The Role of Perspective in History as an Area of Knowledge

Lesson Overview

This lesson is intended for Theory of Knowledge and requires students to reflect how historical knowledge is produced and critically examine the role the individual historian plays. While history, especially in textbooks, is presented as objective fact, this exercise considers the subjective element in historical writing as historians are influenced by the historical and social environment in which they are writing and their individual perspective affects their selection and interpretation of evidence.

Essential Questions

- How can historical narratives be assessed?
- What distinguishes a better historical account from a worse one?

Assessment

Students will write a 1,200-1,600-word essay in response to one (1) of the following prompts:

1. Given access to the same facts, how is it possible that there can be disagreement between experts in a discipline? Develop your answer with reference to History as an Area of Knowledge.
2. "Conflicting knowledge claims always involve a difference in perspective." Discuss with reference to History as an Area of Knowledge.
3. "The knower's perspective is essential in the pursuit of knowledge." To what extent do you agree with regards to History as an Area of Knowledge?

These prompts were developed by the International Baccalaureate Organization for the Theory of Knowledge prescribed title assessment. The essay will be scored employing the IBO Theory of Knowledge Essay Assessment Instrument.

Resources

Alchin, Nicholas and Carolyn P. Henly. Theory of Knowledge. Hodder Education, 2014.

Mandell, Nikki and Bobbie Malone. Thinking Like a Historian. Wisconsin Historical Society Press, 2007.

Materials

Journal: Historical Facts
Grand Coulee Dam Fact Sheet
Artifact Packet
Writing History

Writing History Reflection
Journal: History and Imagination
Writing History Remix
Journal: History Husbandry

LESSON 1 (90 MINUTES)

Min	Activity	Student Procedure	Teacher Procedure
10	Journal	In your journals, respond to the prompt).	Project Journal: Historical Facts on the board.
20	Whole-class Discussion	Share journal responses and discuss the issues raised by the prompt.	Lead a discussion of the journal prompt and address the following key points: 🗝 History has two different connotations. First, there is history as a "series of all past events" (Alchin and Henley 296). However, there is also history as the "academic inquiry" carried out by the historian (Alchin and Henley 296). While history in the first sense can be very objective and quite certain, history in the second sense is much more complex. 🗝 Today, we are going to look more closely at the second connotation of history. The historian's goal is not merely to produce a list of indisputable facts. "These facts are not history itself, but the building blocks from which history is made" (Alchin and Henley 296). The aim of the historian is to theorize about these facts. 🗝 There are many types of historical inquiry, but one of the most common is **CAUSE AND EFFECT**.

30	Small-Group Activity	Work with your group members to develop a historical account of the construction of The Grand Coulee Dam. Your account should be based both on the facts (Grand Coulee Dam Fact Sheet) and the artifacts provided (Artifact Packet). Your inquiry will focus on the **CAUSES AND EFFECTS** of the event. Use the following questions to guide your account: 🗝 Who/what made the change happen?	Provide an overview of the activity: Today, you will examine a historical event, the construction of The Grand Coulee Dam. You will play the role of a historian and will develop a historical account based on facts and artifacts that explains the **CAUSES AND EFFECTS** of this event. Distribute and review the Grand Coulee Dam Fact Sheet (1 copy per group) Divide the class into five (5) groups. Each group will have a different set of artifacts (1 copy per group) that focuses on the event from a specific perspective; **however, do not tell students that they have been given different artifacts or that they are examining different perspectives**: A. Indigenous Peoples B. Dam Workers C. Women D. Farmers E. Local Community
		🗝 Who supported the change? 🗝 Who did not support the change? 🗝 Which effects were intended? 🗝 Which effects were accidental? 🗝 How did the events affect people's lives?	Distribute and explain the Writing History worksheet. It is important that each student completes his/her own worksheet. They will need their individual worksheet for the next lesson.
20	Small-Group Discussion	Discuss the Writing History Reflection questions as a group. One member of the group will summarize the discussion by by listing five (5) key points.	As groups finish, collect the Writing History worksheet from each member. Distribute one (1) copy of Writing History Reflection discussion questions to each group. Groups will discuss these questions orally. One member of the group will summarize the discussion by listing five (5) key points.

