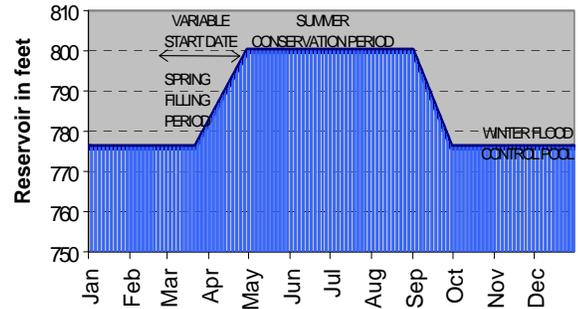


# Wynoochee Dam



Operation of Wynoochee Project



## Wynoochee Dam & Lake

Wynoochee Dam and Lake Project, on the Wynoochee River, is located 37 miles (59.5 km) north of Montesano, Washington, in the Olympic National Forest. From its source in the Olympic Mountains, the river meanders through forests and fertile farmlands before merging with the Chehalis River on its way westward to the Grays Harbor estuary and Pacific Ocean.

Wynoochee Dam was built and operated by the Army Corps of Engineers in October 1970. Wynoochee is a concrete gravity dam with earthen extensions. The 177-foot-high (54m) structure is 1,755 feet (535m) long at the crest and holds back water by its own weight. Originally, the dam was constructed for flood control, water supply, irrigation, fisheries, and recreation. The dam was designed to control the 10-year flood event to 18,000 cfs (16.29 ft) and the 100-year event to 25,400 cfs (20.1 ft) at the Black Creek gage near Montesano.

The Corps transferred ownership of the dam to the City of Aberdeen on July 1, 1990, under the Water Resources Development Act of 1988. Hydropower was added to the project in 1994 (FERC license #6842). Today, Tacoma Public Utilities is responsible for the daily operation and power production of Wynoochee Dam. However, the Corps of Engineers still controls the project during flood events.

## Basin Characteristics

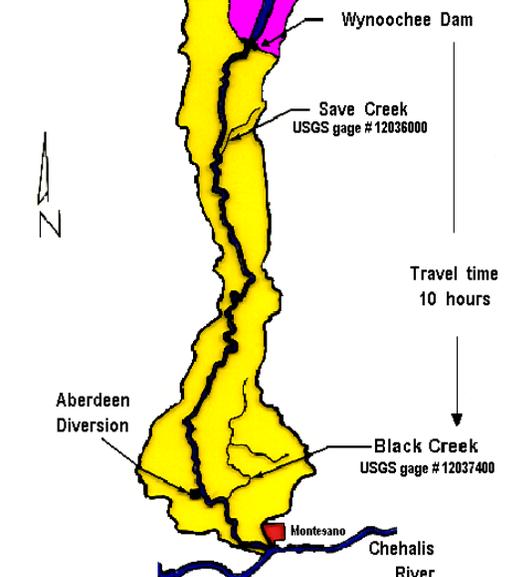
The total Wynoochee River drainage basin is about 195 square miles. The drainage basin above Wynoochee Dam covers about 41 square miles. The drainage basin below Wynoochee Dam (also called local flow), is about 154 square miles. Wynoochee Dam cannot control this 154 square miles of runoff. The dam controls only 20% of the entire watershed.

## Operations

Each year, Wynoochee Lake is drawn down to elevation 776.1 feet (mean sea level) by about Oct. 1 to provide about 24,000 acre-feet for flood control. This is equal to 24,000 acres covered with 1 foot of water or 1 acre with 24,000 feet of water on top of it. This flood control storage is maintained until about March 1. Then the reservoir is gradually filled over a 2 to 3 month period to elevation 800 feet.

