Willamette Basin Reservoirs

An overview of US Army Corps of Engineers dams and reservoirs on Willamette River tributaries

The Willamette Basin Reservoir Study is a joint project sponsored by the Oregon Water Resources Department and the US Army Corps of Engineers. The study, to be completed in 1999, addresses whether operational changes or modifications in the storage allocation would better serve present and future water resource needs in the basin.

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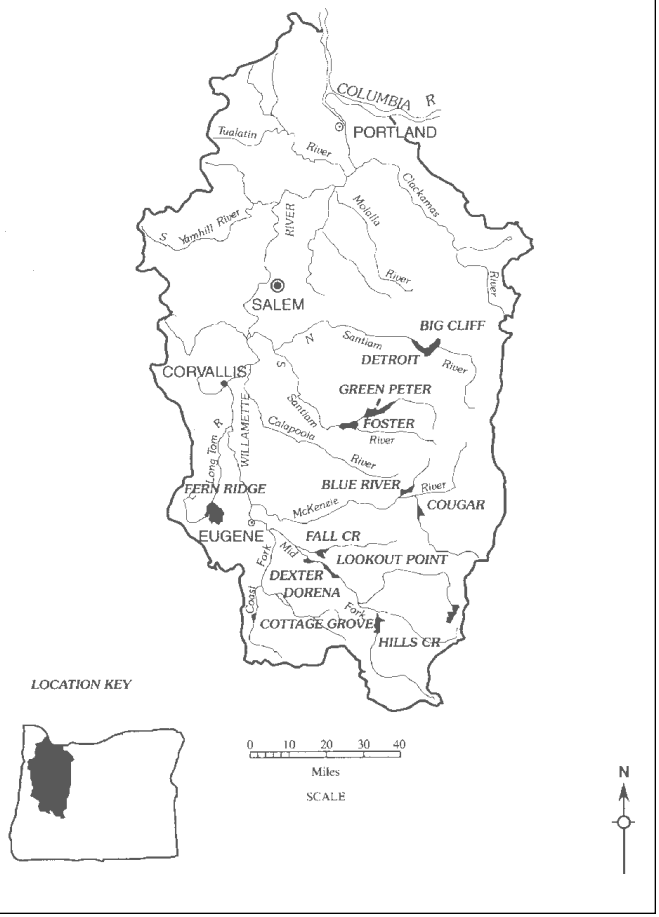
Find more information about the study on the internet at:

www.wrd.state or.us/programs/will_res/index.html

THE WILLAMETTE BASIN RESERVOIR STUDY
"Planning Today for Tomorrow's Water"

Willamette Basin Reservoir System



Fern Ridge Dam and Lake

Year Completed:	1941
Total Storage (full pool):	116,800 acre-feet
Summer Storage:	93,900 acre-feet
Original Project Cost:	$6 million
Power Generators:	None
Generated Power (FY 95):	None
Public Recreation Areas:	5
Avg. Yearly Rec. Visits:	768,000
Draw Down Priority:	Last

Location: The Fern Ridge project is located on the Long Tom River, a tributary of the Willamette River, and is about 12 miles west of Eugene in Lane County, Oregon.

Project: The lake's public recreation areas are highly developed and provide many opportunities for a mix of water-related, day use activities. Also, a number of minimally improved and unimproved areas allow access to other parts of the shoreline. The lake's large surface area and consistent winds make it one of the best sailing lakes in Oregon. The lake is popular for power boating activities, including water-skiing and cruising, as well as sail-boarding.

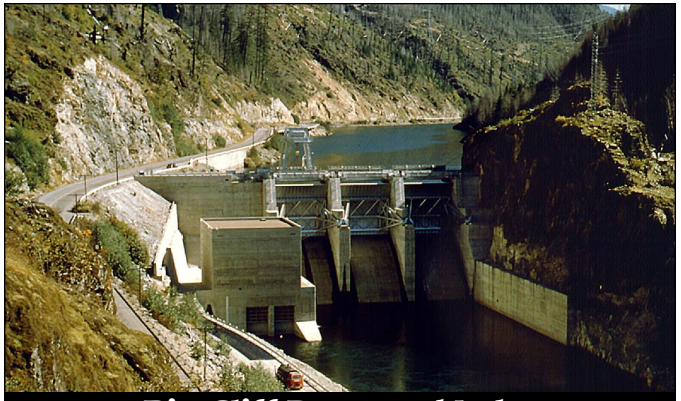
At existing use levels, Fern Ridge Lake has the capacity to support the demand for all the various boating activities. Because of its high priority for recreation, the lake is not drafted for meeting flow requirements on the mainstem Willamette River during the summer.

