Lakes of Oregon

VOLUME 2

Benton, Lincoln, and Polk Counties

"We should do our utmost to encourage the Beautiful, for the Useful encourages itself."
Goethe

OPEN-FILE REPORT . . . 1974

Lakes of Oregon

VOLUME 2

Benton, Lincoln, and Polk Counties

By

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Prepared by
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

in cooperation with the
OREGON STATE ENGINEER

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Devils Lake

Introduction

An inventory of lakes and reservoirs of Oregon is essential for a complete evaluation of the total surface-water supply of the State and to provide a basis for answering questions about Oregon's lakes. Much of the information on lakes and reservoirs previously collected by Federal and State agencies has never been published. These data were compiled and used as a basis for collecting additional information. This report provides information for use by city, county, and State planning groups as well as for sportsmen, tourists, and others interested in preserving the recreational value of Oregon's lakes.

Because of the large number of lakes and reservoirs in Oregon, a single report covering the State would be bulky. Therefore, the lake information is being published in several volumes on a county or multi-county basis. Volume 1, published in 1973, covered Clatsop, Columbia, and Tillamook Counties. Benton, Lincoln, and Polk Counties were selected for this report. (See fig. 1.)

In addition to office compilation of existing data, most lakes were also visited. Visits were made in late summer or early fall when lakes were most accessible and when water temperature and biological activity are at a maximum. Some lakes previously studied by other Federal or State agencies and included in this report were not visited during the study.

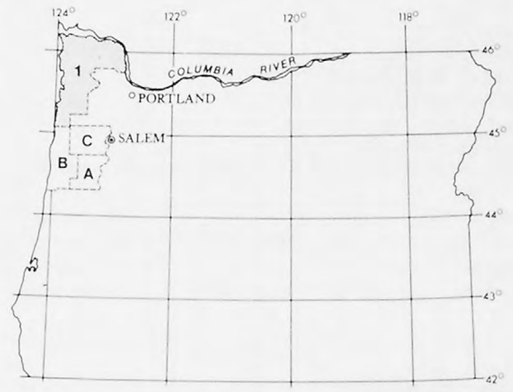


Figure 1.—Index map of Oregon showing locations of (A) Benton, (B) Lincoln, and (C) Polk Counties, and area covered in volume 1.

CRITERIA USED FOR DESIGNATING LAKES

There are no commonly accepted criteria for distinguishing between lakes, ponds, pools, sloughs, and other water bodies. In general, any lake with a surface area greater than 5 acres was included in this inventory. Ponds and lakes smaller than 5 acres generally were not included, although some lakes only an acre or two in size were included if they have recreational value or were used for municipal supply. Natural ephemeral lakes are not included nor are ponds several acres in size that are used solely for stock water. Therefore, lakes were selected for inclusion in this report based primarily on size and on the author's judgment of their actual or potential use.

Natural lakes, as well as manmade ponds and reservoirs, all form and disappear with surprising frequency. Maps may not show all the lakes in a given area nor do they indicate recent changes. Some large lakes shrink into several small ones during the dry season, and the process is reversed when the rains come. Named lakes in Benton, Lincoln, and Polk Counties that did not meet the established criteria are listed on page 7.

RESERVOIRS

In general, any body of water that is either manmade or modified by a manmade structure is classed as a reservoir.

A steadily increasing number of reservoirs are being constructed in Oregon. Because many of these are not shown on the latest maps, their existence had to be determined from other sources, and some that qualify for inclusion in this report may have been missed.

ACKNOWLEDGMENTS

This report was prepared by the Geological Survey, Water Resources Division, in cooperation with the Oregon State Engineer. Several agencies contributed much time and effort in searching their files and reports for data that could be included in this report. The Oregon State Wildlife Commission furnished bathymetric maps, information on lake use, and other valuable data. The office of the State Engineer provided reservoir and water rights information. Physical data and other information were obtained from reports by the Fish Commission of Oregon, the Oregon State Water Resources Board, and the Oregon State Department of Environmental Quality.

Many individuals, including Stanley F. Kapustka, John Friday, S. W. McKenzie, and P. R. Concannon, provided invaluable service in taking aerial photographs and in obtaining and compiling other field data. Special thanks are due D. A. Rickert and W. G. Hines for their many contributions.

Explanation of Terms

Information for each lake included in this report has been classified under several general terms. Most of the numerical information is given in English units; water-quality data are reported in metric units. Factors for converting between English and metric units are given in table 1.

Table 1.–FACTORS FOR CONVERTING ENGLISH UNITS TO INTERNATIONAL SYSTEM (SI) UNITS

Multiply English units	By	To obtain SI units
Feet (ft)	0.3048	Meters (m)
Miles (mi)	1.609	Kilometers (km)
Acres	4047	Square meters (m^2)
	.4047	Square hectometer (hm^2) 1/
	.004047	Square kilometers (km^2)
Square miles (mi^2)	2.590	Square kilometers (km^2)
Acre-feet (acre-ft)	1233	Cubic meters (m^3)
	1.233×10^{-3}	Cubic hectometers (hm^3)
	1.233×10^{-6}	Cubic kilometers (km^3)
Cubic feet per second (ft^3/s)	.02832	Cubic meters per second (m^3/s)

1/ One hectometer is equal to 100 meters.

An explanation of terms used on the individual lake sheets, with comments on their significance and on accuracy of the data, follows:

Identification number – The identification number, in parentheses preceding the lake name, is used only for identifying the lake on the county maps. (See figs. 3-5.) Within each county, lakes are listed in alphabetical order and numbered serially.

Survey date – The survey date, in the upper right-hand corner of the page, gives the date the lake was visited by the Geological Survey field party. Most of the field data, including water-quality data, depth soundings, and observations of inflow and outflow, were obtained during this visit. Separate dates are shown where specific data were collected at a time other than the survey date.

Location – Township, range, and section location were determined from U.S. Geological Survey quadrangle maps (topographic series; see p. 8), with the largest scale map available for the lake area given by name and size; for example, Sheridan 7½' quadrangle map. Direction and distance, rounded to the nearest half a mile (see table 1), from prominent landmarks, such as towns, roads, rivers, or the ocean, are included to aid in rapid, easy location. In some instances, a lake is not shown or named on the topographic map and is so indicated.

Drainage basin – The smallest well-known river basin in which the lake is located is shown first; the major drainage system is listed in parentheses following the basin. For example, the Yaquina River is the smallest well-known river basin in which Buttermilk Lake (p. 32) is located, and it is part of the major drainage system known as the Pacific Slope drainage; therefore, the drainage basin is reported as Yaquina River (Pacific Slope drainage). For a few lakes, the major drainage system is the smallest well-known basin. An example of this is McBee Lake (p. 16), which is in the Willamette River basin. A lake that contributes no outflow to the basin cited is reported as "noncontributing." If a lake is not within a well-known basin, such as Hidden Lake in Lincoln County, the basin name is determined by the lesser known outflow stream.

Drainage area – The surface-drainage area, in square miles (mi^2), is the area that contributes water to the lake. These areas were delineated on U.S. Geological Survey topographic maps and measured by planimeter. Drainage areas for some lakes were classified as indeterminate because either the surface-drainage area cannot be accurately delineated or the inflow consists primarily of precipitation and ground water.

Surface area–The surface areas of lakes, in acres, were obtained from many sources. Published reports were an important source of information; however, most surface areas were measured by planimeter on aerial photographs. Because the surface area of many lakes varies widely, depending on the surface elevation and time of year, areas shown in this report are intended only to describe the general size of the lake. Reservoir areas are generally taken from construction drawings and represent normal pool.

Surface elevation–A single elevation, in feet (ft) above mean sea level, estimated from the best available topographic maps or other source, is shown for most lakes. For the few lakes where lake levels had been monitored, a seasonal range in elevations is shown.

Volume–Lake volumes, in acre-feet (acre-ft), were obtained by computing and then summing the volume of each stratum of water between successive contours on the bathymetric map. Each volume was computed using a standard equation incorporating the areas within both the upper and lower contours of the stratum being computed and the vertical distance between them. Reservoir capacities are generally determined from construction drawings and represent normal pool. Because volumes can vary widely between seasons and from year to year, volume figures reported are intended to illustrate only the relative size of the lakes. Where data were not adequate to compute volume, it is reported as "not determined."

Inflow–All available information pertaining to the surface inflow, including the name of a stream or streams and direction of flow, is given. Although many lakes receive inflow from several streams, inflow generally could not be measured because the lakes were visited during the low-flow season. Where a rate is reported for inflow, it generally was estimated by computing cross-sectional area of the channel and by timing drift. The rate of inflow, where it was measured or estimated, is reported in cubic feet per second (ft^3/s). Inflow from direct precipitation on the lake or from ground-water seepage was neither measured nor estimated.

Outflow–Generally, surface outflow is confined to one channel, and all available information pertaining to it, including the name of the stream and general direction of outflow, is given. Some lakes have no visible outflow, and the water loss other than that from evaporation and transpiration is by ground-water outflow. Where possible, surface outflows were estimated, but no attempt was made to determine ground-water outflow.

Use–Information on recreational use of the lakes and their surrounding areas, whether private or public, was obtained from other publications, by observation, and from local residents.

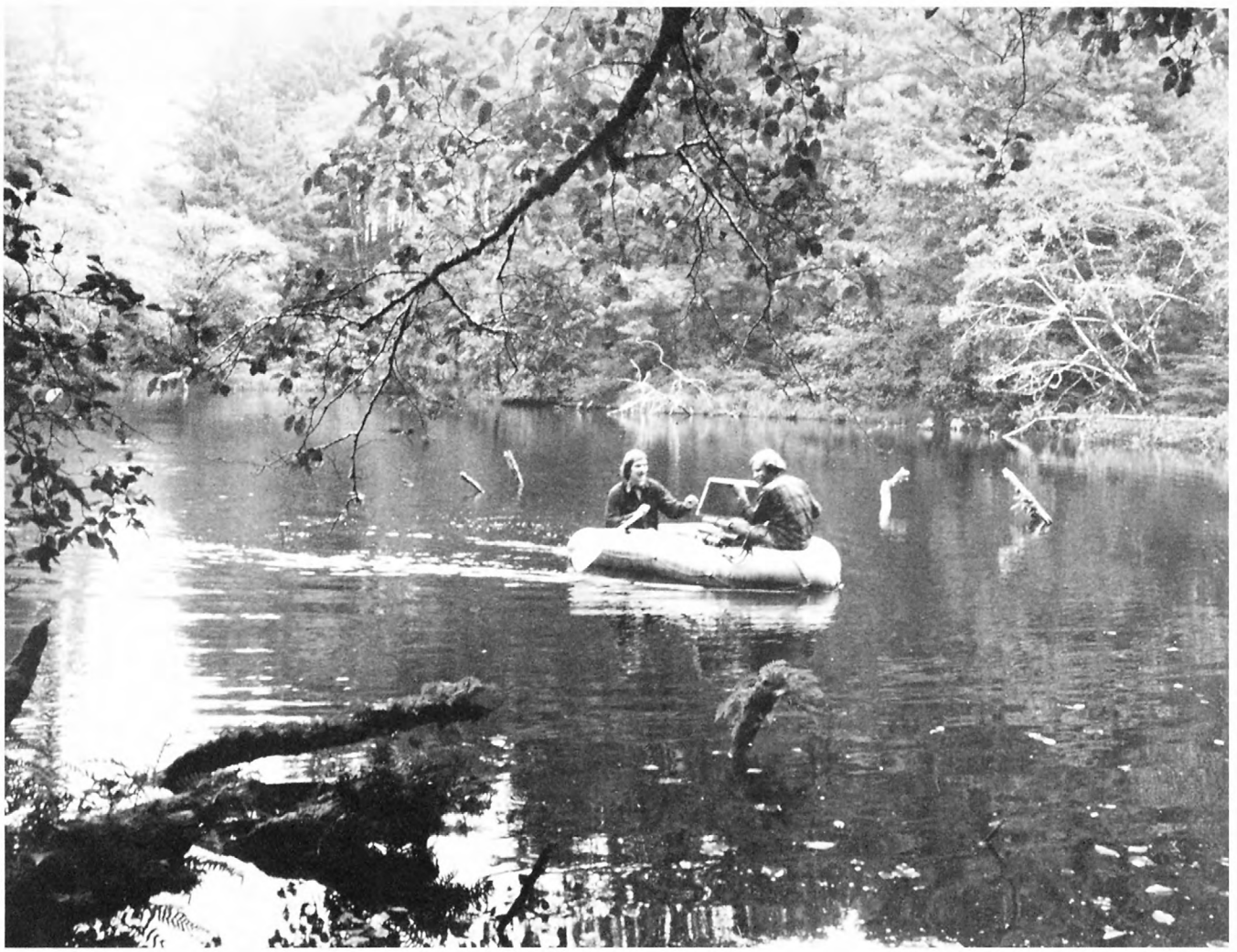
Remarks–Useful information that is not easily classified under the above headings is listed under REMARKS. Topics that might be included in this section are:

1. Descriptive information.
2. Directions or access.
3. Water rights.
4. Qualifying statements.
5. References that provide additional information pertaining to the lake are indicated by numbers from the list of references (p. 8).

Bathymetric map–Depth contours on the map were made from soundings taken on the survey date, using either a sounding line or a recording-chart fathometer, and should be considered approximate. Depths are reported in feet and can be converted readily to meters using a conversion factor (see table 1) or the feet-meter scale on the dissolved oxygen-temperature grid.

The sampling site (symbol ▼) of each lake is shown on the bathymetric map, as are marshes and other features. Aerial photographs were used to estimate the horizontal scale, which is meant to represent relative size only. Inflow and outflow streams are shown graphically by direction and location.

Collecting samples on Coon Lake



Water-Quality Data

The water-quality data reported in this volume were collected at the time indicated on the SURVEY DATE. Most of the quality data were determined from samples collected 1 foot below the water surface at the sampling site shown on the bathymetric map. Dissolved oxygen, temperature, pH, and conductivity were measured at various depths.

Sampling sites, here reported to the nearest 5 seconds of latitude and longitude, were generally near the deepest part of each lake and are considered to be reasonably representative of the physical and chemical characteristics of the entire lake.

Data on alkalinity, hardness, dissolved solids, and dissolved oxygen are reported in milligrams per liter (mg/l). One milligram per liter is a weight of 1 milligram of the particular constituent dissolved in 1 liter of water. At the low concentrations given in this report, 1 mg/l is equivalent to 1 ppm (part per million) used in some water-quality reports.

To help those unfamiliar with the technical terms and the measurements made in this study, the methods used and the significance of the variables measured are reviewed briefly for each quality parameter.

pH—The pH of a solution is a measure of the effective hydrogen-ion activity. The range of pH values is from 0 to 14; solutions in the range of 0 to 7 are considered to be acidic, and those in the range of 7 to 14 are considered to be alkaline. At a pH of 7, water is neither acidic nor alkaline, but is a neutral solution. The pH scale is logarithmic, so that a change of one pH unit represents a ten-fold change in hydrogen-ion activity.

The pH of lake water may be altered through photosynthesis and respiration by waterborne plants, as well as by other activities. The uptake of carbon dioxide during photosynthesis increases the pH of the water, whereas the release of carbon dioxide during respiration decreases the pH value.

During the early part of this study, pH values were measured with a portable pH meter from samples taken 1 foot below water surface. Later in the study, profiles of pH were taken along with temperature, dissolved oxygen, and conductivity, but only the surface and the bottom (1 foot above lake bottom) values were reported.

Conductivity—Specific conductance, or conductivity, is a measure of the ability of water to conduct an electrical current and is expressed as micromhos per centimeter at 25°C (Celsius). The specific conductance of pure water is low, but increases as water becomes more mineralized. Hence, specific conductance is related to the concentration of ionized minerals in the water. In this report, specific conductance was measured for samples taken at various depths, but only the values for samples collected at the surface and 1 foot above the bottom of the lakes are reported.

Alkalinity—Alkalinity is the capacity of water to neutralize an acid by means of chemical buffering. In all natural waters, alkalinity is caused by the presence of bicarbonate, carbonate, or hydroxide ions. For this study, alkalinity is reported in milligrams per liter as calcium carbonate and was determined by titrating the samples with 0.01639 N sulfuric acid to a pH of 4.5.

Total hardness—Historically, water has been classified as "hard" or "soft" depending on how readily the water produces a lather when mixed with soap. For this study, hardness values are reported in milligrams per liter as $CaCO_3$ (calcium carbonate). Any water with hardness of less than 60 mg/l as $CaCO_3$ is considered to be soft on an arbitrary scale used by the Geological Survey.

Dissolved solids—Dissolved solids was determined by evaporating a known quantity of water, drying it at 180°C, and weighing the residue. The U.S. Public Health Service (1962) has established a recommended limit of 500 mg/l of dissolved solids for drinking water supplies, although this limit may be exceeded if no better water is available.

Commonly, the numerical value for dissolved solids (milligrams per liter) is about two-thirds the specific conductance value (in micromhos). However, in the low range of conductivity values found in many parts of Oregon, either proportionately high silica concentrations or abundant organic material may contribute significantly to the dissolved-solids content, causing a higher value than might be expected by comparison with conductivity readings.

Dissolved-oxygen profile—The concentration of dissolved oxygen in water is a function of the temperature and salinity of the water and of the atmospheric pressure and can vary daily or even hourly. Oxygen solubility is inversely related to the water temperature and salinity. The warmer the water the less oxygen it will contain. Oxygen in water is continually being altered by life processes such as photosynthesis and respiration and by complex chemical reactions. In lakes at low altitude, such as along the Oregon coast where atmospheric pressure is high, more oxygen goes into solution than it does in lakes at higher altitudes.

Although dissolved-oxygen values in this report represent only one group of observations, the values will provide a guide for evaluating the suitability of a lake for fish life and for other cleanwater biota. A generalization based on thousands of field determinations on inland waters (Welch, 1952) states that "dissolved oxygen at levels of 3 ppm [mg/l] or lower should be regarded as hazardous to lethal [for fish] under average stream and lake conditions; and that 5 ppm [mg/l] or more of dissolved oxygen should be present in waters, if conditions are to be favorable for freshwater fishes." This statement, which applies

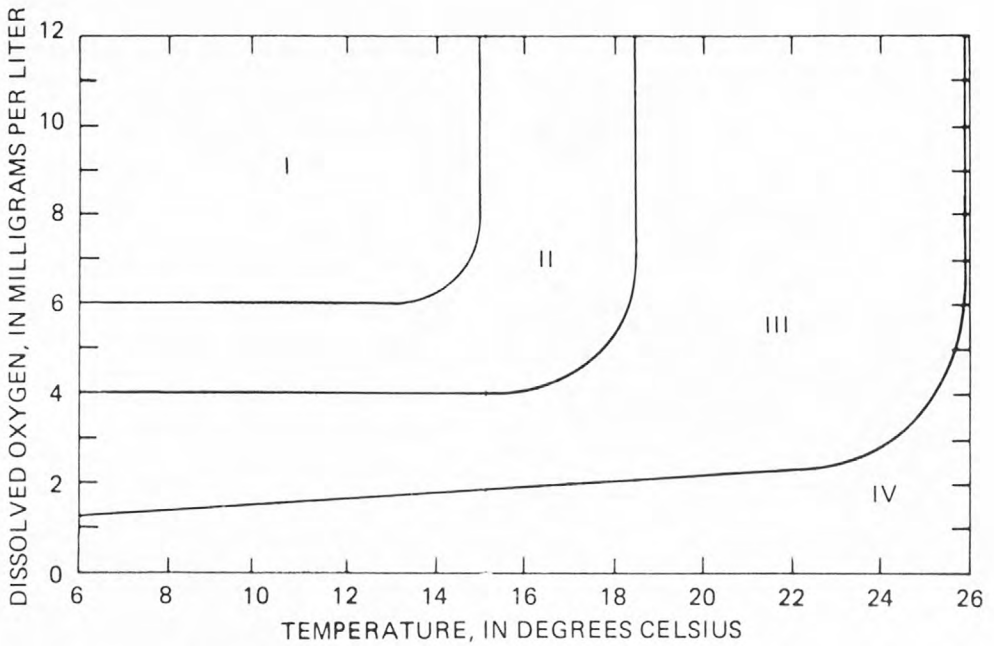


Figure 2. – Favorable to lethal combinations of dissolved oxygen and temperature for rainbow trout. Zone I represents most favorable combinations, whereas zone IV represents lethal combinations.

mainly to warm-water fish, assumes that other vital requirements are held within their proper limits. The combined influence of dissolved oxygen and temperature on rainbow trout is illustrated in figure 2, which is patterned after figure 11 in a report by Smith and Bella (1973).

Temperature profile–Temperature, which varies in lakes with depth and time of year, is the most important controlling factor in the aquatic environment. Life processes, chemical-reaction rates, and many physical events occur only within definite temperature ranges. Temperature variations in lakes are important in determining the suitability of a lake for recreation, fish production (see fig. 2), and industrial and agricultural uses.

For most lakes, the temperatures listed were probably close to the maximum for the year when sampled. However, temperatures during other years may vary considerably from these, depending on weather conditions, inflow, outflow, lake depth, etc. For most lakes, the temperature was plotted against depth, and a solid line was drawn between the plotted points.

Temperatures are reported in degrees Celsius (°C), which can be converted to degrees Fahrenheit (°F) using the following table:

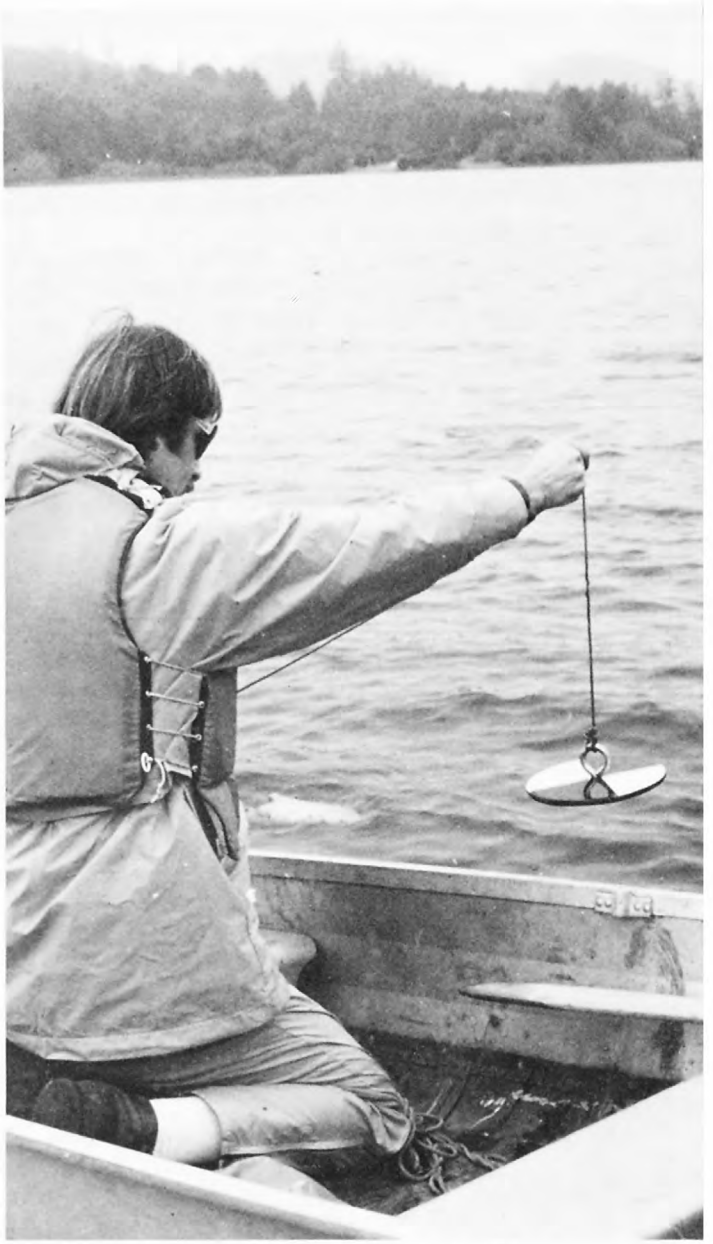
°C	°F	°C	°F	°C	°F
0	32	10	50	20	68
1	34	11	52	21	70
2	36	12	54	22	72
3	37	13	55	23	73
4	39	14	57	24	74
5	41	15	59	25	77
6	43	16	61	26	79
7	45	17	63	27	81
8	46	18	64	28	82
9	48	19	66	29	84

Transparency–Transparency, or penetration of light, refers to the depth to which light can penetrate through water. Because photosynthesis can occur only to depths where sufficient light is available, transparency is one of the most important parameters that govern the biological activity of a lake.

Transparency was measured with a Secchi disc having a diameter of 25 centimeters. The measurements consisted of recording the depth at which the disc just disappeared from view. Depths are read to the nearest 0.1 meter. Secchi disc measurements provide comparative information on the transparency of water in the various lakes measured.

Color—Color value is determined by a comparison of the water with standardized colored-glass discs and is reported in platinum-cobalt (Pt-Co) units. High color values in many of the lakes result from the decomposition of vegetation, which gives the water a brown, tea-like color.

Coliform bacteria—For this report, the fecal coliform group is defined as all organisms that produce blue colonies when grown on M-FC medium at 44.5°C for 24 hours. Because fecal coliforms are that part of the total coliform group that is present in the gut or feces of warmblooded animals, their presence may indicate recent and possibly dangerous contamination. The total coliform group reported early in the survey is defined as any colony that exhibits a characteristic golden metallic sheen when grown on M-Endo medium at 35°C for 18 to 24 hours and may suggest less recent contamination or contributions from sources of nonfecal origin. The reporting unit for both groups is the number of colonies per 100 milliliter sample. If any coliform bacteria are indicated, the water is generally considered to have disease- producing potential and should not be used for drinking unless it is first treated.



Secchi Disc

Other Named Lakes

Some of the named lakes on U.S. Geological Survey topographic maps were not studied because when they were visited they did not meet the established criteria. However, because at other times of the year these lakes might be of some importance and would therefore meet the criteria, they are listed below by county.

Lake	Section	Township	Range
Benton County			
Asbahr Lake	17	T.11 S.	R.4 W.
Baker Lake	35	T.12 S.	R.5 W.
Crystal Lake	11	T.12 S.	R.5 W.
Riser Lake	13	T.13 S.	R.5 W.
Stewart Lake	25	T.11 S.	R.5 W.
Whitaker Lake	14	T.13 S.	R.5 W.
Lincoln County			
None	—	—	—
Polk County			
None	—	—	—

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A State index showing topographic maps is available free on request to the Distribution Section, U.S. Geological Survey, Denver Federal Center, Lakewood, Colo. 80225. The index contains lists of special maps, addresses of local map reference libraries, local map dealers, and Federal map distribution centers. An order blank and detailed instructions for ordering maps are supplied with each index.

Benton County

Lakes of Benton County

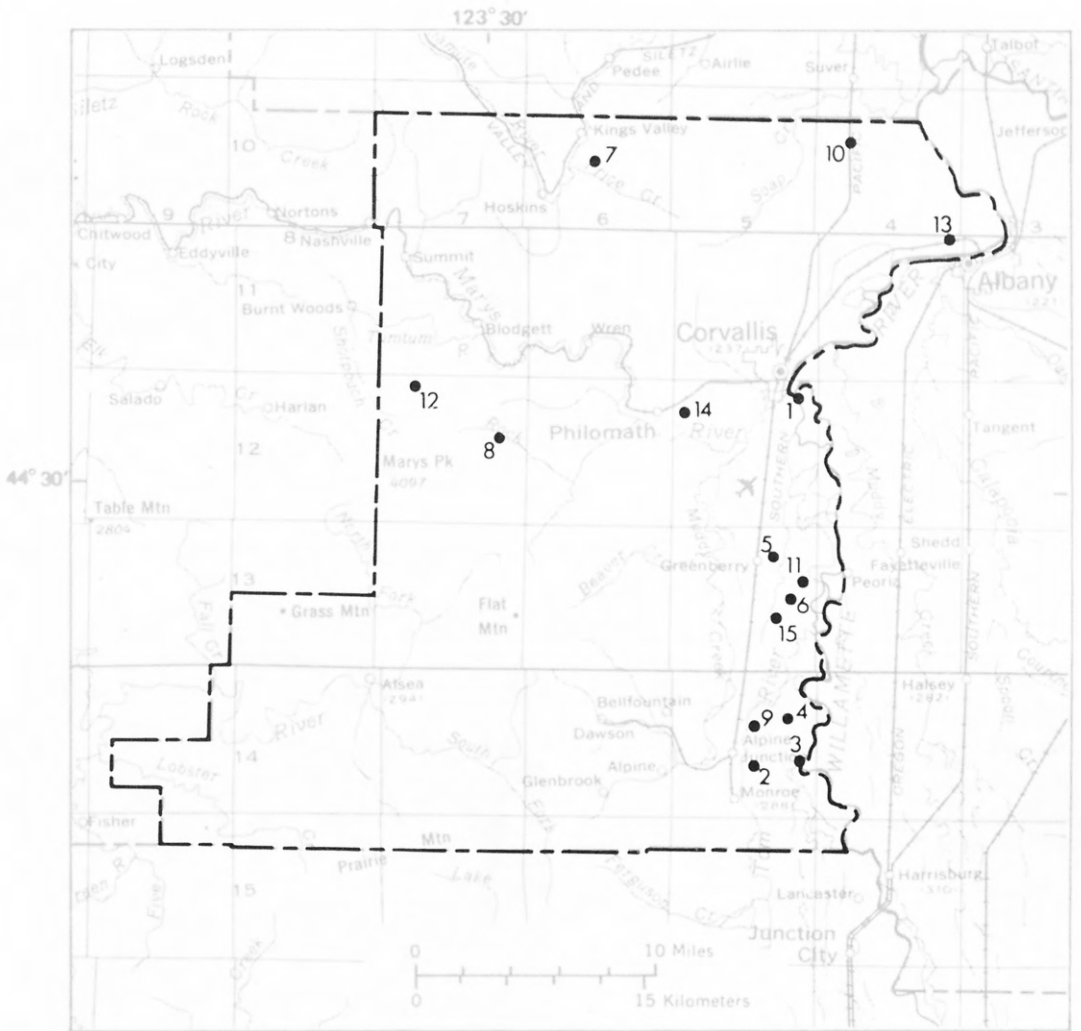


Figure 3.—Locations and identification numbers of lakes in Benton County.

