

Mississippi River Elevation Monitoring 2021

Along the Mississippi River within the MWMO watershed, six river staff gages are installed seasonally and monitored for water level from April through November since 2005. In 2015, MWMO monitoring staff installed an additional staff gage in the river at the MWMO office. The monitoring sites are labeled according to the approximate river mile, which is identified by the distance upstream from the confluence of the Mississippi and Ohio Rivers in Cairo, Illinois, and from the nearest riverbank to the river staff gage. The “E” refers to the eastern river bank and “W” refers to the western river bank. The site with the highest river mile is the farthest upstream.

Ordinary High Water Level (OHWL) values were calculated for some of the river sites where values were available. The data provided by the Minnesota Department of Natural Resources use NGVD (National Geodetic Vertical Datum) 1929 and MWMO’s reference elevations for each staff gage use NAVD (North American Vertical Datum) 1988 elevation values, so the NGVD 29 values were converted to NAVD 88 using a conversion map from MN DNR. The MWMO watershed falls between 0.2 and 0.3 conversion so 0.25 was used to adjust values from NGVD 29 to NAVD 88.

The following figures show river elevation values for each of the monitored river sites. River elevation values from 2019, 2020, and 2021 are overlaid in Figures 1 - 3 and Figures 5 - 8. Figure 4 shows the minimum, average, and maximum elevation values between years 2016 - 2021 at the MWMO river gage site just north of the Lowry Bridge in Northeast Minneapolis.

Mississippi River Elevation at MR859.1W (Camden)

