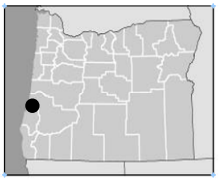


Tenmile Lake

Coos County

South Coast Basin

Location			
Area	1,627 acres (658.4 hect)	Elevation	9 ft (2.7 m)
Type	natural lake	Use	recreation
Location	8 miles south of Reedsport, 0.5 miles east of US Hwy 101		
Access	several private boat ramps provide public access		
USGS Quad	Lakeside (24K), Reedsport (100K)		
Coordinates	43° 34' 28" N, 124° 10' 25" W		
USPLSS	township 23S, range 12W, section 18		

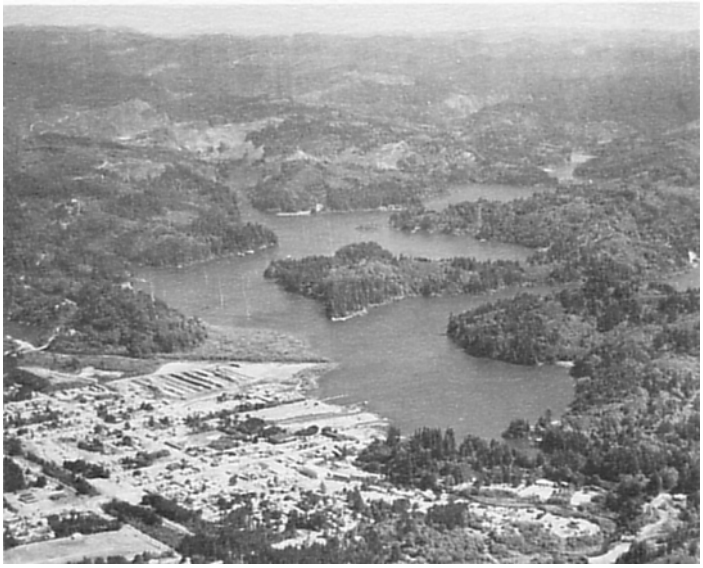
Tenmile Lake is the largest in a series of lake basins that drain the west side of the Coast Range south of the Umpqua River. It is the farthest south in a chain that includes Clear Lake, Eel Lake, North Tenmile Lake and several smaller water bodies. The lake was originally known as Johnson Lake, but the U. S. Board of Geographic Names has officially named it Tenmile Lake; the name South Tenmile Lake is incorrect but is in common usage. Tenmile and North Tenmile Lakes were undoubtedly named for Tenmile Creek which connects them to the ocean. In turn, the creek was so named because it was supposed to be about 10 miles south of Winchester Bay, the first pioneer settlement on this part of the coast.

The entire chain of lakes owes its existence to the same series of geological events as described by Cooper (1958). Ancestral Tenmile Creek was the mainstem of a stream network that drained this entire region, Eel Creek a tributary entering from the north, and Clear Creek a tributary of Eel Creek. During a time of coastal submergence which accompanied post-glacial warming, the whole system underwent a period of readjustment. The main valley and the lower courses of its tributary valleys were inundated. A bar of sand dunes formed across the river mouth and the ponded valley thus became a large lake with branches extending up the tributaries. As submergence continued the depth of the lake increased and the arms were extended farther upstream. At the same time, dunes along the shore north of Tenmile Creek were advancing inland and eventually entered broadside into the valley of Clear Creek, impounding its headwaters and forming what is now Clear Lake. As drainage from Clear Lake flowed into the Eel Creek valley a delta began to form which developed into a sand flat blocking off the upper portion of the valley and giving rise to Eel Lake. The overflow from Eel Lake then carried sand farther downstream and resumed delta formation in the lake occupying the submerged valley of Tenmile Creek. The delta extended itself across the lake to the south shore and farther upstream and downstream. Upstream the delta made contact with the promontory separating the large, submerged north and south arms of Tenmile Creek, thus segregating the present North Tenmile Lake and (South) Tenmile Lake, and producing the extensive sand flat upon which the village of Lakeside now stands. Since that time, movement of sand has ceased and a forest cover has developed so that there have been no further substantial modifications of the drainage pattern.

