



**US Army Corps
of Engineers**®
Northwestern Division

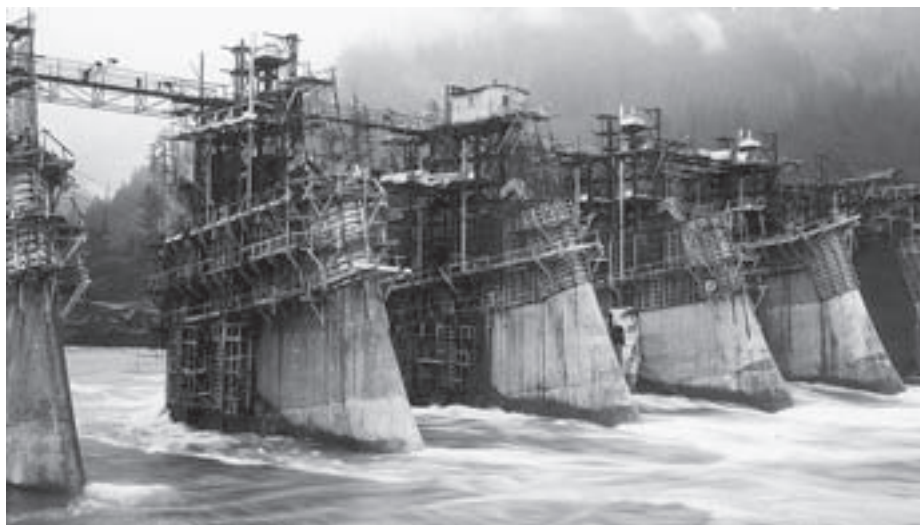
U.S. Army Corps of Engineers
***Multipurpose Dams
of the
Greater Columbia Basin***

Multi-purpose dams of the Columbia Basin

No other single resource in the Pacific Northwest influences the character and way of life of people in the region as much as the Columbia River and its major tributaries.

The Pacific Northwest is dependent to a large extent upon the waters of the Columbia River Basin for power, transportation through navigation, flood damage reduction, food and fiber through irrigation, recreation, fisheries, and to a lesser extent, municipal and industrial water supply. The numerous Corps dams and storage reservoirs within the Basin reflect an historic recognition, by lawmakers and residents alike, of the need to develop and operate projects for multiple purposes to meet multiple demands, often in seeming competition with one another.

Water resource development began in the Basin in the mid-to-late-1800s. Initial efforts included clearing obstructions to navigation through the use of dredging and the construction of navigation locks and canals. In the early 1930s, the Nation embarked on a construction effort to maximize the public benefit of the river. While



the Corps' primary focus at the time was on flood damage reduction and navigation, the agency also saw the benefit of hydropower development as a key component of the dams proposed for the basin. Over the years, numerous structural and operational modifications have been made to Corps dams to provide safer passage for juvenile and adult salmon species.

Increasingly, the Corps has implemented a more holistic approach to managing water resources by focusing on watersheds

and the way that rivers, lakes, wetlands, and coasts interact with one another. Operation of our projects throughout the greater Columbia Basin reflects a commitment to seeking balanced and synergistic solutions and to working in partnership with a broad array of federal and state agencies and other interested stakeholders. One of the Corps' most important jobs in water resources management and development is to achieve the right balance between society's need for economic growth and environmental sustainability.

Many of the 32 Corps projects described here are located on key tributaries of the mighty Columbia and scattered throughout the river's many sub-basins -- the Upper and Middle Columbia; Upper, Middle and Lower Snake River; Willamette River; Rogue River; and Puget Sound. The headwaters of the country's fourth largest river, in fact, originate in the Canadian Rockies then follow a circuitous path for more than 1200 miles before emptying into the Pacific Ocean near Astoria, Oregon. Bounded by the Rocky Mountains to the east and north, the Cascade Range on the west, and the Great Basin to the south, the Columbia is fed by a number of major tributaries, each with its own unique characteristics, but all connected to the larger whole.

Together they compose the greater Columbia Basin - the dominant water system in the Pacific Northwest - and drain nearly 259,000 square miles in the States of Washington, Oregon, Idaho, Montana, Wyoming, Nevada, and Utah.

