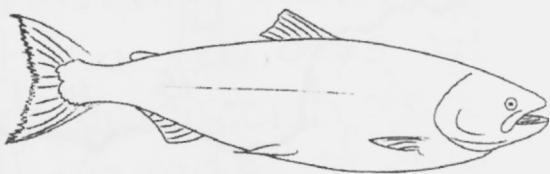
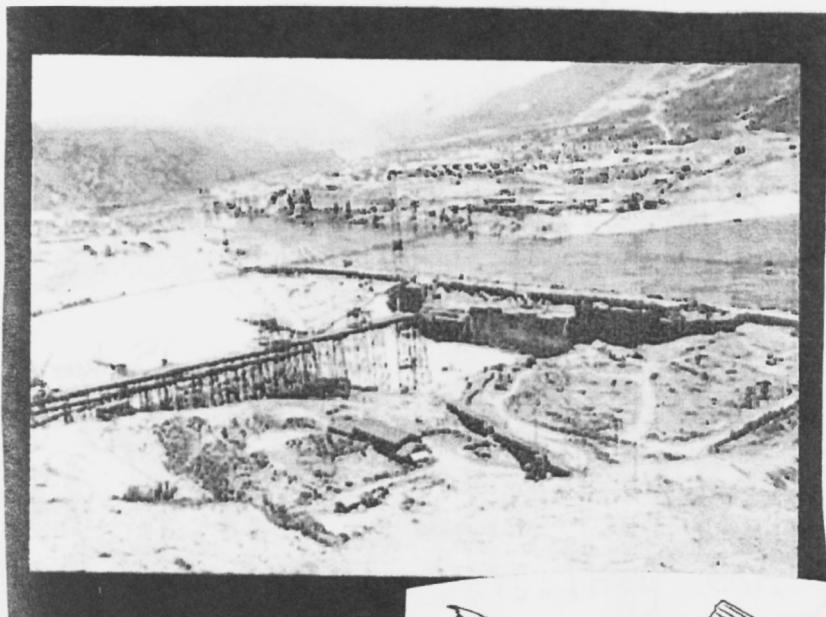
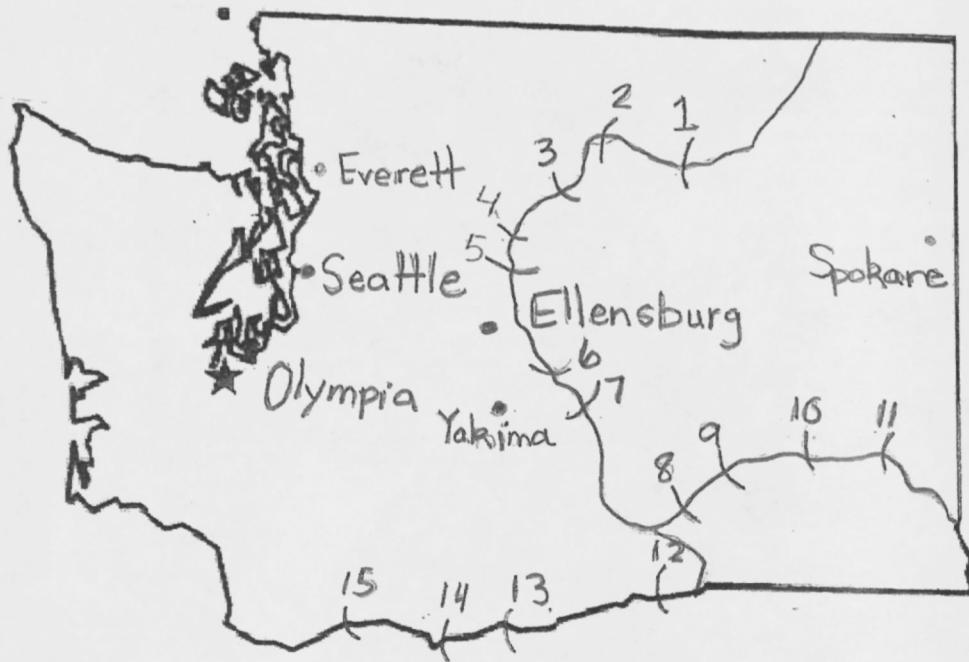


