U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
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Scientific Investigations Report 2023–5108
Plate 7 of 12

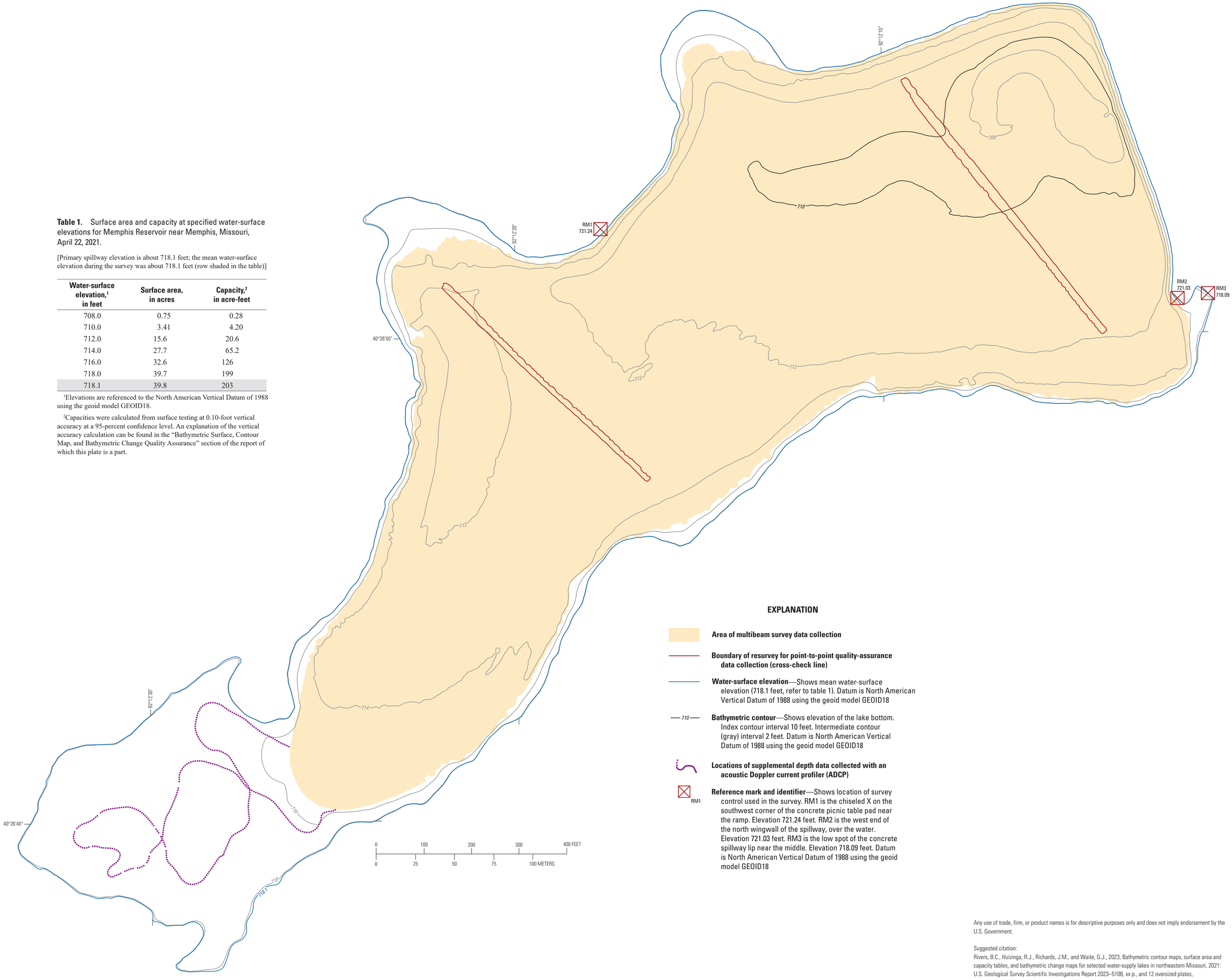
**Table 1.** Surface area and capacity at specified water-surface elevations for Memphis Reservoir near Memphis, Missouri, April 22, 2021.

[Primary spillway elevation is about 718.1 feet; the mean water-surface elevation during the survey was about 718.1 feet (row shaded in the table)]

| Water-surface elevation,[1] in feet | Surface area, in acres | Capacity,[2] in acre-feet |
|---|---|---|
| 708.0 | 0.75 | 0.28 |
| 710.0 | 3.41 | 4.20 |
| 712.0 | 15.6 | 20.6 |
| 714.0 | 27.7 | 65.2 |
| 716.0 | 32.6 | 126 |
| 718.0 | 39.7 | 199 |
| 718.1 | 39.8 | 203 |

[1]Elevations are referenced to the North American Vertical Datum of 1988 using the geoid model GEOID18.

[2]Capacities were calculated from surface testing at 0.10-foot vertical accuracy at a 95-percent confidence level. An explanation of the vertical accuracy calculation can be found in the "Bathymetric Surface, Contour Map, and Bathymetric Change Quality Assurance" section of the report of which this plate is a part.




**EXPLANATION**

**Area of multibeam survey data collection**

**Boundary of resurvey for point-to-point quality-assurance data collection (cross-check line)**

**Water-surface elevation**—Shows mean water-surface elevation (718.1 feet, refer to table 1). Datum is North American Vertical Datum of 1988 using the geoid model GEOID18

710 **Bathymetric contour**—Shows elevation of the lake bottom. Index contour interval 10 feet. Intermediate contour (gray) interval 2 feet. Datum is North American Vertical Datum of 1988 using the geoid model GEOID18

**Locations of supplemental depth data collected with an acoustic Doppler current profiler (ADCP)**

RM1 **Reference mark and identifier**—Shows location of survey control used in the survey. RM1 is the chiseled X on the southwest corner of the concrete picnic table pad near the ramp. Elevation 721.24 feet. RM2 is the west end of the north wingwall of the spillway, over the water. Elevation 721.03 feet. RM3 is the low spot of the concrete spillway lip near the middle. Elevation 718.09 feet. Datum is North American Vertical Datum of 1988 using the geoid model GEOID18



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# Bathymetric Contour Map and Surface Area and Capacity Table for for Memphis Reservoir (lake 29) near Memphis, Missouri, 2021

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