Columbia River Basin



Columbia River Projects



Bonneville Dam

Location: Bonneville, Oregon
Columbia River Mile: 146.1
Authorized Purpose: Power, navigation
Completed: 1938 (Powerhouse I: 10 turbine units), 1982 (Powerhouse II: 8 turbines and 4 fishways)
Generating Capacity: 1,050 megawatts
Juvenile Fish Passage Facilities: Screens on all turbine units; bypass system
Adult Fish Passage Facilities: Fish ladders with fish counting stations



The Dalles Dam

Location: The Dalles, Oregon
Columbia River Mile: 191.5
Authorized Purpose: Power, navigation
Completed: 1960 (14 turbine units), 1973 (8 turbine units)
Generating Capacity: 1,780 megawatts
Juvenile Fish Passage Facilities: Ice and trash sluiceway; spill
Adult Fish Passage Facilities: Two fish ladders with fish counting stations; ongoing surface bypass system studies



John Day Dam

Location: Rufus, Oregon
Columbia River Mile: 215.6
Authorized Purpose: Flood control, power, navigation
Completed: 1971 (16 turbine units)
Generating Capacity: 2,160 megawatts
Juvenile Fish Passage Facilities: Screens on all turbine units with bypass system
Adult Fish Passage Facilities: Two fish ladders with fish counting stations
Storage capacity: 534,000 ac-ft



McNary Dam

Location: Umatilla, Oregon
Columbia River Mile: 292
Authorized Purpose: Power, navigation
Completed: 1957 (14 turbine units)
Generating Capacity: 980 megawatts
Juvenile Fish Passage Facilities: Screens on all units; bypass system; fish collection and transportation facilities; fish run monitoring station
Adult Fish Passage Facilities: Two fish ladders with fish counting stations and adult PIT-tag detection



Willow Creek Dam

Location: Heppner, Oregon
Stream: Willow Creek
Authorized Purpose: Flood control
Completed: 1983
Storage capacity: 9,765 ac-ft



Chief Joseph Dam

Location: Bridgeport, Washington
Columbia River Mile: 545.1
Authorized Purpose: Power
Completed: 1961 (16 turbine units), 1979 (11 turbine units)
Generating Capacity: 2,069 megawatts



Libby Dam

Location: Libby, Montana
River Mile: 221.9 on the Kootenai (from the confluence with the Columbia River)
Authorized Purpose: Flood control, power
Completed: 1973 (5 turbine units)
Generating Capacity: 525 megawatts
Storage capacity: 5,850,000 ac-ft



Albeni Falls Dam

Location: Newport, Washington
Stream: Pend Oreille River
Authorized Purpose: Flood control, power, navigation
Completed: 1955 (3 turbine units)
Generating Capacity: 42 megawatts
Storage capacity: 1,155,200 ac-ft



Mill Creek Dam

Location: Walla Walla, Washington
Stream: Mill Creek
Authorized Purpose: Flood control
Completed: 1942
Storage capacity: 5,885 ac-ft

Snake River Projects



Ice Harbor Dam

Location: Pasco, Washington
Snake River Mile: 9.7 (from confluence with Columbia River)
Authorized Purpose: Power, navigation
Completed: 1962 (3 turbine units), 1976 (3 turbine units)
Generating Capacity: 603 megawatts
Juvenile Fish Passage Facilities: Intake screen bypass system; spill provided.
Adult Fish Passage Facilities: Two fish ladders with fish counting stations



Lower Monumental Dam

Location: Kahlotus, Washington
Snake River Mile: 41.6
Authorized Purpose: Power, navigation
Completed: 1970 (3 turbine units), 1978 (3 turbine units)
Generating Capacity: 810 megawatts
Juvenile Fish Passage Facilities: Intake screen bypass system; collection and transport facilities; spring spill
Adult Fish Passage Facilities: Two fish ladders



Little Goose Dam

Location: Starbuck, Washington
Snake River Mile: 70.3
Authorized Purpose: Power, navigation
Completed: 1970 (3 turbine units), 1978 (3 turbine units)
Generating Capacity: 810 megawatts
Juvenile Fish Passage Facilities: Extended screens on all units with bypass system; collection and transportation facilities; spring spill