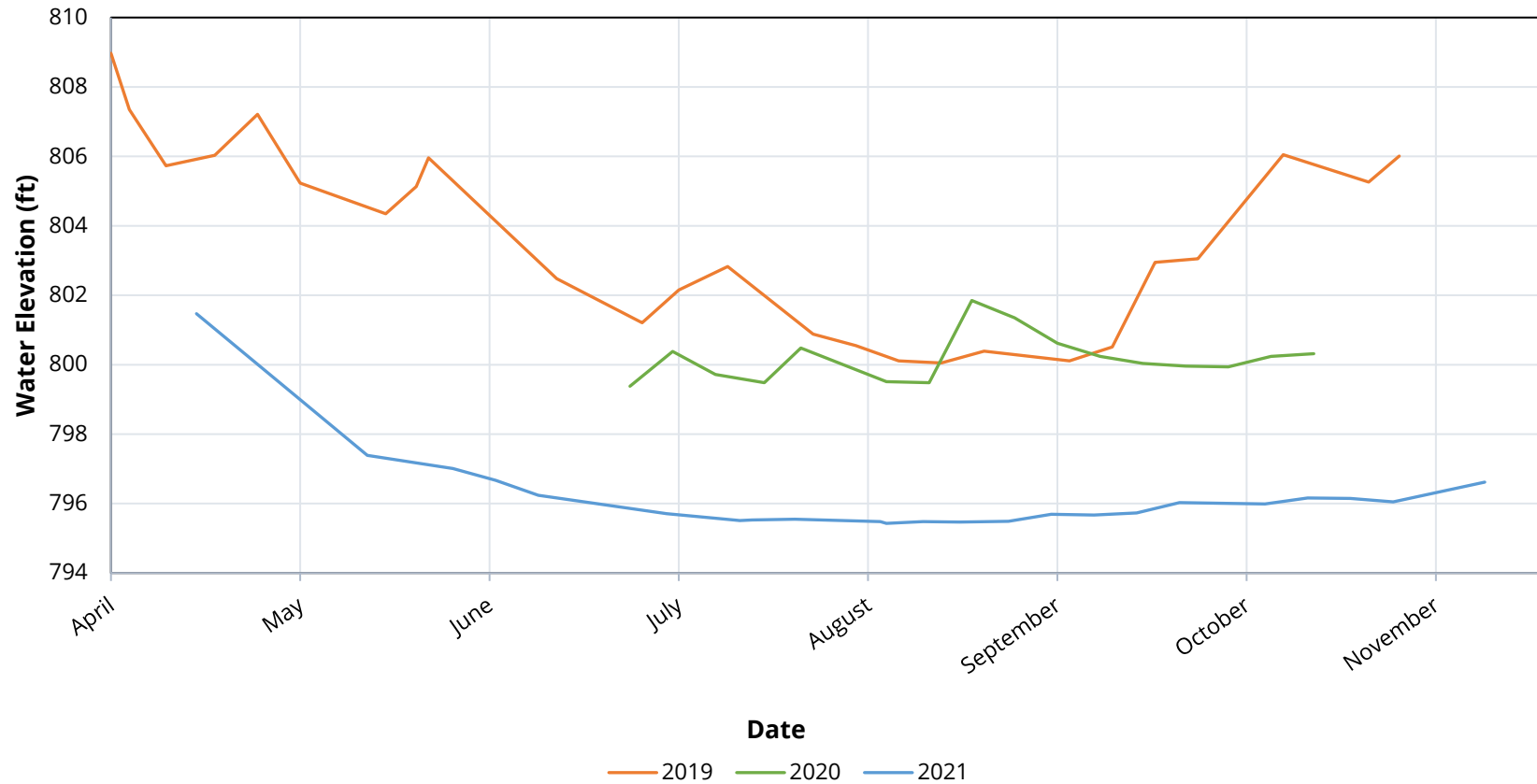


Figure 1. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 859.1. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read gage.

Mississippi River Elevation at MR857.6W (MPRB Boat Launch)