Cottage Grove Dam and Lake

Year Completed:	1942
Total Storage (full pool):	32,900 acre-feet
Summer Storage:	28,700 acre-feet
Original Project Cost:	$3.3 million
Power Generators:	None
Generated Power (FY 95):	None
Public Recreation Areas:	5
Avg. Yearly Rec. Visits:	417,000
Draw Down Priority:	5th

Location: The Cottage Grove project is located on the Coast Fork Willamette River about 6 miles south of Cottage Grove in Lane County, Oregon.

Project: Cottage Grove is a very popular boating lake, particularly for water-skiing and fishing. It is also popular for lakeside camping and day use associated with water-related recreation. The Corps operates and maintains five developed recreation sites with extensive facilities to support these activities. These existing facilities are used to capacity at peak summer use periods. Because Cottage Grove Lake has very little summer storage (28,700 acre-feet), it is usually not drafted for meeting flow needs on the mainstem Willamette River. Cottage Grove Lake has boat access available to low pool. The swimming beaches are sensitive to small amounts of drawdown and are most usable within the upper three feet of pool. Cottage Grove Lake is more sensitive to minor drawdown impacts than nearby Dorena Lake.



Big Cliff Dam and Lake

Year Completed:	1953
Total Storage (full pool):	Not applicable
Summer Storage:	Not applicable
Original Project Cost:	$62.7 million (includes Detroit)
Power Generators:	1
Generated Power (FY 95):	46,352 (megawatt hrs.)
Public Recreation Areas:	None
Avg. Yearly Rec. Visits:	Not applicable
Draw Down Priority:	Not applicable

Location: The Big Cliff project is located 3 miles downstream from the Detroit project on the North Santiam River in Marion County, Oregon.

Project: The Big Cliff project reregulates the water released from the Detroit powerhouse to provide uniform stream flow in the North Santiam River. This reregulation operation may cause Big Cliff Lake to fluctuate as much as 24 feet daily. Because of this water fluctuation, small size, steep slopes and difficult access, recreation facilities are limited at this project to one unimproved boat ramp. No visitation data is collected for Big Cliff Lake.

Detroit Dam and Lake

Year Completed:	1953
Total Storage (full pool):	455,100 acre-feet
Summer Storage:	281,600 acre-feet
Original Project Cost:	$62.7 million (includes Big Cliff)
Power Generators:	2
Generated Power (FY 95):	393,539 Mwatt hrs.
Public Recreation Areas:	7
Avg. Yearly Rec. Visits:	735,000
Draw Down Priority:	Last

Location: The Detroit project is located on the North Santiam River about 45 miles southeast of Salem in Marion County, Oregon.

Project: Located in the rugged mountain forests below Mt. Jefferson, the 3,600 acre Detroit Lake is one of the two most popular Corps lakes for recreation. The lake has extensive public recreation facilities which are operated by the US Forest Service and Oregon Parks and Recreation Department. Because of the high demand for water-based recreation at Detroit Lake, its pool is maintained as high as possible through Labor Day. Also, Detroit Lake is rarely drafted for flow augmentation on the mainstem Willamette River in the summer. Recreation activity associated at Detroit Lake is a major contributor to the local economy.

Dorena Dam and Lake

Year Completed:	1949
Total Storage (full pool):	77,600 acre-feet
Summer Storage:	65,000 acre-feet
Original Project Cost:	$14 million
Power Generators:	None
Generated Power (FY 95):	None
Public Recreation Areas:	5
Avg. Yearly Rec. Visits:	343,000
Draw Down Priority:	5th

Location: The Dorena project is located on the Row River, a tributary of the Coast Fork Willamette River, and is about 6 miles east of CottageGrove in Lane County, Oregon.

Project: Dorena Lake is located in rolling, partially wooded hill country and offers a variety of recreation activities. Dorena Lake is a popular boating lake with a higher percentage of sailboats and sailboards and a smaller percentage of water skiers than nearby Cottage Grove Lake. Dorena also has high levels of camping use. Because Dorena is one of the smaller lakes, (65,000 acre-feet), it is usually not drafted in the summer for meeting flow needs on the mainstem Willamette River. In comparing reservoir operations, Dorena is less sensitive to minor drawdowns than Cottage Grove. Because of its steeper shoreline, drawdown of a few feet does not significantly reduce the surface area available for boating at Dorena.

