



Triangle Lake

Lane County

Mid Coast Basin

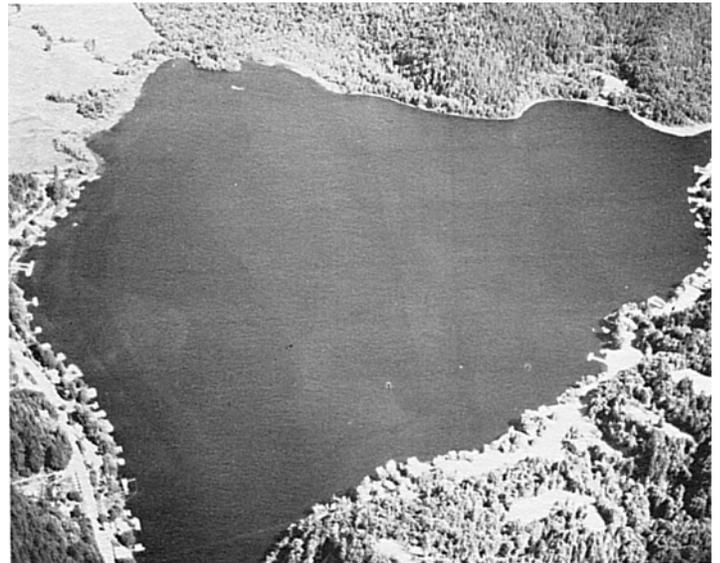
Location	
Area	279 acres (112.9 hect)
Type	natural lake
Use	recreation
Location	25 miles west of Junction City in the Coast Range
Access	paved county boat ramp reached from Ore Hwy 36
USGS Quad	Triangle Lake (24K), Eugene (100K)
Coordinates	44° 09' 56" N, 123° 34' 14" W
USPLSS	township 16S, range 07W, section 20

Triangle Lake lies high in the Oregon Coast Range only a few miles west of the divide and in the headwater portion of the Siuslaw River. The name of the lake is obviously taken from its geometric shape; however, in the latter part of the nineteenth century it was variously known as Loon Lake, Echo Lake, and Lake of the Woods. Although there are hundreds of natural lakes on the Oregon Coast, there are very few in the Coast Range. The explanation lies with the geologic and climatic history of the area. The Pleistocene Epoch was a time of high precipitation and this fact combined with tectonic uplift of the mountains produced very steep-walled, narrow valleys throughout the range. Glacial and volcanic processes, responsible for most of the Cascade Mountain lakes, were virtually non-existent in the Coast Range. However, landslides in the rugged topography are quite common, and the few natural lakes that do exist were formed where massive slides blocked a river valley, impounding water behind it. The only two large natural lakes in the Coast Range, Triangle Lake and Loon Lake, were formed in this manner. Baldwin (1976) described the formation of Triangle Lake. It was blocked by a tilted mass of sandstone that evidently came from high on the north slope of the valley drained by Lake Creek. The creek found its outlet against the south wall where it is incised in bedrock rather than in the slide material. This condition will insure the long life of the alluvial valley but not necessarily of Triangle Lake which is only a remnant of a long lake that used to extend several miles upstream. Most of the old lake has been filled in by sediment and the size of the lake is also slowly reduced as erosion of the outlet reduces the water level. The depth of the water is 97 feet at its deepest point, which is along the western edge where the outlet occurs. However, this is much less than the original depth, and the volume of alluvium necessary to fill the basin is only a small fraction of that already deposited.

The 54 square mile drainage basin is an area of steep, timbered slopes; it reaches a maximum elevation of 3550 feet at Prairie Mountain. Much of the land is owned privately and sections of it are federal land administered by the Bureau of Land Management. The entire shoreline of the lake, other than a small county park, is entirely in private ownership. However, public access is not a problem and Triangle Lake has long been a popular site for water-based recreation for local residents and for visitors from the Willamette Valley. Heaviest use is for water skiing and swimming in the summer. Anglers take warm water species in good numbers throughout the spring and summer. Bluegill are most numerous, followed by catfish, perch, and largemouth bass. Cutthroat trout and rainbow trout are also taken early in the spring; the cutthroat are native and the rainbow trout are stocked.

Sixty to seventy private homes are located along the shoreline, many of them summer homes. Several private resorts and other businesses are also located on or near the shoreline adjacent to Oregon Highway 36. Many of these structures near the lake are old, and there is very little modern development. Most of the homes are constructed on the very edge of the lake, with no room for an adequate drainfield. Some houses do not even use septic tanks, and earth-pit privies have been installed within a few feet of the lake. Despite this, the bacteriological quality of the lake water is fairly good. However, a 1970 survey by the Oregon State Board of Health recommended that future sewage disposal facilities be located on the side of Highway 36 away from the lake. Because of this level of human activity adjacent to the lake, the water is enriched and supports algal blooms. McHugh (1972) reported blooms of *Asterionella formosa*, *Fragilaria crotonensis*, *Aphanizomenon flos-aquae*, and *Ceratium hirundinella*. Phinney and McLachlan (1956) reported a bloom of *Gloeotrichia enchinulata* in August 1956. The phytoplankton density observed on 5/13/82 in this survey was low, probably limited by cooler water temperatures.