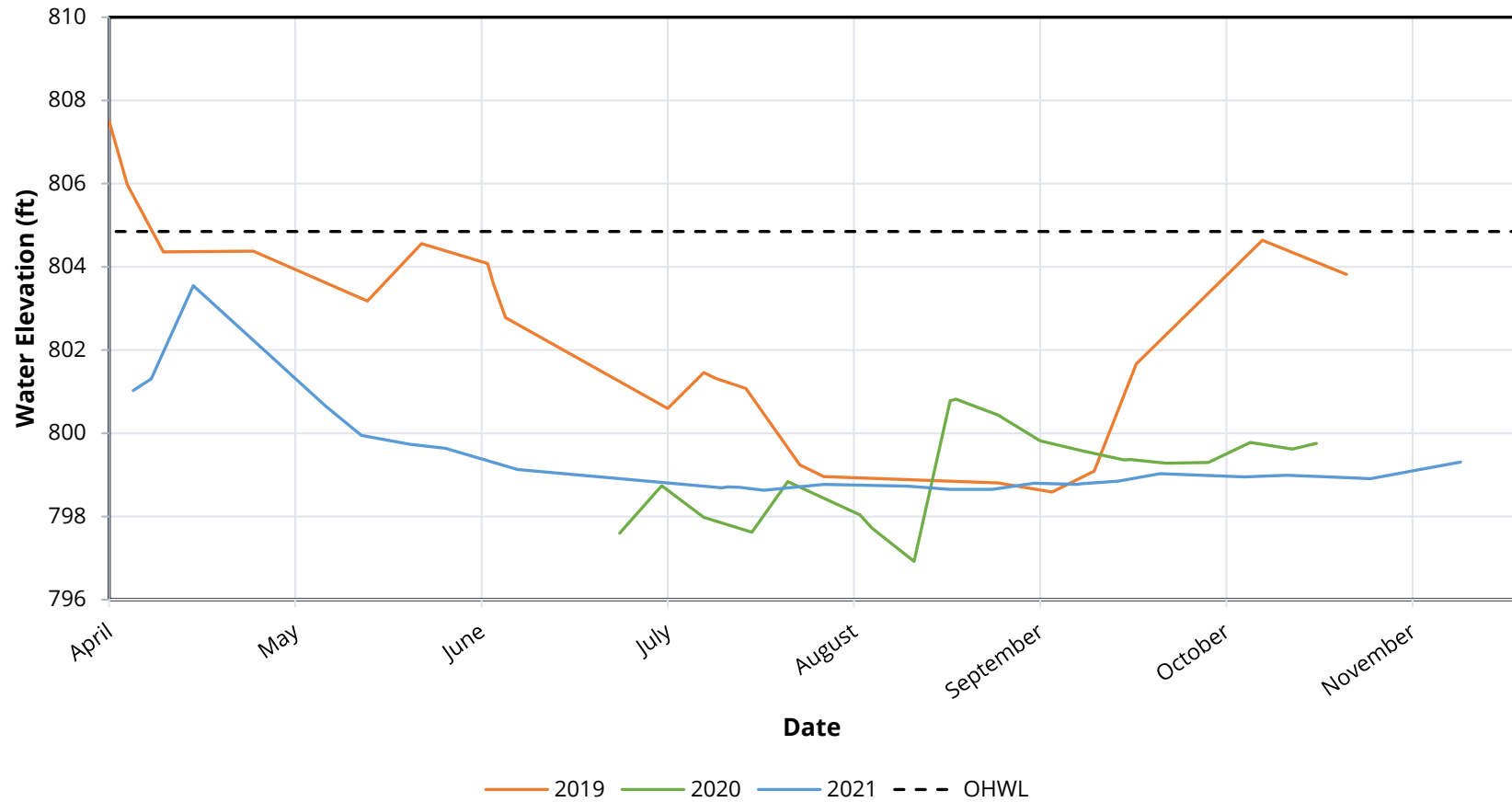


Figure 2. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 857.6. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read gage.

Mississippi River Elevation at MR856.4E (MWMO)