# THE GRAND COULEE DAM ZINE



BY: ANNA RILEY

# MAP OF DAMS



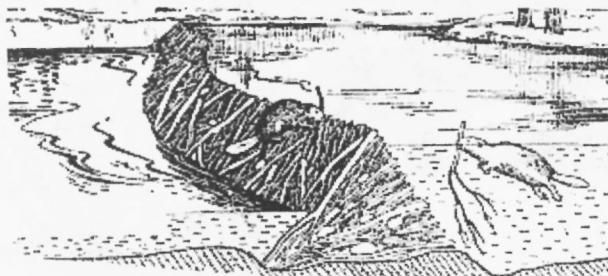
1. Grand Coulee dam
2. Chief Joseph
3. Wells
4. Rocky Reach
5. Rock Island
6. Wanapum
7. Priest Rapids
8. Ice Harbor
9. Lower Monumental
10. Little Goose
11. Lower Granite
12. McNary
13. John Day
14. The Dalles
15. Bonneville

# BOBBY THE BEAVER



Hi I am  
Bobby the  
Beaver!

Hi I am Bobby the beaver. I am the largest member of the rodent family. My babies are called kits. They can start to swim within a few days after birth. Beavers have controlled water for thousands of years. When we build a dam it takes about a week. Did you know that it took eight years to build the Grand Coulee? That's a long time!



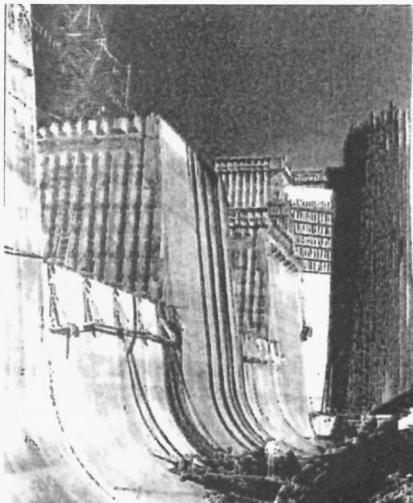
## HOW GRAND COULEE WAS MADE

In 1918 Rufus Woods had the vision of the Grand Coulee. The construction started in 1933 and finished 9 years later. The dam workers had to prepare the site and used the granite rock as the Grand Coulee's foundation. The workers working on the Grand Coulee had to divert the flow of the Columbia, by digging out the mud for the coffer dam. A coffer dam is a temporary structure built to create a dry work environment for the dams construction.



— April 23, 1935  
the west  
coffer dam.  
Courtesy of  
Washington State  
Archives

On March 23, 1935 the west coffer dam was finally completed and the base was then poured with concrete. The coffer dam was then removed and constructed on the east side. Upon completion of the Grand Coulee in 1940 it supplied electricity to Boeing and Hanford during World War II. Years later they finished the irrigation system and added a pump generator in 1951. Then they installed a third power plant in 1975. The Grand Coulee is a great reminder of how Washington came to be.

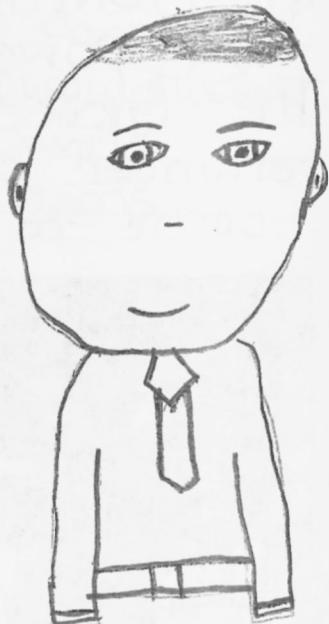


The east coffer dam  
By: Botenberg

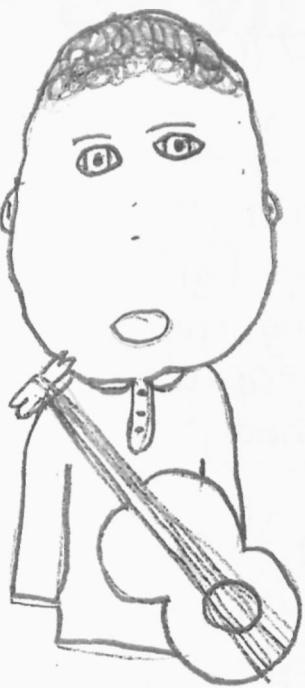
# IMPORTANT PEOPLE



Franklin D. Roosevelt helped Washington come alive by funding the Grand Coulee through The New Deal, which gave shovel ready jobs.

