Grand Coulee Dam

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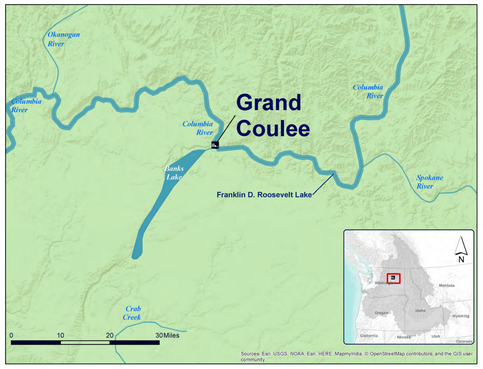
Grand Coulee Dam includes three major hydroelectric power generating plants (named Third, Left, and Right) and the John W. Keys III Pump-Generating Plant. The facilities provide power generation, irrigation, flood risk management, and streamflow regulation for fish migration. Additional incidental benefits include flows for navigation and recreation. Grand Coulee Dam is the main feature of the Columbia Basin Project.



Authorization

Authorized under the National Industrial Recovery Act and later the 1935 Rivers and Harbors Act, the Left Power House was completed in 1941. The Right Power House was completed in 1948. The Third Power Plant was completed in 1975.

Irrigation

The Columbia Basin Project Act of 1943 authorized construction of the Columbia Basin Project, which consists of 330 miles of major distribution canals, lakes and reservoirs, and about 2,000 miles of laterals that serve up to 720,000 acres of land.

Power Production

Power production facilities at Grand Coulee Dam are among the largest in the world; the total generating capacity is rated at 7,015 megawatts. Average yearly power production is 21 billion kWh with power distributed to Washington, Oregon, Idaho, Montana, California, Wyoming, Colorado, New Mexico, Nevada, Utah and Arizona. In addition, Canada receives power under the Columbia River Treaty. Grand Coulee Dam is operated as part of a coordinated federal system of hydroelectric facilities, which provides 35% of the entire power supply of the Pacific Northwest.

Flood Risk Management

From January through June, the reservoir level is adjusted for flood risk management. Grand Coulee Dam, the largest federal storage reservoir on the Columbia River system in the United States, works with other storage projects in the system to provide flood risk management for the lower Columbia River in the Portland, OR and Vancouver, WA areas.

Economic Value

The economic value of the Columbia Basin Project includes irrigated crops, hydropower production, recreational benefits, and the prevention of flood damages.

Fish Hatcheries

Grand Coulee Dam funds a complex of three fish hatcheries (Leavenworth, Winthrop and Entiat), collectively known as the Leavenworth Complex, to mitigate for the loss of anadromous fish above the dam. Over 2 million spring Chinook and summer steelhead are raised annually.

Recreation

Grand Coulee Dam creates Franklin D. Roosevelt (FDR) Lake. The lake stretches 151 miles with about 500 miles of shoreline. The lake is co-managed by the National Park Service, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, Bureau of Reclamation, and Bureau of Indian Affairs.

Water Operations

Grand Coulee Dam operations are closely coordinated to benefit a wide range of needs including hydropower, flood risk management, irrigation, recreation, and operations to benefit resident and anadromous fish.

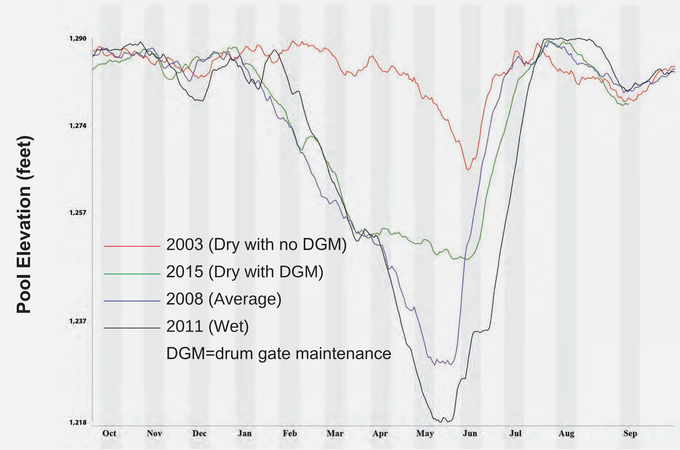
Maintenance Activities

Annual maintenance on dam outlet works, spill structures, power plants, etc. is necessary for continued operations. Periodically extraordinary maintenance activities are necessary to safely operate the project. Examples include power plant modernization (such as the ongoing efforts in the Third, and upcoming efforts in the Left and Right Power Plants), upcomping drum gate maintenance overhaul, and current upgrades to the John W. Keys III Pump Generating Plant.

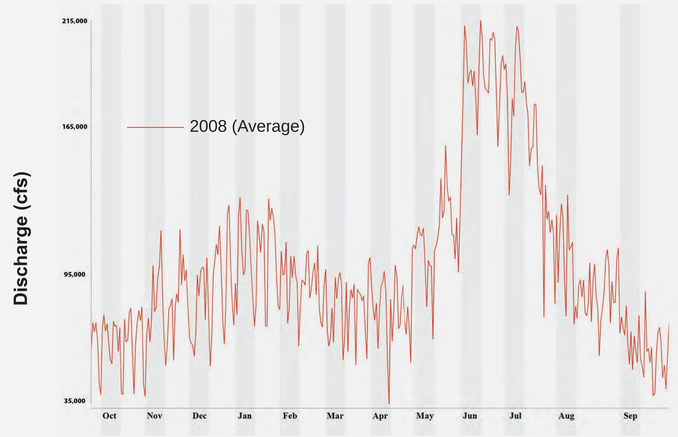
Quick Facts about Grand Coulee Dam

- Original Construction: The main dam and Left Powerhouse -1933 to 1941; Right Powerhouse - 1948; Third Power Plant and forebay construction - 1967 to 1975
- Dam Type: Concrete Gravity
- Dam Height: 550 feet
- Crest Length: 5223 feet
- River: Columbia River
- Active Capacity: 5,349,560 acre-feet (total capacity of 9,715,346 acre-feet)
- Spillway (type/capacity all at full pool elevation of 1290 feet):
  - 11 drum gates /1,000,000 cubic feet per second;
  - 40 outlet works at a total capacity 192,000 cfs
- Three Power Plants and pumping plant:
  - Total Generating Capacity 7015 MW
  - The Left and Right Power Plants - 18 units (6,000 cfs each),
  - Third Power Plant - 6 units (3@ 25,000 cubic foot per second (cfs) each and 3@ 30,000 cfs each),
  - John W. Keys III Pump Generating Plant - 6 pump/generators (2 @ 1605 cfs each, and 4@ 1,700 cfs each), and 6 pumps (1,600 cfs each)

Pool Elevation for selected water years to represent wet, average, and dry conditions for Grand Coulee Dam, WA.



Columbia River outflow for 2008 to represent average conditions for Grand Coulee Dam, WA.



General operational purposes by season.

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	Chum Flow Objectives					McNary Spring Flow Objective – April 10 Pool Elevation Target			McNary Summer Flow Objective – Draft of FDR and Banks Lake		Kokanee Pool Elevation Objective
Vernita Bar Flow Objective						Priest Rapids Flow Objective					
	Flood Risk Management							Refill after July 4th Holiday Weekend			
Power Generation											
Banks Lake Refill						Irrigation Withdrawals and Refill of Banks by Late June			Draft Banks Lake to Provide Irrigation and Flow Augmentation		Banks Lake Refill