DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared in cooperation with the
NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES

WATER RESOURCES-INFORMATION SERIES
REPORT 10

Figure 1.-Index map of northwestern Nevada showing the location of Washoe Lakes

Figure 2.-Bathymetric Reconnaissance Map of Big and Little Washoe Lakes

EXPLANATION

———— 8 ————
Lines of equal water depth, in feet; interval variable. Datum is lake surface at a stage of 5029.8 feet above mean sea level

× 2.5
Control point
Number is depth of water, in feet

Base from aerial photographs, 1:19,000, 1971
Cartography by C. Bosch
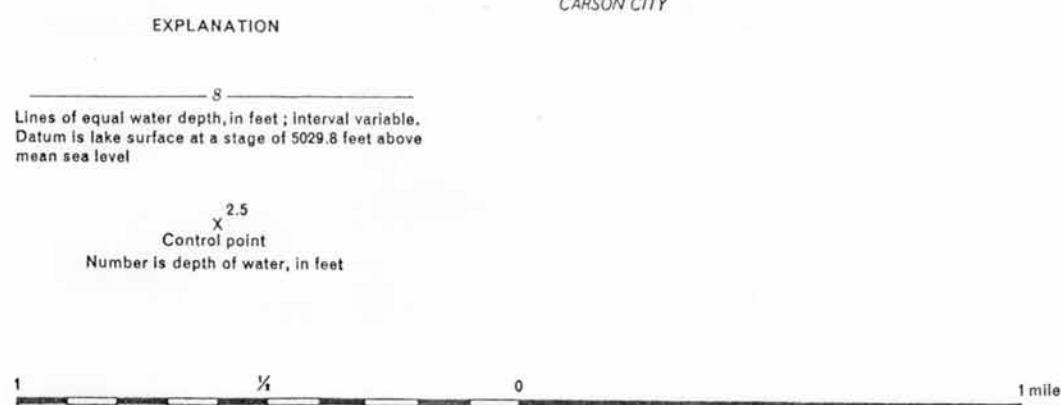
INTRODUCTION

Big and Little Washoe Lakes are 15 miles south of Reno, Nev., and 5 miles north of Carson City on the floor of Washoe Valley (fig. 1). Mountains of the Carson Range of the Sierra Nevada and the Virginia Range surround the valley, except for a narrow canyon to the north through which Steamboat Creek drains the lakes to the Truckee River. Washoe Valley has an area of about 84 square miles.

The principal source of water for the lake is snow-melt in the Carson Range. Small quantities of water are imported to the Washoe Lakes from Browns, Galena, and Third Creeks west and north of the basin. Some water that would normally flow to Big Washoe Lake is exported from the basin to Carson City and Virginia City through the Marlette Water System. A small dam (about 30 feet wide and less than 10 feet high) at the north end of Little Washoe Lake (fig. 2), having a narrow spillway (about 8 feet wide) at an altitude of 5,028.9 feet, is used in part to control the stage of the lakes and the outflow to Steamboat Creek for downstream irrigation.

During most days of the winter, Big Washoe Lake is not frozen over with ice.

Washoe Lake is used mostly for fishing and boating; however, those uses are slight, probably because the lake water is highly turbid (Hutchinson, 1937, p. 85). However, the beaches and sand dunes along the east side of Big Washoe Lake are picturesque. The area is being considered as a site for a State park.

The Washoe Lakes were at a stage of 5,029.8 feet above sea level during June 1971, when the bathymetric survey was made. The lakes usually are a single body of water, because of the flooding of the intervening marshy area between Franktown Creek and the diversion ditch shown in figure 2. Following unusually dry periods of several years, the lakes have gone dry. The last time was in 1934 (Rush, 1967, p. 11). Figure 3 is a summary of stage variations for the period 1963-71.

BATHYMETRY

A continuously recording, electronic fathometer was used to measure the depths of the Washoe Lakes. The author was assisted by his son, Steven, in making the 19 traverses of the two lakes. The results of the survey are summarized in figures 2 and 4. The dimensions of the lakes at the time the survey was made, for the extremes in stage for the period 1963-71, and at spillway stage are summarized in table 1.

Table 1.—Dimensions of the Washoe Lakes at various stages

Dimension	Big Washoe Lake	Little Washoe Lake	Total
JUNE 1971			
Stage, in feet	5,029.8 ± 0.1	5,029.9 ± 0.1	--
Area, in acres	5,800		5,900
Volume, in acre-feet	33,000		34,000
AT SPILLWAY STAGE			
Stage, in feet	5,028.9	5,028.9	--
Area, in acres	5,700	110	5,800
Volume, in acre-feet	30,000	500	31,000
MAXIMUM RECORDED STAGE, 1963-71 [1]			
Stage, in feet	5,030.6	5,030.6	--
Area, in acres	5,900	112	6,000
Volume, in acre-feet	36,000	850	37,000
MINIMUM RECORDED STAGE, 1963-71			
Stage, in feet	a5,023.5	b5,021.9	--
Area, in acres	3,160	16	--
Volume, in acre-feet	10,000	6	--

1. On February 12 and 24, 1970.
a. On November 24, 1964.
b. On October 28, 1964.

REFERENCES

Hutchinson, G. E., 1937, A contribution to the limnology of arid regions, primarily founded on observations made in the Lahontan Basin [Nev.]: Connecticut Acad. Arts Sci. Trans., v. 33, p. 47-132.

