



Dorena Lake
Lane County
Willamette/Sandy Basin

Location	
Area	1,840 acres (744.6 hect)
Type	reservoir
Use	multi-purpose
Location	5.5 miles east of Cottage Grove
Access	paved county road from Cottage Grove
USGS Quad	Dorena Lake (24K), Oakridge (100K)
Coordinates	43° 47' 10" N, 122° 57' 12" W
USPLSS	tow nship 20S, range 02W, section 32



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

Dorena Lake is a multi-purpose reservoir located in the gently rolling hill country of the southern Willamette Valley. It was formed by impounding the waters of the Row River about seven miles upstream of its confluence with the Coast Fork of the Willamette River. One of 13 Corps of Engineers water resource projects in the Willamette Valley, it was one of the first to be operated, having been constructed in 1949. Construction actually began in 1941, but was delayed by World War II. The primary function of Dorena Lake, as with nearby Cottage Grove Lake, is flood control and it has been estimated by the Corps that more than \$87,000,000 in flood damages have been prevented over the years because of their presence. High water levels are maintained in the lake from May to mid July, after which a lowering begins in order to meet downstream requirements. By mid-September the lake is usually down about 40 feet below full pool. During the winter months it is lowered to the minimum pool to provide storage for flood water. Given the relatively flat topography of the area, there is a considerable decrease in lake area and shoreline length during the draw-down.

Dorena Lake is located only about 20 miles from the center of Eugene and is thus extremely popular for recreation. Boaters and swimmers use the lake extensively and angling is considered to be very good. Large numbers of rainbow trout are planted annually; other species include bluegill, largemouth bass, cutthroat trout and catfish. Lane County operates two parks with boat ramps at the lake and camping is available on the southwest shore.

The shoreline of the lake is under management of the Corps of Engineers. Private land encompasses most of the lower half of the drainage basin, while the Umpqua National Forest administers most of the upper half. Although Dorena Lake lies at the lower edge of the western hemlock vegetation zone, very little of this climax forest species is found near the lake or in the lower portion of its drainage basin. Extensive logging and other land use modifications have created a varied pattern of vegetation throughout the area. Some of the lower part of the drainage basin is used for agricultural production, with some private timberland.

Dorena Lake is nearly 100 feet deep at full pool and develops a distinct thermal stratification during summer. There is some oxygen depletion in the water near the bottom, and surface pH can be as high as 8; these are conditions that normally suggest moderately eutrophic conditions. However, major ion concentrations are about average for Willamette Valley reservoirs and the concentrations of chlorophyll and phosphorus are low; these factors suggest a classification of mesotrophic. Fish production in the lake is somewhat limited because of the fluctuation of water level. Elevated levels of mercury have been detected in the tissue of fish taken from Dorena Lake in recent years, and this has been attributed to the occurrence of natural mercury deposits in the drainage basin. Analysis of fish tissue by the Department of Environmental Quality in 1983 showed these levels to still be below the U.S. Food and Drug Administration action levels.

Drainage Basin Characteristics	
Area	265.0 sq mi (686.4 sq km)
Relief	moderate
Precip	50-80 in (127-203 cm)
Agriculture	
Land Use %	Forest 97.0, Range -, Water 1.0, Irrig -, Non Irrig 2.0, Urban -, Other -
Notes -	
Lake Morphometry	
Area	1,840.0 acres (744.6 hect)
Depth	97 ft (29.6 m)
Ave/Max Depth Ratio	0.440
Volume	77,600 acre ft (95.86 cu hm)
Shoal area	15%
Volume factor	1.37
Shape factor	1.80
Length of Shoreline	13. mi (20.9 km)
Retention time	1.7 mo
Notes -	
Water Quality	
Trophic status	mesotrophic, high mercury levels detected in fish tissues
Sample date	08/12/81
Temp	79.2F (26.2C)
Diss. Oxygen (mg/l)	9.0
Transparency	15.7 ft (4.8 m)
Phosp (mg/l)	0.003
Cholorophyl a (mg/l)	0.7
Alkalinity	11
Conductivity (umhos/cm)	49
pH	7.9
Major Ions	Na 3.1, K 0.5, Ca 5.5, Mg 1.3, Cl 1.3, SO4 1.9
Notes -	