LOCATION: NW¼ sec.1, T.12 S., R.5 W., on Fischer Island, about 0.5 mi (0.8 km) east of Corvallis and 1.5 mi (2 km) north of Willamette Park. Riverside 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 20 acres (80,000 m^2).

SURFACE ELEVATION: 210 ft (64 km) above mean sea level, from topographic map.

VOLUME: 120 acre-ft (150,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: No recreational use.

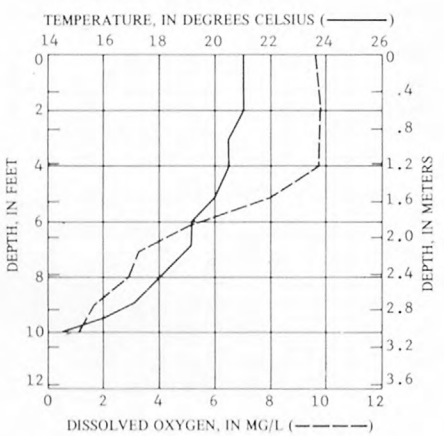
REMARKS: The largest of several water-filled gravelpits on the island. There is no evidence of either submerged or surface aquatic growth. Gravel is excavated commercially from the vicinity of the pond.

WATER-QUALITY DATA

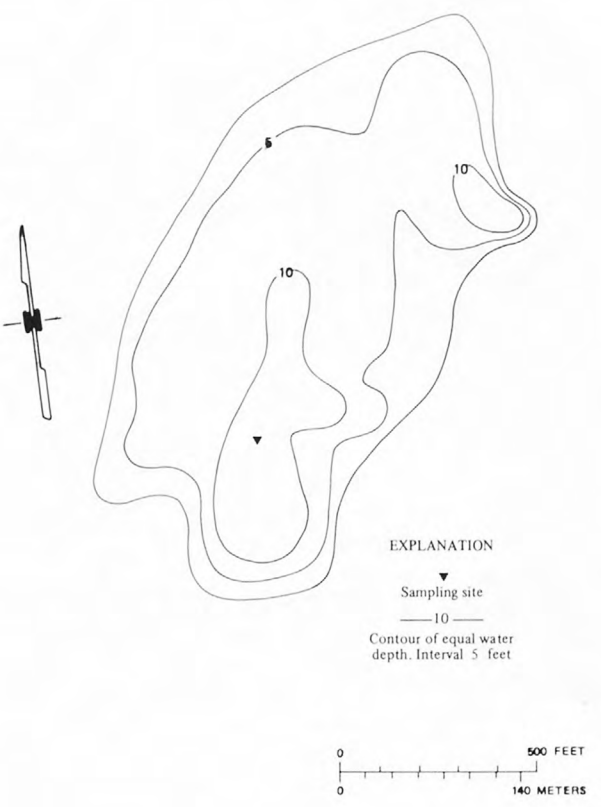
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°33'35", long 123°14'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.6	205
BOTTOM	7.6	215

ALKALINITY (mg/l as $CaCO_3$)	73
TOTAL HARDNESS (mg/l as $CaCO_3$)	84
DISSOLVED SOLIDS (mg/l)	123
TRANSPARENCY (meters)	.6
COLOR (Pt-Co units)	50
FECAL COLIFORM (colonies/100 ml)	6



BATHYMETRIC MAP



LOCATION: Sec.22, T.14 S., R.5 W., about 1 mi (1.6 km) east of Alpine Junction and 1.5 mi (2 km) northeast of Monroe. Monroe 7½-minute quadrangle map.

DRAINAGE BASIN: Long Tom (Willamette River drainage, non-contributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 2 acres (8,000 m^2).

SURFACE ELEVATION: 270 ft (80 m) above mean sea level, from topographic map. Water surface on survey date was estimated to be about 10 ft (3 m) lower than normal.

VOLUME: 4 acre-ft (5,000 m^3).

INFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the south side of the lake. The lake is flooded by the Willamette and Long Tom Rivers during extremely high water.

OUTFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the north side of the lake.

USE: Private fishing.

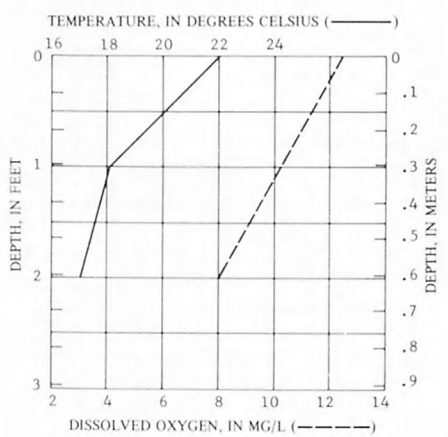
REMARKS: An algae bloom covering most of the lake surface and the resultant photosynthetic activity were probably the cause of supersaturated oxygen levels in the epilimnion. The bottom of the lake is mostly mud. This lake occupies an abandoned stream channel.

WATER-QUALITY DATA

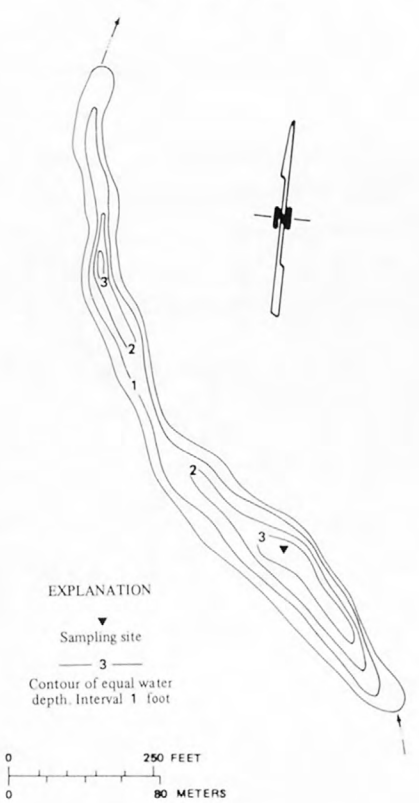
SAMPLING TIME: 1700 hours
SAMPLING SITE: Lat 44°20'05", long 123°16'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.3	233
BOTTOM	6.7	228

ALKALINITY (mg/l as $CaCO_3$)	91
TOTAL HARDNESS (mg/l as $CaCO_3$)	110
DISSOLVED SOLIDS (mg/l)	160
TRANSPARENCY (meters)	.5
COLOR (Pt-Co units)	40
FECAL COLIFORM (colonies/100 ml)	84



BATHYMETRIC MAP



LOCATION: Secs.14, 23, 24, T.14 S., R.5 W., about 2 mi (3 km) east of Alpine Junction and 3 mi (5 km) northeast of Monroe. Monroe and Harrisburg 7½-minute quadrangle maps.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 9 acres (36,000 m^2).

SURFACE ELEVATION: 270 ft (80 m) above mean sea level, from topographic map.

VOLUME: 50 acre-ft (60,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: No recreational use.

REMARKS: An algae bloom covering most of the lake surface and the resultant photosynthetic activity were probably the cause of supersaturated oxygen levels and elevated pH values in the epilimnion. There is also a considerable amount of submerged aquatic growth. The bottom material is mostly mud. This lake occupies an abandoned stream channel, part of which is on the Benton-Linn County line.

Water rights certificate issued for the diversion of 0.55 ft^3/s (0.016 m^3/s) for irrigation.

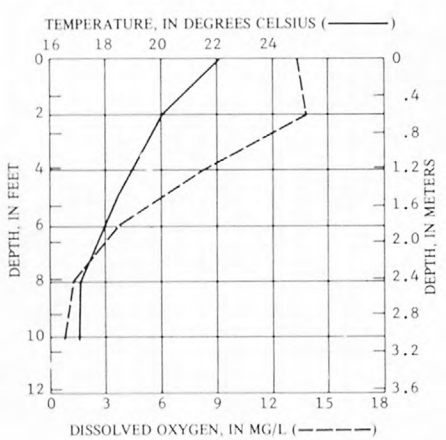
Reference: 11.

WATER-QUALITY DATA

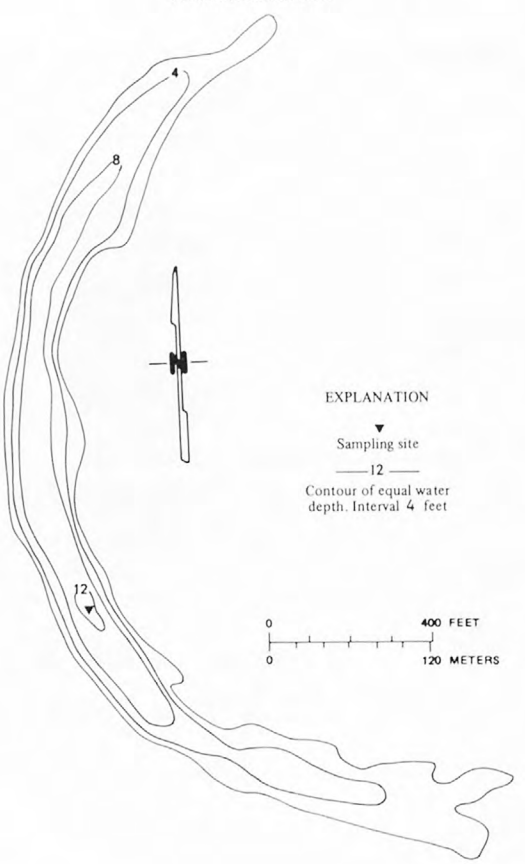
SAMPLING TIME: 1300 hours
SAMPLING SITE: Lat 44°20'45", long 123°15'20"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.1	201
BOTTOM	8.1	215

ALKALINITY (mg/l as $CaCO_3$)	78
TOTAL HARDNESS (mg/l as $CaCO_3$)	212
DISSOLVED SOLIDS (mg/l)	171
TRANSPARENCY (meters)	.7
COLOR (Pt-Co units)	25
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: Sec.14, T.14 S., R.5 W., about 2 mi (3 km) west of Bellfountain Junction and 3 mi (5 km) northeast of Monroe. Monroe 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 4 acres (16,000 m^2).

SURFACE ELEVATION: 260 ft (80 m) above mean sea level, from topographic map.

VOLUME: 15 acre-ft (18,000 m^3).

INFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the south end of the lake. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: Private fishing.

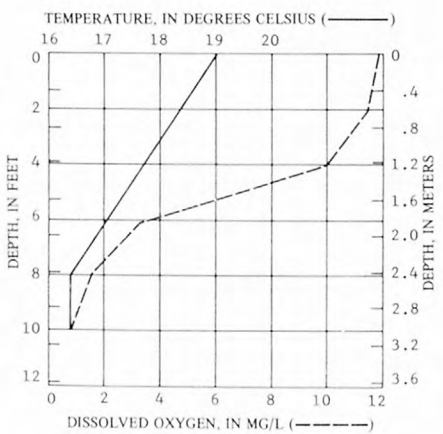
REMARKS: Aquatic growth covers about 10 percent of the lake surface. Bottom material is mostly gravel, with some mud and clay. This lake occupies an abandoned stream channel.
Water rights certificate issued for the diversion of 3.69 ft^3/s (0.100 m^3/s) for irrigation.
Reference: 11.

WATER-QUALITY DATA

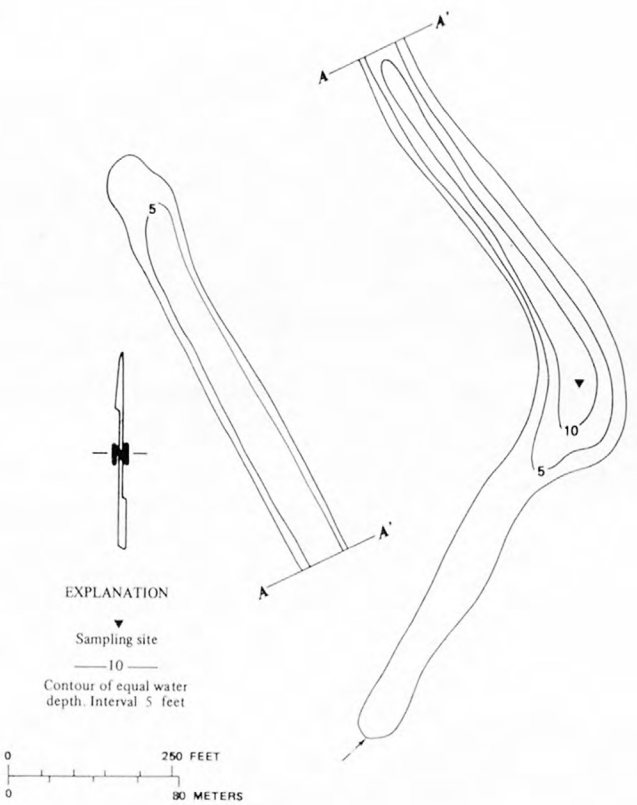
SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°21'20", long 123°15'15"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.0	233
BOTTOM	7.4	246

ALKALINITY (mg/l as $CaCO_3$)	76
TOTAL HARDNESS (mg/l as $CaCO_3$)	100
DISSOLVED SOLIDS (mg/l)	177
TRANSPARENCY (meters)	.9
COLOR (Pt-Co units)	25
FECAL COLIFORM (colonies/100 ml)	13



BATHYMETRIC MAP



LOCATION: Secs.2, 11, T.13 S., R.5 W., about 1 mi (1.6 km) east of Greenberry and 2 mi (3 km) southeast of the Corvallis Airport. Greenberry 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River.

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 30 acres (120,000 m^2).

SURFACE ELEVATION: 230 ft (70 m) above mean sea level, from topographic map.

VOLUME: 170 acre-ft (210,000 m^3).

INFLOW: None observed. Topographic map indicates five unnamed intermittent streams around the lake. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the north end of the lake to Baker Lake (p. 7).

USE: Private fishing.

REMARKS: Aquatic growth covering a large part of the lake surface and the resultant photosynthetic activity were probably the cause of supersaturated oxygen levels in the epilimnion. The bottom material is mostly mud. This lake occupies an abandoned stream channel.

Water rights certificate issued for the diversion of 1.35 ft^3/s (0.038 m^3/s) for irrigation.

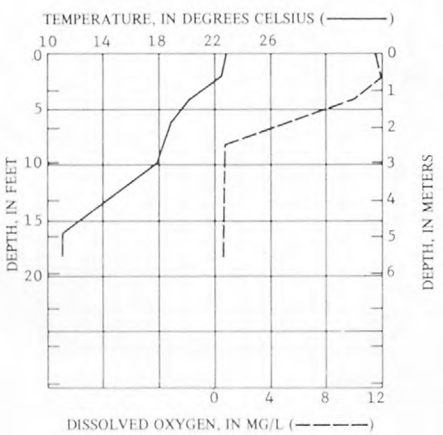
Reference: 11.

WATER-QUALITY DATA

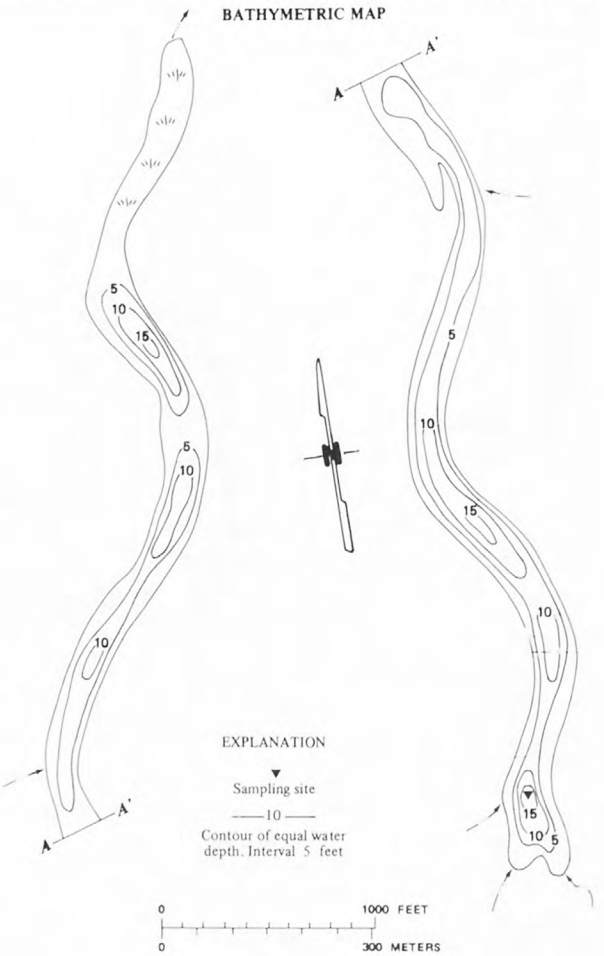
SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°27'15", long 123°15'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.5	231
BOTTOM	7.2	479

ALKALINITY (mg/l as $CaCO_3$)	98
TOTAL HARDNESS (mg/l as $CaCO_3$)	95
DISSOLVED SOLIDS (mg/l)	175
TRANSPARENCY (meters)	1.5
COLOR (Pt-Co units)	10
FECAL COLIFORM (colonies/100 ml)	2



BATHYMETRIC MAP



LOCATION: SE¼ sec.14, T.13 S., R.5 W., about 0.5 mi (0.8 km) east of Winkle Butte and 4 mi (6 km) southeast of the Corvallis Airport. Greenberry 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Willamette River.

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 9 acres (36,000 m^2).

SURFACE ELEVATION: 240 ft (73 m) above mean sea level, from topographic map.

VOLUME: 30 acre-ft (37,000 m^3).

INFLOW: None observed. Topographic map indicates two unnamed intermittent streams on the south side of lake. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the north side of lake to McBee Lake (p. 16).

USE: Private fishing

REMARKS: Aquatic growth covers about 15 percent of the lake surface. Bottom material is mostly mud, and there are snags on the lake's perimeter. This lake occupies an abandoned stream channel.

WATER-QUALITY DATA

SAMPLING TIME: 1100 hours
SAMPLING SITE: Lat 44°26'05", long 123°15'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.5	184
BOTTOM	8.0	217

ALKALINITY (mg/l as $CaCO_3$) 61

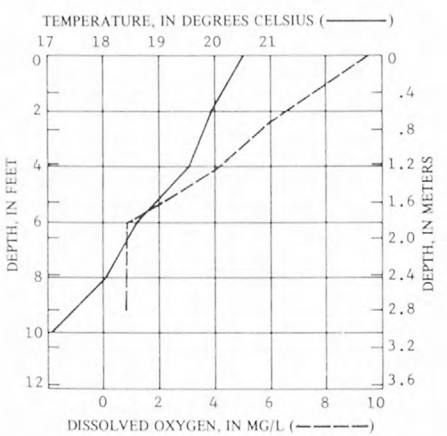
TOTAL HARDNESS (mg/l as $CaCO_3$) 75

DISSOLVED SOLIDS (mg/l) 130

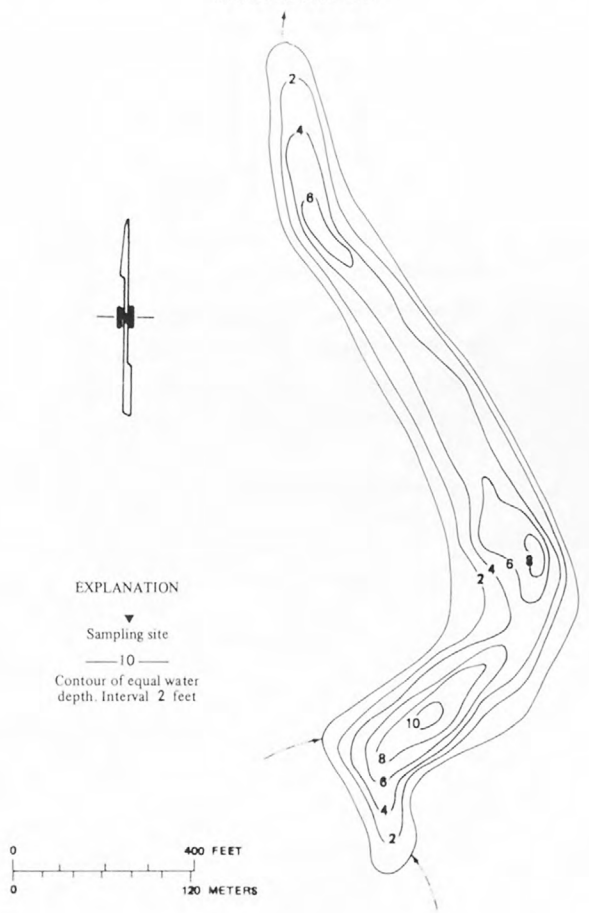
TRANSPARENCY (meters) .8

COLOR (Pt-Co units) 15

FECAL COLIFORM (colonies/100 ml) 3



BATHYMETRIC MAP



LOCATION: NW¼ sec.22, T.10 S., R.6 W., about 1.5 mi (2 km) southeast of Kings Valley and 11 mi (18 km) northwest of Corvallis. Corvallis 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Luckiamute River (Willamette River drainage).

DRAINAGE AREA: 1.17 mi^2 (3.03 km^2). (Information furnished by the U.S. Soil Conservation Service.)

SURFACE AREA: 19.8 acres (80,000 m^2) at normal pool. (Information furnished by the U.S. Soil Conservation Service.)

SURFACE ELEVATION: 400 ft (120 m) above mean sea level, from topographic map.

VOLUME: 166.4 acre-ft (205,000 m^3) at normal pool. Information furnished by the U.S. Soil Conservation Service.

INFLOW: No flow through channels on east and south sides of reservoir.

OUTFLOW: Regulated through dam for irrigation. No flow through spillway.

USE: Private fishing.

REMARKS: There is both surface and submerged aquatic growth, most of it bottom grass. The bottom material is mostly mud.

Water rights certificate issued for storage of 166.4 acre-ft (205,000 m^3). Use of stored water for irrigation shall not exceed 150.2 acre-ft (185,000 m^3) per year.

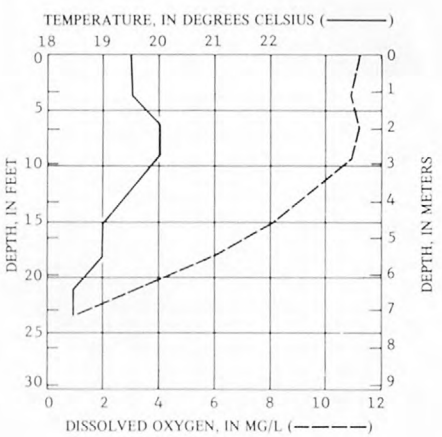
The water behind the secondary dam is called Schaffers Pond on the reservoir blueprint.

WATER-QUALITY DATA

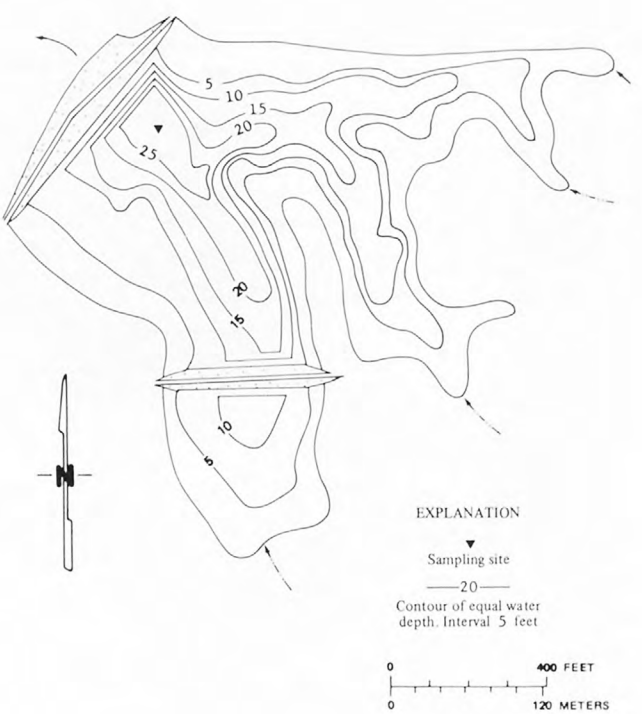
SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°41'25", long 123°24'55"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.3	154
BOTTOM	7.7	159

ALKALINITY (mg/l as $CaCO_3$)	83
TOTAL HARDNESS (mg/l as $CaCO_3$)	63
DISSOLVED SOLIDS (mg/l)	115
TRANSPARENCY (meters)	2.7
COLOR (Pt-Co units)	10
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: W½ sec.13, NE¼ sec.14, T.12 S., R.7 W., about 5.5 mi (9 km) southwest of Wren and 6 mi (10 km) west of Philomath. Corvallis 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Marys River (Willamette River drainage).

DRAINAGE AREA: 3.34 mi^2 (8.65 km^2).

SURFACE AREA: 9 acres (36,000 m^2).

SURFACE ELEVATION: 658 ft (201 m) above mean sea level at spillway crest. (Information furnished by city of Corvallis.)

VOLUME: 257 acre-ft (317,000 m^3) at the above elevation. (Information furnished by city of Corvallis.)

INFLOW: Estimated 2 ft^3/s (0.06 m^3/s) from North Fork Rock Creek on west side of reservoir.

OUTFLOW: Regulated for municipal use. Estimated less than 0.1 ft^3/s (0.003 m^3) through spillway on east side of reservoir.

USE: No recreational use.

REMARKS: The reservoir water is clear, with no evidence of either submerged or surface aquatic growth. Bottom material is mostly mud.

Water rights certificate issued to Corvallis for diversion of 4.7 ft^3/s (0.013 m^3/s) and storage of 257 acre-ft (317,000 m^3) for municipal water supply.

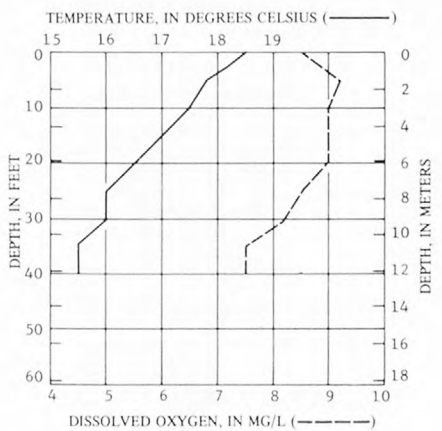
The Corvallis watershed is closed to the general public.

WATER-QUALITY DATA

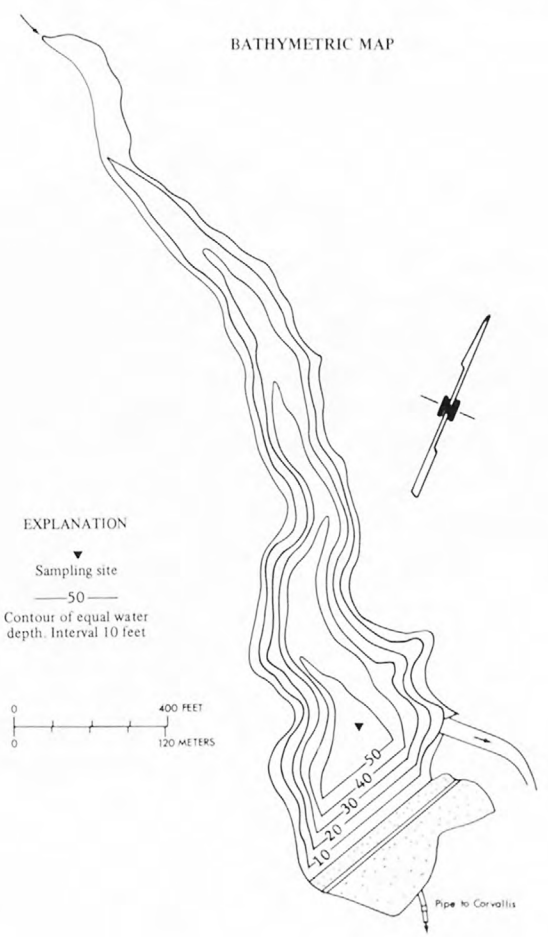
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°31'35", long 123°29'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.8	90
BOTTOM	7.6	84

ALKALINITY (mg/l as $CaCO_3$)	45
TOTAL HARDNESS (mg/l as $CaCO_3$)	36
DISSOLVED SOLIDS (mg/l)	60
TRANSPARENCY (meters)	3.4
COLOR (Pt-Co units)	5
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: Sec.15, T.14 S., R.5 W., about 1 mi (1.6 km) southeast east of Bellfountain Junction and 2.5 mi (4 km) northeast of Monroe. Monroe 7½-minute quadrangle map.

