Green Peter Lake

Linn County

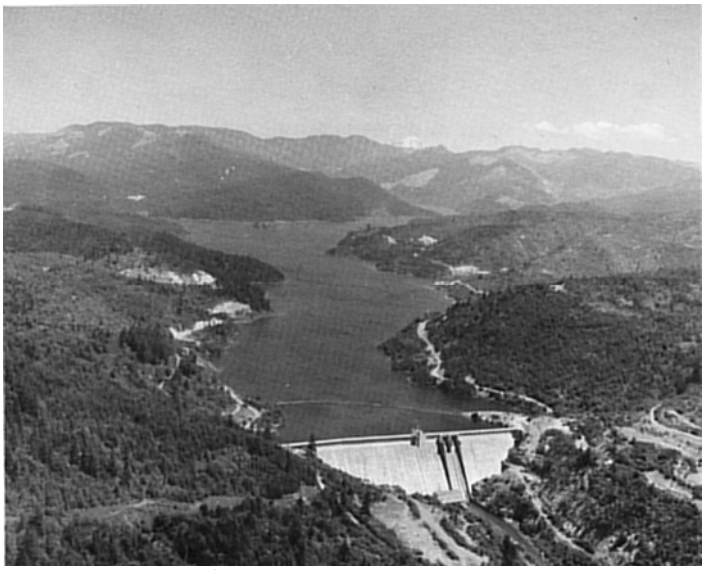
Willamette/Sandy Basin

Location			
Area	3,720 acres (1,505.5 hect)	**Elevation**	1,015 ft (309.4 m)
Type	reservoir	**Use**	multi-purpose
Location	8 miles northwest of Sweet Home		
Access	4 miles on Quartzville Road (paved) from Foster		
USGS Quad	Green Peter (24K), Mckenzie River (100K)		
Coordinates	44˚ 27' 00" N, 122˚ 33' 00" W		
USPLSS	township 13S, range 02E, section 10		

Green Peter Lake is one of 13 multi-purpose reservoirs built and operated by the Corps of Engineers in the Willamette Valley. Construction began on the dam and on Foster Dam downstream in 1961 and was completed in 1968. Green Peter Dam on the Middle Santiam River is a 380-foot, concrete structure with a gated spillway for regulation of lake levels. The powerhouse contains two generator units and the 80,000 kilowatt plant is run during periods of peak power demand. Consequently, large fluctuations in flow occur downstream on the Middle Santiam River. Foster Lake absorbs these fluctuations by impounding and releasing the water more uniformly. The project has prevented millions of dollars in damage from downstream flooding since its completion. Green Peter Lake has not developed a particularly strong reputation for fishing and at present the catch consists mainly of rainbow trout. As stocking continues it will certainly draw more anglers. Boat launching and day use facilities have been provided by Linn County and the Corps of Engineers, although launching is difficult at low water.

The highly irregular shoreline of Green Peter Lake is typical of reservoirs and also testifies to the rugged topography of this portion of the western Cascades. The 38 mile perimeter is characterized by precipitous slopes, narrow tributaries and high forested ridges. Land iri the drainage basin is managed, in part, by federal agencies (Willamette National Forest, Bureau of Land Management) and, in part, by private interests. Most of the private land consists of forested slopes near the lake. The Corps of Engineers administers the shoreline.

The water column in the lake develops a distinct temperature stratification in summer. Intakes for the power plant are located in the deeper, cooler water so that water discharged downstream is cooler in the summer than would otherwise be the case. The chemistry of the water in the lake is typical of Cascade drainages: dilute and soft. Phosphorus and chlorophyl concentrations are low, and water transparency is average, indicating mesotrophic conditions. Phytoplankton species, however, are diatoms typically occurring in lakes of higher trophic states. Blooms of phytoplankton have not been reported nor have excessive growths of macrophytes.



Source: U.S. Army Corps of Engineers, 1975. View looking northeast

Drainage Basin Characteristics							
Area	277.0 sq mi (717.4 sq km)	**Relief**	steep	**Precip**	70-100 in (178-254 cm)		
				Agriculture			
Land	**Forest**	**Range**	**Water**	**Irrig**	**Non Irrig**	**Urban**	**Other**
Use %	98.0	-	2.0	-	-	-	-
Notes	-						

Lake Morphometry					
			Maximum		**Average**
Area	3,720.0 acres (1,505.5 hect)	**Depth**	315 ft (96.0 m)		114ft (34.7 M)
Ave/Max Depth Ratio	0.360	**Volume**	430,000 acre ft (531.18 cu hm)		
Shoal area	6%	**Volume factor**	.98	**Shape factor**	6.43
Length of Shoreline	48. mi (77.2 km)			**Retention time**	4.8 mo
Notes	-				

Water Quality								
Trophic status	mesotrophic							
Sample date	08/28/81	**Temp**	72.5F (22.5C)	**Diss. Oxygen (mg/l)**	9.2			
Transparency	11.8 ft (3.6 m)	**Phosp (mg/l)**	0.002	**Cholorophyl a (mg/l)**	0.6			
Alkalinity	13	**Conductivity (umhos/cm)**	34	**pH**	7.3			
Major Ions	**Na**	**K**	**Ca**	**Mg**	**Cl**	**SO4**		
	2.1	0.3	4.0	0.8	1.0	2.0		
Notes	-