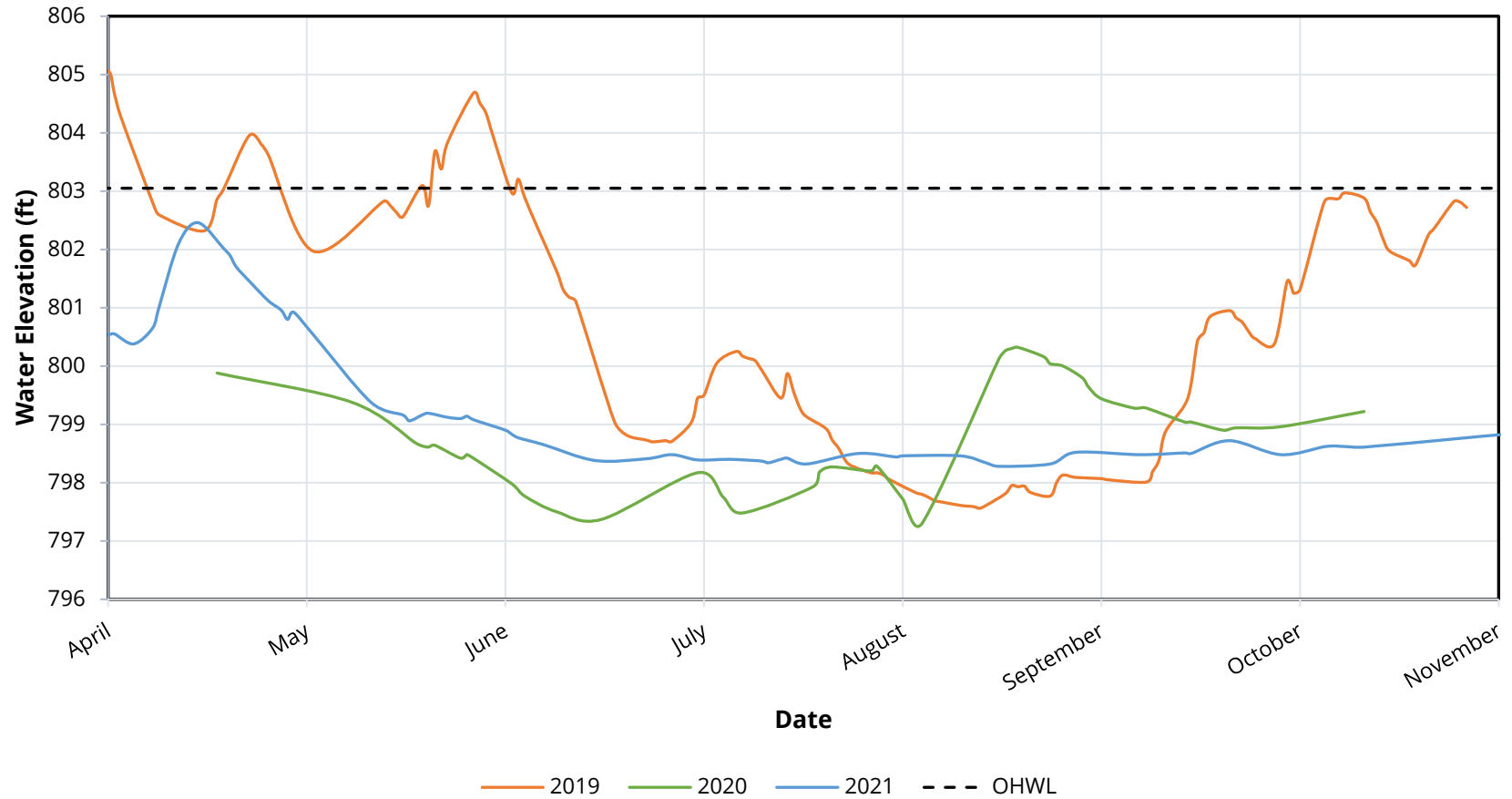


Figure 3. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 856.4. Staff gage readings were collected daily Monday-Friday or when staff were available to read gage. Ordinary high water level (OHWL) value included for comparison.

River Elevation at MWMO Site 2016 - 2021

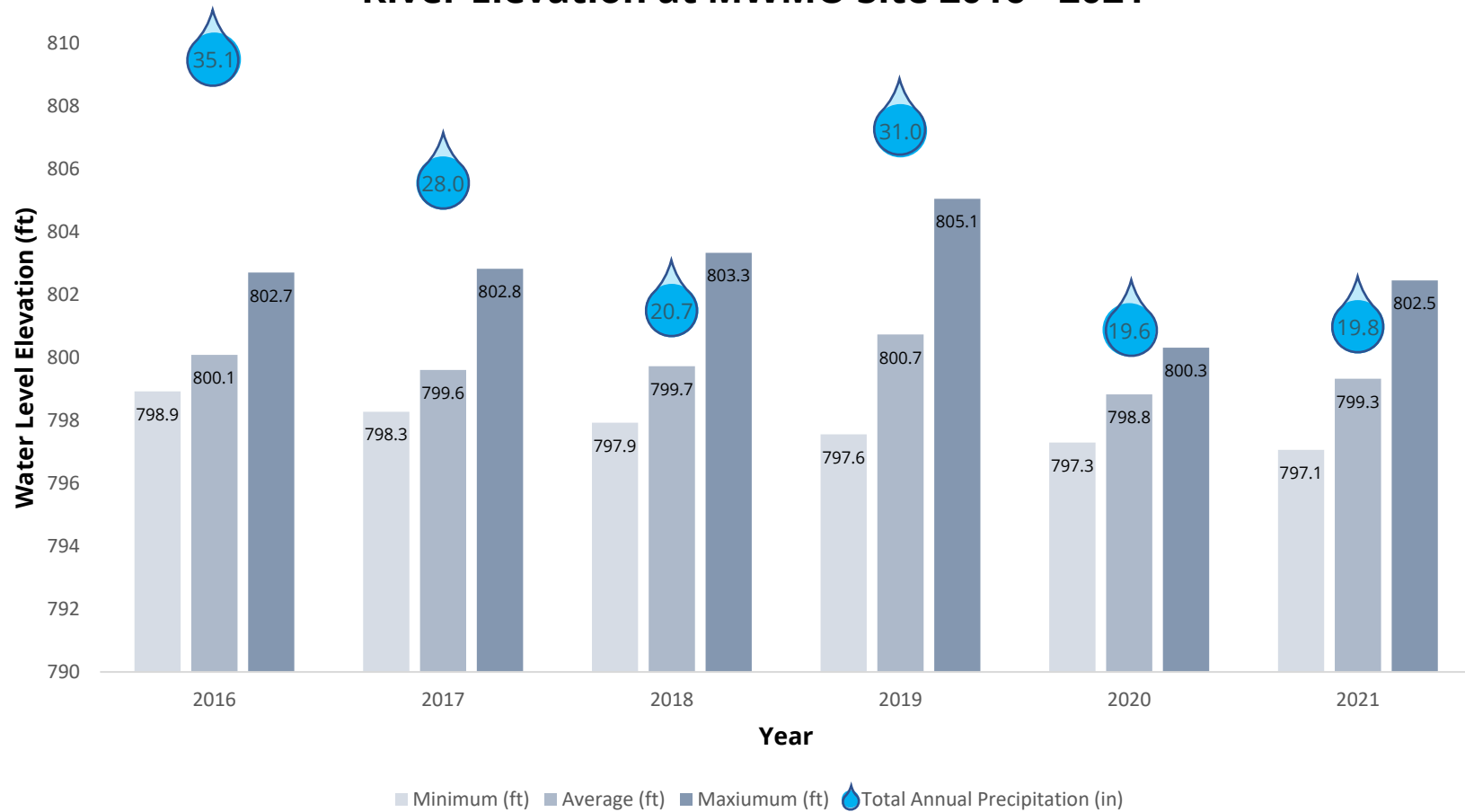


Figure 4. Minimum, average, and maximum elevation values at Mississippi River mile 856.4 with total annual precipitation for years 2016-2021. Precipitation data collected at MWMO office with Texas Instruments heated rain gauge.