DRAINAGE BASIN: Long Tom (Willamette River drainage, non-contributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 7 acres (28,000 m^2).

SURFACE ELEVATION: 260 ft (80 m) above mean sea level, from topographic map.

VOLUME: 20 acre-ft (25,000 m^3).

INFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the south side of the lake from Garlinghouse Lake (p.13) and Miller Creek. The lake is flooded by the Willamette and Long Tom Rivers during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: Private fishing.

REMARKS: An algae bloom covering most of the lake surface and the resultant photosynthetic activity were probably the cause of supersaturated oxygen levels in the epilimnion. The bottom material is mostly gravel. This lake occupies an abandoned stream channel.

Water rights certificate issued for diversion of 3.46 ft^3/s (0.098 m^3/s) for irrigation.

WATER-QUALITY DATA

SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°21'10", long 123°16'40"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.9	562
BOTTOM	8.0	647

ALKALINITY (mg/l as $CaCO_3$) 91

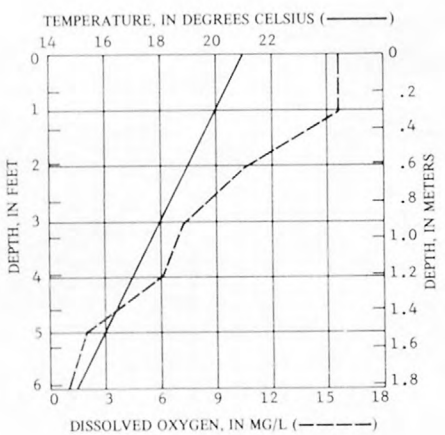
TOTAL HARDNESS (mg/l as $CaCO_3$) 120

DISSOLVED SOLIDS (mg/l) 232

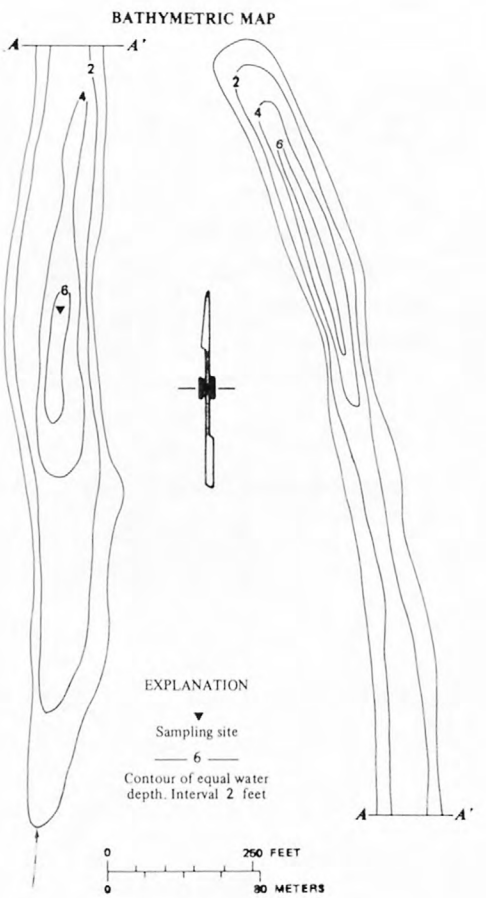
TRANSPARENCY (meters) .3

COLOR (Pt-Co units) 50

FECAL COLIFORM (colonies/100 ml) 80



BATHYMETRIC MAP



LOCATION: Secs.8, 17,T.10 S., R.4 W., about 0.5 mi (0.8 km) south of the Polk-Benton County line and 2.5 mi (4 km) northeast of Adair Air Force Station. Lewisburg 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Luckiamute River (Willamette River drainage).

DRAINAGE AREA: 3.06 mi^2 (7.93 km^2).

SURFACE AREA: 9 acres (36,000 m^2).

SURFACE ELEVATION: 200 ft (60 m) above mean sea level, from topographic map.

VOLUME: 15 acre-ft (18,000 m^3).

INFLOW: Estimated 3 ft^3/s (0.09 m^3/s) return flow from manufacturing plant. No flow through channel on west side of lake.

OUTFLOW: No flow through spillway on north edge of reservoir.

USE: No recreational use.

REMARKS: Aquatic growth covers about 50 percent of the lake surface. Bottom material is mostly hard mud, and the water has a dark-brown color. The return flow of plant effluent to the reservoir accounts for the poor quality of the water. Dead fish were seen floating on the surface.

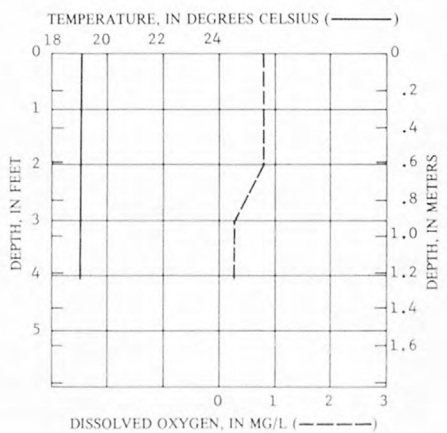
Water rights permit issued for both the storage of 39 acre-ft (48,000 m^3) and diversion of 0.2 ft^3/s (0.006 m^3/s) for manufacturing.

WATER-QUALITY DATA

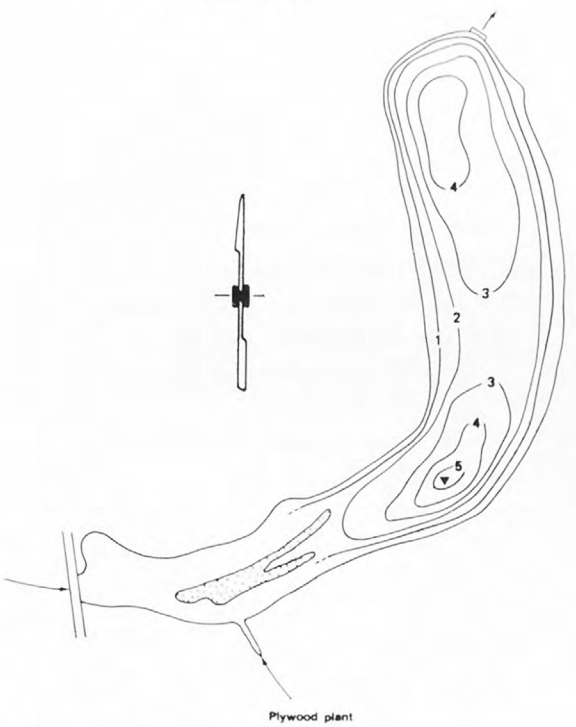
SAMPLING TIME: 0900 hours
SAMPLING SITE: Lat 44°42'30", long 123°11'40"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	11.3	>1,000
BOTTOM	12.0	>1,000

ALKALINITY (mg/l as $CaCO_3$)	680
TOTAL HARDNESS (mg/l as $CaCO_3$)	17
DISSOLVED SOLIDS (mg/l)	954
TRANSPARENCY (meters)	.3
COLOR (Pt-Co units)	260
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



EXPLANATION

▼ Sampling site

— 3 — Contour of equal water depth. Interval 1 foot

0 400 FEET
0 120 METERS

LOCATION: Secs.12, 13, T.13 S., R.5 W., about 1.5 mi (2 km) east of U.S. Highway 99W and 2 mi (3 km) west of Peoria. Peoria 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 5 acres (20,000 m^2).

SURFACE ELEVATION: 230 ft (70 m) above mean sea level, from topographic map.

VOLUME: 20 acre-ft (25,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: None apparent.

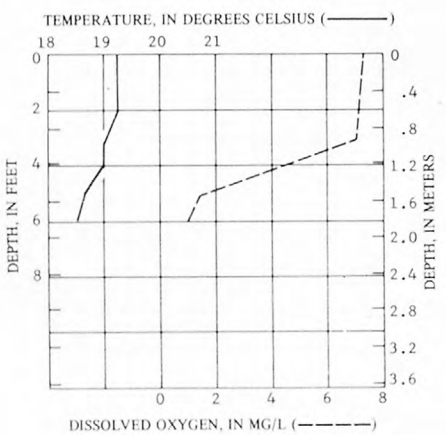
REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly mud, and the water has a dark-brown color. This lake occupies an abandoned stream channel.

WATER-QUALITY DATA

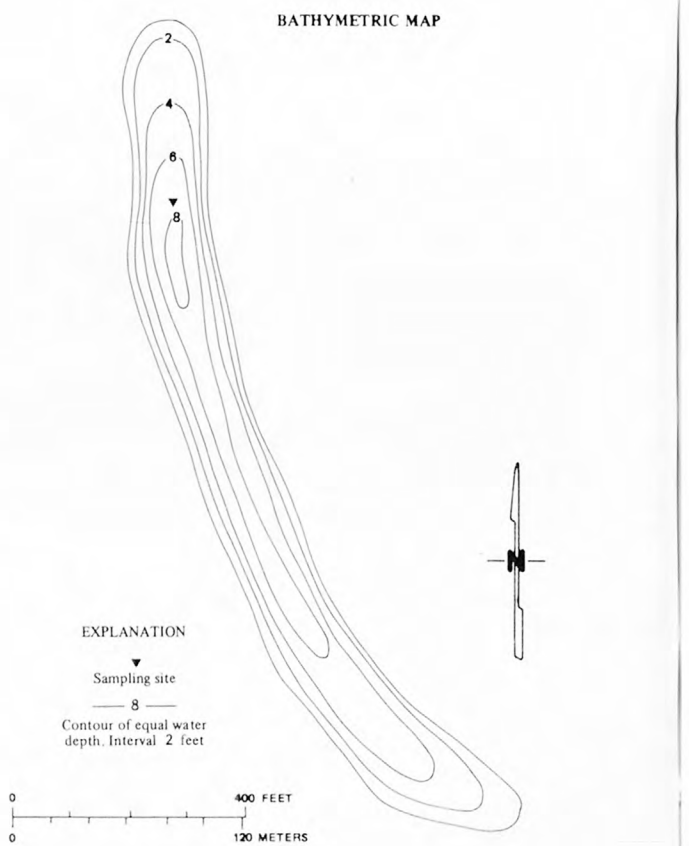
SAMPLING TIME: 0900 hours
SAMPLING SITE: Lat 44°26'55", long 123°14'40"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.2	166
BOTTOM	8.2	171

ALKALINITY (mg/l as $CaCO_3$)	60
TOTAL HARDNESS (mg/l as $CaCO_3$)	62
DISSOLVED SOLIDS (mg/l)	119
TRANSPARENCY (meters)	.5
COLOR (Pt-Co units)	100
FECAL COLIFORM (colonies/100 ml)	48



BATHYMETRIC MAP



LOCATION: W½ sec.5, NE¼ sec.6, T.12 S., R.7 W., about 4 mi (6 km) southwest of Blodgett and 5 mi (8 km) south of Summit. Marys Peak 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Marys River (Willamette River drainage).

DRAINAGE AREA: 3.47 mi^2 (8.99 km^2).

SURFACE AREA: 32 acres (130,000 m^2). (Information from the Oregon State Engineer.)

SURFACE ELEVATION: 750 ft (230 m) above mean sea level, from topographic map.

VOLUME: 362 acre-ft (446,000 m^3). (Information furnished by the Oregon State Engineer.)

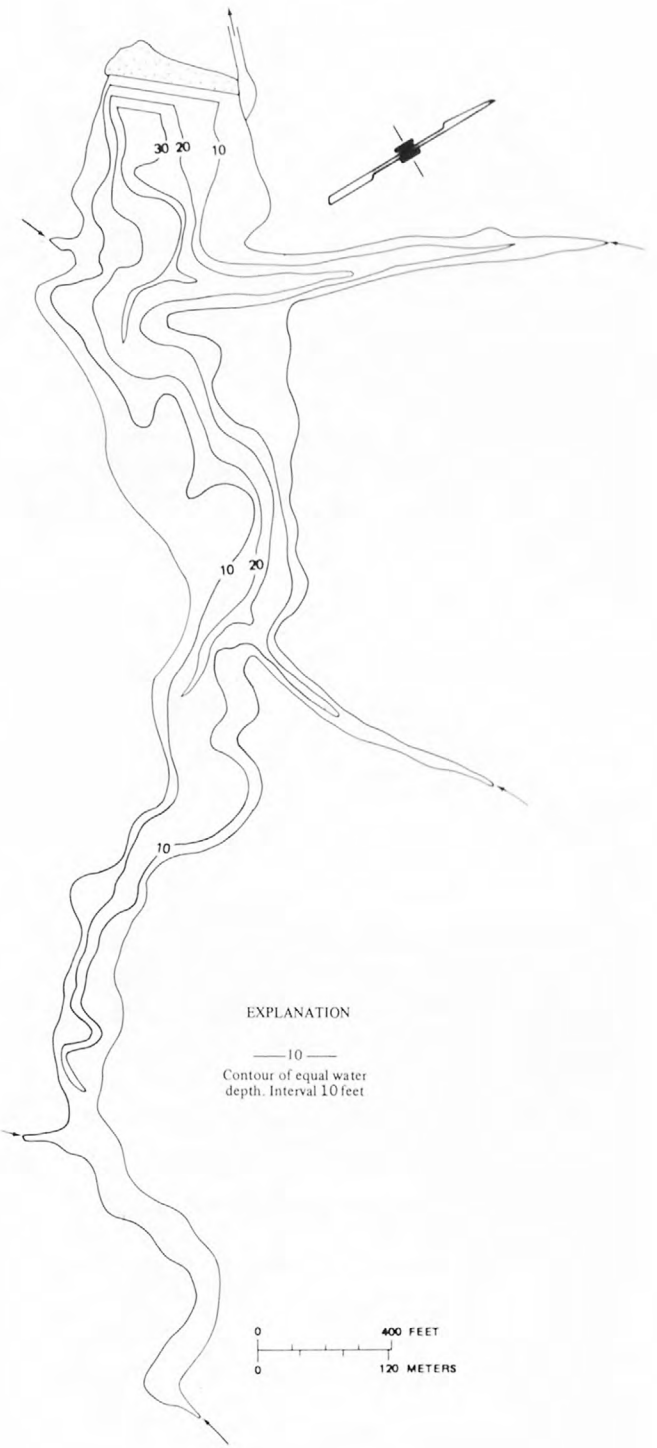
INFLOW: Topographic map indicates five unnamed streams entering the reservoir.

OUTFLOW: Bark Creek, through dam on west side of reservoir.

USE: Private recreation, including fishing, boating, and water skiing.

REMARKS: Not visited by U.S. Geological Survey field party; therefore, no water-quality data are available. The reservoir and surrounding area are not open to the general public. Water rights certificate issued for storage of 362 acre-ft (446,000 m^3) for recreation and fish culture. References: 8, 10.

BATHYMETRIC MAP



LOCATION: Sec.31, T.10 S., R.3 W., and sec.1, T.11 S., R.4 W., in North Albany. Albany and Lewisburg 7½-minute quadrangle maps.

DRAINAGE BASIN: Willamette River.

DRAINAGE AREA: 0.76 mi^2 (1.97 km^2).

SURFACE AREA: 15 acres (61,000 m^2).

SURFACE ELEVATION: 186 ft (57 m) above mean sea level, from topographic maps.

VOLUME: 100 acre-ft (120,000 m^3).

INFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the west side of the lake.

OUTFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the east side of the lake. The lake is flooded by the Willamette River during extremely high water.

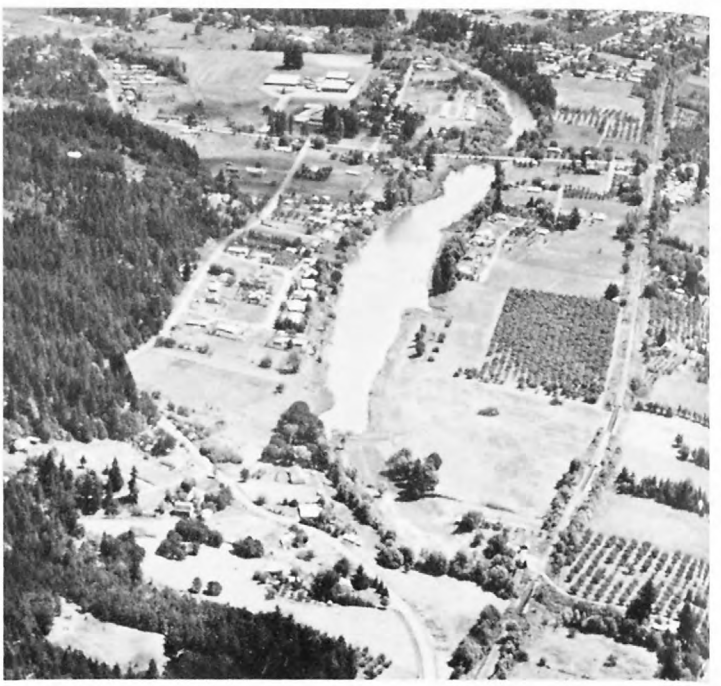
USE: Private recreational use, including fishing, swimming, and water skiing.

REMARKS: Approximately 5 percent of the lake's surface is covered with aquatic plants, and the bottom material is mostly mud. The lake occupies an abandoned stream channel.

Water rights certificate issued for diversion of 0.12 ft^3/s (0.003 m^3/s) for irrigation.

Water-quality data and bathymetric map apply only to that portion of the lake west of the North Albany road.

References: 11, 15.

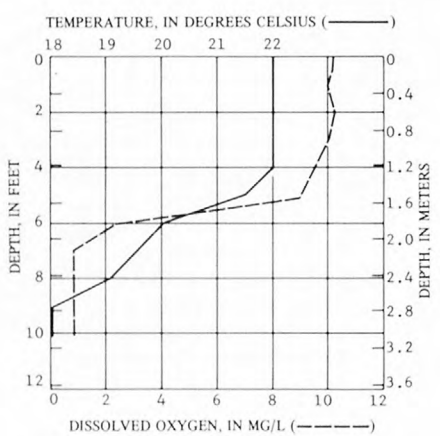


WATER-QUALITY DATA

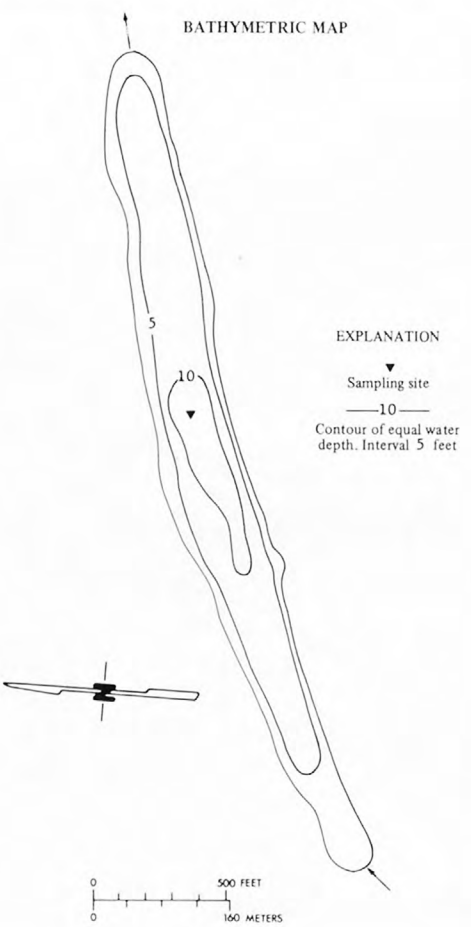
SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°38'55", long 123°07'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.5	334
BOTTOM	7.4	433

ALKALINITY (mg/l as $CaCO_3$)	112
TOTAL HARDNESS (mg/l as $CaCO_3$)	130
DISSOLVED SOLIDS (mg/l)	224
TRANSPARENCY (meters)	.6
COLOR (Pt-Co units)	30
FECAL COLIFORM (colonies/100 ml)	100



BATHYMETRIC MAP



LOCATION: Secs. 6, 7, T.12 S., R.5 W., about 3.5 mi (6 km) west of Corvallis near Philomath. Corvallis 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Marys River (Willamette River drainage, non-contributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 110 acres (450,000 m^2). (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 294 ft (90 m) above mean sea level (from topographic map).

VOLUME: 1,028 acre-ft (1.26 hm^3). (Information furnished by the Oregon State Engineer.)

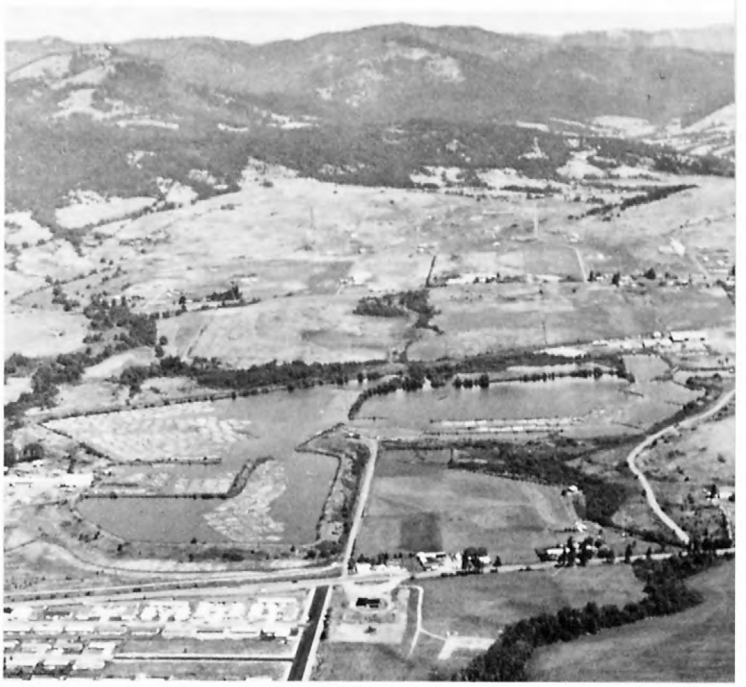
INFLOW: None observed. Construction drawings indicate two streams on the north side of the pond.

OUTFLOW: No flow through spillway on southeast side of pond.

USE: No recreational use.

REMARKS: Most of the pond is being used for log storage with very little of the surface exposed. The bottom material is mostly mud, and the water is dark brown in color. Decaying organic material probably causes the low oxygen levels, as well as the high nonionized dissolved-solids content and low pH.

Water rights certificate issued for storage of 1,028 acre-ft (1.26 hm^3) for log pond.

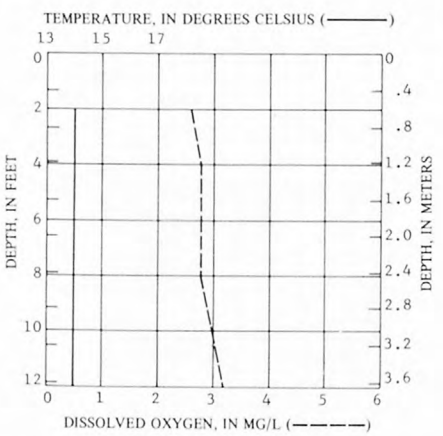


WATER-QUALITY DATA

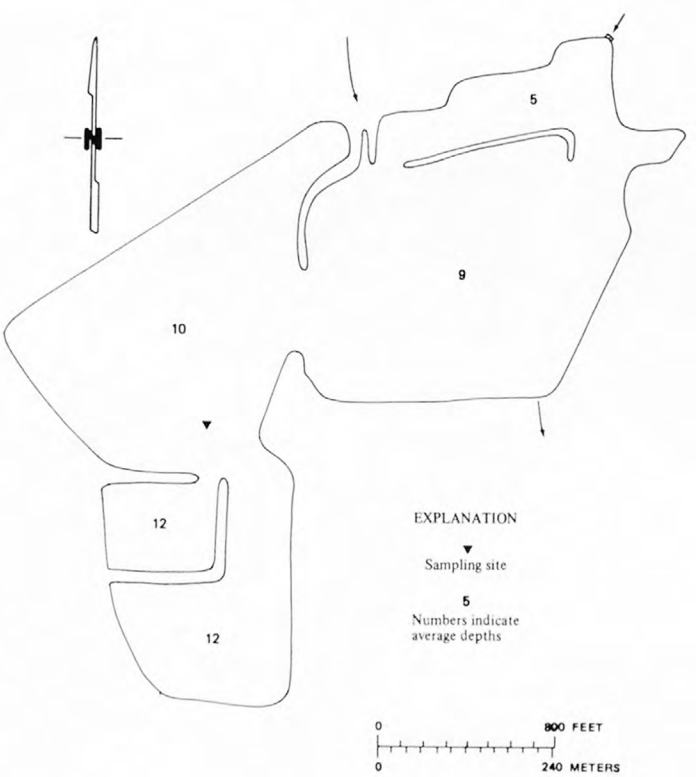
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°32'50", long 123°20'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.5	71
BOTTOM	6.4	72

ALKALINITY (mg/l as $CaCO_3$)	24
TOTAL HARDNESS (mg/l as $CaCO_3$)	14
DISSOLVED SOLIDS (mg/l)	93
TRANSPARENCY (meters)	.1
COLOR (Pt-Co units)	700
FECAL COLIFORM (colonies/100 ml)	--



BATHYMETRIC MAP



LOCATION: Secs.23, 26, T.13 S., R.5 W., about 2 mi (3 km) south of Greenberry and 2.5 mi (4 km) east of the William L. Finley Game Refuge headquarters. Greenberry 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River.

DRAINAGE AREA: 3.31 mi^2 (8.57 km^2).

SURFACE AREA: 25 acres (100,000 m^2).

SURFACE ELEVATION: 240 ft (73 m) above mean sea level, from topographic map.

VOLUME: 100 acre-ft (120,000 m^3).

INFLOW: None observed. Topographic map indicates four unnamed intermittent streams entering the lake. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed. Topographic map indicates an unnamed intermittent stream on the north side of the lake connecting to Whitaker Lake (p. 7).

USE: Private fishing.

REMARKS: The lake is relatively free of debris, although there are numerous snags on its perimeter. The water is brownish green, and the bottom is mostly mud with some gravel. This lake occupies an abandoned stream channel.

Water rights certificate issued for diversion of 5.56 ft^3/s (0.157 m^3/s) for irrigation.

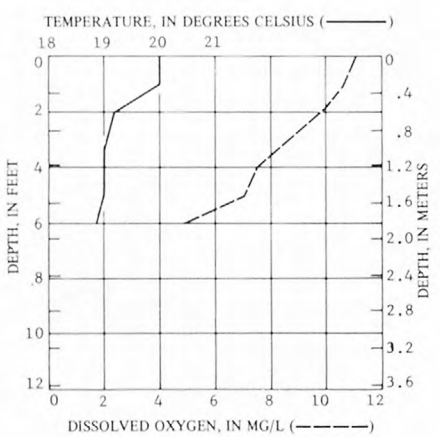
References: 15.