The drainage basin of Tenmile Lake is thus quite large and includes the basin of North Tenmile Lake within it. Other major tributaries entering the various arms include Shutter Creek, Adams Creek, Johnson Creek and Benson Creek. In contrast to Eel and Clear Lakes, the Tenmile Lakes are quite shallow and have filled in with rich organic matter which washes in from the drainage basin; narrow marshes border the lakes in several areas. The bottom material is sand, muck and peat. In some places around Tenmile Lake the surface topography is very steep and there is frequent slumping of overlying sedimentary material into the water, thereby gradually reducing lake depth. The upland area of the drainage basin is primarily covered by forest and is almost totally in private ownership, as is the shoreline of the lake.

The ecological characteristics of the Tenmile Lakes are dominated by their very shallow depth and the effects of introduced species of rooted macrophytes, particularly the Brazilian water weed (Elodea). Major ion concentrations are below average for coastal lakes; but phosphorus and chlorophyl concentrations were above average, and nitrate values were extremely high when sampled for this survey. Water transparency is below average for coastal lakes. These are all indicators of an eutrophic lake. Algal blooms are frequently observed in the water, and there is a noticeable oxygen depletion of the bottom water even though the lake is shallow. The phytoplankton surveys reported here showed quite high algal densities in spring and late fall, when cooler water temperatures normally reduce algal densities. Summer algae would be even more dense. A bloom of Aphanizomenon, a blue-green alga typical of highly eutrophic lakes, was reported by in August, 1956 (Phinney and McLachlan 1956). Phytoplankton data for 11/22/82 show Gomphosphaeria, also a blue-green eutrophic alga, to be dominant in terms of biomass. McHugh (1972) reported dominance of Melosira during winter months, which again is typical of eutrophic lakes. The summer, fall, and winter phytoplankton contain indicators of eutrophic conditions; however the spring sample is more typical of a lower trophic state as indicated by the biomass dominance of Dinobryon. Dinobryon is usually regarded as occurring most frequently in low-phospate, or oligotrophic, lakes, but this may be an exception. Undoubtedly some of the nutrient input into the lake is due to the heavy recreational use and the large number of homes around the shoreline. Also, the shallow nature of the lake allows nutrients to be resupplied readily from bottom sediments.

Tenmile Lake has long been popular with recreationists from the local area as well as with large numbers of users from the interior valleys. In fact, Tenmile Lake receives more use by boaters (over 40,000 boater use days per year) than any other lake in Oregon (Frenkel 1975). Like the north lake, Tenmile has good rainbow fishing but it is the success with bass and panfish that attracts most anglers. Largemouth bass activity has been so good that limits are often the rule. Bluegill is the most prolific species in the lake.



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

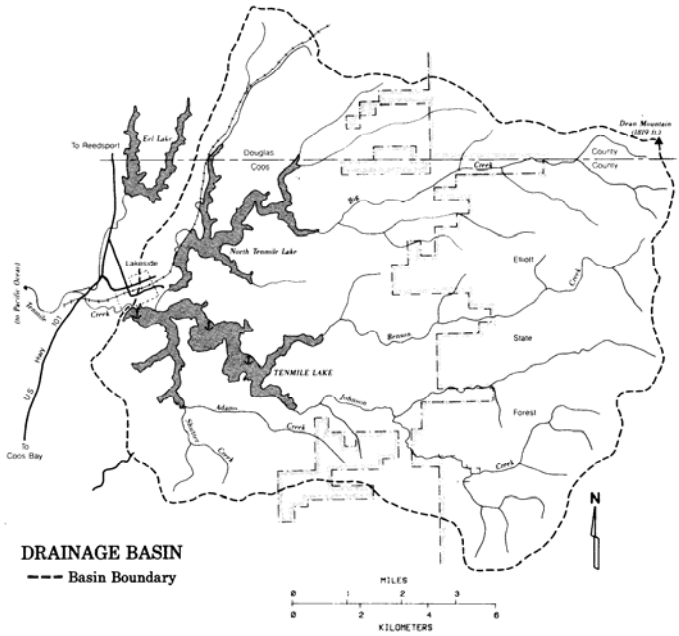
Drainage Basin Characteristics							
Area	69.7 sq mi (180.5 sq km)	Relief	moderate	Precip	67-100 in (170-254 cm)		
				Agriculture			
Land Use %	Forest	Range	Water	Irrig	Non Irrig	Urban	Other
	93.0	-	5.0	-	-	2.0	-
Notes	-						