15	Whole-class Discussion	Reflect on the process of developing historical accounts.	Close the lesson by leading a discussion on the following questions: ⊶ What would be a historian's next step in this process? ⊶ How might s/he verify this historical account? ⊶ How certain can historical explanations be? ⊶ What factors determines the certainty of a historical explanation?

LESSON 2 (90 MINUTES)

Min	Activity	Student Procedure	Teacher Procedure
10	Journal	In your journal, respond to the prompt.	Project Journal: History and Imagination on the board.

40	Small-Group Activity	Each member will share the historical account s/he wrote in the previous lesson. Group members will compare/contrast accounts and consider which accounts are better. After the discussion, the group will write a revised historical account.	Divide the class into five (5) groups. Make sure each group is comprised of at least one (1) member from each of the groups from the previous lesson. For example, Group 1 will have a student from A, B, C, D, and E. Return the completed Writing History worksheet (collected in lesson 1) to each student. Give each group one (1) copy of the Writing History Remix worksheet.
30	Whole-class Discussion	Each group will share their revised account	Ask one member from each group to share the groups revised historical account Facilitate a discussion that addresses the following questions: 🗝 Which accounts do you think are more accurate? 🗝 What factors determines the certainty of a historical explanation? 🗝 Why is collaboration so important in developing historical knowledge?
15	Small-Group Discussion	As a group, develop a checklist/guideline for evaluating historical accounts	What makes a historical account "good"? Develop a checklist of qualities that define a "good" historical account.
Homework		Select a passage from your history textbook and evaluate it using the guidelines you developed in your groups. How "good" is your textbook?	

LESSON 3 (90 MINUTES)

Min	Activity	Student Procedure	Teacher Procedure
10	Journal	In your journal, respond to the prompt.	Project Journal: History Husbandry on the board.

75	Whole-class Discussion	Participate in the discussion using specific examples from the group activities completed in Lessons 1 and 2.	Lead a discussion that addresses the following questions/points: 🗝 How can historical narratives be assessed? 🗝 What distinguishes a better historical account from a worse one? 🗝 Historian Edward Hallett Carr contends that "the believe in a hard core of historical facts existing objectively and independently of the historian is a preposterous fallacy, but one which is very hard to eradicate." **Why is it difficult to have a certain, objective historical account?** 🗝 **Why might facts be difficult to find?** "Historians cannot simply choose his facts freely from a vast and complete body of information" (Alchin and Henley 298). Many records have been lost or were not written down. In our analysis of The Grand Coulee Dam, we had more artifacts speaking to the experience of workers and the federal government than we did of the Indian tribes and women. 🗝 **How do historians choose which facts to include; how might this be a source of bias?** Historians also cannot include every fact. S/he must sift and select the facts. "Once the material is sifted and sorted, theory – the historians viewpoint – is inextricably tied up with the data, and there is no longer any `hard core' of fact" (Alchin and Henley 300). 🗝 **How do historians evaluate the reliability of source material; how might this be a source of bias?** Historians also need to consider the reliability of their sources. "No document can tell us more than what the author of the document thought happened, thought would happen, thought ought to happen, would like to have happened or

			even would like others to think he thought would happen" (Alchin and Henley 300). 🗝 **How might language contribute to bias?** Historians have to interpret the language used in the primary sources. They also use language to write these accounts. Connotation of words can shape other people's perception of history.
10	Pair/Share	With a partner, create a metaphor by making three (3) points of comparison between history as an area of knowledge to the object in your picture.	Give each pair of students a picture of an object.
Homework		Watch "The Danger of a Single Story" Ted Talk by Chimamanda Adichie https://www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story Write a 1-page informal response with regards to history.	

JOURNAL: HISTORICAL FACTS

State a historical fact of which you are certain. How did you come to know this fact? Is this fact controversial or is it generally accepted by the wider knowledge community? What evidence has been provided to support this fact? What counts as a fact in history?

