,360.0 feet
  - Notes: Releases will be adjusted as necessary to maintain the desired reservoir elevation at Gavins Point.
- **Big Bend Dam**
  - Average releases past month – 30,800 cfs
  - Forecast average release rate – 38,100 cfs
  - Forecast reservoir level – 1,420.0 feet
  - Notes: Spillway releases will occur May 7-10 while maintenance is performed on all turbines.
- **Oahe Dam**
  - Average releases past month – 30,200 cfs
  - Forecast average release rate – 37,600 cfs
  - End-of-April reservoir level – 1,616.4 feet (rising 1.7 feet during April)
  - Forecast end-of-April reservoir level – 1,615.9 feet
- **Garrison Dam**
  - Average releases past month – 13,400 cfs
  - Current release rate – 21,000 cfs
  - Forecast average release rate – 30,000 cfs (end of May)
  - End-of-April reservoir level – 1,846.4 feet (rising 3.8 feet during April)
  - Forecast end-of-May reservoir level – 1,847.2 feet
  - Notes: Releases will be stepped up from 21,000 cfs to 30,000 cfs during May.
- **Fort Peck Dam**
  - Average releases past month – 6,600 cfs
  - Current release rate – 8,000 cfs
  - Forecast average release rate – 10,000 cfs (late May)
  - End-of-April reservoir level – 2,240.6 feet (up 2.5 feet from March)
  - Forecast end-of-April reservoir level – 2,242.8 feet

The six mainstem power plants generated 794 million kWh of electricity in April. Typical energy generation for April is 693 million kWh. The power plants are projected to generate 12.3 billion kWh of electricity this year, 131 percent of the long-term average, 9.4 billion kWh.