WATER-QUALITY DATA

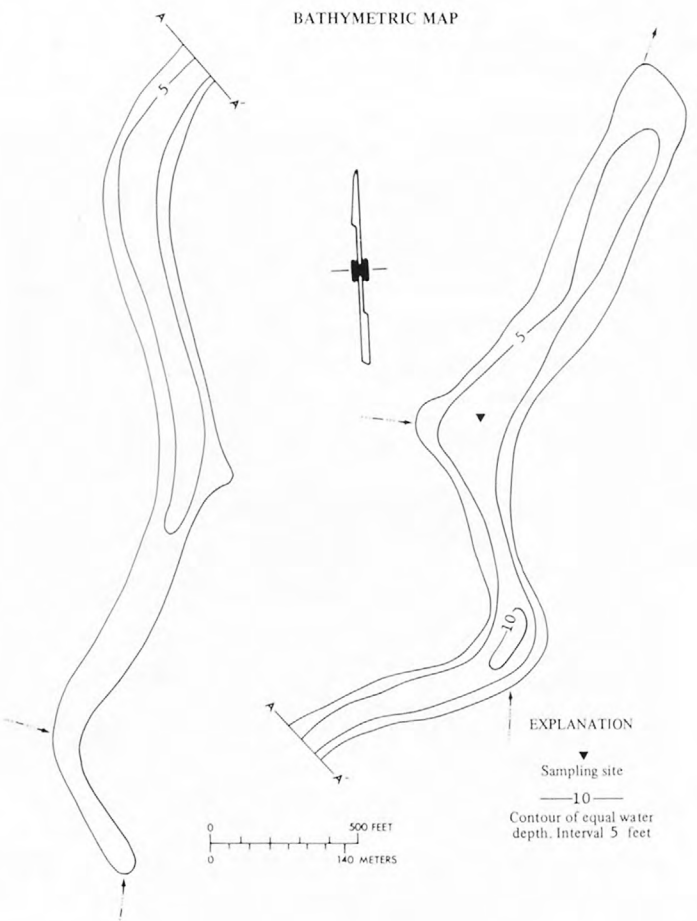
SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°25'45", long 123°15'55"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.0	294
BOTTOM	8.6	300

ALKALINITY (mg/l as $CaCO_3$)	82
TOTAL HARDNESS (mg/l as $CaCO_3$)	120
DISSOLVED SOLIDS (mg/l)	188
TRANSPARENCY (meters)	.7
COLOR (Pt-Co units)	30
FECAL COLIFORM (colonies/100 ml)	6



BATHYMETRIC MAP



Lincoln County

Lakes of Lincoln County

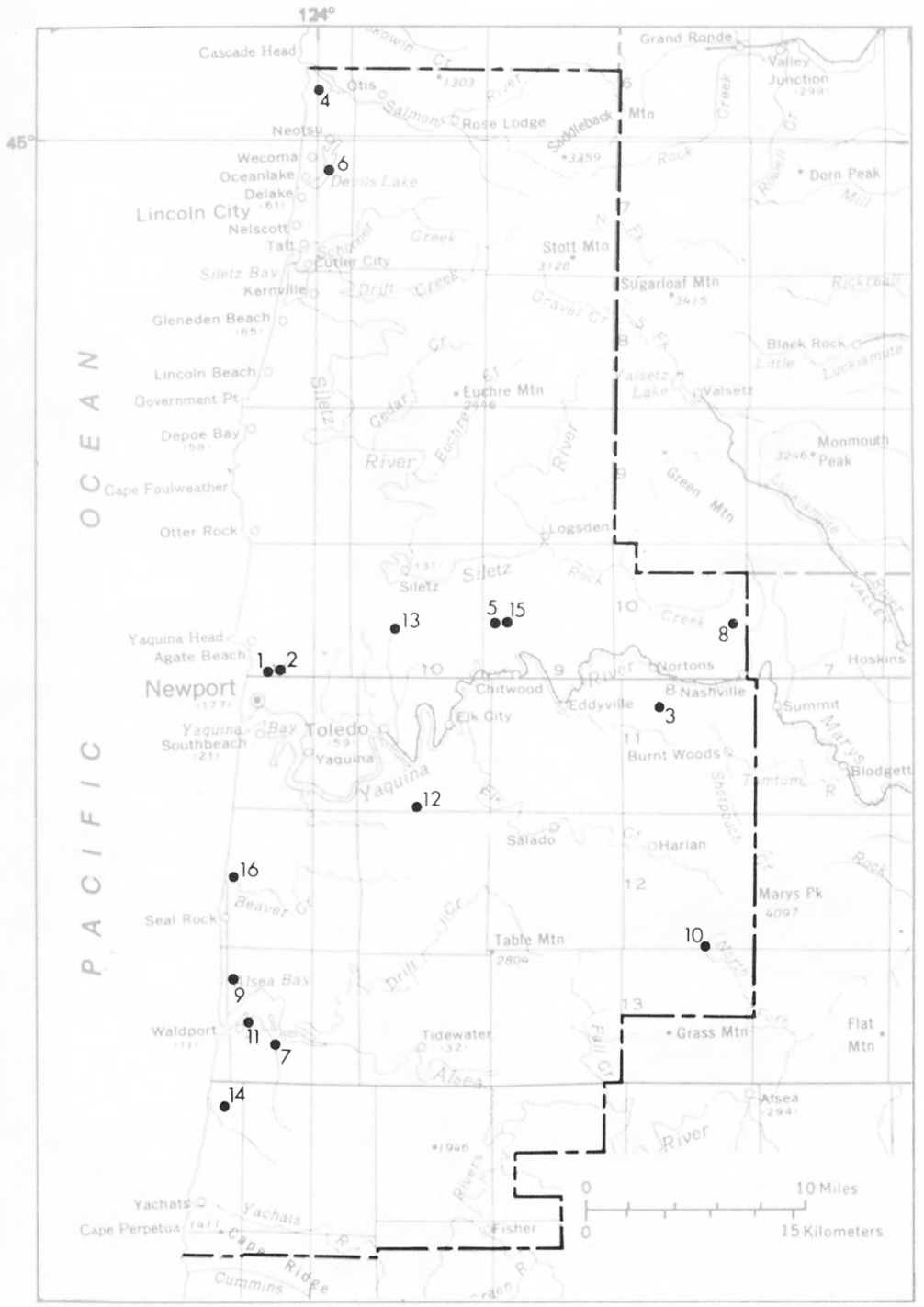


Figure 4.—Locations and identification numbers of lakes in Lincoln County.

LOCATION: Sec.33, T.10 S., R.11 W., about 1.5 mi (2 km) northeast of Newport and 1.5 mi (2 km) southeast of Agate Beach. Yaquina 15-minute quadrangle map. (Called Newport Reservoir on map.)

DRAINAGE BASIN: Big Creek (Pacific Slope drainage).

DRAINAGE AREA: 3.20 mi^2 (8.29 km^2).

SURFACE AREA: 20 acres (81,000 m^2). (Information furnished by city of Newport.)

SURFACE ELEVATION: 38 ft (12 m) above mean sea level at maximum pool. (Information furnished by city of Newport.)

VOLUME: 160 acre-ft (200,000 m^3). (Information furnished by city of Newport.)

INFLOW: From Big Creek Reservoir No. 2 on southeast side of the reservoir.

OUTFLOW: Regulated for municipal use. No measurable flow through spillway on survey date.

USE: Public fishing for stocked trout. Boats without motors are permitted on the reservoir.

REMARKS: No evidence of either submerged or surface aquatic growth.

Water-rights certificate issued for the storage and diversion of 200 acre-ft (250,000 m^3) for municipal water supply.

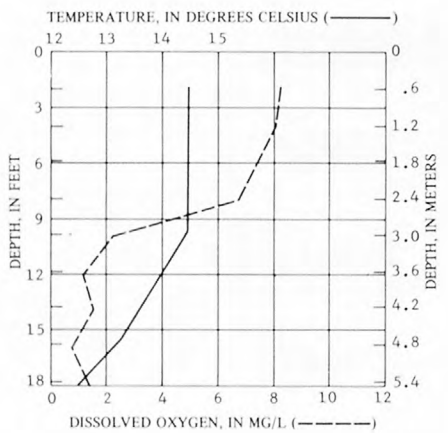
References: 3, 16.

WATER-QUALITY DATA

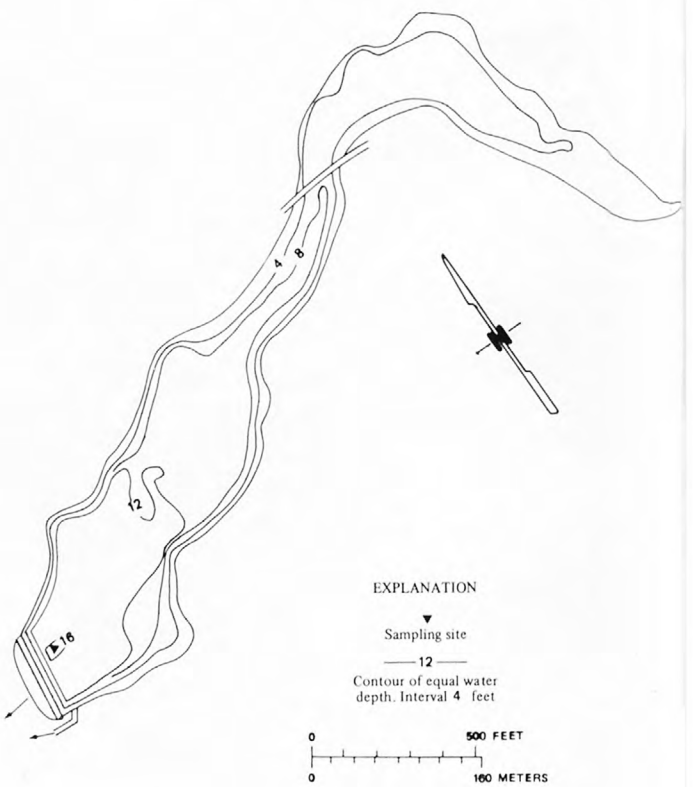
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°39'20", long 124°02'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.9	97
BOTTOM	6.3	--

ALKALINITY (mg/l as $CaCO_3$)	18
TOTAL HARDNESS (mg/l as $CaCO_3$)	15
DISSOLVED SOLIDS (mg/l)	59
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	40
TOTAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: Secs. 33, 34, T.10 S., R.11 W., about 2 mi (3 km) northeast of Newport and 2 mi (3 km) southeast of Agate Beach. Yaquina 15-minute quadrangle map.

DRAINAGE BASIN: Big Creek (Pacific Slope drainage).

DRAINAGE AREA: 2.87 mi^2 (7.43 km^2).

SURFACE AREA: 17 acres (69,000 m^2) at normal pool. (Information furnished by city of Newport.)

SURFACE ELEVATION: 66 ft (20 m) above mean sea level at normal pool. (Information furnished by city of Newport.) The water surface on the survey date was about 4 ft lower than indicated on the bathymetric map.

VOLUME: 338 acre-ft (417,000 m^3) at normal pool. (Information furnished by city of Newport.)

INFLOW: Numerous small streams contribute flow to the reservoir, but the two primary sources are Blattner Creek on the north side of the reservoir and Big Creek on the east side of the reservoir.

OUTFLOW: Regulated to Big Creek Reservoir No. 1 (p. 30).

USE: Public fishing for stocked trout. Boats without motors are permitted on the reservoir.

REMARKS: There is no evidence of either surface or submerged aquatic growth.

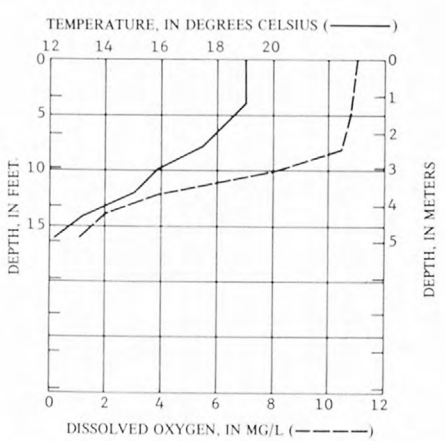
Water-rights permit issued for the storage and diversion of 345 acre-ft (425,000 m^3) for municipal supply.

WATER-QUALITY DATA

SAMPLING TIME: 0900 hours
SAMPLING SITE: Lat 44°39'25", long 124°01'45"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.5	87
BOTTOM	6.2	--

ALKALINITY (mg/l as $CaCO_3$)	14
TOTAL HARDNESS (mg/l as $CaCO_3$)	13
DISSOLVED SOLIDS (mg/l)	71
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	35
TOTAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP

LOCATION: Sec.5, T.11 S., R.8 W., about 4 mi (6 km) northwest of Burnt Woods and 5.5 mi (9 km) west of Summit. Marys Peak 15-minute quadrangle map.

DRAINAGE BASIN: Yaquina River (Pacific Slope drainage).

DRAINAGE AREA: 0.59 mi^2 (1.53 km^2).

SURFACE AREA: 3 acres (12,000 m^2).

SURFACE ELEVATION: 350 ft (107 m) above mean sea level, from topographic map.

VOLUME: 40 acre-ft (49,000 m^3).

INFLOW: No measurable flow through marsh from Buttermilk Creek on south side of lake.

OUTFLOW: No measurable flow through marsh to Buttermilk Creek on north side of lake.

USE: Private recreation.

REMARKS: Thick aquatic weeds grow along the lake perimeter, with the largest accumulation on the north end. The southern part of the lake is mostly marsh during low water, and the channel connecting the marsh to the main body of water is not navigable.

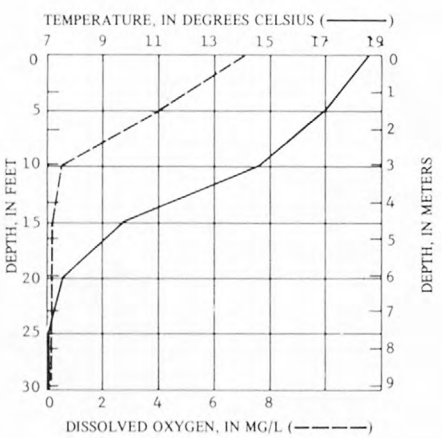
The lake is closed to the general public.

WATER-QUALITY DATA

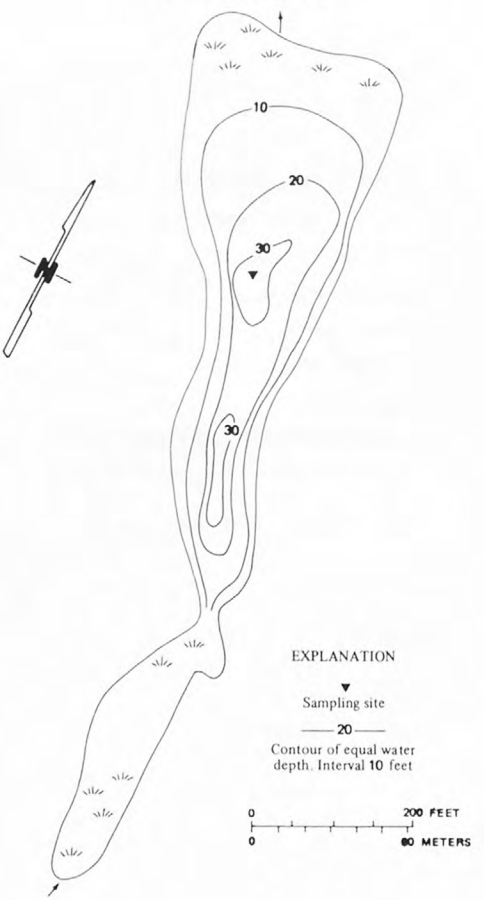
SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°38'25", long 123°41'20"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.8	75
BOTTOM	6.2	--

ALKALINITY (mg/l as $CaCO_3$)	32
TOTAL HARDNESS (mg/l as $CaCO_3$)	20
DISSOLVED SOLIDS (mg/l)	70
TRANSPARENCY (meters)	1.0
COLOR (Pt-Co units)	40
FECAL COLIFORM (colonies/100 ml)	--



BATHYMETRIC MAP



LOCATION: Sec.23, T.6 S., R.11 W., about 2 mi (3 km) north of Roads End and 3 mi (5 km) west of Otis. Hebo 15-minute quadrangle map.

DRAINAGE BASIN: Salmon River (Pacific Slope drainage).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 1 acre (4,000 m^2).

SURFACE ELEVATION: 300 ft (90 m) above mean sea level, from topographic map.

VOLUME: 6 acre-ft (7,400 m^3).

INFLOW: None observed, and no channel indicated on topographic map.

OUTFLOW: No measurable flow through unnamed stream on east side of lake.

USE: Private recreation for the Westwind YWCA Camp.

REMARKS: There are some snags in the lake, but there is no evidence of either submerged or surface aquatic growth. Because this lake is located in a depression near the top of a hill, surface runoff contributes only a small portion of the water needed to maintain the lake; therefore, the primary source of water is probably a perched water table that helps to maintain the level of the lake throughout the year.

Temperature and dissolved-oxygen profiles are not available.

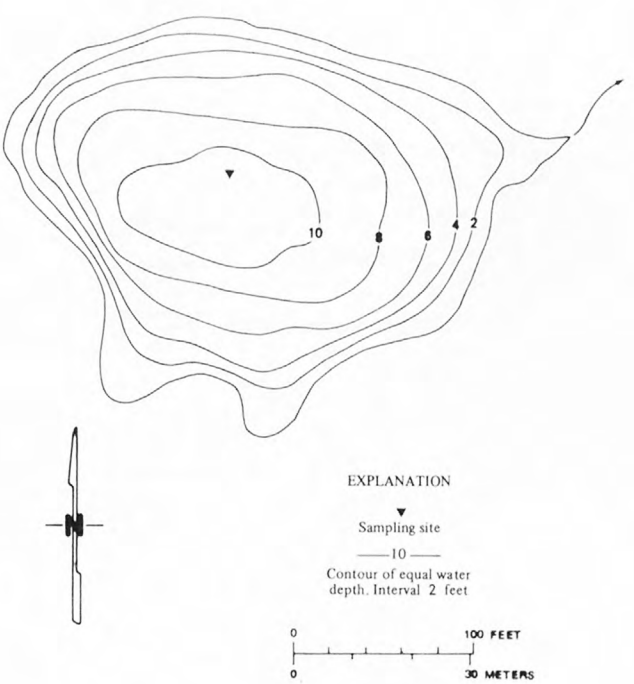
WATER-QUALITY DATA

SAMPLING TIME: 1400 hours
SAMPLING SITE: Lat 45°02'00", long 124°00'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.7	193
BOTTOM	7.7	193

ALKALINITY (mg/l as $CaCO_3$)	38
TOTAL HARDNESS (mg/l as $CaCO_3$)	32
DISSOLVED SOLIDS (mg/l)	116
TRANSPARENCY (meters)	1.0
COLOR (Pt-Co units)	50
FECAL COLIFORM (colonies/100 ml)	4

BATHYMETRIC MAP



LOCATION: Sec.18, T.10 S., R.9 W., about 4.5 mi (7 km) east of Siletz and 7.5 mi (12 km) northeast of Toledo. Toledo 15-minute quadrangle map.

DRAINAGE BASIN: Siletz River (Pacific Slope drainage).

DRAINAGE AREA: 0.24 mi^2 (0.62 km^2).

SURFACE AREA: 1 acre (4,000 m^2).

SURFACE ELEVATION: 350 ft (107 m) above mean sea level, from topographic map.

VOLUME: 7 acre-ft (8,600 m^3).

INFLOW: No measurable flow from unnamed creek on southwest side of lake.

OUTFLOW: No measurable flow through marsh to Thayer Creek on east side of lake.

USE: Public fishing.

REMARKS: An algae bloom covered about half of the lake surface on the survey date, and the lake had a large amount of submerged aquatic growth. The abundance of organic material in the lake probably accounts for the dissolved-solids value being higher than indicated by the conductivity reading. This lake was probably formed when a landslide blocked the flow of water through the valley it occupies. Many Coast Range lakes were formed by this process (Baldwin, 1964).

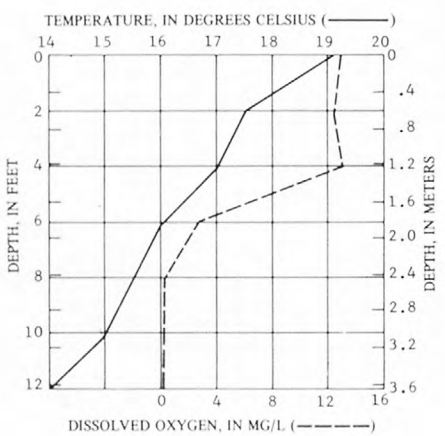
Although the land is privately owned by Publishers Paper Corp., public access and use of the lake is permitted. For access, there is now an improved gravel road over the route shown as a trail on the quadrangle map.

WATER-QUALITY DATA

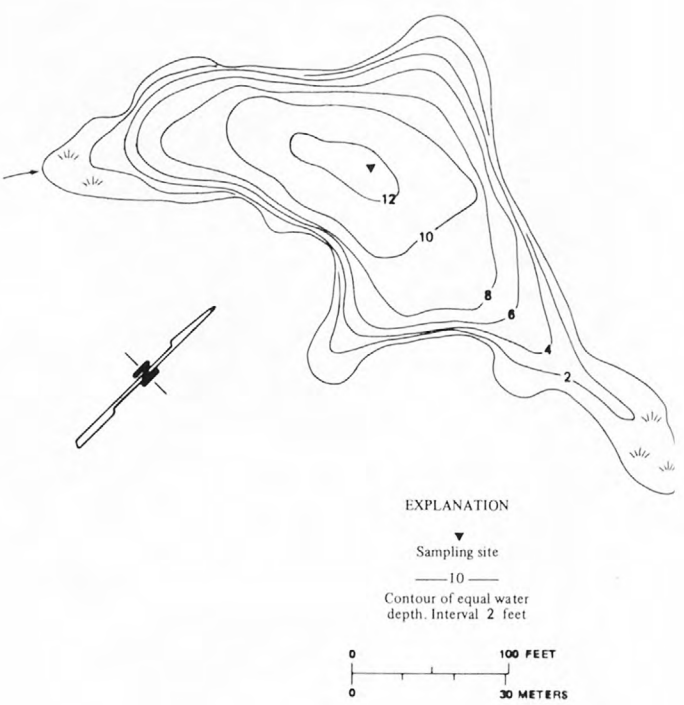
SAMPLING TIME: 1400 hours
SAMPLING SITE: Lat 44°42'00", long 123°49'45"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.6	62
BOTTOM	6.3	--

ALKALINITY (mg/l as $CaCO_3$)	21
TOTAL HARDNESS (mg/l as $CaCO_3$)	14
DISSOLVED SOLIDS (mg/l)	64
TRANSPARENCY (meters)	1.5
COLOR (Pt-Co units)	50
TOTAL COLIFORM (colonies/100 ml)	200



BATHYMETRIC MAP



LOCATION: Secs.1, 2, 11, 12, 14, 15, T.7 S., R.11 W., about 4 mi (6 km) north of Cutler City in Ocean Lake. Cape Foulweather and Euchre Mountain 15-minute quadrangle maps.

DRAINAGE BASIN: Dee River (Pacific Slope drainage).

DRAINAGE AREA: 12.8 mi^2 (33.2 km^2).

SURFACE AREA: 680 acres (2.8 km^2). (Information furnished by the Oregon State Wildlife Commission.)

SURFACE ELEVATION: 20 ft (6 m) above mean sea level, from topographic map.

VOLUME: 6,800 acre-ft (8.4 hm^3). (Information furnished by the Oregon State Wildlife Commission.)

INFLOW: Largely from Rock Creek on south end of the lake, but Thompson Creek, on northeast end, and several unnamed streams contribute some inflow. The following measurements were made on September 18, 1973:

Rock Creek.....	5.79 ft^3/s (0.16 m^3/s)
Thompson Creek.....	.2 ft^3/s (0.01 m^3/s)*
Miscellaneous.....	.4 ft^3/s (0.01 m^3/s)*
Total.....	6.39 ft^3/s (0.18 m^3/s)

*Estimate.

Total inflow from three previous measurements ranged from 3.5 ft^3/s (0.10 m^3/s) in September 1972 to 11 ft^3/s (0.31 m^3/s) in May 1973 (U.S. Geological Survey records).

OUTFLOW: Flow through Dee River on southwest end of lake estimated to be nearly equal to the total inflow.

USE: General recreational use, including fishing, boating, and water skiing. Types of fish include cutthroat and rainbow trout, largemouth bass, yellow perch, crappie, bullhead and channel catfish, and silver salmon (U.S. Soil Conservation Service, 1970).

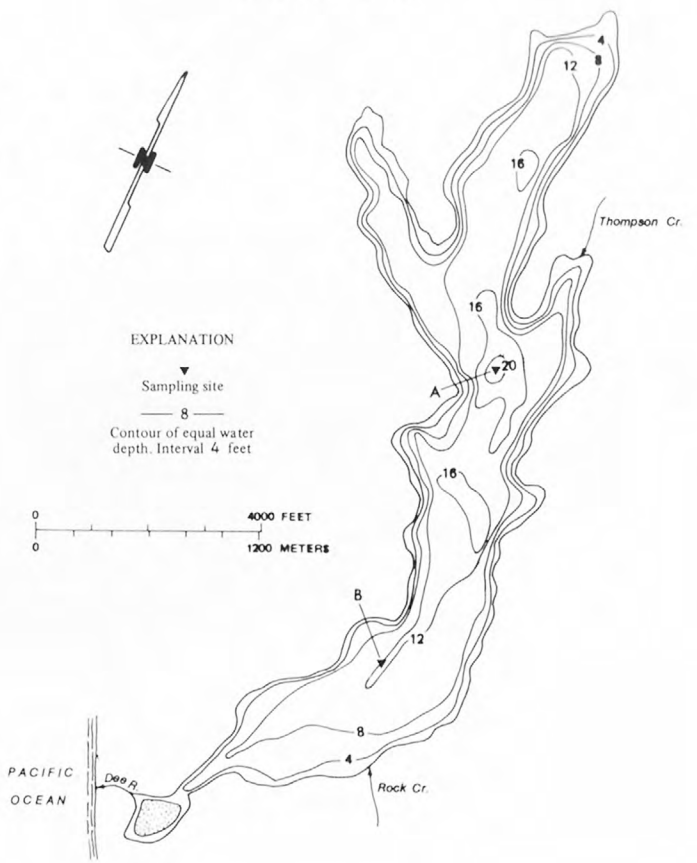
REMARKS: The lake is surrounded by many residences and summer homes.

Continued enrichment of the lake over the years has led to plankton blooms during summer and to the growth of dense beds of both submerged and emergent aquatic plants which die back in the fall, sink to the bottom, and accumulate to form peat. According to McHugh (1972), if this enrichment continues, large portions of the lake could be turned into marsh within the next 50 years. McHugh also states that high coliform had plagued the lake and made it questionable for swimming up to 1970; the situation has improved since 1970.

Devils Lake was formed when sand dunes and beach deposits blocked the lower end of a stream valley. Because the bottom of Dee River is above sea level, a freshwater lake results rather than a saltwater estuary (Lund, 1974).

References: 3, 4, 6, 7, 16.

BATHYMETRIC MAP



WATER-QUALITY DATA

SAMPLING TIME: 1530 hours
SAMPLING SITE: (A) Lat 44°59'10", long 123°59'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.9	109
BOTTOM	7.8	109

ALKALINITY (mg/l as $CaCO_3$) 24

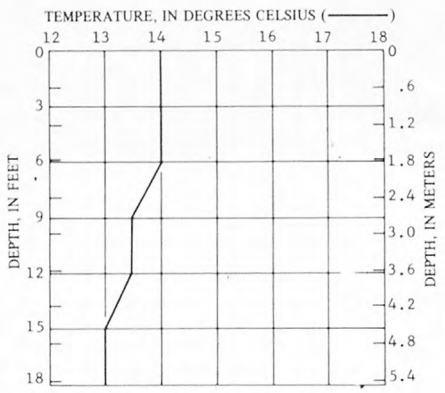
TOTAL HARDNESS (mg/l as $CaCO_3$) 22

DISSOLVED SOLIDS (mg/l) 56

TRANSPARENCY (meters) 2.4

COLOR (Pt-Co units) 20

FECAL COLIFORM (colonies/100 ml) 2



WATER-QUALITY DATA

SAMPLING TIME: 1500 hours
SAMPLING SITE: (B) Lat 44°58'20", long 123°59'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	105
BOTTOM	7.3	104

ALKALINITY (mg/l as $CaCO_3$) 24

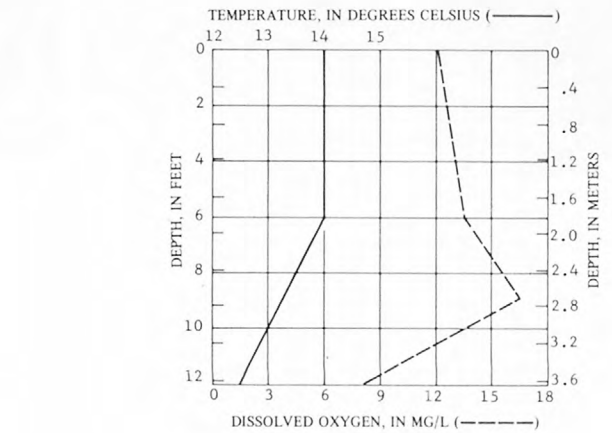
TOTAL HARDNESS (mg/l as $CaCO_3$) 23

DISSOLVED SOLIDS (mg/l) 54

TRANSPARENCY (meters) 2.4

COLOR (Pt-Co units) 20

FECAL COLIFORM (colonies/100 ml) 4



LOCATION: Secs.28, 29, T.13 S., R.11 W., about 2 mi (3 km) southeast of Waldport and 8 mi (13 km) northeast of Yachats. Waldport 15-minute quadrangle map. (Called Eckman Slough on map.)

DRAINAGE BASIN: Alsea River (Pacific Slope drainage).

DRAINAGE AREA: 6.57 mi^2 (17.0 km^2).

SURFACE AREA: 45 acres (180,000 m^2).

SURFACE ELEVATION: 10 ft (3 m) above mean sea level, from topographic map.

VOLUME: 180 acre-ft (220,000 m^3).