Water in Triangle Lake is very dilute and has conductivity lower than any of the coastal lakes. Of course, Triangle Lake is considerably higher and is 28 miles from the ocean. Because most of the lake is relatively deep (average depth is 52 feet), there is little growth of rooted macrophytes. However, in the shallow areas, macrophytes are quite abundant; for example, near the outlet and in the other littoral areas. In spite of the development around the lake and some agricultural activity in the drainage basin, both of which may contribute nutrients to the lake, the concentrations of chlorophyll and phosphorus are below average and the water transparency is above average for lakes of the region. The lake is deep enough to develop a pronounced thermal stratification in the summer and shows some tendency for oxygen depletion in the deeper water (Smith and Bella 1973). Maloney et al (1975) conducted nutrient bioassays (in the laboratory) and found that the addition of various nutrients did not increase algal growth. In nutrient bioassays conducted within the lake by Powers et al (1975), contradictory results were obtained in that phosphorus stimulated growth. The combination of chemical and biological indicators suggest a mesotrophic classification for Triangle Lake.



Source: Oregon National Guard, 1981-82. View looking southeast.

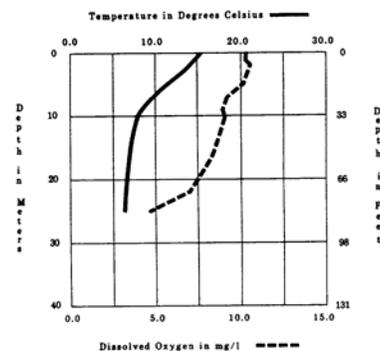
Drainage Basin Characteristics						
Area	54.2 sq mi (140.4 sq km)	Relief	steep	Precip	80-100 in (203-254 cm)	
Agriculture						
Land Use %	Forest 92.6	Range 3.5	Water 0.9	Irrig 0.5	Non Irrig 2.5	Urban 0.5
Notes -						
Lake Morphometry			Maximum	Average		
Area	279.0 acres (112.9 hect)	Depth	95 ft (29.0 m)	52ft (15.8 M)		
Ave/Max Depth Ratio	0.550	Volume	14,465 acre ft (17.87 cu hm)			
Shoal area	8%	Volume factor	1.64	Shape factor	1.51	
Length of Shoreline	3.5 mi (5.6 km)	Retention time	1 mo			
Notes -						
Water Quality						
Trophic status	mesotrophic					
Sample date	05/13/82	Temp	59.7F (15.4C)	Diss. Oxygen (mg/l)	10.4	
Transparency	11.5 ft (3.5 m)	Phosp (mg/l)	0.012	Chlorophyll a (mg/l)	2.1	
Alkalinity	6	Conductivity (umhos/cm)	33	pH	7.0	
Major Ions	Na 3.0	K 0.6	Ca 2.4	Mg 0.8	Cl 3.1	SO4 1.4
Notes -						

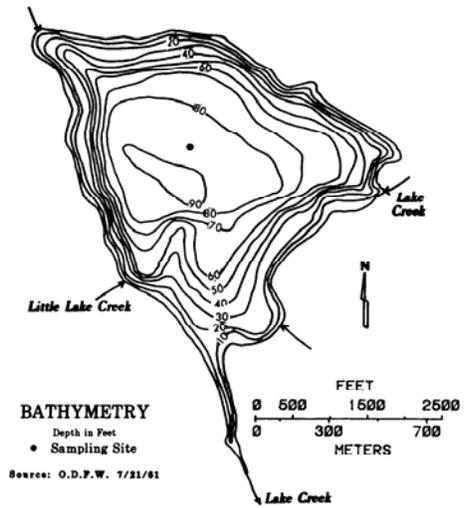
Phytoplankton Surveys:

5/13/82

Alga	#/ml	%
<i>Rhodomonas minuta</i>	11	15.7
<i>Asterionella formosa</i>	8	11.4
<i>Dinobryon bavaricum</i>	8	11.4
<i>Synedra radians</i>	6	8.6
<i>Chrysococcus rufescens</i>	6	8.6
others (9)	31	44.3
Total	70	100.0

TEMPERATURE AND OXYGEN





DRAINAGE BASIN
--- Basin Boundary

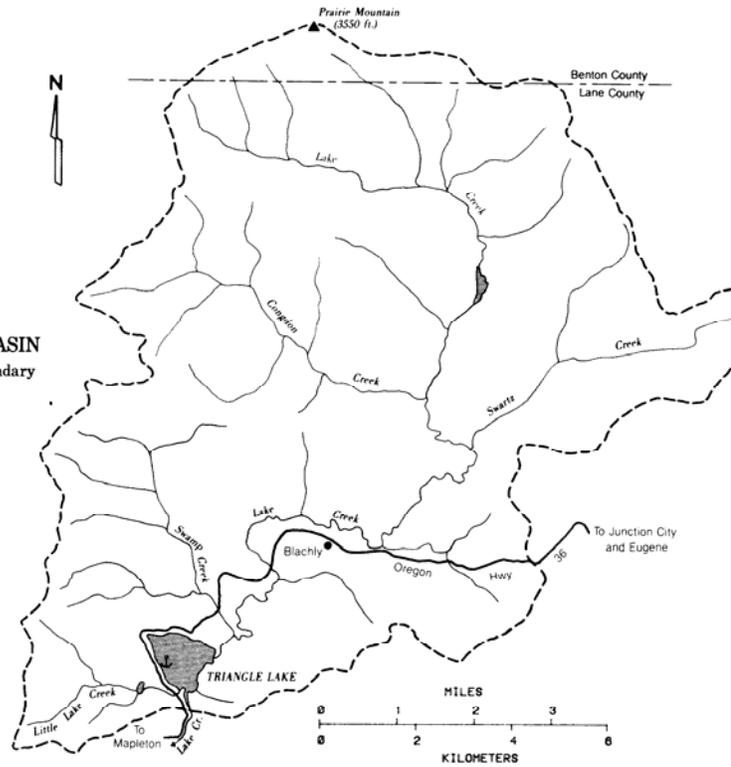


Photo captions

1. Triangle Lake
2. Lake Creek
3. Oregon Highway 36
4. Residences



Source: NASA, 1974. Vertical photo.