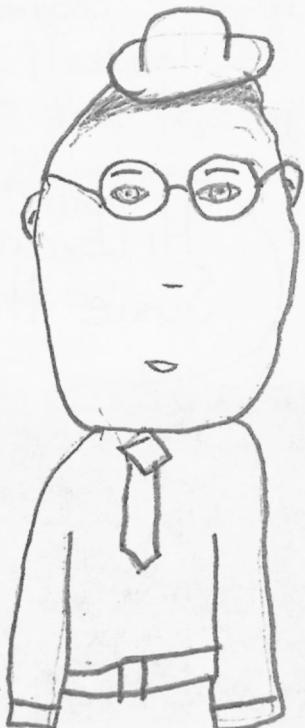


Rufus Woods was the publisher for The Wenatchee Daily World, which he wrote about supporting the Grand Coulee. Other papers said it was a "white elephant."



Woody Guthrie was hired by the BPA to write songs about the Grand Coulee and other public utilities. He got paid \$266 dollars, and got a car for a month. One of his most famous songs was Roll on Columbia. Roll on.

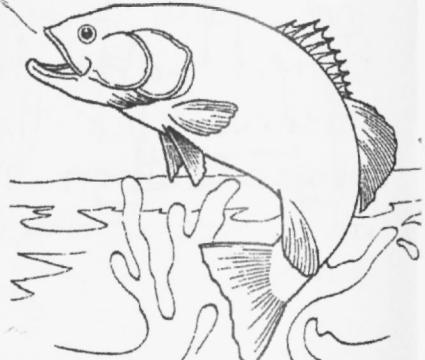
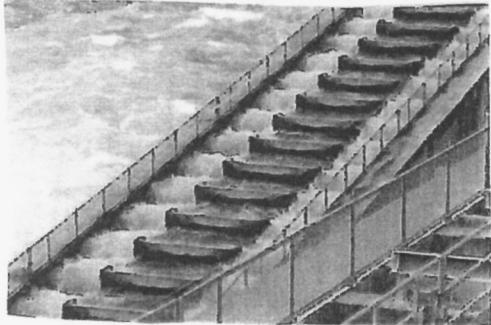
Frank A. Banks was the chief construction engineer for the Grand Coulee. Banks Lake the reservoir for the upper section of the Grand Coulee is named after him.



# SUSIE THE SALMON

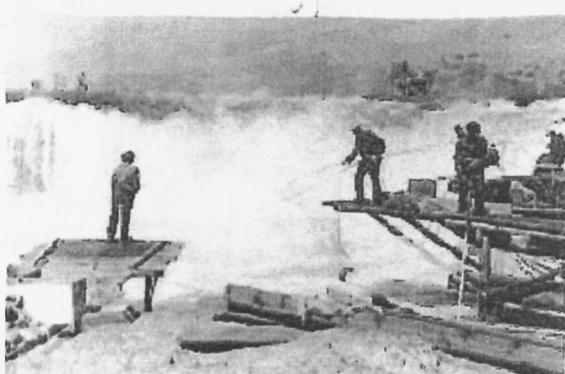
Hi I am Susie the salmon. What in the world is that big, concrete structure blocking my spawning route? Those people that built the dam did they go crazy? We fish have migrated along the Columbia for millions of years. A lot of my family is lost because they stopped coming to the dam after 5 years. They stopped coming because engineers couldn't build a fish ladder, and we couldn't jump over the Grand Coulee.