Grand Coulee Dam Fact Sheet

Grand Coulee Dam Aerial. Pacific Northwest Region, Bureau of Reclamation, 26 July 2017, www.usbr.gov/pn/

- The Grand Coulee Dam is a gravity dam located on the Columbia River in central Washington.
- Construction began in 1933, and the dam was completed in 1942.
- The dam was engineered by and is still operated by the Bureau of Reclamation, which is a part of the Department of the Interior.
- The Dam is made from 12 million cubic yards of concrete, enough concrete to build a sidewalk four feet wide and for inches thick and wrap it twice around the equator.
- On August 4, 1934, President Franklin D. Roosevelt visited the construction site and delivered a speech.
- At the time, the payroll for the dam was among the largest in the nation. The project employed 8,000 workers, who made an average of 80¢ an hour. Over the course of construction 77 workers died. The total construction required over 100 million man-hours.
- The basic construction of the dam cost $163 million.
- The dam created a 421 billion cubic feet reservoir named Franklin D. Roosevelt Lake, which displaced around 3,000 people. Much of the land that was flooded belonged to local Indian Tribes.
- In 1940, the Confederated Tribes of the Colville Reservation hosted a three-day gathering to eulogize the loss of Kettle Falls. The event was called the "Ceremony of Tears." U.S. Senator Clarence Dill was a featured speaker at the event on June 16, 1940.
- The dam does not contain fish ladders, structures that enable fish to bypass a dam. More than 55 percent of the spawning and rearing habitat once available to salmon and steelhead in the Columbia River Basin is permanently blocked by dams.

- The first hydroelectric generator began operation on March 22, 1941. 8,000 people gathered to watch this inaugural event. Chief Jim James of the San Poil tribe pressed the button that sent its first jolt of electricity to the outside world
- On August 20, 1937, Franklin Roosevelt signed the Bonneville Project Act, which gave the Bonneville Power Administration (BPA), a federal agency, control of electricity generated by the Grand Coulee Dam.

- In 1941, the BPA hired folksinger Woody Guthrie to write songs for a documentary about the dam. In one month, he wrote 26 songs inspired by the Columbia River and the Grand Coulee Dam.

- Defense industries powered by the BPA created 750 ships, 10,000 combat airplanes, and numerous B17 and B-29 bombers.

- During World War II, the electricity generated by the dam powered the aluminum plants of the Pacific Northwest and the Manhattan Project's Hanford Site along the Columbia River, which generated the plutonium for the atomic bomb dropped on Nagasaki.

- On a visit to the dam in 1948, President Harry Truman said that without the dam, "it would have been almost impossible to win this war."

- On May 11, 1950, President Harry Truman gave an address at the dedication of the Grand Coulee Dam.

- The dam is a centerpiece of the Columbia Basin Project, an irrigation network in Central Washington. It is the largest water reclamation project in the U.S. supplying water for the irrigation of 671,000 acres.

- The Bureau of Reclamation projects the yearly value of the Columbia Basin Project to be $630 million in irrigated crops, $950 million in power production, $20 million in flood damage prevention, and $50 million in recreation.

- The dam is the largest single producer of electricity in the United States, and it is the third largest hydroelectric facility in the world. With its 28 generators producing up to 23,860,944,469 kilowatthours annually. That is enough power to supply 2.3 million households with electricity for one year.

- Today, a million visitors a year travel to rural Washington State to visit the Lake Roosevelt National Recreation area.

References

"Grand Coulee Dam." Pacific Northwest Region, Bureau of Reclamation, 11 Oct. 2016, https://www.usbr.gov/pn/grandcoulee/

"Grand Coulee Dam." Wikipedia, Wikipedia Foundation, Inc., 29 July 2017, https://en.wikipedia.org/wiki/Grand_Coulee_Dam.

Tickery, Erick. "The Grand Coulee Powers On, 75 Years After Its First Surge of Electricity." Smithsonian, The Smithsonian Institute, 22 March 2016, http://www.smithsonianmag.com/history/grand-coulee-powers-75-years-after-its-first-surgeelectricity-180958524/.