INFLOW: No measurable flow through marsh on west side of lake or from Eckman Creek on south side of lake.

OUTFLOW: Estimated 5 ft^3/s (0.14 m^3/s) through culvert on northwest side of lake to the Alsea River.

USE: Public fishing and boating. The lake is stocked with rainbow trout by the Oregon State Wildlife Commission and with Coho Salmon by the Fish Commission of Oregon. A State park for day use only is located on the northwest side of the lake.

REMARKS: There are large amounts of submerged aquatic growth throughout the lake, and the bottom material is mostly silt. The lake is formed by a slough closed off at Highway 34, which forms the northern boundary.

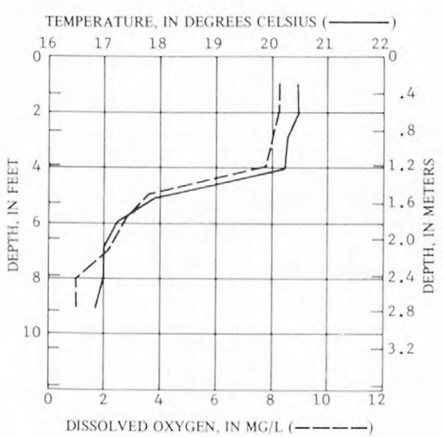
Reference: 16.

WATER-QUALITY DATA

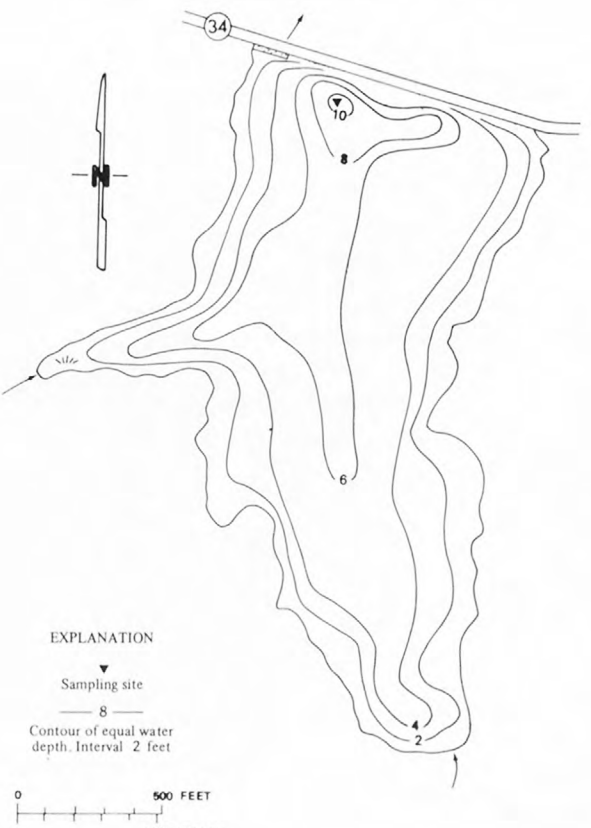
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°24'55", long 124°02'00"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	316
BOTTOM	7.3	382

ALKALINITY (mg/l as $CaCO_3$)	30
TOTAL HARDNESS (mg/l as $CaCO_3$)	30
DISSOLVED SOLIDS (mg/l)	178
TRANSPARENCY (meters)	1.5
COLOR (Pt-Co units)	15
TOTAL COLIFORM (colonies/100 ml)	980



BATHYMETRIC MAP



LOCATION: Sec.24, T.10 S., R.8 W., about 2 mi (3 km) north of Nashville and 1 mi (1.6 km) west of the Lincoln-Benton County line. Marys Peak 15-minute quadrangle map.

DRAINAGE BASIN: Yaquina River (Pacific Slope drainage).

DRAINAGE AREA: 1.94 mi^2 (5.02 km^2).

SURFACE AREA: 3 acres (12,000 m^2).

SURFACE ELEVATION: 430 ft (130 m) above mean sea level, from topographic map.

VOLUME: 25 acre-ft (31,000 m^3).

INFLOW: No measurable flow from the Little Yaquina River on west side of lake or through unnamed creek on south side of lake.

OUTFLOW: No measurable flow through channel on east side of lake.

USE: Private fishing.

REMARKS: There is no evidence of either submerged or surface aquatic growth, but there are several snags and stumps in the water. Judging from the number of ducks and geese present, this lake is a popular gathering place for waterfowl.

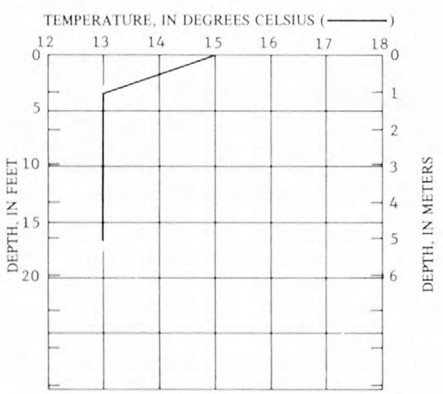
Water-rights certificate issued for diversion of 3.0 ft^3/s (0.08 m^3/s) for fish propagation.

WATER-QUALITY DATA

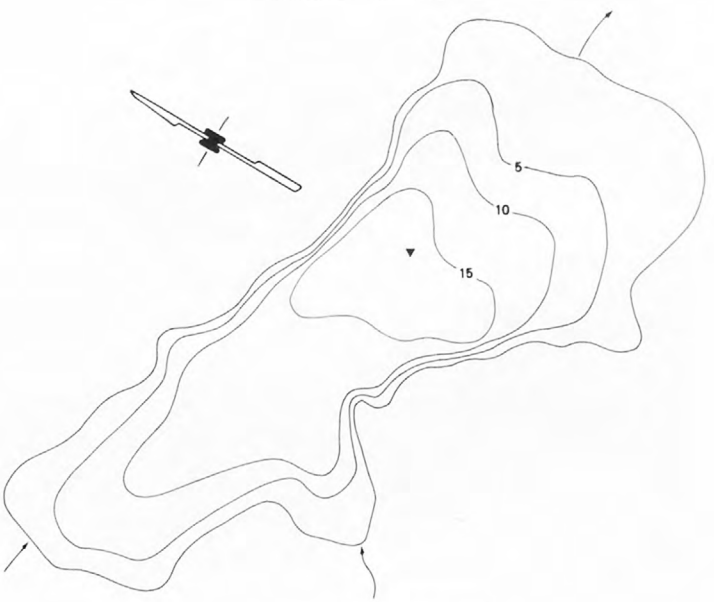
SAMPLING TIME: 1500 hours
SAMPLING SITE: Lat 44°41'05", long 123°37'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.0	66
BOTTOM	6.8	107

ALKALINITY (mg/l as $CaCO_3$)	34
TOTAL HARDNESS (mg/l as $CaCO_3$)	21
DISSOLVED SOLIDS (mg/l)	44
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	30
FECAL COLIFORM (colonies/100 ml)	80



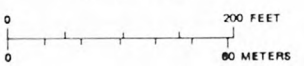
BATHYMETRIC MAP



EXPLANATION

▼ Sampling site

——10—— Contour of equal water depth. Interval 5 feet



LOCATION: Sec.7, T.13 S., R.11 W., about 2 mi (3 km) north of Waldport and 3 mi (5 km) south of Seal Rock. Waldport 15-minute quadrangle map.

DRAINAGE BASIN: Buckley Creek (Pacific Slope drainage).

DRAINAGE AREA: 1.25 mi^2 (3.24 km^2).

SURFACE AREA: 4 acres (16,000 m^2).

SURFACE ELEVATION: 50 ft (15 m) above mean sea level, from topographic map.

VOLUME: 20 acre-ft (25,000 m^3).

INFLOW: No measurable flow from Buckley Creek on east side of lake.

OUTFLOW: No measurable flow through marsh to Buckley Creek on north side of lake.

USE: Private recreation.

REMARKS: The north end of the lake has many snags and is covered with water lilies, but there is no evidence of either submerged or surface aquatic growth.

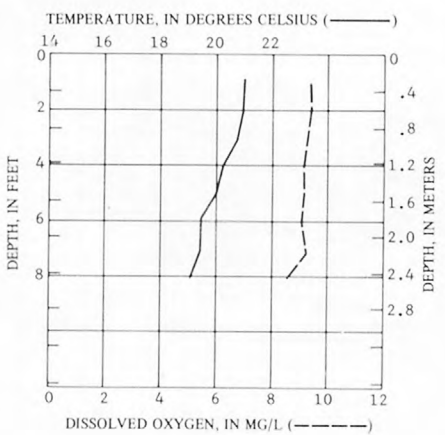
This is the largest of several small lakes in the area and is the only one that was sampled. The water-quality data presented for this lake is probably representative of the other lakes at the time of sampling. The lake is located in a private real-estate development and is not open to the public.

WATER-QUALITY DATA

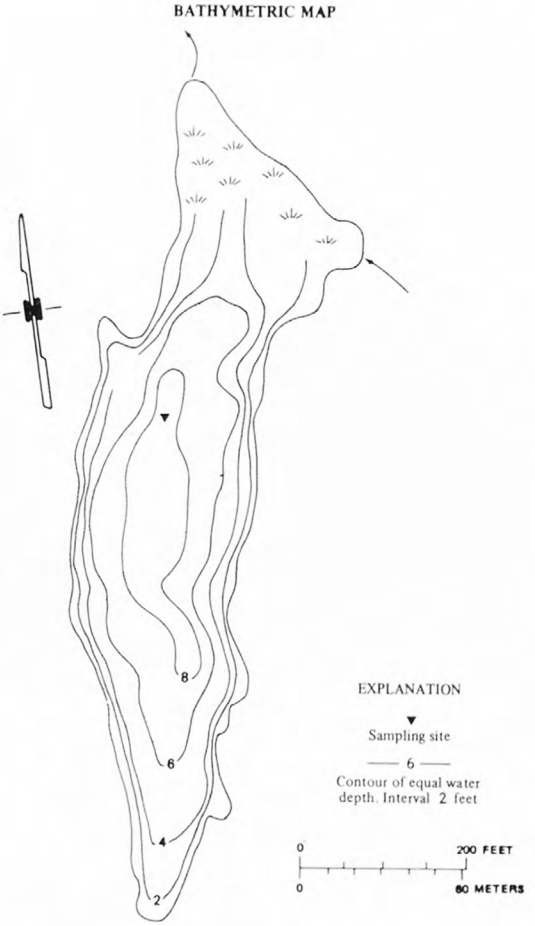
SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 44°27'20", long 124°04'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.1	140
BOTTOM	7.0	145

ALKALINITY (mg/l as $CaCO_3$)	6
TOTAL HARDNESS (mg/l as $CaCO_3$)	16
DISSOLVED SOLIDS (mg/l)	126
TRANSPARENCY (meters)	2.1
COLOR (Pt-Co units)	25
TOTAL COLIFORM (colonies/100 ml)	340



BATHYMETRIC MAP



LOCATION: Secs.33, 34, T.12 S., R.8 W., about 7.5 mi (12 km) northwest of Alsea and 3 mi (5 km) west of the Lincoln-Benton County line. Alsea 15-minute quadrangle map.

DRAINAGE BASIN: Alsea River (Pacific Slope drainage).

DRAINAGE AREA: 2.59 mi^2 (6.71 km^2).

SURFACE AREA: 8 acres (32,000 m^2).

SURFACE ELEVATION: 1,200 ft (366 m) above mean sea level, from topographic map.

VOLUME: 60 acre-ft (74,000 m^3).

INFLOW: No measurable flow from Lake Creek on the north side of lake, Klickitat Creek on the west side, and an unnamed creek on the south side.

OUTFLOW: No measurable flow through marsh to North Fork Alsea River on southeast side of lake.

USE: Fishing for native cutthroat trout.

REMARKS: There is both surface and submerged aquatic growth throughout the lake, as well as many snags and logs. The northern part of the lake is mostly marsh. The dissolved-solids concentration, which is higher than suggested by the conductivity reading, may be due to the abundance of organic material in the lake.

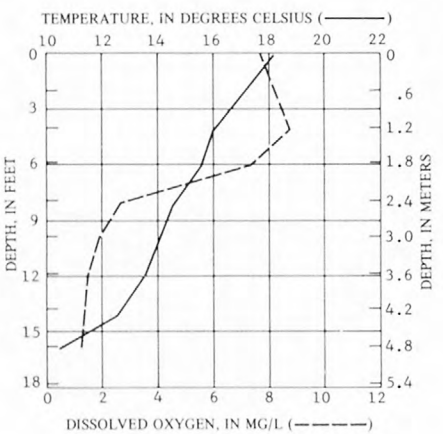
References: 3, 16.

WATER-QUALITY DATA

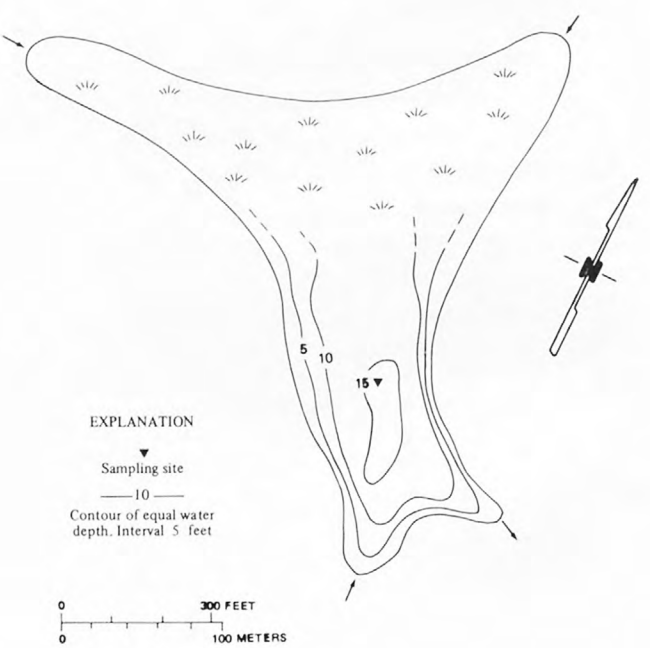
SAMPLING TIME: 1700 hours
SAMPLING SITE: Lat 44°28'45", long 123°39'25"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.2	42
BOTTOM	6.7	64

ALKALINITY (mg/l as $CaCO_3$)	22
TOTAL HARDNESS (mg/l as $CaCO_3$)	12
DISSOLVED SOLIDS (mg/l)	67
TRANSPARENCY (meters)	1.5
COLOR (Pt-Co units)	50
FECAL COLIFORM (colonies/100 ml)	--



BATHYMETRIC MAP



LOCATION: Secs.19, 30, T.13 S., R.11 W., about 8 mi (13 km) north of Yachats and just east of Waldport. Waldport 15-minute quadrangle map.

DRAINAGE BASIN: Alsea River (Pacific Slope drainage).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 55.5 acres (225,000 m^2) at normal pool. (Information furnished by the Oregon Wildlife Comm.)

SURFACE ELEVATION: 12 ft (3.7 m) above mean sea level at normal pool. (Information furnished by the Oregon Wildlife Comm.)

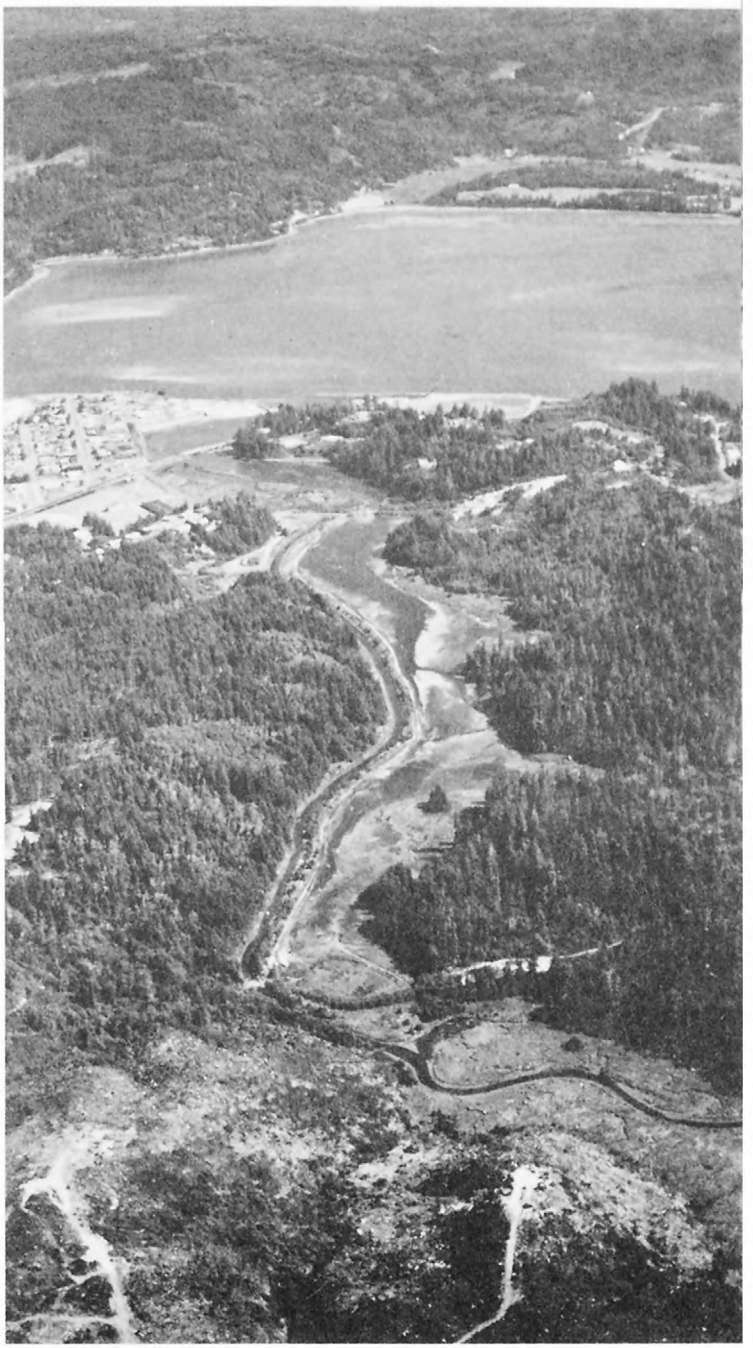
VOLUME: 430 acre-ft (530,000 m^3) at normal pool. (Information furnished by the Oregon Wildlife Comm.)

INFLOW: Freshwater inflow is diverted from Lint Creek on south side of the reservoir, with excess water continuing through channel along west side of reservoir. Tide gates are used on north side of reservoir to control saltwater inflow during high and low tides.

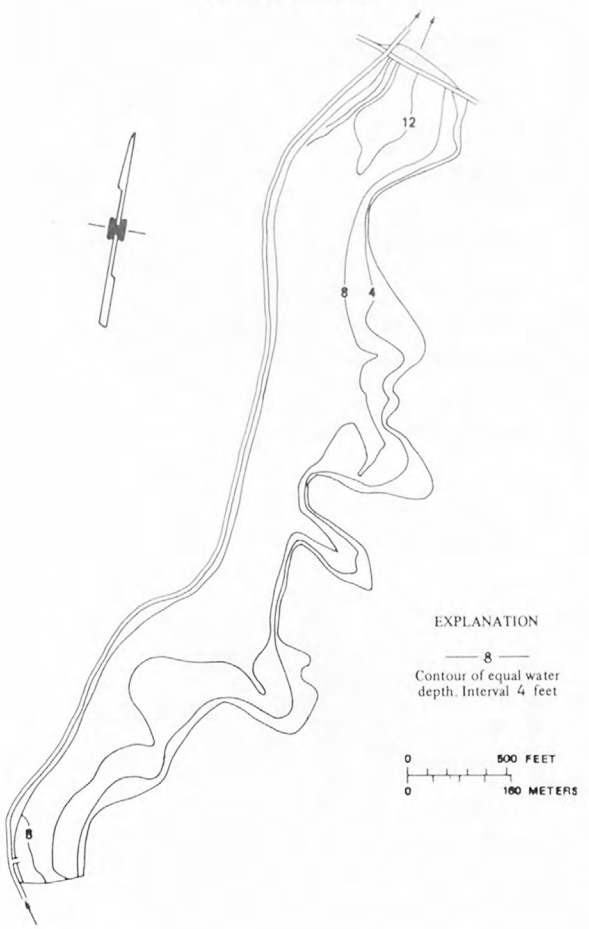
OUTFLOW: Through control structure on north side of reservoir.

USE: Salmon and steelhead rearing pond.

REMARKS: Not visited by U.S. Geological Survey field party.
Lint Slough Reservoir was constructed in 1963 and was first used for experimental salmon and steelhead rearing in the spring of 1964. Specific limits of temperature, dissolved oxygen, and salinity are maintained by manipulating the freshwater-saltwater mixture in the reservoir.
Water-rights permit issued for storage of 176 acre-ft (217,000 m^3) for fish culture.



BATHYMETRIC MAP



LOCATION: Sec.33, T.11 S., R.10 W., about 3.5 mi (6 km) southeast of Toledo and 4 mi (6 km) southwest of Elk City. Toledo 15-minute quadrangle map. (Shown prior to enlargement, but not named on map.)

DRAINAGE BASIN: Yaquina River (Pacific Slope drainage).

DRAINAGE AREA: 4.15 mi^2 (10.7 km^2). (Information furnished by city of Toledo.)

SURFACE AREA: 15 acres (61,000 m^2) at normal pool. (Information furnished by city of Toledo.)

SURFACE ELEVATION: 145 ft (44 m) above mean sea level at normal pool. (Information furnished by city of Toledo.) Water surface was 137.6 ft (41.9 m) above mean sea level on August 14, 1973.

VOLUME: 250 acre-ft (308,000 m^3) at normal pool. (Information furnished by city of Toledo.)

INFLOW: Estimated 0.8 ft^3/s (0.02 m^3/s) from Mill Creek on south side of reservoir, 0.8 ft^3/s (0.02 m^3/s) from unnamed creek on east side of reservoir, and less than 0.5 ft^3/s (0.01 m^3/s) from unnamed creek on west side of reservoir on August 14, 1973.

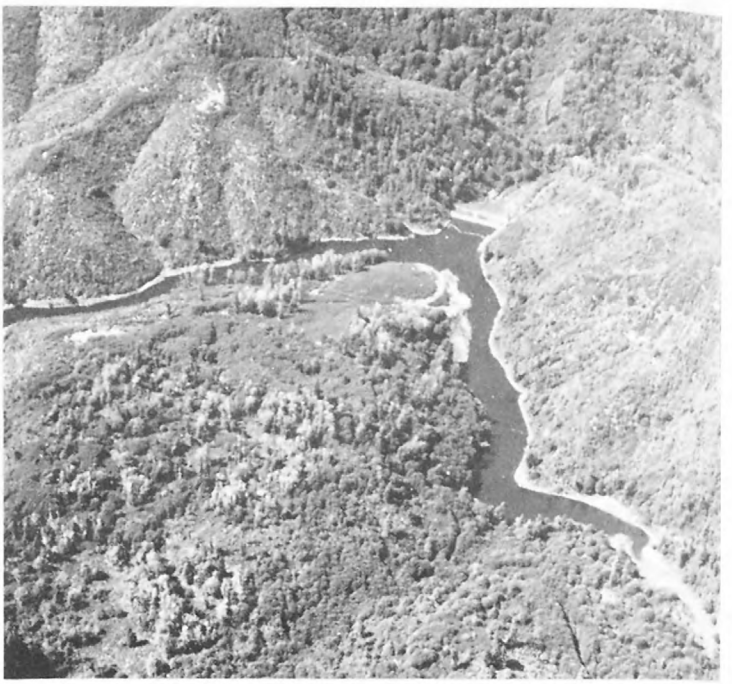
OUTFLOW: Mean daily discharge on Mill Creek about 1,200 ft (370 m) downstream from dam (U.S. Geological Survey gaging station 143060.36) was 2.0 ft^3/s (0.57 m^3/s) on August 14, 1974. Water is also diverted from the reservoir for municipal supply.

USE: No recreational use.

REMARKS: The city of Toledo uses air injection to maintain water quality during periods of thermal stratification. The water-quality data presented were collected prior to air injection and represents natural conditions during the stratification period.

Water-rights permit issued to Toledo for storage of 250 acre-ft (308,000 m^3) for municipal water supply.

The Toledo watershed is closed to the general public.



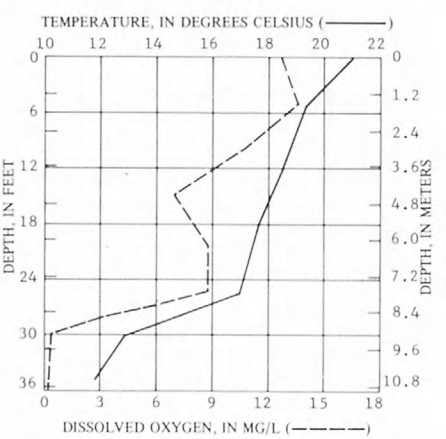
WATER-QUALITY DATA

SAMPLING TIME: 1500 hours
SAMPLING SITE: Lat 44°34'20", long 123°54'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.1	59
BOTTOM	6.3	--

ALKALINITY (mg/l as $CaCO_3$)	16
TOTAL HARDNESS (mg/l as $CaCO_3$)	11
DISSOLVED SOLIDS (mg/l)	50
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	20
FECAL COLIFORM (colonies/100 ml)	--

BATHYMETRIC MAP



LOCATION: Secs.20, 21, T.10 S., R.10 W., about 2.5 mi (4 km) south of Siletz and 4 mi (6 km) north of Toledo. Toledo 15-minute quadrangle map (shown prior to enlargement and not named).

DRAINAGE BASIN: Yaquina River (Pacific Slope drainage).

DRAINAGE AREA: 1.32 mi^2 (3.42 km^2). Natural drainage only. (See INFLOW.)

SURFACE AREA: 117 acres (473,000 m^2) at normal pool. (Information furnished by the Georgia-Pacific Corp.)

SURFACE ELEVATION: 164.1 ft (50.0 m) above mean sea level on the survey date. The maximum for the year was 164.3 ft (50.1 m) above mean sea level on June 18, and the minimum was 150.0 ft (45.7 m) above mean sea level on October 30, 31 and November 5, 6. (Information furnished by Georgia-Pacific Corp.)

VOLUME: 3,650 acre-ft (0.0045 km^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: Three small unnamed streams on the east and north sides of the reservoir contribute some inflow, but most of the inflow is water diverted by pipe from the Siletz River. The diversion rate varies during the year.

OUTFLOW: Estimated 2 ft^3/s (0.06 m^3/s) through an outlet structure on south side of dam to West Olalla Creek. Water is diverted from West Olalla Creek in Toledo for manufacturing.

USE: General recreational use. Rainbow trout are planted by the Fish Commission of Oregon. Boats without motors are permitted on the reservoir. An overnight campground maintained by Georgia-Pacific Corp. is located downstream from the reservoir.

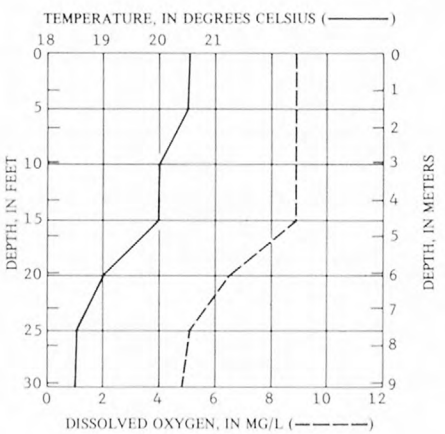
REMARKS: Water-rights certificate issued for storage of 3,650 acre-ft (0.0045 km^3) for paper processing at mill in Toledo. A temporary permit was issued in 1973 to increase the total storage to 4,250 acre-ft (0.0052 km^3).
Name variation is Olallie Reservoir.
References: 3, 16.

WATER-QUALITY DATA

SAMPLING TIME: 1030 hours
SAMPLING SITE: Lat 44°40'55", long 123°55'45"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.4	--
BOTTOM	6.4	--

ALKALINITY (mg/l as $CaCO_3$)	16
TOTAL HARDNESS (mg/l as $CaCO_3$)	12
DISSOLVED SOLIDS (mg/l)	48
TRANSPARENCY (meters)	2.7
COLOR (Pt-Co units)	15
TOTAL COLIFORM (colonies/100 ml)	134



BATHYMETRIC MAP

LOCATION: Sec.2, T.14 S., R.12 W., about 4 mi (5 km) south of Waldport and 0.5 mi (0.8 km) east of Highway 101. Waldport 15-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Big Creek (Pacific Slope drainage).

DRAINAGE AREA: 0.83 mi^2 (2.15 km^2).

SURFACE AREA: 2 acres (8,000 m^2).

SURFACE ELEVATION: 10 feet (3 m) above mean sea level, from topographic map.

VOLUME: 3 acre-ft (4,000 m^3).

INFLOW: No measurable flow through Reynolds Creek on north side of lake.

OUTFLOW: No measurable flow through channel on west side of lake to Pacific Ocean.