Lower Granite Dam

Location: Almota, Washington
Snake River Mile: 107.5
Authorized Purpose: Power, navigation
Completed: 1975 (3 turbine units), 1978 (3 turbine units)
Generating Capacity: 810 megawatts
Juvenile Fish Passage Facilities: Extended screens on all units, bypass system; collection and transportation facilities; fish passage monitoring facility; spring spill
Adult Fish Passage Facilities: Fish ladder, monitoring, and trap facilities



Lucky Peak Dam

Location: Boise, Idaho
River: Boise River
Authorized Purpose: Flood control, irrigation
Completed: 1955 (4 turbine units)
Generating Capacity: 87.5 megawatts
Storage capacity: 264,371 ac-ft



Dworshak Dam

Location: Ahsahka, Idaho
Stream: North Fork Clearwater River
Authorized Purpose: Flood control, power, navigation
Completed: 1973 (3 turbine units)
Generating Capacity: 400 megawatts
Storage capacity: 3,453,000 ac-ft

Puget Sound Projects



Howard Hanson Dam

Location: Palmer, Washington
Stream: Green River
Authorized Purpose: Flood control
Completed: 1962
Storage capacity: 106,000 ac-ft



Mud Mountain Dam

Location: Enumclaw, Washington
Stream: White River
Authorized Purpose: Flood control
Completed: 1948
Fish Passage Facilities: Fish ladder with fish collection facility
Storage capacity: 106,000 ac-ft



Rogue Projects



Lost Creek Dam

Location: McLeod, Oregon
Stream: Rogue River
Authorized Purpose: Flood control, power, recreation, irrigation
Completed: 1975 (2 turbine units)
Generating Capacity: 49 megawatts
Storage capacity: 315,000 ac-ft



Applegate Dam

Location: Applegate, Oregon
Stream: Applegate River
Authorized Purpose: Flood control, fish and wildlife enhancement, irrigation
Completed: 1980
Storage capacity: 75,200 ac-ft