Hi I am  
Susie the salmon

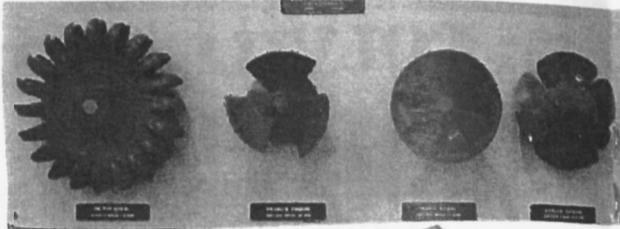


# COLVILLE INDIANS

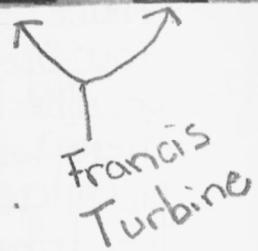
The Colville had fished at Kettle Falls for thousands of years. You used to be able to walk on the backs of the salmon there was so many. The tribes had a salmon chief that told the tribes when the fish got to their area, and everyone came to fish at Kettle Falls. Since they didn't have fishing poles, so they used long sticks with nets on the end. When the Grand Coulee was being built twelve communities along with Kettle Falls as a result of Grand Coulee they got submerged. Also the Native Americans were to received cheap power and payment for their land which slowly happened.



# TURBINES



There are 33 turning turbines in the Grand Coulee. There are three types of turbines.

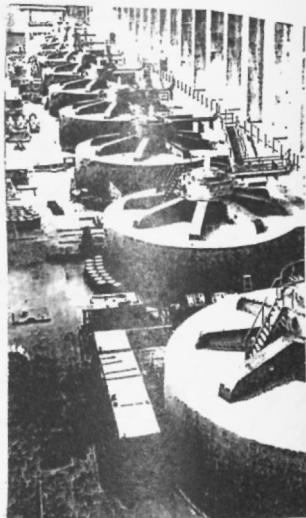
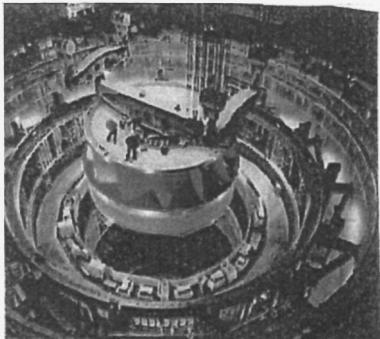


1. Francis Turbine works best with medium flow and medium pressure

2. Kaplan Turbine works best with lots of water and less pressure

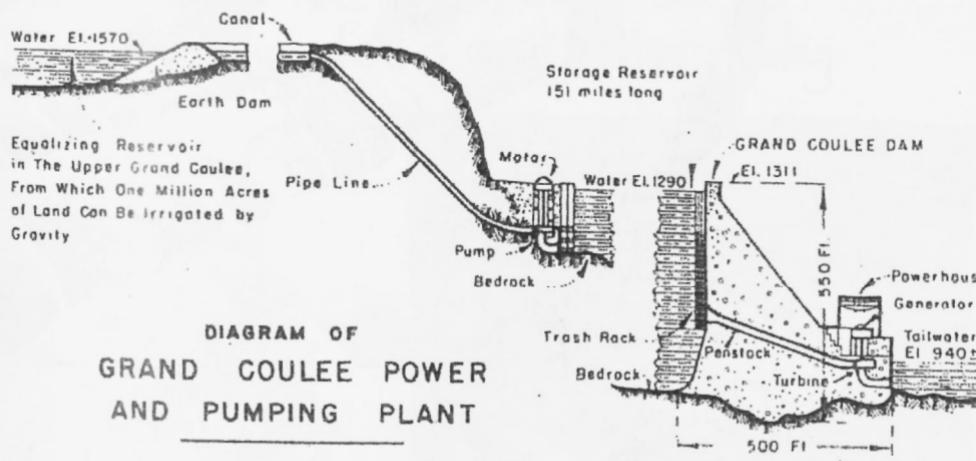
3. Pelton Turbine works best with high pressure

The largest turbine generator at Grand Coulee dam weighed 3000 tons. The water flow from the Columbia River is very powerful, and the drop is steep, creating a lot of power to get all the turbines up to full speed in 12 seconds.