Lake Morphometry					
			Maximum	Average	
Area	1,627.0 acres (658.4 hect)	Depth	22 ft (6.7 m)	10ft (3.0 M)	
Ave/Max Depth Ratio	0.450	Volume	16,212 acre ft (20.03 cu hm)		
Shoal area	42%	Volume factor	1.36	Shape factor	4.05
Length of Shoreline	22.9 mi (36.9 km)	Retention time	1 mo		
Notes	-				

Water Quality							
Trophic status	eutrophic-, extensive macrophyes; algal problems and a history of fishery problems						
Sample date	11/22/82	Temp	50.0F (10.0C)	Diss. Oxygen (mg/l)	-		
Transparency	8.2 ft (2.5 m)	Phosp (mg/l)	0.013	Cholorophyl a (mg/l)	6.6		
Alkalinity	19	Conductivity (umhos/cm)	65	pH	7.0		
Major Ions	Na	K	Ca	Mg	Cl	SO4	
	6.8	0.9	4.2	1.6	15.8	1.7	
Notes	-						
Sample date	05/05/82	Temp	59.9F (15.5C)	Diss. Oxygen (mg/l)	7.9		
Transparency	10 ft (3.0 m)	Phosp (mg/l)	0.013	Cholorophyl a (mg/l)	2.7		
Alkalinity	10	Conductivity (umhos/cm)	52	pH	7.1		
Major Ions	Na	K	Ca	Mg	Cl	SO4	
	4.9	0.7	3.2	1.3	6.7	2.4	
Notes	-						

In spite of the excellent fishing now found in Tenmile Lake, the history of the fishery is an unfortunate one (Grenfell 1969, Schwartz 1977). Earlier this century large populations of cutthroat trout, silver salmon and steelhead passed through the Tenmile Lakes system to spawn in the tributary streams. The rich, productive lakes provided an ideal habitat for fish growth. The size of fish taken by anglers was impressive and the reputation of the Tenmile Lakes as producers of trophy fish was well established. In an attempt to create more variety and to develop a warm water fishery, yellow perch and brown bullhead were introduced, probably in the 1920s. These new species prospered, but at the expense of the salmon and trout. In time the quality of the salmon and trout fishery declined drastically as the increased numbers of warm water fish decreased the food supply. Studies of the problem were begun by the State Game Commission about 1938 and in 1953 an intensive study program was started with the goal of eliminating undesirable species and rebuilding the salmon and trout runs. These runs had also been adversely affected over the years by the deterioration of spawning grounds. Logging operations made some tributaries unsuitable for spawning salmon, while on others siltation reduced productivity. Much loss has also resulted from re-channeling of streams by landowners to obtain better drainage and more farming areas, usually in the flatter areas around the mouths of tributaries that make good pasture.

The first major effort at rehabilitation involved the removal of tons of fish by poisoning. Success was not achieved. Finally, after years of controversy, a more drastic method was employed - a complete eradication of the entire population of fish. In 1968 the Tenmile Lakes and adjacent waters (including Eel Lake) were treated with the poison rotenone; only the brown bullhead survived. The lake has been subsequently restocked and there is now a tremendous overabundance of bluegill. In 1971, largemouth bass were introduced to prey on the bluegill. Currently, the Oregon Department of Fish and Wildlife has several plans proposed to alleviate the problem, including the introduction of a hybrid, sterile bass that supposedly would exert a strong predation pressure on the blugill. An objection to this hybrid is that it may prey upon salmonids. However, salmonids are more difficult to capture and it is assumed that few would be caught when bluegill are so abundant. Another objection is that the hybrid could not reach bluegill in the weeds. At present the bluegill density is so high that they are found in open water. Another proposed program includes weed control. Herbicides hold the most promise, but achieve only temporary control.



Phytoplankton Surveys:

5/5/82

Alga	#/ml	%
Ankistrodesmus falcatus	1,392	75.7
Dinobryon sertularia	181	9.8
Rhodomonas minuta	149	8.1
Kephyrion spirale	32	1.7
Synedra rumpens	32	1.7
others (4)	54	3.0
Total	1,840	100.0

11/22/82

Alga	#/ml	%
Ankistrodesmus falcatus	492	44.0
Rhodomonas minuta	219	19.6
Gomphosphaeria lacustris	109	9.7
Crucigenia quadrata	64	5.7
Melosira distans	46	4.1
others (11)	189	16.9
Total	1,119	100.0