Mississippi River Elevation at MR854.9W (North Loop)

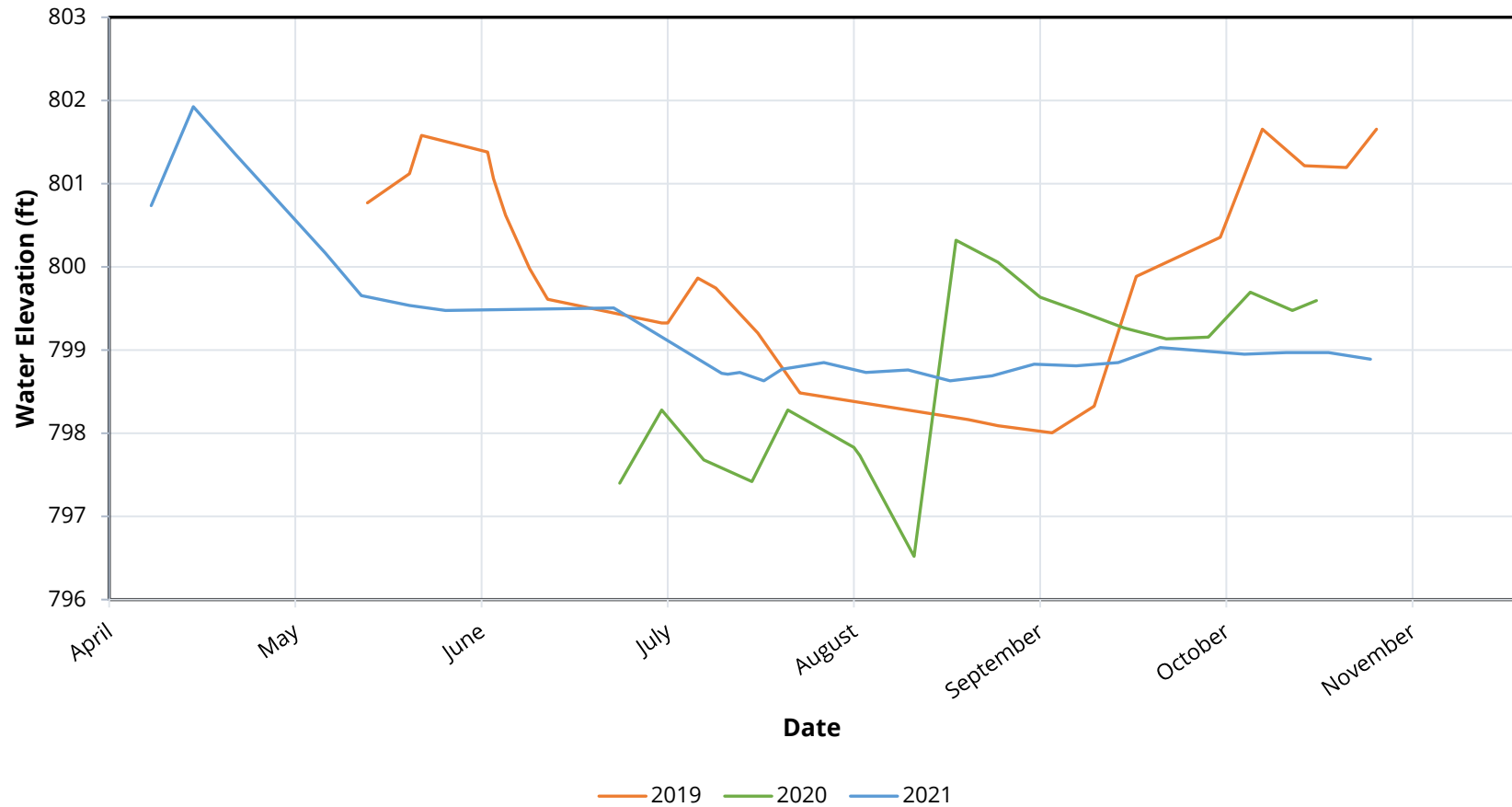


Figure 5. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 854.9. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read the gage.