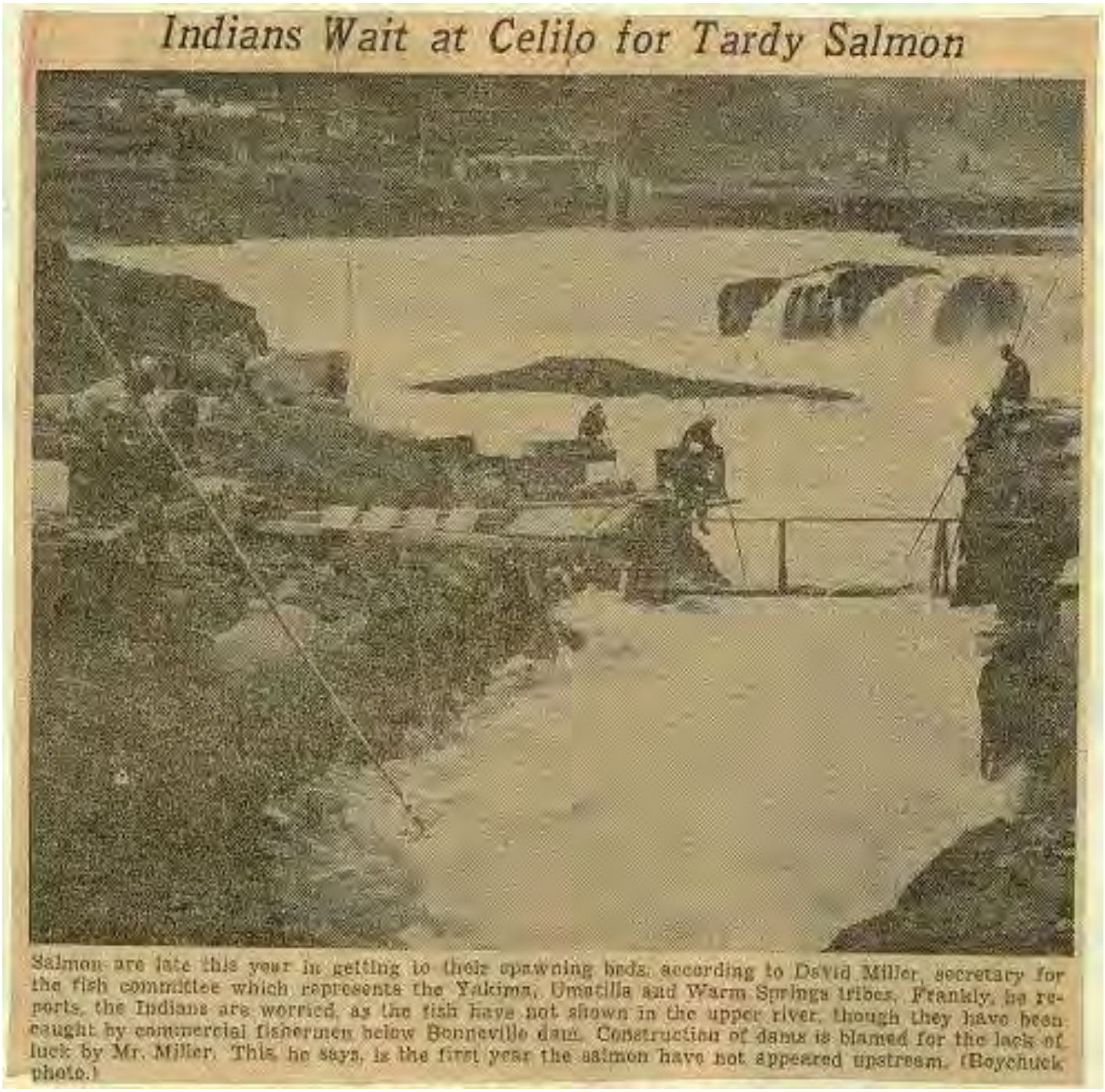
Artifact Packet

Artifacts: Group A

Group A

A1

Newspaper clipping from the Oregonian regarding fishing at Celilo Falls and Indian fishermen, dated 05-30-1937. Credit: Boychuck. http://plateauportal.libraries.wsu.edu/digital-heritage/indians-wait-celilo-tardy-salmon



Indians Wait at Celilo for Tardy Salmon

Salmon are late this year in getting to their spawning beds, according to David Miller, secretary for the fish committee which represents the Yakima, Umatilla and Warm Springs tribes. Frankly, he reports, the Indians are worried, as the fish have not shown in the upper river, though they have been caught by commercial fishermen below Bonneville dam. Construction of dams is blamed for the lack of luck by Mr. Miller. This, he says, is the first year the salmon have not appeared upstream. (Boychuck photo.)