# THE WORKS OF A TURBINE

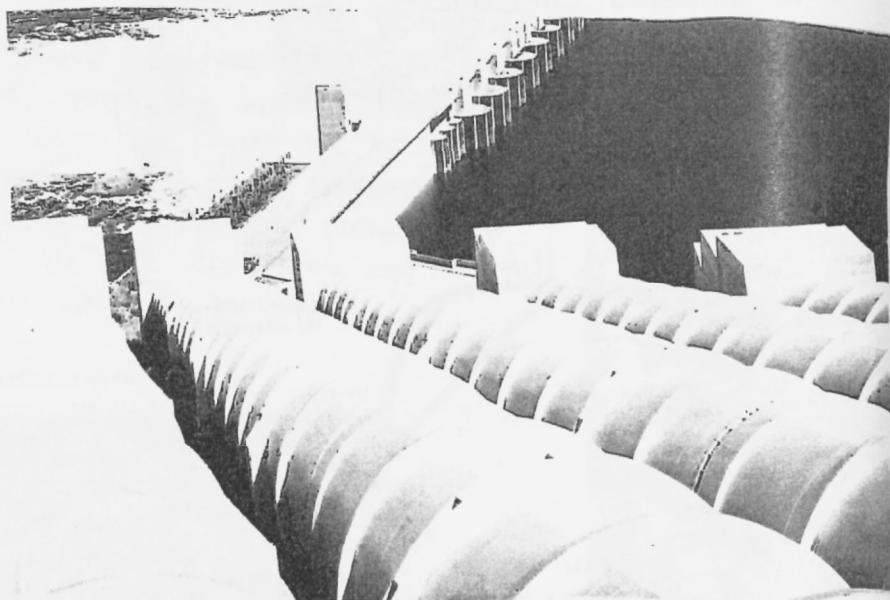
A turbine works by having water flow through a series of blades connected to a generator. The stored water flows through a penstock that is big as car which is like a funnel taking the water to the Francis Turbine. The turbine is connected to a generator by a round shaft like on the wheel of a bike. A generator is made of magnets on a wheel that is called a rotor. The rotor spins the turbine's blades and makes electricity in a copper ring that is around the rotor producing hydro-power.



By: Botenberg

# IRRIGATION

Power and irrigation are related. The workers harnessed the power of the Columbia to get rid of the desert waste land. Billy Klapp was the first person to advance the idea of irrigating the Columbia Basin. The Grand Coulee makes irrigation by pumping water into discharge tubes.



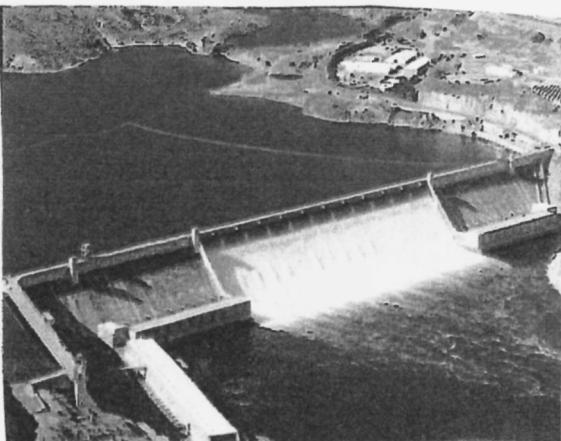
Discharge Tubes

By: The Story of the Columbia Basin Project



Am I

interrupting? It's me Bobby the beaver. Did you know the discharge tubes pump water into Banks Lake. This didn't happen until after World War II. The government made Grand Coulee hold the irrigation system, power got top priority during World War II. After World War II the purpose of power changed to irrigating the land. The Grand Coulee now irrigates 670,000 acres providing food and water today.