Willamette Valley Projects



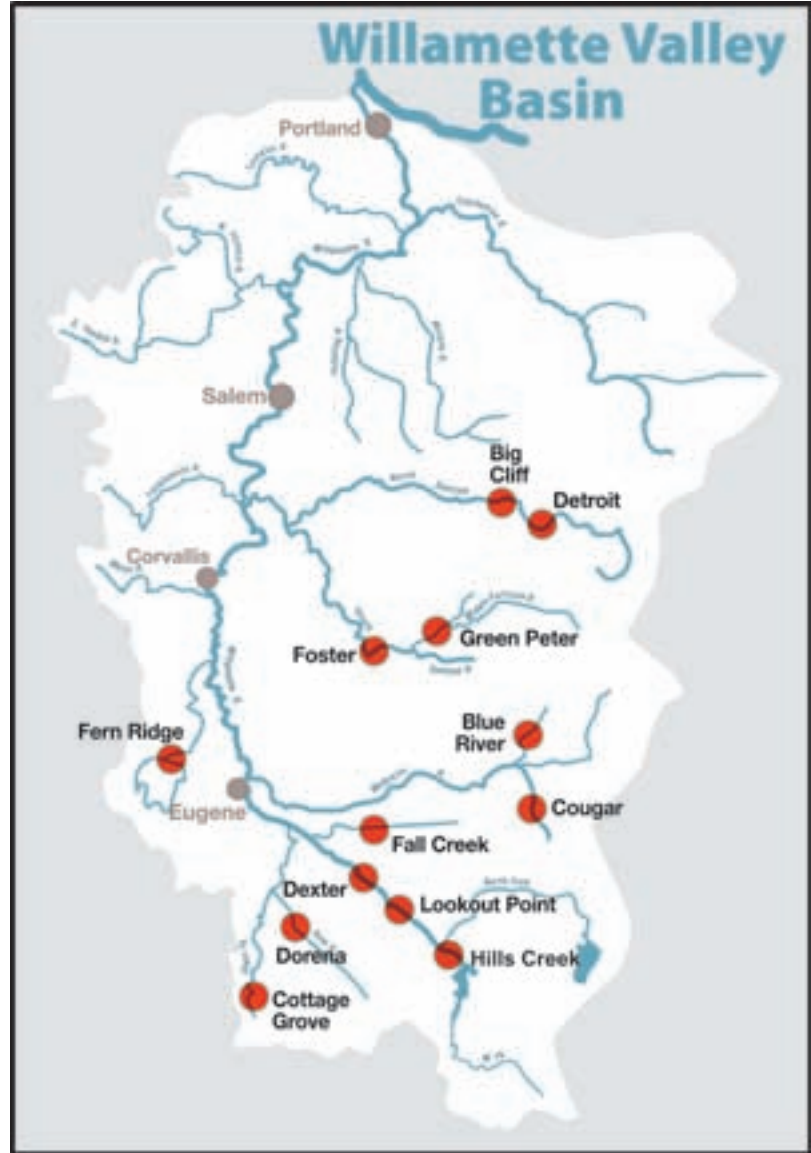
Big Cliff Dam

Location: Detroit, Oregon
Stream: North Santiam River
Authorized Purpose: Power (reregulation of flows from Detroit project)
Completed: 1953
Generating Capacity: 18 megawatts



Detroit Dam

Location: Detroit, Oregon
Stream: North Santiam River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1953 (2 turbine units)
Generating Capacity: 100 megawatts
Storage capacity: 321,000 ac-ft



Green Peter Dam

Location: Foster, Oregon
Stream: Middle Santiam River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1967 (2 turbine units)
Generating Capacity: 80 megawatts
Juvenile Fish Passage Facilities: Juvenile collector in forebay
Adult Fish Passage Facilities: Fish ladder
Storage capacity: 312,500 ac-ft



Foster Dam

Location: Foster, Oregon
Stream: South Santiam River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1968 (2 turbine units)
Generating Capacity: 20 megawatts
Adult Fish Passage Facilities: Fish ladder with fish collection facility
Storage capacity: 28,300 ac-ft
Additional information: Foster dam regulates the flow from Green Peter dam



Blue River Dam

Location: Blue River, Oregon
Stream: Blue River
Authorized Purpose: Flood control, navigation, irrigation
Completed: 1969
Storage capacity: 82,000 ac-ft



Cougar Dam

Location: Blue River, Oregon
Stream: South Fork McKenzie River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1964 (2 turbine units)
Generating Capacity: 25 megawatts
Adult Fish Passage Facilities: Fish ladder with fish collection facility (planned completion: 2010)
Storage capacity: 153,500 ac-ft



Fall Creek Dam

Location: Lowell, Oregon
Stream: Fall Creek River
Authorized Purpose: Flood control, navigation, irrigation
Completed: 1966
Juvenile Fish Passage Facilities: Fish horn downstream bypass.
Adult Fish Passage Facilities: Fish ladder with fish collection facility
Storage capacity: 125,100 ac-ft



Lookout Point Dam

Location: Lowell, Oregon
Stream: Middle Fork Willamette River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1954 (3 turbine units)
Generating Capacity: 120 megawatts
Storage capacity: 336,400 ac-ft



Hills Creek Dam

Location: Oakridge, Oregon
Stream: Middle Fork Willamette River
Authorized Purpose: Flood control, power, navigation, irrigation
Completed: 1962
Generating Capacity: 30 megawatts
Storage capacity: 234,300 ac-ft



Dorena Dam

Location: Dorena, Oregon
Stream: Row River
Authorized Purpose: Flood control, navigation, irrigation
Completed: 1949
Storage capacity: 72,100 ac-ft



Dexter Dam

Location: Lowell, Oregon
Stream: Middle Fork Willamette River
Authorized Purpose: Run of river dam and reservoir
Completed: 1954 (1 turbine unit)
Generating Capacity: 15 megawatts
Adult Fish Passage Facilities: Fish ladder with fish collection facility
Additional Information: Dexter Dam regulates the flow from Lookout Point Dam