TEMPERATURE AND OXYGEN

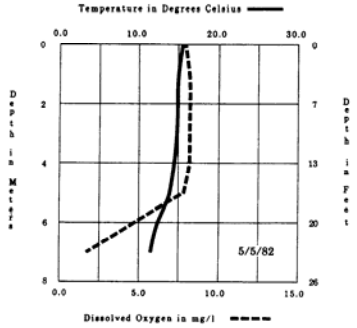
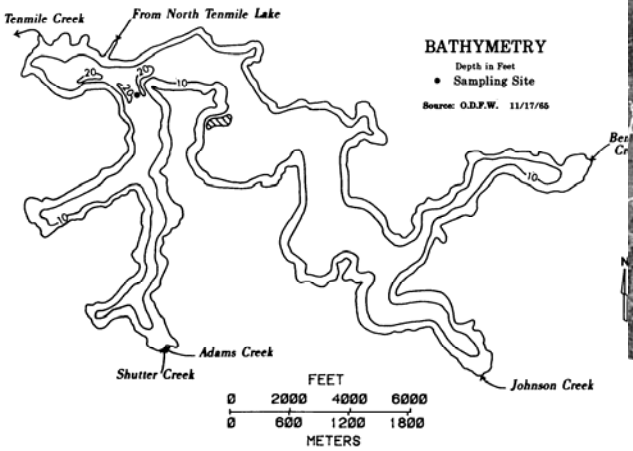
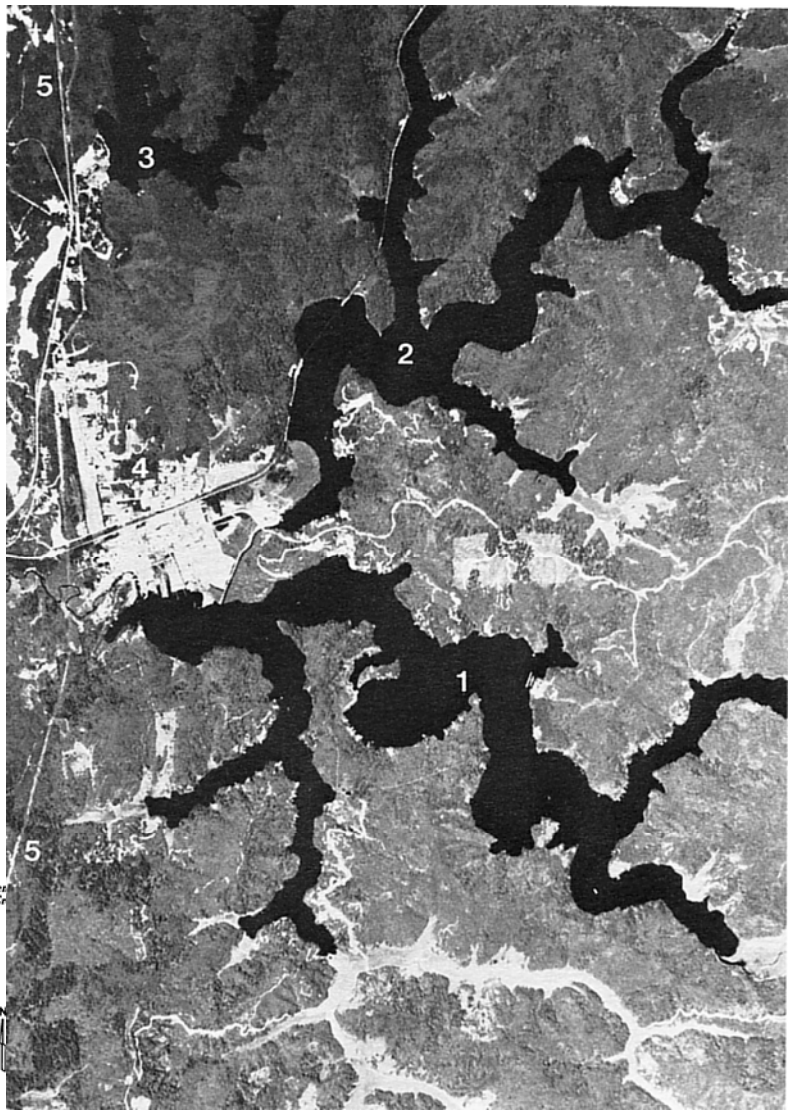


Photo captions

1. Tenmile Lake
2. North Tenmile Lake
3. Eel Lake
4. Lakeside (town)
5. US Highway 101





Source: NASA, 1974. Vertical photograph.