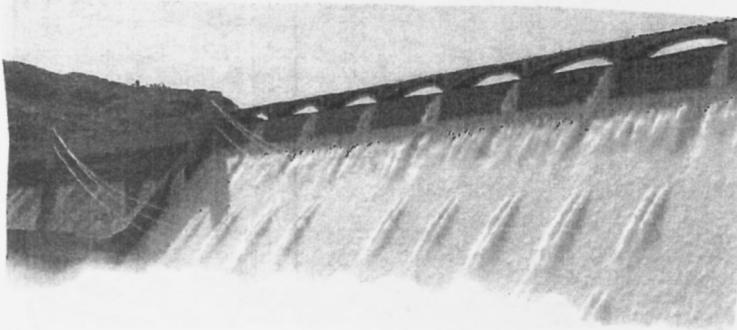
# GRAND COULEE DAM FACTS



1. It is a gravity dam
2. The height of the Grand Coulee is 550 feet tall
3. The length is 5,223 feet long.
4. The Grand Coulee is the largest concrete structure of the world.
5. The Grand Coulee is as tall as the Space Needle.
6. It's the largest hydropower producer in the U.S. = 21 billion kilowatt hour/year
7. The Grand Coulee was an important power source for factories in World War II and the dam helped supply power to Boeing

# FUTURE OF DAMS

For the next few years I hope people will be thankful for what Rufus Woods and President Roosevelt did. They were the visionaries of the Grand Coulee. I hope people won't take the Grand Coulee down in the future because it powers millions of homes, makes electricity to power lights, and computers. The Grand Coulee Dam helps with irrigation, by watering the crops. We should be thankful for the Grand Coulee Dam.



# ABOUT ROLL ON COLUMBIA

*Chorus*

Roll on, Columbia, roll on  
Roll on, Columbia, roll on

Your power is turning our darkness to dawn

So roll on, Columbia, roll on

*Chorus*

Green Douglas firs where the waters cut through  
Down her wild mountains and canyons she flew  
Canadian Northwest to the oceans so blue

*Chorus - Roll on Columbia, roll on*

Other great rivers add power to you  
Yakima, Snake, and the Klickitat, too  
Sandy Willamette and Hood River too

*Chorus - So roll on, Columbia, roll on*

Tom Jefferson's vision would not let him rest  
An empire he saw in the Pacific Northwest  
Sent Lewis and Clark and they did the rest

*Chorus - So roll on, Columbia, roll on*

It's there on your banks that we fought many a fight  
Sheridan's boys in the blockhouse that night  
They saw us in death but never in flight

*Chorus - So roll on Columbia, roll on*

At Bonneville now there are ships in the locks  
The waters have risen and cleared all the rocks  
Shiploads of plenty will steam past the docks

*Chorus - So roll on, Columbia, roll on*

And 6n up the river is Grand Coulee Dam  
The mightiest thing ever built by a man  
To run the great factories and water the land

*Chorus - So roll on, Columbia, roll on*

These mighty men labored by day and by night  
Matching their strength 'gainst the river's wild flight  
Through rapids and falls, they won the hard fight

*Chorus - So roll on, Columbia, roll on*

Song written by:  
Woody Guthrie



Roll on Columbia is a folk song. It was written in by Woody Guthrie in 1941. Woody Guthrie was born in Oklahoma and traveled to Washington because he was hired to write songs for the BPA. In 1987, it was adopted as the official folk song of Washington state.





Sample jugs of water from 48 States were poured into canal, symbolizing the project's contributions to the Nation's wealth.

## Columbia Basin Project



My photo

# Books Used

Building Dams By: Rebecca  
written: 2016 Steloff

Canals and Dams Investigate  
feats of Engineering By: Donna  
written: 2013 Latham

Grand Coulee Dam By: Ray  
written: 2008 Bottnerberg

Story of the Columbia  
Basin Project By: U.S.  
written: 1978 Bureau of  
Reclamation

PBS Grand Coulee Dam  
American Experience  
made: 2012

Field Trip to Grand  
Coulee

Left trip to Guelph  
Carrie

Ames; SADS

PBS: Guernsey  
American Express

289

not in

Bacon Bars

Melissa: 1152  
Bacon Bars

Multi-Bookshelf  
Cottage

Old Bookshelf

51  
Diana

1000

1000

1000

1000

1000