USE: General recreational use by local residents.

REMARKS: Because this lake lies at a low elevation close to the ocean, fresh water in the lake is mixed with salt water which enters through the outlet channel during high tides. This saline characteristic is demonstrated by the high dissolved-solids and conductivity values.

WATER-QUALITY DATA

SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°22'15", long 124°05'00"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.8	2,650
BOTTOM	6.3	--

ALKALINITY (mg/l as $CaCO_3$) 32

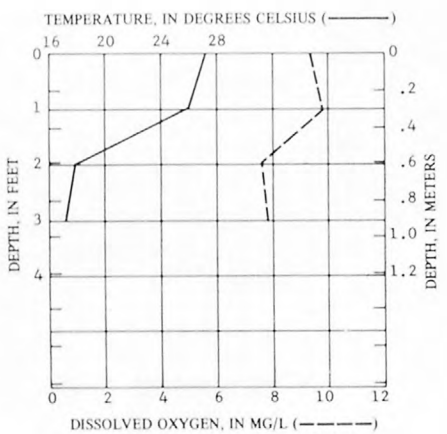
TOTAL HARDNESS (mg/l as $CaCO_3$) 190

DISSOLVED SOLIDS (mg/l) 1,620

TRANSPARENCY (meters) 1.0

COLOR (Pt-Co units) 200

TOTAL COLIFORM (colonies/100 ml) 4,000

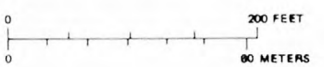


BATHYMETRIC MAP

EXPLANATION

▼ Sampling site

— 3 — Contour of equal water depth. Interval 1 foot



LOCATION: Secs.17, 18, T.10 S., R.9 W., about 5 mi (8 km) east of Siletz and 7.5 mi (12 km) northeast of Toledo. Toledo 15-minute quadrangle map.

DRAINAGE BASIN: Siletz River (Pacific Slope drainage).

DRAINAGE AREA: 0.12 mi^2 (0.31 km^2).

SURFACE AREA: 1 acre (4,000 m^2).

SURFACE ELEVATION: 400 ft (120 m) above mean sea level, from topographic map.

VOLUME: 10 acre-ft (12,000 m^3).

INFLOW: No measurable flow through marsh on east side of lake.

OUTFLOW: No measurable flow through marsh on west side of lake.

USE: Public fishing.

REMARKS: This lake does not have the abundance of aquatic growth found in nearby Derrick Lake (p. 34), although there are some submerged varieties present. There are also many snags and logs on the lake. The lake was probably formed when a landslide blocked the flow of water through the valley it occupies. Many Coast Range lakes were formed by this process (Baldwin, 1964).

Although the land is privately owned by Publishers Paper Corp., public access and use of the lake is permitted. For access, there is now an improved gravel road over the route shown as a trail on the quandrangle map.

WATER-QUALITY DATA

SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°42'00", long 123°49'25"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	6.9	43
BOTTOM	6.3	--

ALKALINITY (mg/l as $CaCO_3$) 13

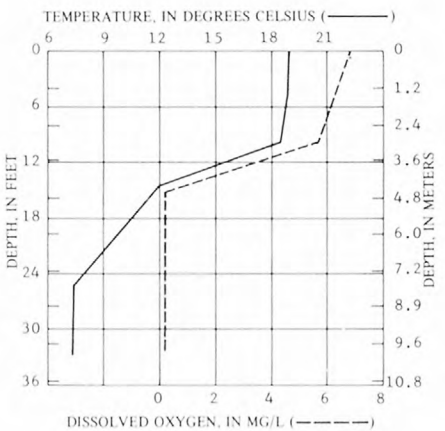
TOTAL HARDNESS (mg/l as $CaCO_3$) 7

DISSOLVED SOLIDS (mg/l) 41

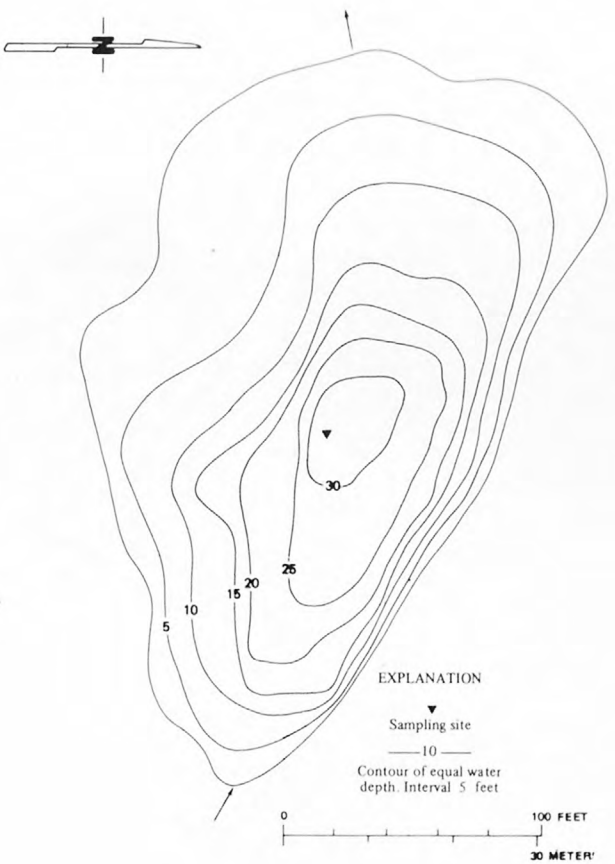
TRANSPARENCY (meters) 2.1

COLOR (Pt-Co units) 30

TOTAL COLIFORM (colonies/100 ml) 310



BATHYMETRIC MAP



LOCATION: SW¼ sec.18, T.12 S., R.11 W., about 1.5 mi (2 km) north of Seal Rock and 8 mi (13 km) south of Newport. Yaquina 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Beaver Creek (Pacific Slope drainage).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 1 acre (4,000 m^2).

SURFACE ELEVATION: 20 ft (6 m) above mean sea level, from topographic map.

VOLUME: 5 acre-ft (6,000 m^3).

INFLOW: Previously diverted from Tracy Creek on west side of pond, but pumphouse on Tracy Creek is no longer operational, and no other surface inflow was found.

OUTFLOW: Controlled through gate valve to Beaver Creek south of pond. No flow through pipe on survey date.

USE: None apparent.

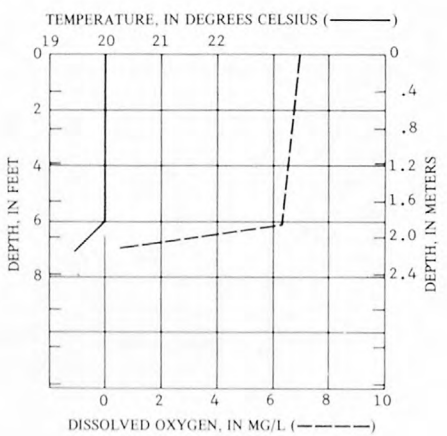
REMARKS: This abandoned log pond has a firm mud bottom with heavy submerged aquatic growth and some large lily pads on the surface. The mill adjacent to the pond burned down several years ago; no attempt has been made to rebuild.

WATER-QUALITY DATA

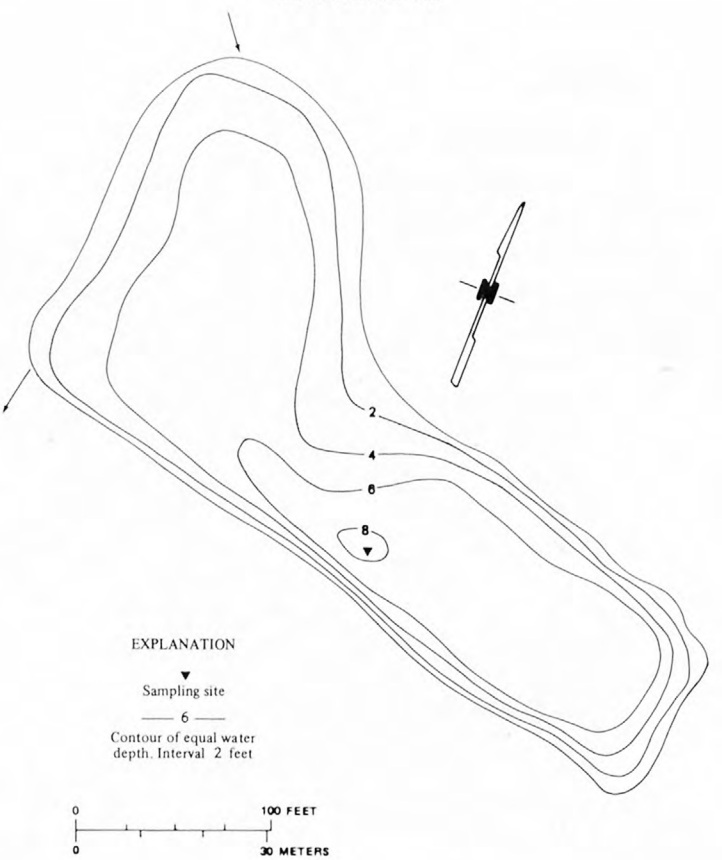
SAMPLING TIME: 0900 hours
SAMPLING SITE: Lat 44°31'20", long 124°04'05"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.4	188
BOTTOM	6.9	--

ALKALINITY (mg/l as $CaCO_3$)	42
TOTAL HARDNESS (mg/l as $CaCO_3$)	34
DISSOLVED SOLIDS (mg/l)	160
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	30
TOTAL COLIFORM (colonies/100 ml)	150



BATHYMETRIC MAP



Polk County

Lakes of Polk County

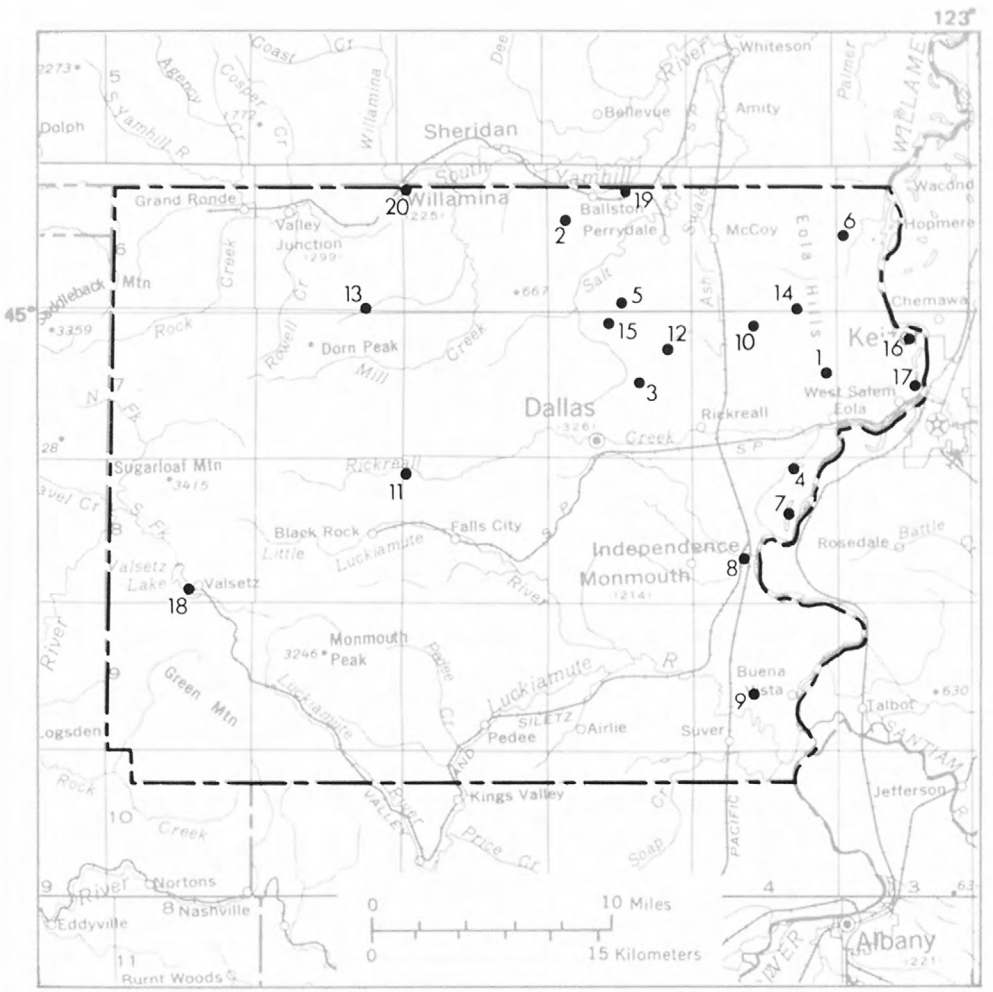


Figure 5.—Locations and identification numbers of lakes in Polk County.

LOCATION: Sec.13, T.7 S., R.4 W., 0.3 mi (0.5 km) south of Orchard Heights Road and about 4 mi (6 km) west of Salem. Salem West 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Glenn Creek (Willamette River drainage).

DRAINAGE AREA: 0.59 mi^2 (1.53 km^2).

SURFACE AREA: 10.6 acres (42,900 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 675 ft (202 m) above mean sea level, from topographic map.

VOLUME: 135.8 acre-ft (167,400 m^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow through unnamed streams on west and south sides of reservoir.

OUTFLOW: No measurable flow through dam or spillway on east side of reservoir.

USE: Private recreation.

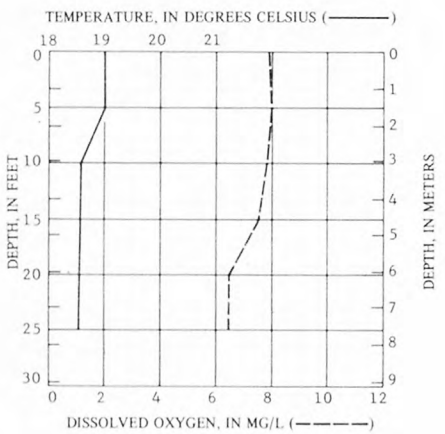
REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly clay.
Water-rights certificate issued for the storage of 137 acre-ft (169,000 m^3) for irrigation.

WATER-QUALITY DATA

SAMPLING TIME: 1530 hours
SAMPLING SITE: Lat 44°57'45", long 123°06'55"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.7	62
BOTTOM	7.5	--

ALKALINITY (mg/l as $CaCO_3$)	19
TOTAL HARDNESS (mg/l as $CaCO_3$)	17
DISSOLVED SOLIDS (mg/l)	55
TRANSPARENCY (meters)	2.4
COLOR (Pt-Co units)	10
FECAL COLIFORM (colonies/100 ml)	5



BATHYMETRIC MAP

LOCATIONS: Secs.7, 18, T.6 S., R.5 W., about 1 mi (1.6 km) south of the Polk-Yamhill County line and 1.5 mi (24 km) southwest of Ballston. Ballston 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Yamhill River (Willamette River drainage).

DRAINAGE AREA: 0.10 mi^2 (0.26 km^2).

SURFACE AREA: 6.8 acres (27,500 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 240 ft (73 m) above mean sea level, from topographic map.

VOLUME: 72.5 acre-ft (89,400 m^3). (Information furnished by the Oregon State Engineer.)

INFLOW: None observed, and no channel indicated on topographic map.

OUTFLOW: No measurable flow through dam or spillway on east side of reservoir.

USE: Private recreation.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly soft mud.
Water-rights certificate issued for storage of 72.5 acre-ft (89,400 m^3) for irrigation. Diversion from reservoir is not to exceed 0.31 ft^3/s (0.01 m^3/s).

WATER-QUALITY DATA

SAMPLING TIME: 0930 hours
SAMPLING SITE: Lat 45°03'25", long 123°20'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.0	184
BOTTOM	7.3	187

ALKALINITY (mg/l as $CaCO_3$) 45

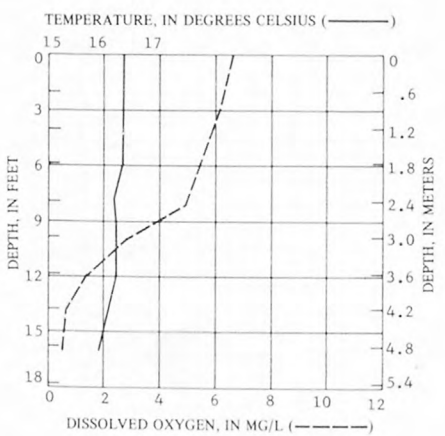
TOTAL HARDNESS (mg/l as $CaCO_3$) 64

DISSOLVED SOLIDS (mg/l) 169

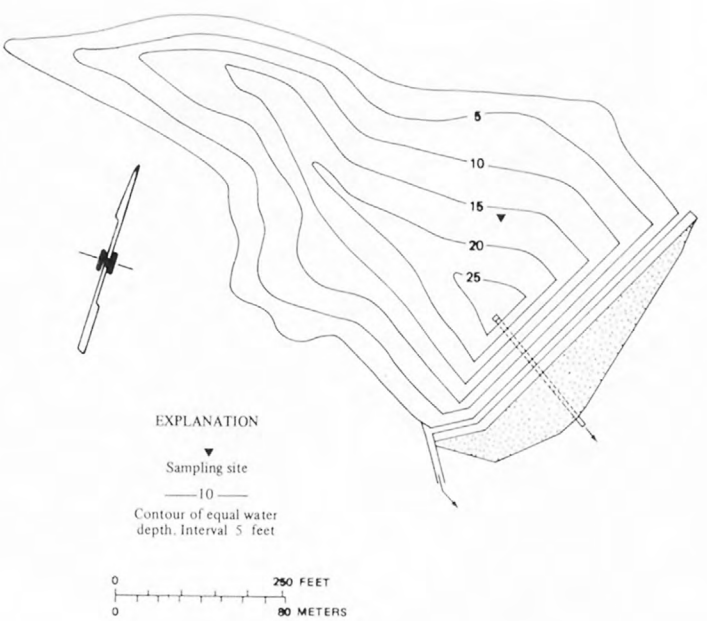
TRANSPARENCY (meters) .4

COLOR (Pt-Co units) 80

FECAL COLIFORM (colonies/100 ml) 9



BATHYMETRIC MAP



LOCATION: SE¼ sec.22, T.7 S., R.5 W., about 1 mi (1.6 km) north of Fir Villa and 2 mi (3.2 km) northeast of Dallas. Dallas 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Rickreall Creek (Willamette River drainage).

DRAINAGE AREA: 0.89 mi^2 (2.30 km^2).

SURFACE AREA: 10 acres (40,000 m^2).

SURFACE ELEVATION: 240 ft (73 m) above mean sea level, from topographic map.

VOLUME: 45 acre-ft (55,000 m^3).

INFLOW: No measurable flow through unnamed intermittent stream on west side of reservoir.

OUTFLOW: No measurable flow through spillway to the unnamed intermittent stream on east side of reservoir.

USE: Private recreation.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly hard mud. The high coliform number indicates a nearby source of fecal contamination. Water-rights certificates issued for storage of 47 acre-ft (58,000 m^3), with 0.35 ft^3/s (0.01 m^3/s) diverted for irrigation.

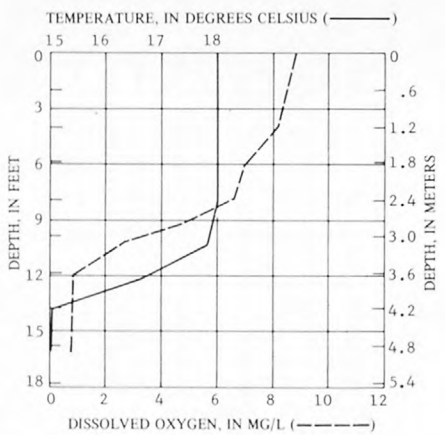
WATER-QUALITY DATA

SAMPLING TIME: 1400 hours
SAMPLING SITE: Lat 44°56'30", long 123°16'50"

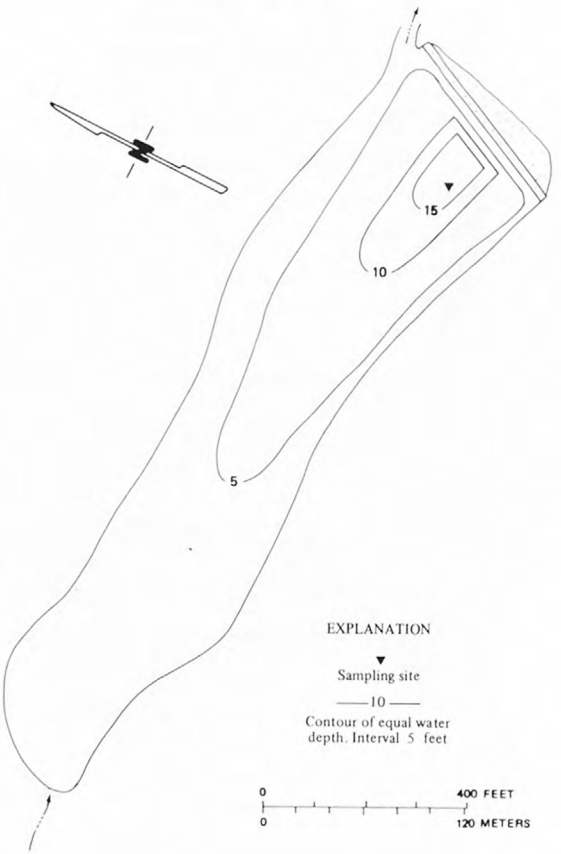
	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.2	127
BOTTOM	7.0	283 1/

ALKALINITY (mg/l as $CaCO_3$)	45
TOTAL HARDNESS (mg/l as $CaCO_3$)	47
DISSOLVED SOLIDS (mg/l)	108
TRANSPARENCY (meters)	1.5
COLOR (Pt-Co units)	30
FECAL COLIFORM (colonies/100 ml)	930

1/ Sharp increase in conductivity occurred at about 13 ft (4 m).



BATHYMETRIC MAP



LOCATION: Sec.2, T.8 S., R.4 W., about 2 mi (3 km) south of Brunks Corner and 4 mi (6.5 km) southeast of Rickreall. Rickreall 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 15 acres (61,000 m^2).

SURFACE ELEVATION: 130 ft (40 m) above mean sea level, from topographic map. Lake was about 10 ft (3 m) below high-water marks on the survey date.

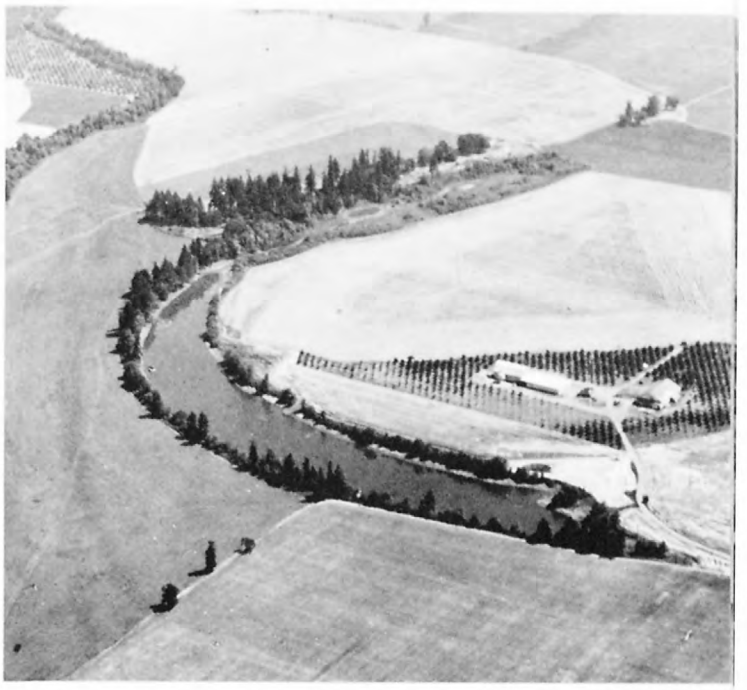
VOLUME: 50 acre-ft (62,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: Private recreation.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly soft mud.
This lake occupies an abandoned stream channel.
Water-rights certificate issued for the diversion of 2.28 ft^3/s (0.06 m^3/s) from the reservoir for irrigation.

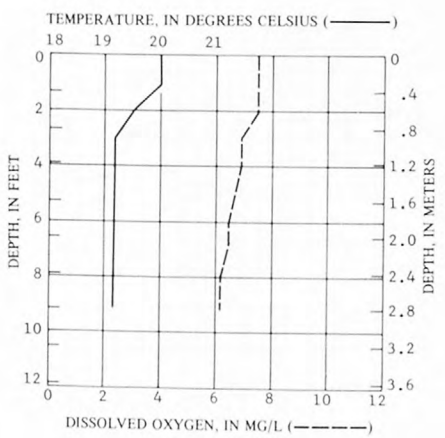


WATER-QUALITY DATA

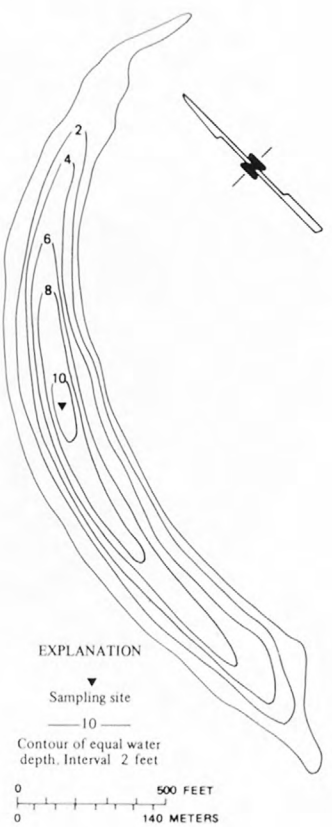
SAMPLING TIME: 1045 hours
SAMPLING SITE: Lat 44°54'15", long 123°09'00"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	132
BOTTOM	7.3	143

ALKALINITY (mg/l as $CaCO_3$)	67
TOTAL HARDNESS (mg/l as $CaCO_3$)	61
DISSOLVED SOLIDS (mg/l)	101
TRANSPARENCY (meters)	1.0
COLOR (Pt-Co units)	5
FECAL COLIFORM (colonies/100 ml)	35



BATHYMETRIC MAP



LOCATION: NW¼ sec.34, T.6 S., R.5 W., about 3 mi (4.8 km) southwest of Perrydale and 4 mi (6.4 km) southeast of Ballston. Ballston 7½-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Yamhill River (Willamette River drainage).

DRAINAGE AREA: 0.11 mi^2 (0.28 km^2).

SURFACE AREA: 5 acres (20,000 m^2).

SURFACE ELEVATION: 340 ft (104 m) above mean sea level, from topographic map.

VOLUME: 30 acre-ft (37,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map.

OUTFLOW: No measurable flow through dam or spillway to unnamed intermittent stream on south side of lake.

USE: Private recreation.

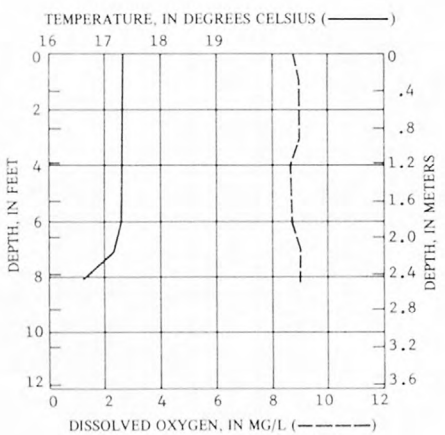
REMARKS: No evidence of either submerged or surface aquatic growth.

WATER-QUALITY DATA

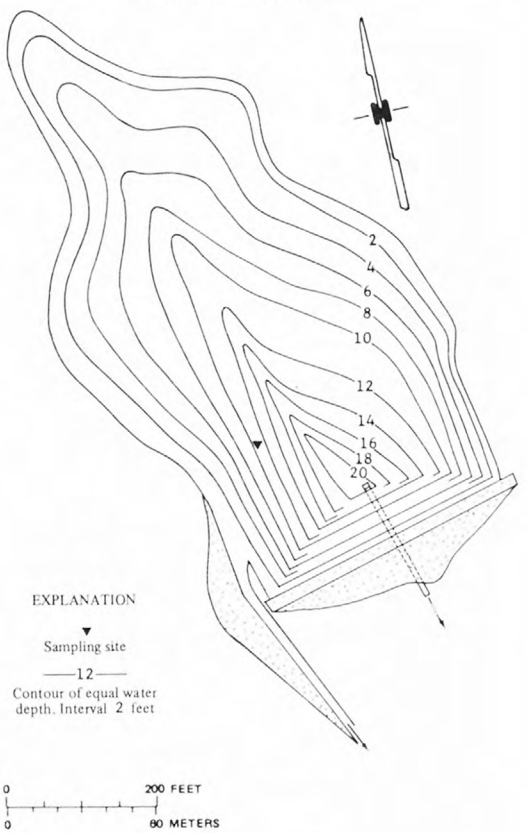
SAMPLING TIME: 1100 hours
SAMPLING SITE: Lat 45°00'25", long 123°17'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.9	210
BOTTOM	7.9	212

ALKALINITY (mg/l as $CaCO_3$)	31
TOTAL HARDNESS (mg/l as $CaCO_3$)	85
DISSOLVED SOLIDS (mg/l)	157
TRANSPARENCY (meters)	1.8
COLOR (Pt-Co units)	5
FECAL COLIFORM (colonies/100 ml)	27



BATHYMETRIC MAP



LOCATION: Sec.18, T.6 S., R.3 W., about 2 mi (3.2 km) northwest of Lincoln and 3.5 mi (5.6 km) south of Hopewell. Mission Bottom 7½-minute quadrangle map (photorevised 1970). (Not named on map.)

