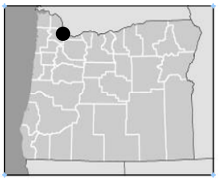


Sturgeon Lake

Multnomah/Columbia County

Willamette/Sandy Basin

Location			
Area	2,928 acres (1,185.0 hect)	**Elevation**	8 ft (2.4 m)
Type	natural lake	**Use**	recreation, w aterfow l habitat
Location	6.5 miles north of Portland on Sauvie Island		
Access	via Reeder Road from US Hw y 30		
USGS Quad	Sauvie Island (OR/WA) (24K), Vancouver (100K)		
Coordinates	45° 43' 26" N, 122° 47' 28" W		
USPLSS	tow nship 03N, range 01W, section 22		

Sturgeon Lake is the most dominant of the maze of floodplain lakes located just downstream from the confluence of the Columbia and Willamette Rivers. It is located within Sauvie Island and is a large, shallow, mud-bottomed lake. It is a creation and a reflection of the Columbia River, with the lake surface rising and falling with the river stage; inflow and outflow is through the Gilbert River. The very shallow but large lake occupies the middle of Sauvie Island, one of the largest river islands on the continent. The southern end of this island has long been rich in farmland, and numerous dikes protect the flat area from seasonal flooding. Much of the northern end, including most of the land surrounding Sturgeon Lake, was acquired in 1947 by the Oregon State Game Commission (now the Oregon Department of Fish and Wildlife) as a refuge to provide suitable habitat for wintering waterfowl. Large populations of birds have long used this area for feeding and nesting. Approximately one-half of the waterfowl wintering in the Willamette Valley stay on Sauvie Island. Lewis and Clark, passing by the island in 1802, noted "Our choice of camp was unfortunate as with us were immense numbers of geese, swans, and ducks which during the night serenaded us." More than 220 species of birds are known to be present here sometime during the year; the most obvious include great blue herons, whistling swans, Canada geese, and sandhill cranes.

Most of the shoreline is open for viewing, hiking, and canoeing. Hunting is seasonally allowed around some Tarts of the lake. Fishermen can find all types of warm-water fish in the murky waters, but catfish and crappies seem to provide the most successful catches. Boat launching can be difficult in the low water season, and water level fluctuations have occasionally stranded boats on the extensive mud flats. The lake was named in the very early days, probably from the mistaken belief that it provided spawning grounds for the very large sturgeon found in the Columbia and Willamette Rivers. Legend holds that these fish came ashore from the lake to pick the fruit from the nearby apple trees. Incidentally, the largest sturgeon on record, over 12 feet long and weighing 1285 pounds, was caught just a few miles away near Vancouver.

The ecological characteristics of Sturgeon Lake are largely determined by its extremely shallow depth and the tidal influence from the Columbia and Willamette Rivers. Suspended sediments in the inflowing water settle out and are deposited on the lake bottom. Winds and wave action maintain a high concentration of sediment in the water column, and as a result transparency is very low. The annual range is 0.3 to 4 feet (0.1 to 1.2 meters), but the average is at the lower end (Klingeman et al 1982). Other water quality parameters, such as high phosphorus and chlorophyl concentrations, indicate that this lake is eutrophic. Major ion concentrations and conductivity are similar to the Columbia and Willamette Rivers.

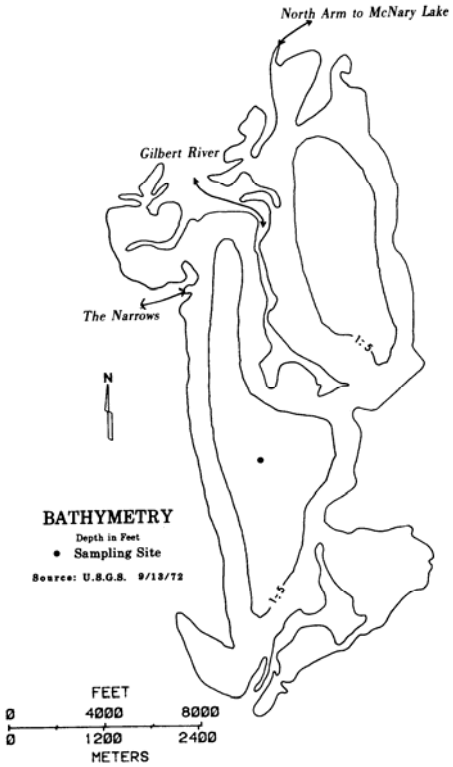
Sturgeon Lake has several problems in addition to the main problem of siltation: it experiences algal blooms (Aphanizomenon and Anabaena); it is plagued with high levels of bacteria; and the lake perimeter is being invaded by willows. Submerged macrophytes are not abundant, largely due to the limited water transparency, unstable sediments, fluctuating water levels, and the activities of carp that abound in this lake. The sedimentation problem was investigated by Klingeman et al (1982) in a study sponsored by the West Multnomah County Soil and Water Conservation District in 1980. In addition to reporting extensive data on the lake and surrounding environments, they studied in detail the causes, rates, and effects of sedimentation in the lake. Modifications made in the area of Sturgeon Lake over the past four decades have accelerated the sediment deposition, which is currently estimated to be about one inch per year. These modifications include diking, dredge spoil disposal, blocking of creeks, and reservoir flood control operations. Subsequently, the lake was becoming shallower and smaller, willows were invading the exposed shoreline and, of particular concern, habitat sought by the waterfowl was slowly being destroyed. Klingeman et al provided many options for managing silt deposition in their report, options which include dredging, flushing, damming, lake isolation, and others. The long-term recommendation for rehabilitation was to reopen Dairy Creek, a tributary of the lake, and thereby reestablish natural flushing from the Columbia River. Although the lake would not become appreciably deeper, it would be expected that further sedimentation would be prevented and water quality would improve.