Rush, F. E., 1967, Water-resources appraisal of Washoe Valley, Nevada: Nevada Dept. Conserv. and Nat. Resources, Water Resources-Reconn. Ser. Rept. 41, 39 p.
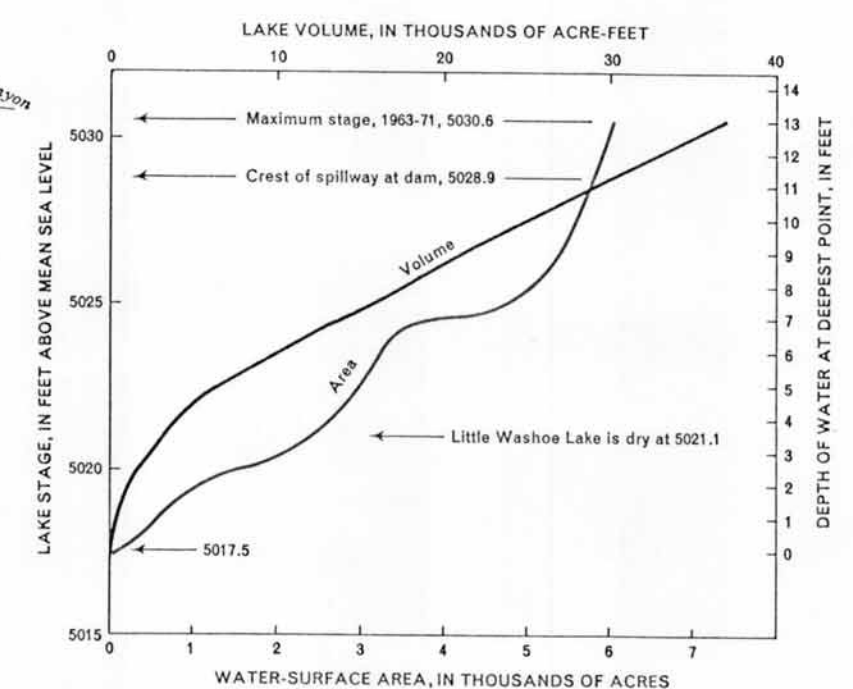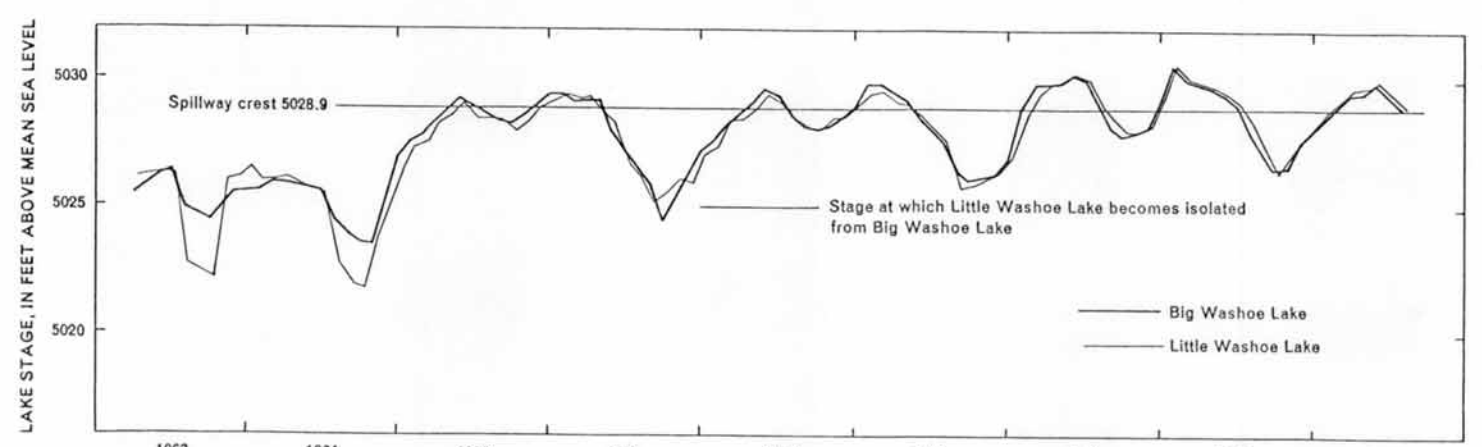
Figure 3.-Stage-area-volume relations for Big and Little Washoe Lakes

Figure 4.-Variations in lake stage, 1963-71

BATHYMETRIC RECONNAISSANCE OF BIG AND LITTLE WASHOE LAKES, WASHOE COUNTY, NEVADA

By

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