DRAINAGE BASIN: Spring Valley Creek (Willamette River drainage).

DRAINAGE AREA: 0.48 mi^2 (1.24 km^2).

SURFACE AREA: 8 acres (32,000 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 150 ft (46 m) above mean sea level, from topographic map.

VOLUME: 40 acre-ft (49,000 m^3).

INFLOW: No measurable flow through unnamed intermittent stream on west side of reservoir.

OUTFLOW: No measurable flow through dam or spillway to Spring Valley Creek on east side of reservoir.

USE: No apparent recreational use.

REMARKS: The abundance of organic material, indicated by the high color, pH, and dissolved-oxygen values in the epilimnion, probably accounts for the dissolved-solids value being higher than indicated by the conductivity reading.

Surface runoff from pastures around the lake probably accounts for the high fecal coliform.

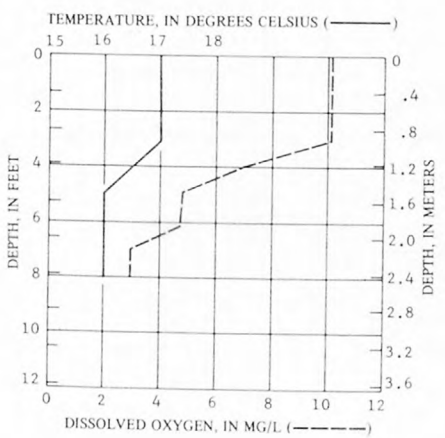
Water-rights certificate issued for the storage of 43.6 acre-ft (53,800 m^3) for irrigation. Diversion from the reservoir is not to exceed 1.07 ft^3/s (0.03 m^3/s).

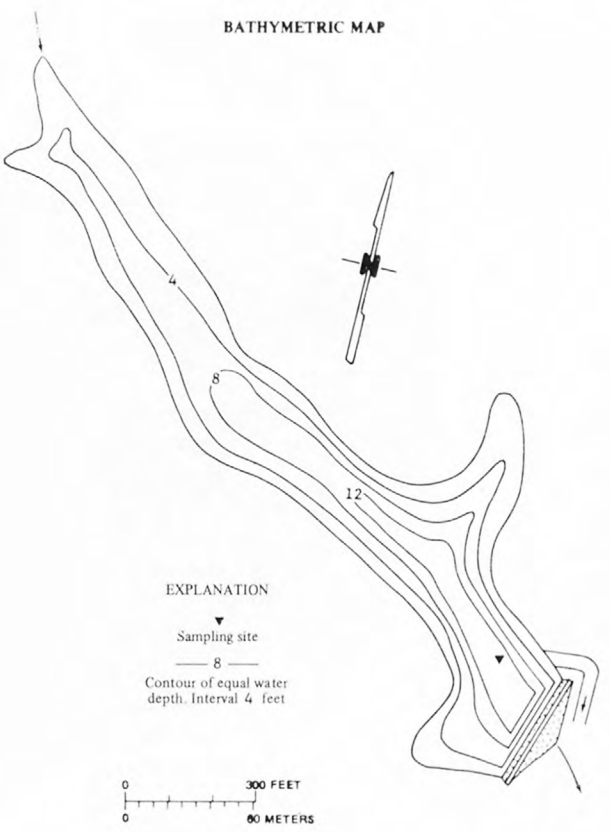
WATER-QUALITY DATA

SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 45°02'40", long°123 05'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.1	83
BOTTOM	7.9	92

ALKALINITY (mg/l as $CaCO_3$)	43
TOTAL HARDNESS (mg/l as $CaCO_3$)	29
DISSOLVED SOLIDS (mg/l)	106
TRANSPARENCY (meters)	.3
COLOR (Pt-Co units)	140
FECAL COLIFORM (colonies/100 ml)	105





LOCATION: Secs.10, 11, 15, T.8 S., R.4 W., about 3.5 mi (5.6 km) south of Brunks Corner and 5 mi (8 km) southeast of Rickreall. Rickreall 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 20 acres (81,000 m^2).

SURFACE ELEVATION: 131 ft (40 m) above mean sea level, from topographic map.

VOLUME: 80 acre-ft (99,000 m^3).

INFLOW: None observed, and no channel indicated on topographic map. The lake is flooded by the Willamette River during extremely high water.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: Private recreation.

REMARKS: The lake had a mild algae bloom on the survey date, and evidence of some submerged aquatic growth. The bottom material is mostly soft mud.
This lake occupies an abandoned stream channel.
Water-rights certificate issued for diversion of 5.95 ft^3/s (0.17 m^3/s) for irrigation.

WATER-QUALITY DATA

SAMPLING TIME:
SAMPLING SITE:

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.8	103
BOTTOM	7.3	96

ALKALINITY (mg/l as $CaCO_3$) --

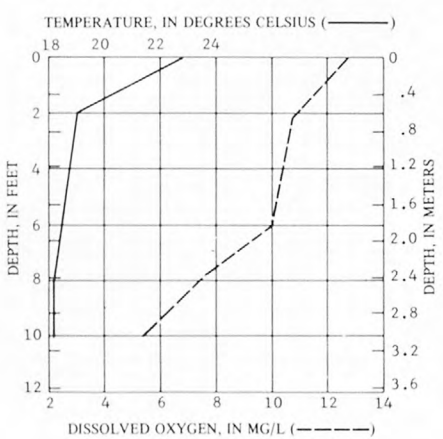
TOTAL HARDNESS (mg/l as $CaCO_3$) 42

DISSOLVED SOLIDS (mg/l) 102

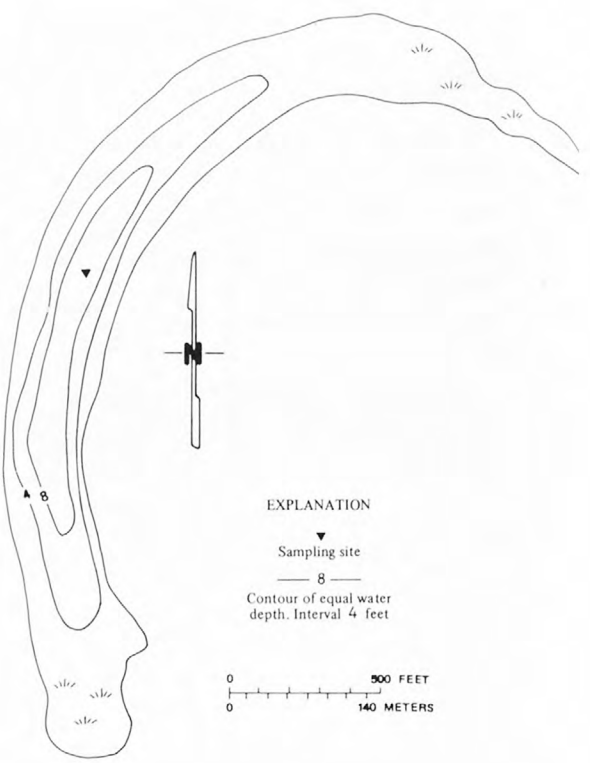
TRANSPARENCY (meters) .3

COLOR (Pt-Co units) 35

FECAL COLIFORM (colonies/100 ml) 0



BATHYMETRIC MAP



LOCATION: Sec.21, T.8 S., R.4 W., in Independence, about 0.5 mi (0.8 km) southeast of Independence Airport. Monmouth 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 10 acres (40,000 m^2).

SURFACE ELEVATION: 170 ft (52 m) above mean sea level, from topographic map.

VOLUME: 70 acre-ft (86,000 m^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: No surface inflow. Wells supply water to maintain the reservoir.

OUTFLOW: No surface outflow.

USE: Fishing by permission only. The pond contains mostly catfish.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly hard mud. Only part of the pond was being used for log storage on the survey date. Water-rights certificate issued for storage of 73.5 acre-feet (90,600 m^3) for log storage.

WATER-QUALITY DATA

SAMPLING TIME: 0900 hours
SAMPLING SITE: Lat 44°51'25", long 123°11'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	267
BOTTOM	7.8	285

ALKALINITY (mg/l as $CaCO_3$) 150

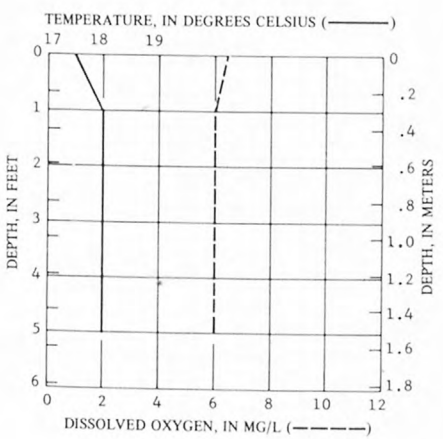
TOTAL HARDNESS (mg/l as $CaCO_3$) 120

DISSOLVED SOLIDS (mg/l) 164

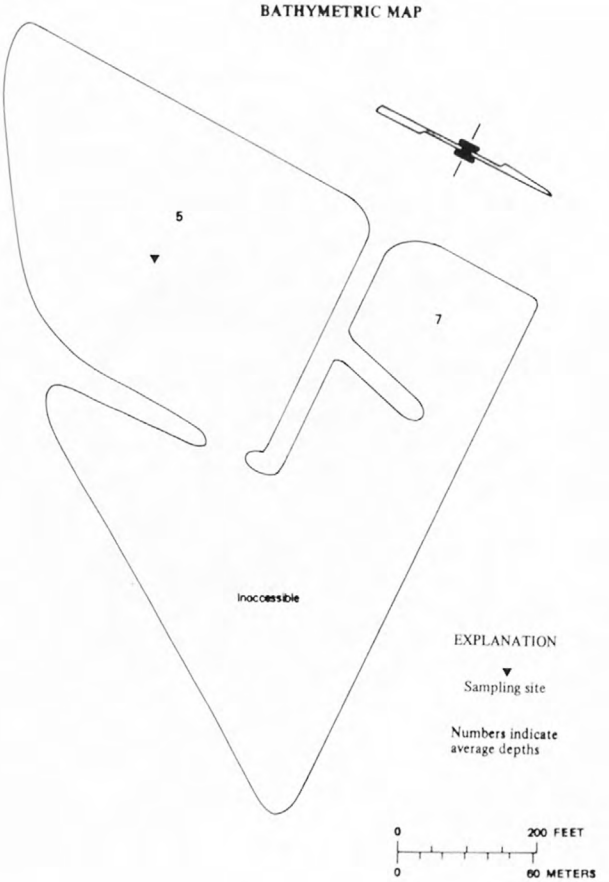
TRANSPARENCY (meters) .3

COLOR (Pt-Co units) 50

FECAL COLIFORM (colonies/100 ml) 3



BATHYMETRIC MAP



LOCATION: Sec.21, T.9 S., R.4 W., about 1 mi (1.6 km) northwest of Buena Vista and 5 mi (8 km) south of Independence. Monmouth 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Luckiamute River (Willamette River drainage).

DRAINAGE AREA: 1.02 mi^2 (2.64 km^2).

SURFACE AREA: 20 acres (81,000 m^2). (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 240 ft (73 m) above mean sea level. (Information furnished by the Oregon State Engineer.)

VOLUME: 120 acre-ft (150,000 m^3). (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow through unnamed intermittent stream on east side of reservoir.

OUTFLOW: No measurable flow through dam or spillway to unnamed stream on west side of reservoir.

USE: Private recreation.

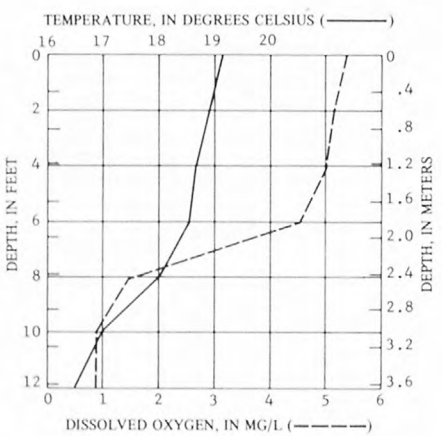
REMARKS: Some aquatic growth in shallow areas of reservoir. Bottom material is mostly soft mud.
Water-rights permit issued for storage of 120 acre-ft (150,000 m^3) for irrigation.

WATER-QUALITY DATA

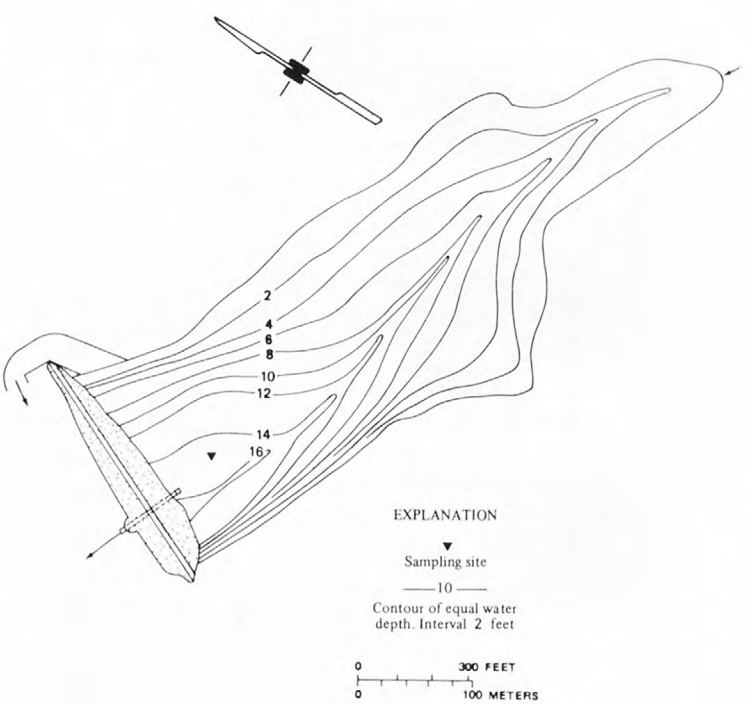
SAMPLING TIME: 1115 hours
SAMPLING SITE: Lat 44°46'35", long 123°11'05"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.6	263
BOTTOM	8.3	273

ALKALINITY (mg/l as $CaCO_3$)	87
TOTAL HARDNESS (mg/l as $CaCO_3$)	75
DISSOLVED SOLIDS (mg/l)	155
TRANSPARENCY (meters)	1.3
COLOR (Pt-Co units)	80
FECAL COLIFORM (colonies/100 ml)	4



BATHYMETRIC MAP



LOCATION: Sec.4, T.7 S., R.4 W., about 2 mi (3 km) northwest of Oak Grove and 5 mi (8 km) northeast of Rickreall. Rickreall 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Rickreall Creek (Willamette River drainage).

DRAINAGE AREA: 0.44 mi^2 (1.14 km^2).

SURFACE AREA: 6 acres (24,000 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 250 ft (76 m) above mean sea level, from topographic map.

VOLUME: 35 acre-ft (43,000 m^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow through channel on north side (from upper reservoir) or in unnamed creek on west side of reservoir.

OUTFLOW: No measurable flow through dam or spillway on south side of reservoir.

USE: Private recreation.

REMARKS: Upper Marx Reservoir was nearly dry on the survey date. Water from the upper reservoir is used to maintain the water level in the reservoir. Bottom material in the lower reservoir is mostly hard mud.

Water-rights certificate issued for storage of 119.8 acre-ft (147,700 m^3) in both reservoirs for irrigation.

WATER-QUALITY DATA

SAMPLING TIME: 1830 hours
SAMPLING SITE: Lat 44°59'15", long 123°11'15"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.9	87
BOTTOM	7.8	97

ALKALINITY (mg/l as $CaCO_3$) 30

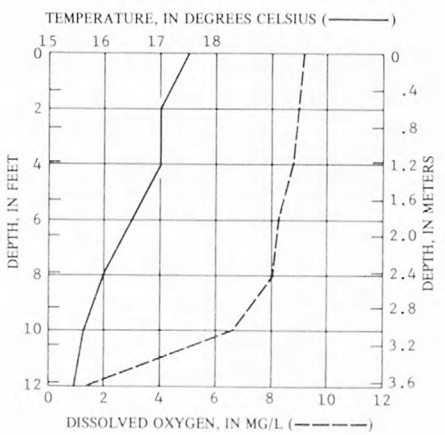
TOTAL HARDNESS (mg/l as $CaCO_3$) 27

DISSOLVED SOLIDS (mg/l) 80

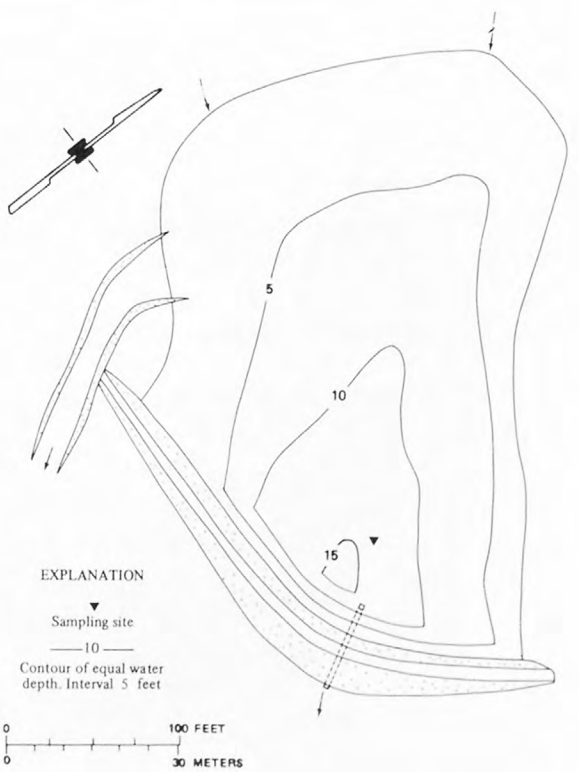
TRANSPARENCY (meters) .6

COLOR (Pt-Co units) 100

FECAL COLIFORM (colonies/100 ml) 60



BATHYMETRIC MAP



LOCATION: E½ sec.1, T.8 S., R.7 W.; sec.6, T.8 S., R.6 W., about 3 mi (5 km) northwest of Falls City and 8 mi (13 km) west of Dallas. Dallas 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Rickreall Creek (Willamette River drainage).

DRAINAGE AREA: 17.1 mi^2 (44.3 km^2). (Information furnished by the Oregon State Engineer.)

SURFACE AREA: 60 acres (243,000 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 761 ft (232 m) above mean sea level. (Information furnished by the Oregon State Engineer.)

VOLUME: 1,550 acre-ft (1.90 hm^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: Estimated a total of 2 ft^3/s (0.06 m^3/s) from all inflows. The major inflows are Rickreall Creek on west side of reservoir and Rockhouse Creek on northwest side of reservoir.

OUTFLOW: Estimated 1 ft^3/s (0.03 m^3/s) through weir on east side of reservoir.

USE: Public fishing. Boating and swimming are prohibited.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly hard mud. Reservoir capacity was increased in 1973 by raising the dam height.

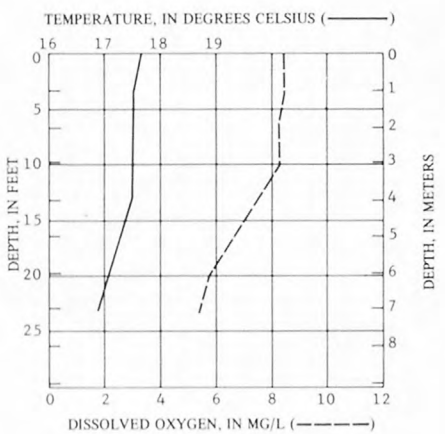
Water-rights certificate issued for storage of 1,990 acre-ft (2.45 hm^3) (maximum pool) and diversion of 0.06 ft^3/s (0.002 m^3/s) for municipal supply for Dallas.

WATER-QUALITY DATA

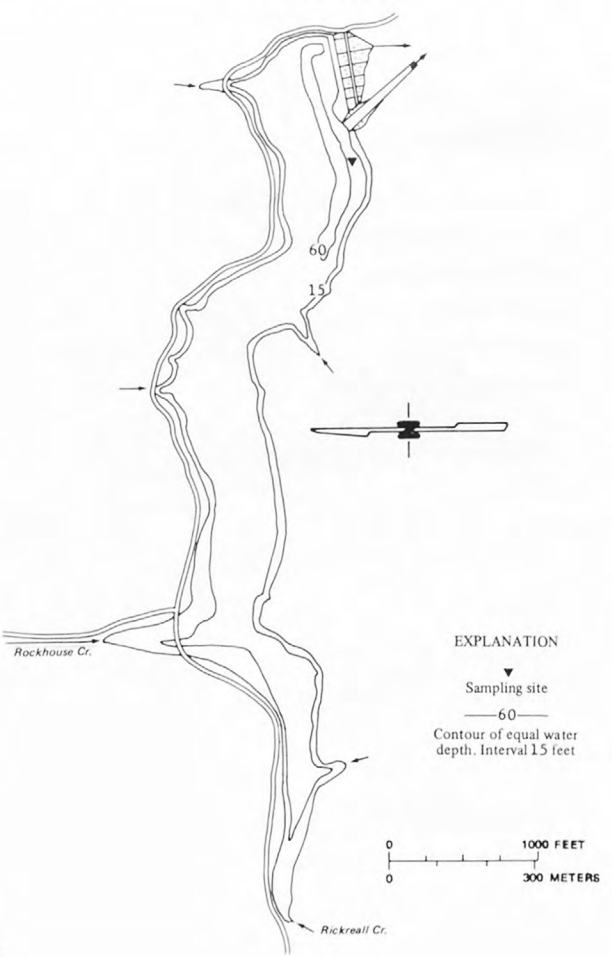
SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°54'05", long 123°28'10"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	80
BOTTOM	7.4	96

ALKALINITY (mg/l as $CaCO_3$)	34
TOTAL HARDNESS (mg/l as $CaCO_3$)	32
DISSOLVED SOLIDS (mg/l)	57
TRANSPARENCY (meters)	3.7
COLOR (Pt-Co units)	10
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: NE¼ sec.11, NW¼ sec.12, T.7 S., R.5 W., near Smithfield and about 5 mi (8 km) northeast of Dallas. Dallas 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Rickreall Creek (Willamette River drainage).

DRAINAGE AREA: 0.64 mi^2 (1.66 km^2). (Information furnished by the Oregon State Engineer.)

SURFACE AREA: 35 acres (142,000 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 180 ft (55 m) above mean sea level, from topographic map.

VOLUME: 210 acre-ft (259,000 m^3) at normal pool. (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow through unnamed streams on south and north sides of reservoir.

OUTFLOW: Estimated 1 ft^3/s (0.03 m^3/s) through dam to Baskett Slough. No flow through spillway.

USE: National Wildlife Refuge.

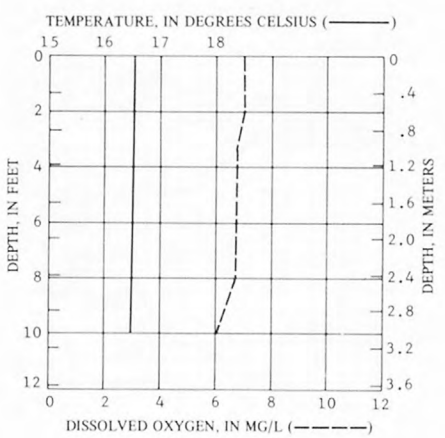
REMARKS: Bottom material is mostly soft mud.
This reservoir is located in the Baskett Slough National Wildlife Refuge and provides a sanctuary for many migratory waterfowl.
Water-rights certificate issued for storage of 210 acre-ft (259,000 m^3) for irrigation.

WATER-QUALITY DATA

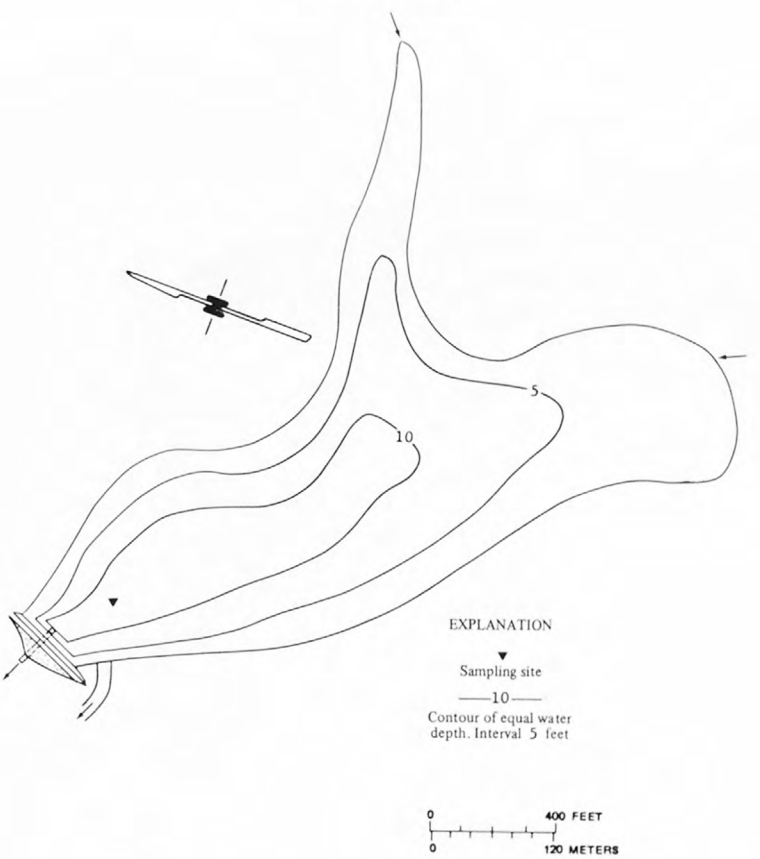
SAMPLING TIME: 1000 hours
SAMPLING SITE: Lat 44°58'50", long 123°15'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.7	126
BOTTOM	7.7	126

ALKALINITY (mg/l as $CaCO_3$)	42
TOTAL HARDNESS (mg/l as $CaCO_3$)	39
DISSOLVED SOLIDS (mg/l)	90
TRANSPARENCY (meters)	.4
COLOR (Pt-Co units)	70
FECAL COLIFORM (colonies/100 ml)	540



BATHYMETRIC MAP



LOCATION: SW¼ sec.35, T.6 S., R.7 W., about 6 mi (10 km) southeast of Grand Ronde, on Gooseneck Creek. Grand Ronde 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Yamhill River (Willamette River drainage).

DRAINAGE AREA: 1.67 mi^2 (4.33 km^2). (Information furnished by the Oregon State Engineer.)

SURFACE AREA: 5 acres (20,000 m^2) at normal pool. (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 840 ft (260 m) above mean sea level, from topographic map.

VOLUME: 66.8 acre-ft (82,360 m^3). (Information furnished by the Oregon State Engineer.)

INFLOW: Estimated 2 ft^3/s (0.06 m^3/s) from Gooseneck Creek on west side of reservoir.

OUTFLOW: No measurable flow through dam or spillway to Gooseneck Creek on east side of reservoir.

USE: Private recreation. Reservoir has been stocked with trout.

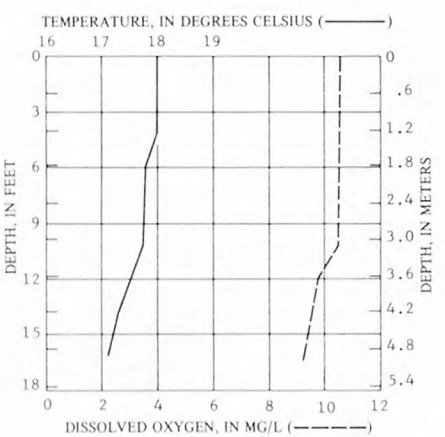
REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly soft clay.
The high pH values cannot be attributed to anything specific without further testing.
Water-rights permit issued for storage of 66.8 acre-ft (82,360 m^3) for irrigation.