Mississippi River Elevation at MR852.2E (UMN Boat Launch)

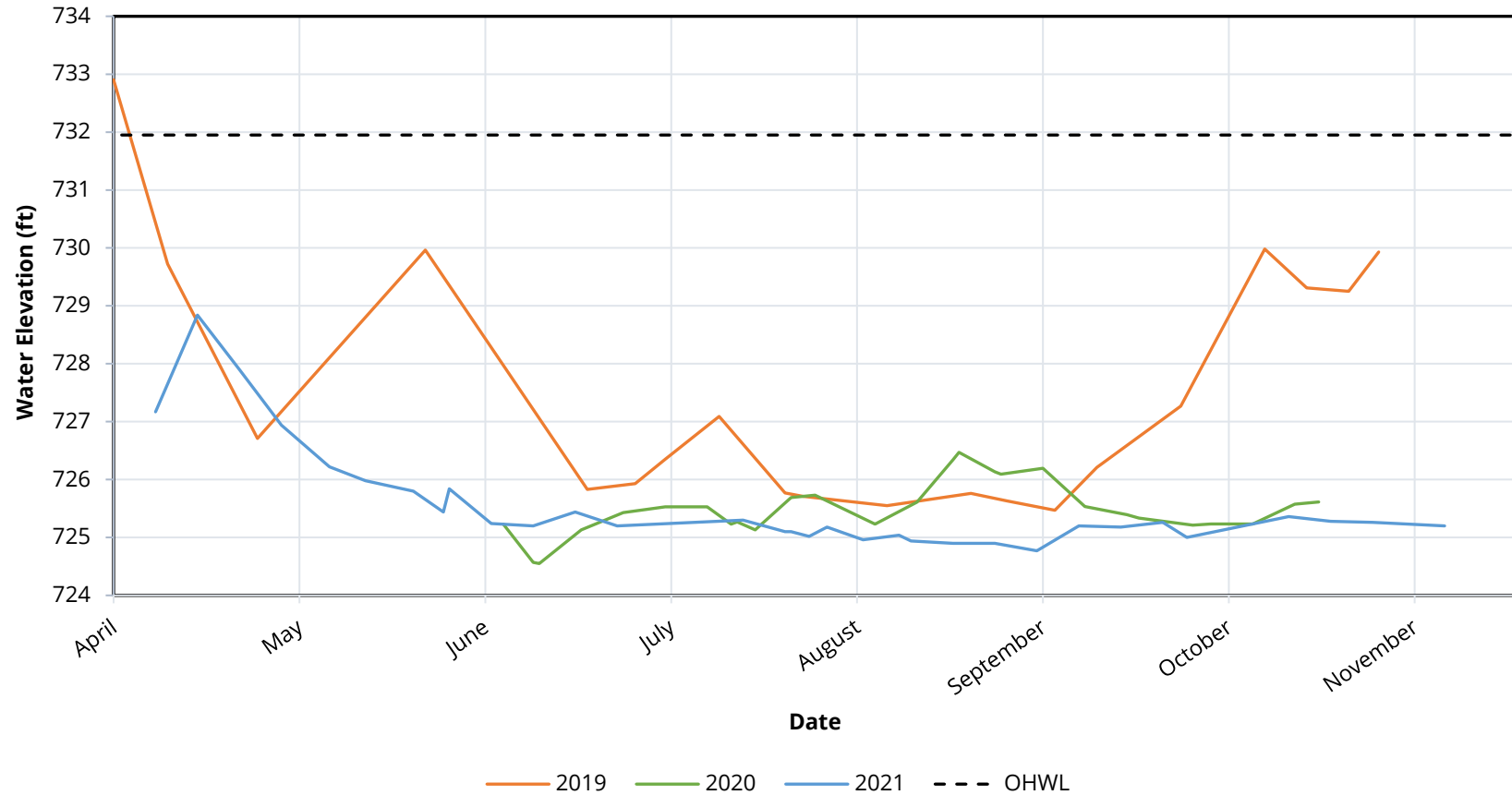


Figure 6. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 852.2. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read gage. Ordinary high water level (OHWL) value included for comparison.