Hills Creek Dam and Lake

Year Completed:	1961
Total Storage (full pool):	355,500 acre-feet
Summer Storage:	194,600 acre-feet
Original Project Cost:	$46 million
Power Generators:	2
Generated Power (FY 95):	164,791 (megawatt hrs.)
Public Recreation Areas:	5
Avg. Yearly Rec. Visits:	109,000
Draw Down Priority:	4th

Location: The Hills Creek project is located on the Middle Fork Willamette River and is about 45 miles southeast of Eugene in Lane County, Oregon.

Project: This project is set in rugged mountain country within the Willamette National Forest. The scenic 2,735 acre lake with its 44 miles of forested shoreline provides many opportunities for outdoor recreation. The US Forest Service operates the public parks around the lake. The Corps developed a 130-acre wildlife and wetland area below the dam. Hills Creek is operated in conjunction with Lookout Point downstream to meet flow needs on the mainstem Willamette River during the summer. It is drafted later than Lookout Point, however, to preserve its pool elevation for boating activities.

Foster Dam and Lake

Year Completed:	1968
Total Storage (full pool):	60,700 acre-feet
Summer Storage:	24,800 acre-feet
Original Project Cost:	$82.3 million (includes Green Peter)
Power Generators:	2
Generated Power (FY 95):	104,956 Mwatt hrs.
Public Recreation Areas:	6
Avg. Yearly Rec. Visits:	590,000
Draw Down Priority:	Last

Location: The Foster project is located about 6 miles downstream of Green Peter on the South Santiam River just east of Sweet Home in Linn County, Oregon.

Project: The Foster project reregulates the water released during power production at Green Peter to provide a more uniform stream flow in the South Santiam River. Foster Lake is the most popular water-oriented recreation resource in Linn County and its recreation facilities are operated primarily by Linn County. The lake is stocked with trout and kokanee. Because of its high priority for recreation, the lake is rarely drafted for flow augmentation of the mainstem Willamette River.

Green Peter Dam and Lake

Year Completed:	1968
Total Storage (full pool):	28,100 acre-feet
Summer Storage:	249,900 acre-feet
Original Project Cost:	$82.3 million (includes Foster)
Power Generators:	2
Generated Power (FY 95):	235,961 Mwatt hrs.
Public Recreation Areas:	3
Avg. Yearly Rec. Visits:	230,000
Draw Down Priority:	5th

Location: The Green Peter project is located on the Middle Santiam River, a tributary of the South Santiam River, and is about 30 miles southeast of Albany in Linn County, Oregon.

Project: The flood of December 1964 caused about $900,000 in damage and delayed construction of Green Peter for several months. Two coffer dams and a bridge trestle were destroyed, and debris filled the powerhouse draft tube and ruined the pumping plant. Green Peter is operated to maintain fixed releases from Foster Lake because of its fishery needs and outflow requirements. Releases are made to augment flows at Salem, when necessary during low flow years. The 3,720 acre lake offers a variety of recreational opportunities, and its public recreation areas are operated by Linn County.

Lookout Point Dam and Lake

Year Completed:	1954
Total Storage (full pool):	455,800 acre-feet
Summer Storage:	324,200 acre-feet
Original Project Cost:	$88.2 million (includes Dexter)
Power Generators:	3
Generated Power (FY 95):	297,325 Mwatt hrs.
Public Recreation Areas:	6
Avg. Yearly Rec. Visits:	97,000
Draw Down Priority:	1st

Location: The Lookout Point project is located on the Middle Fork Willamette River, 26 miles downstream from the Hills Creek project, and is about 22 miles southeast of Eugene in Lane County, Oregon.

Project: Lookout Point receives only a moderate amount of recreational use. Use of this project is constrained by a lack of facilities, difficult access, and high degree of reservoir fluctuation. In 1996, Lane County constructed a boat launch facility at Signal Point which provides the only boat launching access throughout the year to the lake. Lookout Point has a large storage capacity and is drafted first for meeting flow requirements on the mainstem Willamette River in the summer. As mitigation for project-caused loss of salmon spawning habitat, the Corps built the Oakridge hatchery and Dexter holding ponds, which are operated by the Oregon Department of Fish and Wildlife.