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

Drainage Basin Characteristics							
Area	indeterminate	**Relief**	low	**Precip**	40 in (102 cm)		
				Agriculture			
Land Use %	**Forest**	**Range**	**Water**	**Irrig**	**Non Irrig**	**Urban**	**Other**
	-	-	-	-	-	-	-
Notes	Surrouding land is farms and pastureland.						

Lake Morphometry			Maximum	Average
Area	2,928.0 acres (1,185. hect)	**Depth**	3 ft (0.9 m)	1ft (0.2 M)
Ave/Max Depth Ratio	0.190	**Volume**	1,627 acre ft (2.01 cu hm)	
Shoal area	100%	**Volume factor**	.56	**Shape factor** 3.62
Length of Shoreline	27.4 mi (44.1 km)	**Retention time**	indet.	
Notes	-			

Water Quality							
Trophic status	eutrophic, very high turbidty, sedimentation problem						
Sample date	10/11/82	**Temp**	68.4F (20.2C)	**Diss. Oxygen (mg/l)**	-		
Transparency	0.7 ft (0.2 m)	**Phosp (mg/l)**	-	**Cholorophyl a (mg/l)**	-		
Alkalinity	29	**Conductivity (umhos/cm)**	106	**pH**	-		
Major Ions	**Na**	**K**	**Ca**	**Mg**	**Cl**	**SO4**	
	7.3	1.2	8.3	2.9	18.0	10.1	
Notes	-						



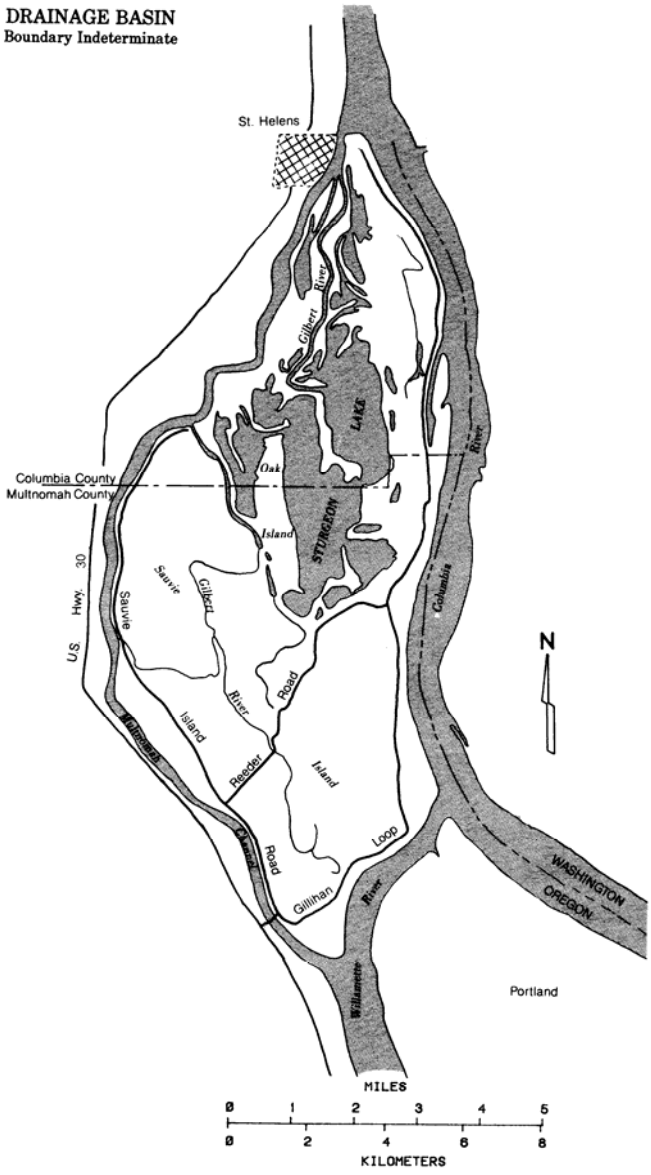


Photo Captions

1. Sturgeon Lake
2. Columbia River
3. Multnomah Channel
4. McNary Lake
5. The Narrows
6. Gilbert River

Source: NASA, 1976. Vertical photograph.