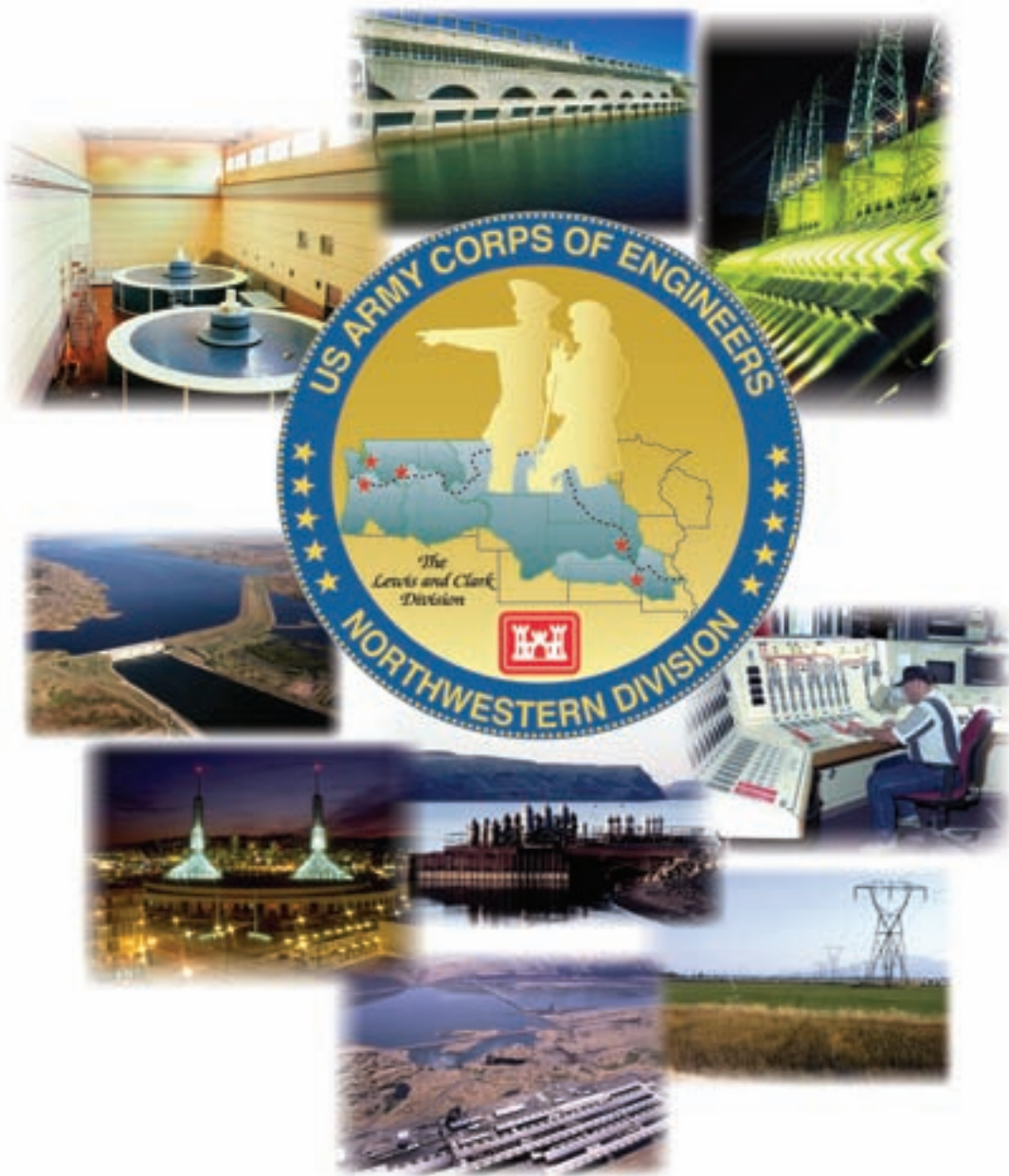
Cottage Grove Dam

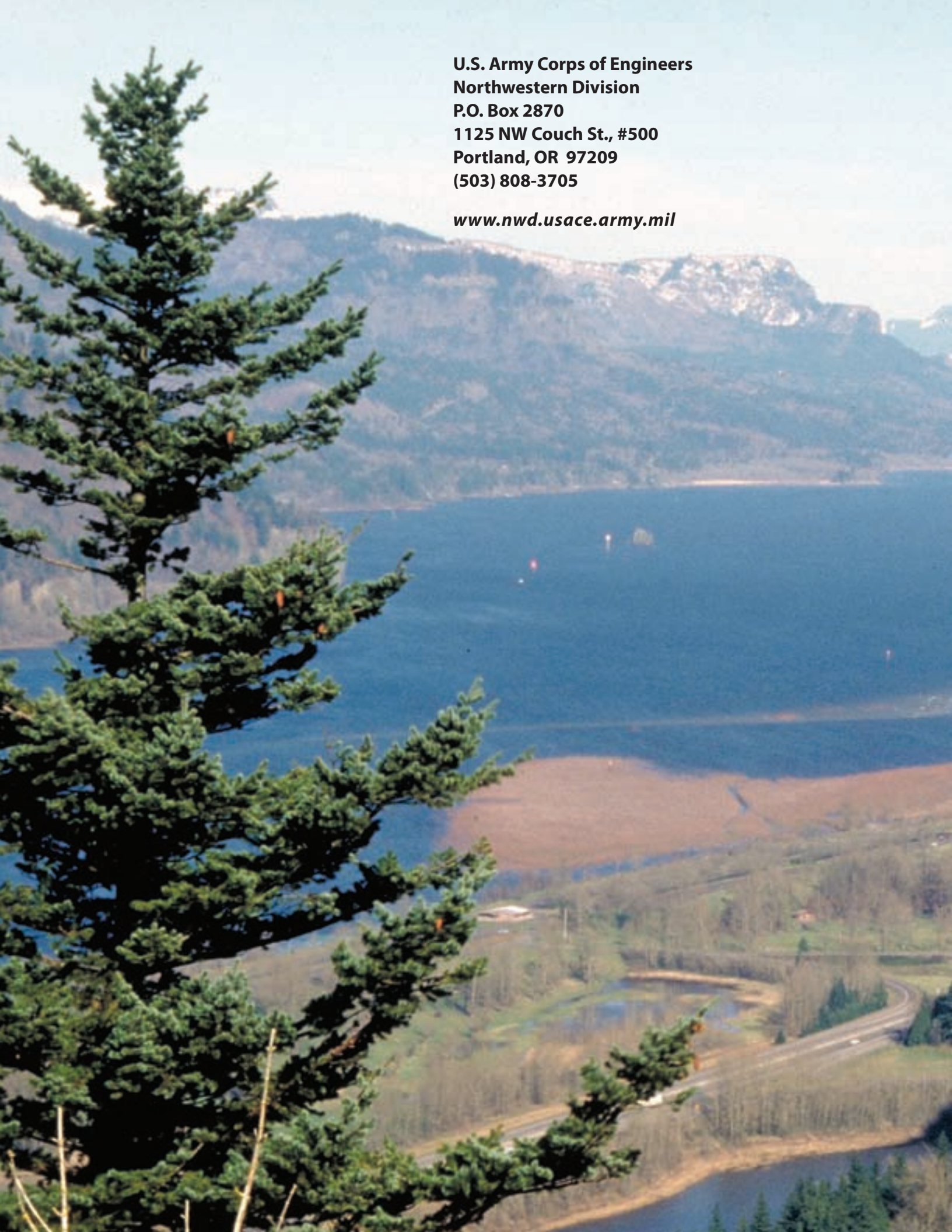
Location: Cottage Grove, Oregon
Stream: Coast Fork Willamette River
Authorized Purpose: Flood control
Completed: 1942
Storage capacity: 31,800 ac-ft



Fern Ridge Dam

Location: Elmira, Oregon
Stream: Long Tom River
Authorized Purpose: Flood control, navigation, irrigation
Completed: 1941
Storage capacity: 101,100 ac-ft





**U.S. Army Corps of Engineers
Northwestern Division
P.O. Box 2870
1125 NW Couch St., #500
Portland, OR 97209
(503) 808-3705**

www.nwd.usace.army.mil