## Wynoochee River Basin

20% of basin controlled by Wynoochee Dam



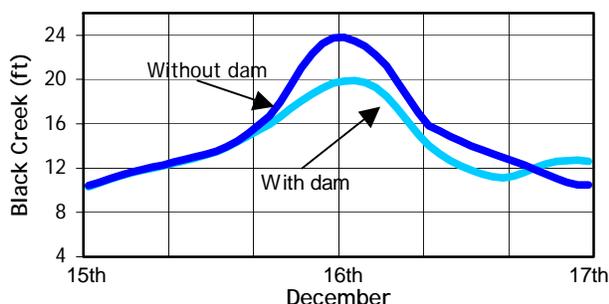
## Travel Time

It takes about 2 hours for the water released from Wynoochee Dam to reach the river gage at the mouth of Save Creek. From there, it takes another 8 hours to reach the river gage near Montesano above the mouth of Black Creek. During floods, the Corps reduces the releases from Wynoochee Dam (essentially "turning off" the dam) 10 hours before they expect local (uncontrollable flow below the dam) to peak at Montesano. As an example, if Wynoochee Dam is "turned off" at noon, then at 10 p.m. all of the flow at Montesano would come from rain that fell below the dam. If the dam is "turned on" and begins evacuating the storage at 10 p.m., that water would not reach Montesano until 8 a.m. the following day. Thus, "turning on" the dam when the river is peaking at Montesano does not add to that peak.

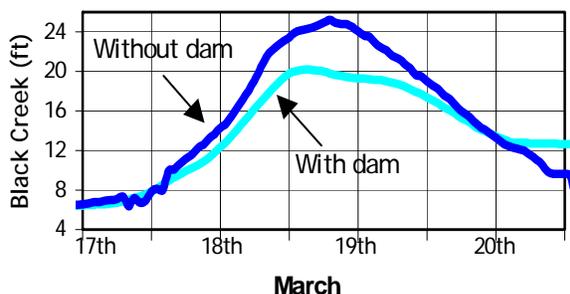
## Big Floods in Recent Years

The floods of March 1997 and December 1999 are two of the largest events that have occurred since the construction of the dam. The dam reduced flooding by over 4 feet. These events were caused by large amounts of precipitation both above and below the dam.

### Wynoochee River 1999



### Wynoochee River 1997



## Rainfall Intensity vs. Rainfall Distribution

Usually, the most intense precipitation is above the dam (elevation 800 feet). However, the drainage area of the lower watershed is four times the size of the upper watershed. Although rainfall is less intense downstream of the dam, it falls over a larger area than above the dam. In fact, about 2/3 of the water in the Wynoochee River at Montesano originates from rain falling below the dam. The remaining 1/3 of the river flow can be regulated by Wynoochee Dam.

## Living with Flood Threat – BE PREPARED!

There are several precautionary measures that owners of flood-prone residences should take to be prepared when the next flood occurs.

1. Keep a NOAA weather radio nearby. This way, you will be notified of all flood warnings, watches, and threats that the National Weather Service issues them.
2. If it has been raining hard for several hours, or steadily raining for several days be alert to the possibility of a flood. Remember that heavy rain combined with low-level snowmelt can produce substantial river flows.
3. Grays Harbor County has a new automatic telephone warning service (of currently listed phone numbers) designed to alert residents when a potentially damaging flood is approaching. Please call **(360) 249-2895** to have your unlisted number added to the list.
4. DEM contact number during flood events is **(360) 249-3911**.
5. Also watch the river, evacuate before nightfall, check on your neighbors, get animals to higher ground. For other important flood information call the DEM.

## Web Contacts

U.S. Army Corps of Engineers, Seattle District For current flow data, see the Corps' web page:

[www.nwd-wc.usace.army.mil/nws/hh/](http://www.nwd-wc.usace.army.mil/nws/hh/)

Grays Harbor County Department of Emergency Management (DEM):

<http://users.techline.com/ghdem/>

National Weather Service:

[www.wrh.noaa.gov/seattle/](http://www.wrh.noaa.gov/seattle/)

Grays Harbor County:

[www.co.grays-harbor.wa.us](http://www.co.grays-harbor.wa.us)

