



#### 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 (977.25 feet, refer to table 1). Datum is North American Vertical Datum of 1988 using the geoid model GEOID18
- 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
- Reference mark and identifier**—Shows location of survey control used in the survey. RM1 is the chiseled X on the west end of concrete emergency spillway, near the east end of the dam. Elevation 979.36 feet. RM2 is the chiseled arrow on the north side of the intake house platform near the crane on the eastern corner. Elevation 982.19 feet. RM3 is concrete lip at the east end of the notch in the primary overflow spillway. Elevation 977.25 feet. Datum is North American Vertical Datum of 1988 using the geoid model GEOID18

**Table 1.** Surface area and capacity at specified water-surface elevations for Shepherd Mountain Lake near Ironton, Missouri, April 19, 2022.

[Primary spillway elevation is about 977.3 feet; the mean water-surface elevation during the survey was about 977.3 feet (row shaded in the table)]

Water-surface elevation, <sup>1</sup> in feet	Surface-area, in acres	Capacity, <sup>2</sup> in acre-feet
952.0	0.02	0.01
954.0	0.13	0.13
956.0	0.36	0.58
958.0	0.91	1.75
960.0	1.70	4.36
962.0	2.88	8.93
964.0	4.43	16.2
966.0	6.33	26.9
968.0	8.23	41.4
970.0	10.5	60.0
972.0	14.0	83.9
974.0	19.4	118
976.0	22.4	160
977.3	24.1	190

<sup>1</sup>Elevations are referenced to the North American Vertical Datum of 1988 using the geoid model GEOID18.

<sup>2</sup>Capacities were calculated from surface testing at 0.12-foot vertical accuracy at a 95-percent confidence level. An explanation of the vertical accuracy calculation can be found in the "Quality Assurance for Bathymetric Surface, Contour Map, and Bathymetric Change" section of the report of which this plate is a part.

## Bathymetric Contour Map and Surface Area and Capacity Table for Shepherd Mountain Lake (lake 43) near Ironton, Missouri, 2023

By  
Benjamin C. Rivers, Richard J. Huizinga, and Garrett J. Waite  
2024

ISSN 2229-132X (online)  
<https://doi.org/10.3133/sir20245114>

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Suggested citation:  
Rivers, B.C., Huizinga, R.J., and Waite, G.J., 2024, Bathymetric contour maps, surface area and capacity tables, and bathymetric change maps for selected water-supply lakes in Missouri, 2022–23: U.S. Geological Survey Scientific Investigations Report 2024–5114, 70 p., and 13 oversized plates, <https://doi.org/10.3133/sir20245114>.