Mississippi River Elevation at MR849.9W (Lake Street Bridge)

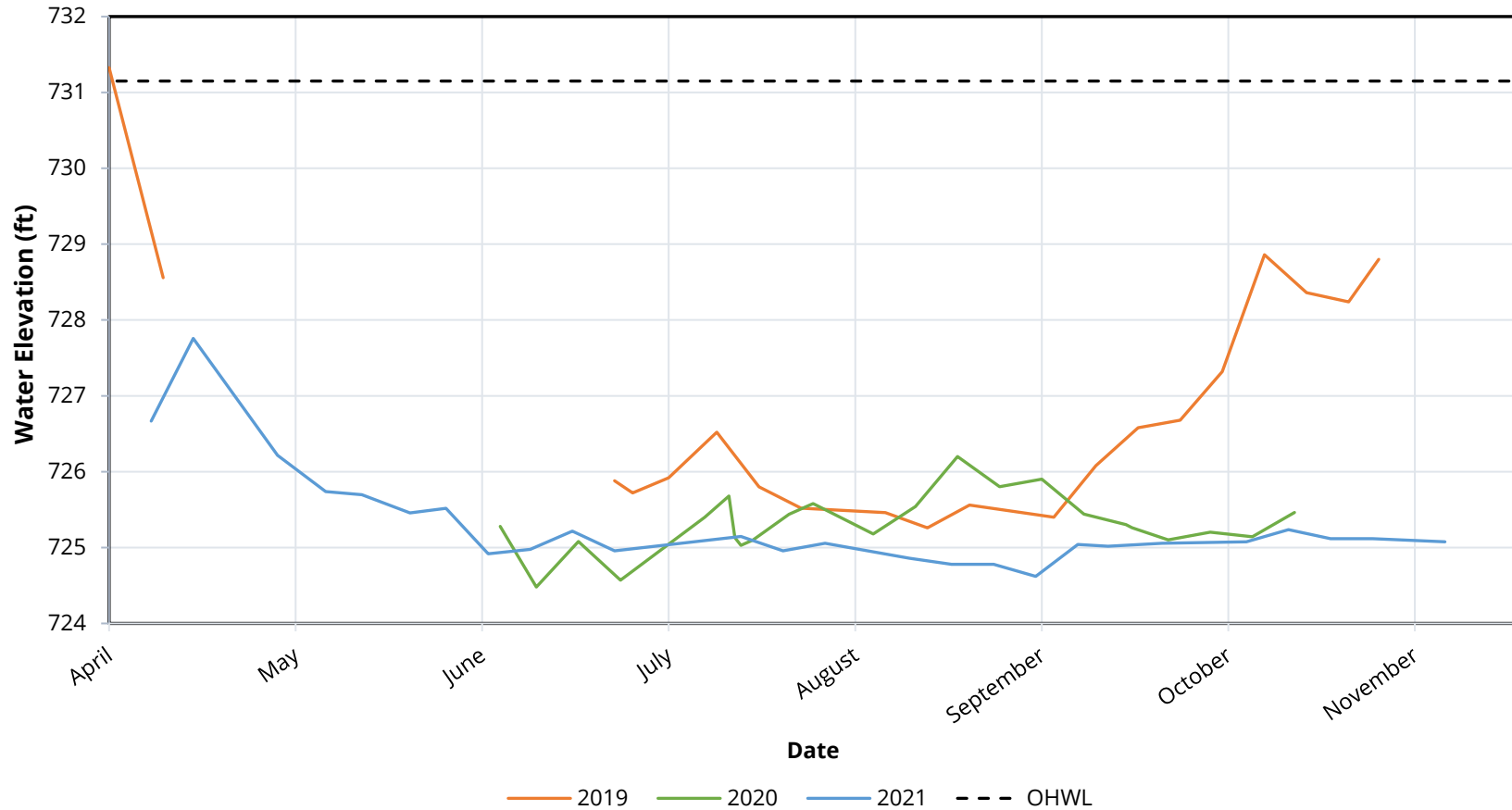


Figure 7. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 849.9. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read gage. Ordinary high water level (OHWL) value included for comparison.