WATER-QUALITY DATA

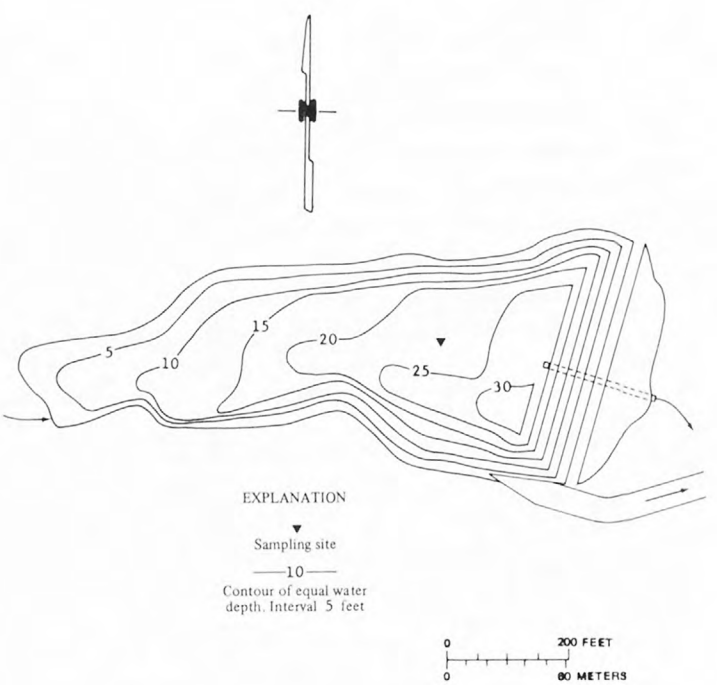
SAMPLING TIME: 1345 hours
SAMPLING SITE: Lat 45°00'05", long 123°30'40"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	9.9	95
BOTTOM	9.9	94

ALKALINITY (mg/l as $CaCO_3$)	54
TOTAL HARDNESS (mg/l as $CaCO_3$)	35
DISSOLVED SOLIDS (mg/l)	72
TRANSPARENCY (meters)	2.9
COLOR (Pt-Co units)	5
FECAL COLIFORM (colonies/100 ml)	0



BATHYMETRIC MAP



LOCATION: Sec.35, T.6 S., R.4 W., about 3 mi (5 km) south of Bethel Heights and 8 mi (13 km) southeast of Amity. Amity 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 1 acre (4,000 m^2).

SURFACE ELEVATION: 610 ft (190 m) above mean sea level, from topographic map.

VOLUME: 5 acre-ft (6,000 m^3).

INFLOW: No surface inflow; reservoir is spring fed.

OUTFLOW: None observed, and no channel indicated on topographic map.

USE: Private recreation for Oregon 4-H groups. No swimming is permitted.

REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly hard mud.

This is the largest of several manmade ponds on the 4-H grounds.

Water-rights permit issued for storage of 5 acre-ft (6,000 m^3) for recreation and fish culture.

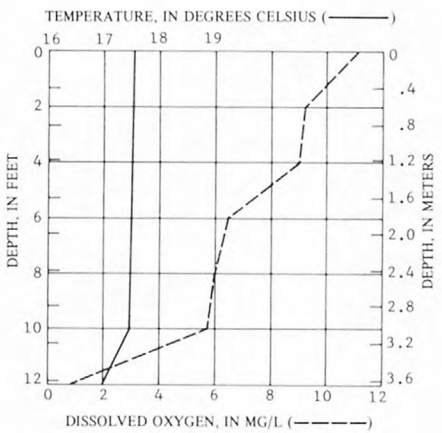
BATHYMETRIC MAP

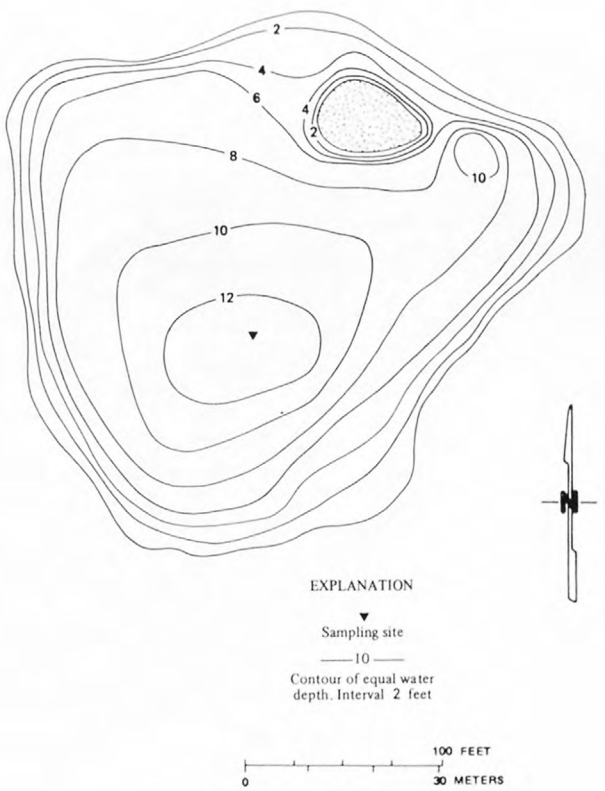
WATER-QUALITY DATA

SAMPLING TIME: 1200 hours
SAMPLING SITE: Lat 45°00'05", long 123°08'40"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.5	70
BOTTOM	6.9	71

ALKALINITY (mg/l as $CaCO_3$)	34
TOTAL HARDNESS (mg/l as $CaCO_3$)	22
DISSOLVED SOLIDS (mg/l)	67
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	35
FECAL COLIFORM (colonies/100 ml)	3





LOCATION: E½ sec.4, T.7 S., R.5 W., about 0.5 mi (0.8 km) west of the Amity-Dallas Road and 5 mi (8 km) north of Dallas. Dallas 15-minute quadrangle map. (Not shown on map.)

DRAINAGE BASIN: Salt Creek (Willamette River drainage).

DRAINAGE AREA: 1.12 mi^2 (2.90 km^2).

SURFACE AREA: 20 acres (81,000 m^2).

SURFACE ELEVATION: 250 ft (76 m) above mean sea level, from topographic map.

VOLUME: 125 acre-ft (154,000 m^3). (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow through unnamed intermittent stream on north side of reservoir.

OUTFLOW: No measurable flow through dam or spillway on south side of reservoir.

USE: Private recreation and fish culture.

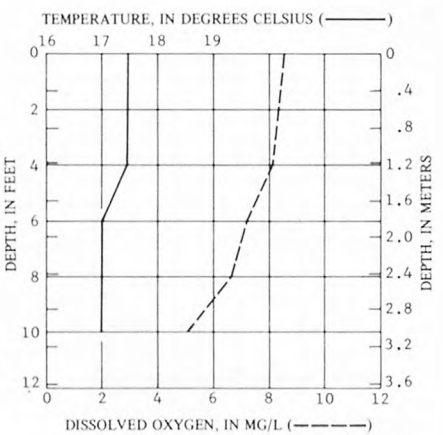
REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly soft mud.
Water-rights certificate issued for storage of 125 acre-ft (154,000 m^3) for irrigation.

WATER-QUALITY DATA

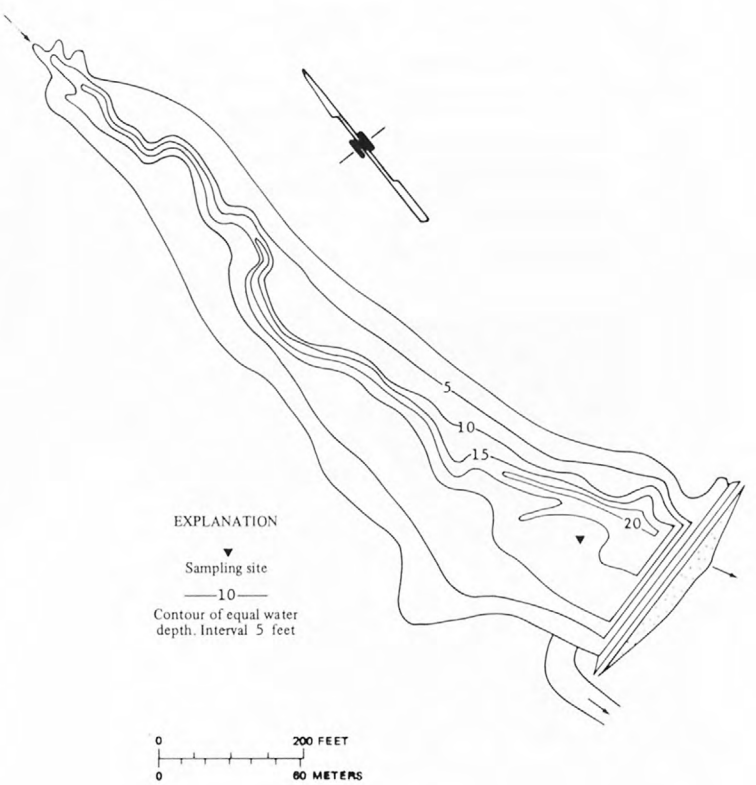
SAMPLING TIME: 1800 hours
SAMPLING SITE: Lat 44°59'30", long 123°17'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.8	151
BOTTOM	7.6	153

ALKALINITY (mg/l as $CaCO_3$)	38
TOTAL HARDNESS (mg/l as $CaCO_3$)	51
DISSOLVED SOLIDS (mg/l)	122
TRANSPARENCY (meters)	1.0
COLOR (Pt-Co units)	40
FECAL COLIFORM (colonies/100 ml)	6



BATHYMETRIC MAP



LOCATION: Sec.3, T.7 S., R.3 W., about 1 mi (1.6 km) southwest of Keizer and 3 mi (5 km) northeast of West Salem. Salem West 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 7 acres (28,000 m^2).

SURFACE ELEVATION: 111 ft (34 m) above mean sea level, from topographic map.

VOLUME: 70 acre-ft (86,000 m^3).

INFLOW: No surface inflow. This pond is flooded by the Willamette River during extremely high water.

OUTFLOW: No surface outflow.

USE: No apparent recreational use. Several "no fishing" signs are posted around the pond.

REMARKS: No evidence of either submerged or surface aquatic growth. This pond is actually a water-filled gravel pit and therefore has a mostly gravel bottom.

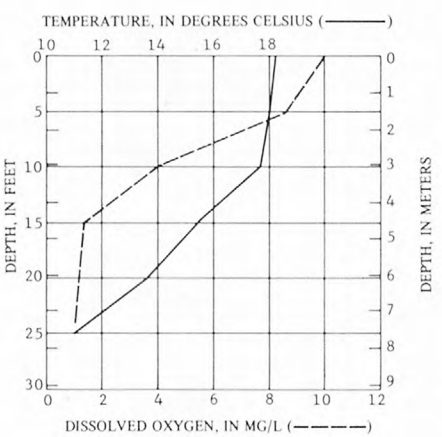
Water-rights certificate issued for diversion of 0.75 ft^3/s (0.02 m^3/s) for irrigation.

WATER-QUALITY DATA

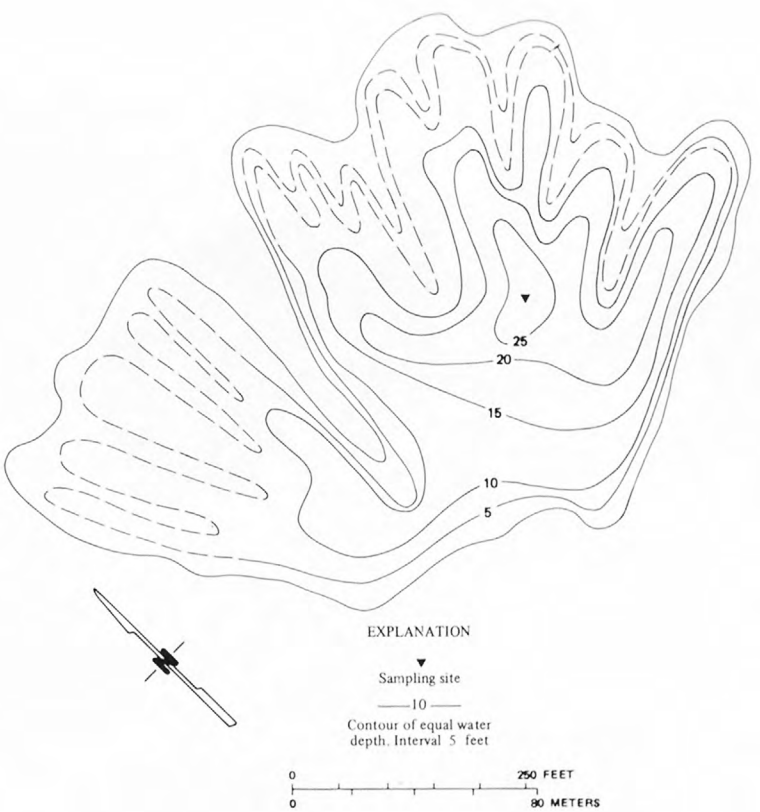
SAMPLING TIME: 1300 hours
SAMPLING SITE: Lat 44°59'10", long 123°02'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.4	177
BOTTOM	6.8	306

ALKALINITY (mg/l as $CaCO_3$)	77
TOTAL HARDNESS (mg/l as $CaCO_3$)	80
DISSOLVED SOLIDS (mg/l)	138
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	10
FECAL COLIFORM (colonies/100 ml)	8



BATHYMETRIC MAP



LOCATION: Sec.15, T.7 S., R.3 W., about 1 mi (1.6 km) northeast of West Salem, near Wallace Park. Salem West 7½-minute quadrangle map.

DRAINAGE BASIN: Willamette River (noncontributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 3 acres (12,000 m^2).

SURFACE ELEVATION: 110 ft (34 m) above mean sea level, from topographic map.

VOLUME: 25 acre-ft (31,000 m^3).

INFLOW: No surface inflow. This pond is flooded by the Willamette River during extremely high water.

OUTFLOW: No surface outflow.

USE: Public recreation. Surrounding land used extensively by motorcycle enthusiasts.

REMARKS: Some aquatic growth was present in the pond, mostly submerged. This pond is actually a water-filled gravel pit and therefore has a mostly gravel bottom.

WATER-QUALITY DATA

SAMPLING TIME: 1600 hours
SAMPLING SITE: Lat 44°57'25", long 123°02'30"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.6	190
BOTTOM	7.1	201

ALKALINITY (mg/l as $CaCO_3$) 88

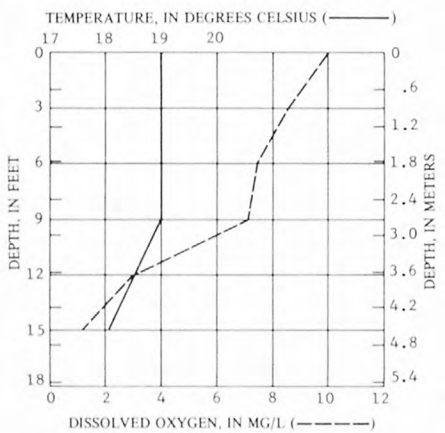
TOTAL HARDNESS (mg/l as $CaCO_3$) 82

DISSOLVED SOLIDS (mg/l) 140

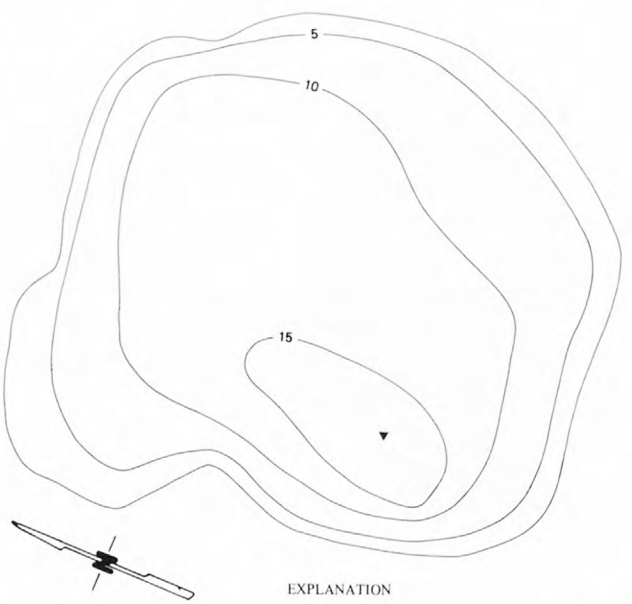
TRANSPARENCY (meters) 1.0

COLOR (Pt-Co units) 25

FECAL COLIFORM (colonies/100 ml) 1



BATHYMETRIC MAP



LOCATION: Secs.28, 33, 34, T.8 S., R.8 W., in Valsetz. Valsetz 15-minute quadrangle map.

DRAINAGE BASIN: Siletz River (Pacific Coast drainage).

DRAINAGE AREA: 17.5 mi^2 (45.3 km^2).

SURFACE AREA: 380 acres (1.5 km^2).

SURFACE ELEVATION: 1,099 ft (335 m) above mean sea level, indicated on topographic map.

VOLUME: 4,500 acre-ft (5.6 hm^3).

INFLOW: Estimated less than 5 ft^3/s (0.14 m^3/s) from all inflows, including the South Fork Siletz River on the survey date.

OUTFLOW: Estimated about 4 ft^3/s (0.11 m^3/s) through fish ladder, with about 2 ft^3/s (0.06 m^3/s) of seepage through dam.

USE: Public fishing. The lake contains Brown and cutthroat trout, silver salmon, steelhead, largemouth bass, yellow bullhead, goldfish, and sculpin. The salmon and steelhead are migrants (McHugh, 1972).

REMARKS: Valsetz Lake was formed by damming the South Fork of the Siletz River to form a log pond. The pond has been in use for many years, and the lake bottom is packed with sunken bark, logs, and parts of old buildings that have decayed and fallen in. Log rafts of various ages, some with vegetation sprouting on them, are moored around the shores. Shallow embayments around the shore have dense stands of surface and submerged aquatic growth.

Although the lake has been affected by log storage, no very harmful effects have been noted. Further enrichment, however, might cause dense algal blooms and other ecological troubles (McHugh, 1972).

Water-rights certificate issued for diversion of 5 ft^3/s (0.14 m^3/s) for use by lumber company.

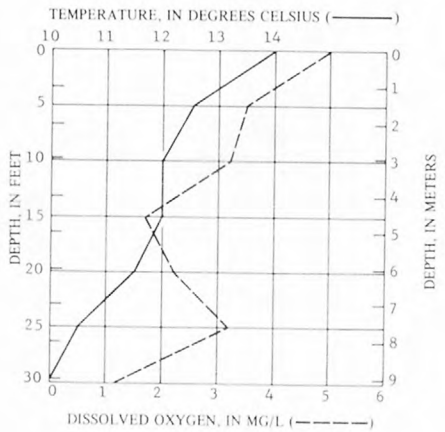
References: 3, 7.

WATER-QUALITY DATA

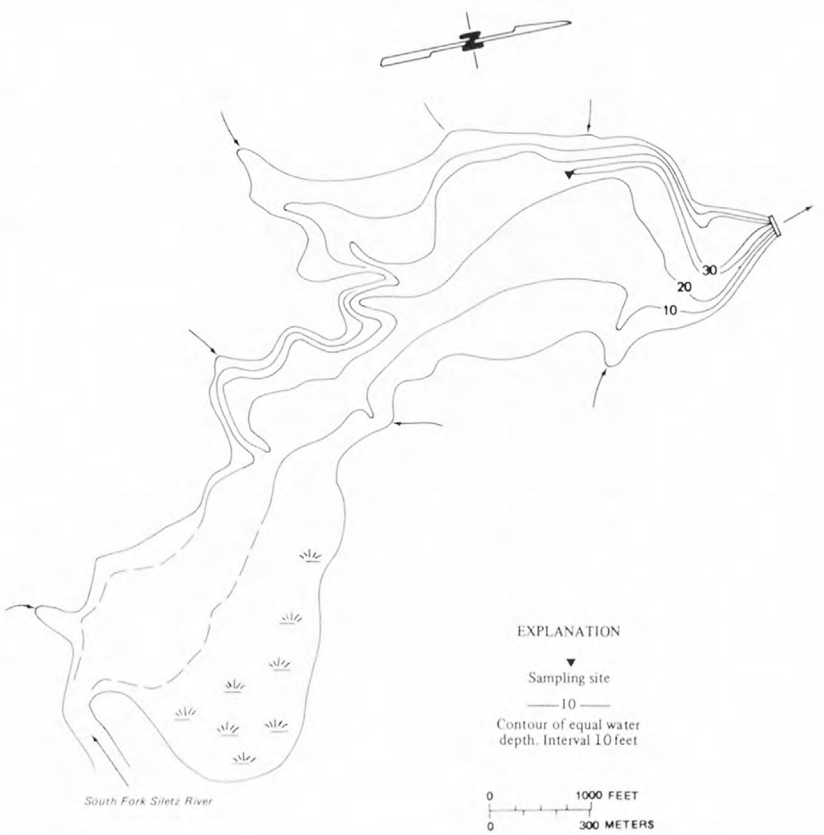
SAMPLING TIME: 1400 hours
SAMPLING SITE: Lat. 44°50'35", long 123°40'00"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	7.1	44
BOTTOM	6.3	44

ALKALINITY (mg/l as $CaCO_3$)	21
TOTAL HARDNESS (mg/l as $CaCO_3$)	13
DISSOLVED SOLIDS (mg/l)	28
TRANSPARENCY (meters)	1.2
COLOR (Pt-Co units)	40
FECAL COLIFORM (colonies/100 ml)	4



BATHYMETRIC MAP



LOCATION: SE¼ sec.3, T.6 S., R.5 W., on Polk-Yamhill County line about 2 mi (3.2 km) northwest of Perrydale and 2 mi (3.2 km) northeast of Ballston. Ballston 7½-minute quadrangle map (photorevised 1970). (Not named on map.)

DRAINAGE BASIN: Yamhill River (Willamette River drainage).

DRAINAGE AREA: 0.40 mi^2 (1.04 km^2).

SURFACE AREA: 14 acres (57,000 m^2). (Information furnished by the Oregon State Engineer.)

SURFACE ELEVATION: 150 ft (46 m) above mean sea level, from topographic map.

VOLUME: 98 acre-ft (121,000 m^3). (Information furnished by the Oregon State Engineer.)

INFLOW: No measurable flow from unnamed intermittent stream on south side of reservoir. During heavy runoff, excess water is diverted around west side of reservoir.

OUTFLOW: No measurable flow through spillway on north side of reservoir.

USE: Private recreation. Reservoir has been stocked with bass in recent years.

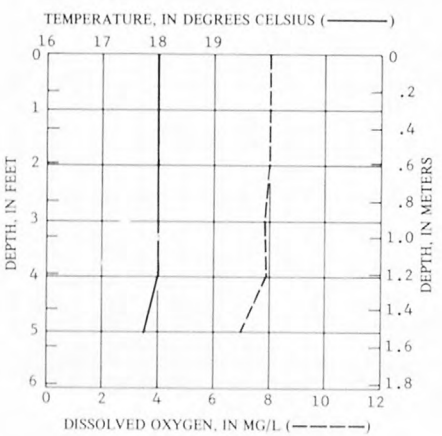
REMARKS: No evidence of either submerged or surface aquatic growth. Bottom material is mostly hard clay.
Water-rights certificate issued for storage of 98 acre-ft (121,000 m^3) for irrigation.

WATER-QUALITY DATA

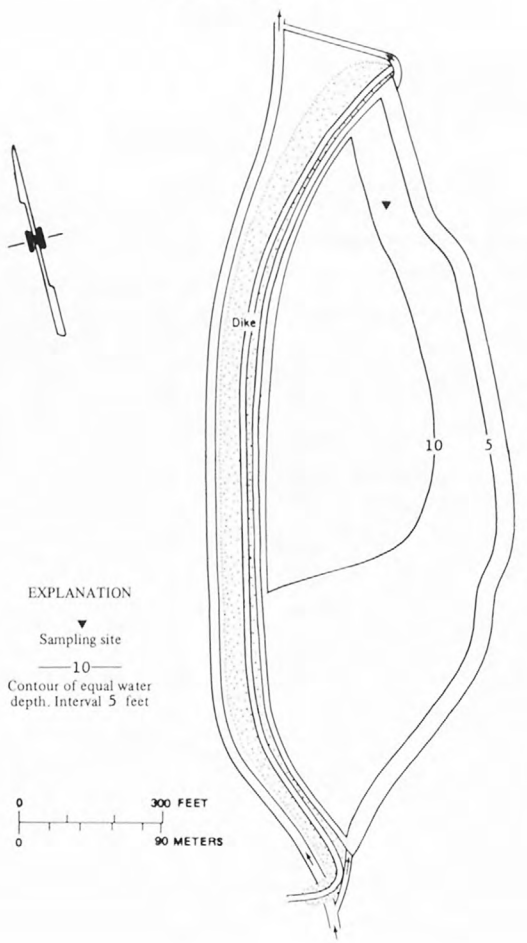
SAMPLING TIME: 1300 hours
SAMPLING SITE: Lat°45 04'35", long 123°16'35"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.8	205
BOTTOM	9.0	201

ALKALINITY (mg/l as $CaCO_3$)	90
TOTAL HARDNESS (mg/l as $CaCO_3$)	83
DISSOLVED SOLIDS (mg/l)	141
TRANSPARENCY (meters)	1.0
COLOR (Pt-Co units)	25
FECAL COLIFORM (colonies/100 ml)	108



BATHYMETRIC MAP



LOCATION: Sec.1, T.6 S., R.7 W., about 4 mi (6 km) southwest of Sheridan, just south of the Polk-Yamhill County line in Willamina. Sheridan 7½-minute quadrangle map. (Not named on map.)

DRAINAGE BASIN: Yamhill River (Willamette River drainage, non-contributing).

DRAINAGE AREA: Indeterminate.

SURFACE AREA: 5 acres (20,000 m^2).

SURFACE ELEVATION: 230 ft (70 m) above mean sea level, from topographic map.

VOLUME: 10 acre-ft (12,000 m^3).

INFLOW: No surface inflow. Water is pumped from Willamina Creek to maintain reservoir.

OUTFLOW: No surface outflow.

USE: Public recreation. Reservoir is stocked with trout.

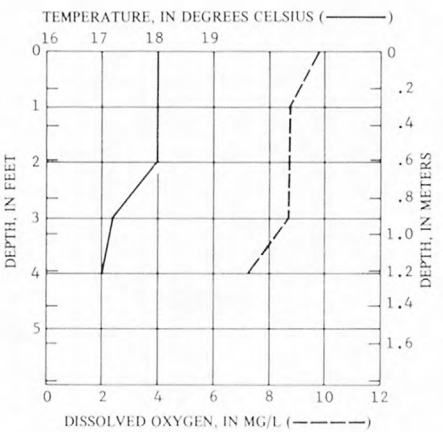
REMARKS: The Vern Huddleston Memorial recreational area, of which the reservoir is a part, is maintained by the city of Willamina. At one time the reservoir served as a log-storage pond for a plywood manufacturing firm.

WATER-QUALITY DATA

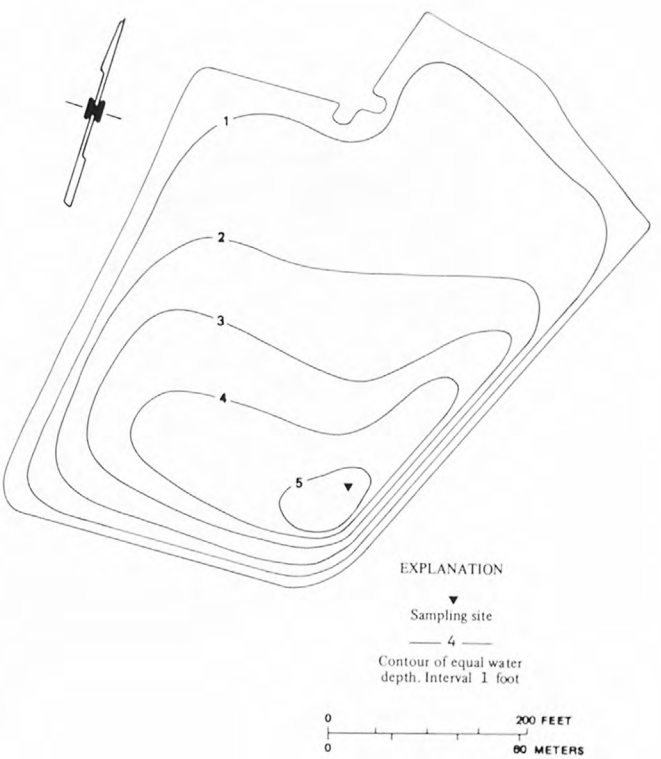
SAMPLING TIME: 1800 hours
SAMPLING SITE: Lat 45°04'25", long 123°28'50"

	pH (units)	CONDUCTIVITY (micromhos at 25°C)
SURFACE	8.3	83
BOTTOM	8.4	67

ALKALINITY (mg/l as $CaCO_3$)	27
TOTAL HARDNESS (mg/l as $CaCO_3$)	22
DISSOLVED SOLIDS (mg/l)	67
TRANSPARENCY (meters)	.4
COLOR (Pt-Co units)	60
FECAL COLIFORM (colonies/100 ml)	10



BATHYMETRIC MAP



Index

Note: Identification numbers are shown for some lakes.

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

Klickitat Lake . . . *Oregon State Hwy. Dept. Photo*

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