Dexter Dam and Lake

Year Completed:	1954
Total Storage (full pool):	Not applicable
Summer Storage:	Not applicable
Original Project Cost:	$88.2 million (includes Lookout Point)
Power Generators:	1
Generated Power (FY 95):	87,797 Mwatt hrs.
Public Recreation Areas:	2
Avg. Yearly Rec. Visits:	321,000
Draw Down Priority:	Not applicable

Location: The Dexter project is located 2.8 miles downstream of the Lookout Point project on the Middle Fork Willamette River in Lane County, Oregon.

Project: Dexter Lake is a reregulating reservoir below Lookout Point Lake and is a popular lake for day-use recreation activities. It has more recreation activity than Lookout Point because it is more accessible. Two public use areas are operated by Lane County, Dexter Park and Lowell Park. The boat ramps associated with these parks provide boat launching throughout the year. Dexter Lake is very popular for boating because it only fluctuates up to 5 feet daily and has no large seasonal drawdown.

Blue River Dam and Lake

Year Completed:	1969
Total Storage (full pool):	89,500 acre-feet
Summer Storage:	78,800 acre-feet
Original Project Cost:	$32 million
Power Generators:	none
Generated Power (FY 95):	none
Public Recreation Areas:	3
Avg. Yearly Rec.Visits:	66,000
Draw Down Priority:	3rd

Location: The Blue River project is located on the Blue River, a tributary of the McKenzie River, and is about 38 miles east of Eugene in Lane County, Oregon.

Project: The Blue River project was constructed by the Corps after the devastating December 1964 flood in the Willamette Basin. The project's recreation facilities, all within the Willamette National Forest, are operated by the US Forest Service. The scenic 1,240 acre lake with its many miles of forested shoreline provides many recreational opportunities. Water also is released from Blue River Lake during the summer months adding to the natural flows on the mainstem Willamette River. Construction of an authorized plan to modify the existing intake tower to improve downstream water temperatures for native fish species is scheduled to begin in 2002.

Cougar Dam and Lake

Year Completed:	1963-64
Total Storage (full pool):	219,000 acre-feet
Summer Storage:	143,900 acre-feet
Original Project Cost:	$54.2 million
Power Generators:	2
Generated Power (FY 95):	172,171 (megawatt hrs.)
Public Recreation Areas:	6
Avg. Yearly Rec. Visits:	64,000
Draw Down Priority:	2nd

Location: The Cougar project is located on the South Fork McKenzie River about 42 miles east of Eugene in Lane County, Oregon.

Project: Cougar dam is the highest embankment dam ever built by the Corps, reaching 452 feet above streambed. The scenic 1,280 acre lake with its many miles of forested shoreline provides a wide variety of outdoor recreation opportunities. Water is released from Cougar Lake during the summer months adding to the natural flows on the mainstem Willamette River for fish and water quality. The Corps built the McKenzie Fish Hatchery near Leaburg on the McKenzie River as mitigation for loss of fish habitat caused by construction of the Cougar and Blue River projects. Oregon Department of Fish and Wildlife operates the hatchery. There is an authorized plan to improve downstream water temperatures for native fish by modifying the existing intake tower beginning in 1998.

Fall Creek Dam and Lake

Year Completed:	1966
Total Storage (full pool):	125,000 acre-feet
Summer Storage:	108,200 acre-feet
Original Project Cost:	$22 million
Power Generators:	None
Generated Power (FY 95):	None
Public Recreation Areas:	5
Avg. Yearly Rec. Visits:	269,000
Draw Down Priority:	5th

Location: The Fall Creek project is located on Fall Creek, a tributary of the Middle Fork Willamette River, about 22 miles southeast of Eugene in Lane County, Oregon.

Project: Fall Creek Lake has a moderate level of recreation facilities with two public day-use areas operated by Lane County and a campground operated by the Corps. The lake is heavily used for recreation, especially boating, fishing, swimming, and water-skiing. Fall Creek has high capability for future expansion of camping and other recreation facilities. The lake has a low drawdown priority for augmenting stream flows on the mainstem Willamette River in the summer, reflecting its relatively high priority for recreation. The Oregon Department of Fish and Wildlife uses Fall Creek reservoir as a rearing facility for spring chinook salmon. The project is operated to flush fingerlings from the reservoir in late fall.