Mississippi River Elevation at MR848.1W (4300 West River Parkway)

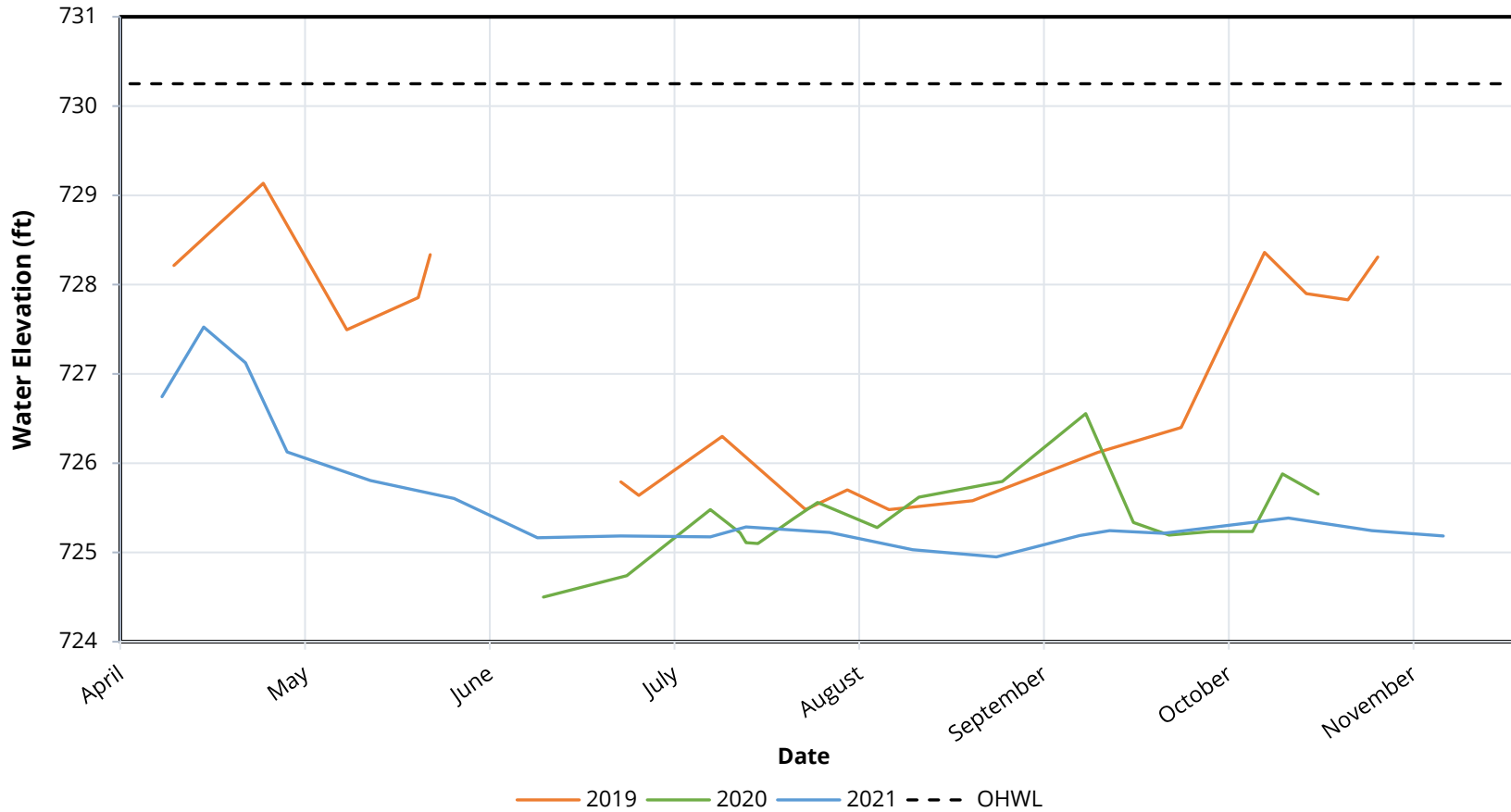


Figure 8. Mississippi River elevation values between April and November in 2019, 2020, and 2021 at river mile 848.1. Staff gage readings were collected approximately every week or when monitoring staff were on site and able to read gage. Ordinary high water level (OHWL) value included for comparison.