A2

Chief Jim James of the Colville Tribe, right, his arms folded, and others view fishing sites at Kettle Falls during the Ceremony of Tears. Credit: Northwest Museum of Arts & Culture, Spokane.
https://www.nwcouncil.org/history/CeremonyOfTears

Artifacts: Group A

A3

In 1939, a year before the Ceremony of Tears, local Indians gathered near Kettle Falls to move the graves of their ancestors to higher ground, away from the area that would be flooded by Lake Roosevelt. Here, women smoke salmon for the grave-removal ceremony. Credit: Northwest Museum of Arts and Culture, Spokane. (https://www.nwcouncil.org/history/CeremonyOfTears)

A4

Indians fishing at the falls in the 1950s. Credit: Columbia River Inter-Tribal Fish Commission. https://www.nwcouncil.org/history/CeliloFalls

Artifacts: Group A

A5

Kettle Falls had been a historic salmon fishing spot for Native Americans for around 7,000 years. Credit: Northwest Museum of Arts and Culture. http://www.pbs.org/wgbh/americanexperience/features/coulee-colvville/

A6

Native American fishermen typically stood on wooden platforms or rocks and used 20-foot poles with a net attached to the end to scoop up salmon just below the falls. Credit: Northwest Museum of Arts and Culture. http://www.pbs.org/wgbh/americanexperience/features/coulee-colvville/

Artifacts: Group A

Artifacts: Group A

A7

At a ceremony on March 22, 1941, Washington Governor Arthur B. Langlie (left), Chief Engineer Frank Banks (second from left), and San Poil Chief Jim James (right) switched on the dam's electrical generators for thousands of onlookers. Credit: Blaine Harden.
http://www.pbs.org/wgbh/americanexperience/features/coulee-colville/

A8

Martin Louie Jr. holding can of pink salmon. Credit: Blaine Harden.
http://www.pbs.org/wgbh/americanexperience/features/coulee-colville/

A9

"Government-to-Government Agreement in Principle Between the State of Washington Department of Fish and Wildlife and The Spokane Tribe of Indians."
http://www.spokanetribe.com/userfiles/file/050107_lake_roosevelt_agreement_in_principle_with_wa.pdf

Government-to-Government Agreement in Principle
Between the State of Washington Department of Fish and Wildlife
and The Spokane Tribe of Indians

For the Spokane River Arm of Lake Roosevelt

PARTIES: This Agreement in Principle is by and between the Spokane Tribe of Indians (Tribe) and the State of Washington Department of Fish and Wildlife (WDFW), acting through duly authorized representatives.

WHEREAS, the Tribe and WDFW have developed a cooperative and beneficial working relationship on important issues affecting Lake Roosevelt, including but not limited to the use of water supplies for agriculture, hydropower, protection of water quality, enhancement of fisheries and recreation and other beneficial uses, while providing "seamless" fishing opportunities for anglers, and

WHEREAS, the congress of the United States has pending before it "The Spokane Tribe of Indians of the Spokane Reservation Grand Coulee Dam Equitable Compensation Settlement Act" (Act); and

WHEREAS, the Tribe and WDFW intend to develop a cooperative agreement with other affected governments to provide for coordination and cooperative management of resources and interests within Lake Roosevelt; and

WHEREAS, representatives of WDFW and the Tribe have discussed and cooperatively worked together to develop an agreement in principle, which respects each party's sovereignty;

NOW THEREFORE, the undersigned parties, understanding their mutual intent to develop a joint Cooperative Assistance Agreement, agree in principle to the following terms for management of law enforcement activities under the Act by their respective agencies on the Spokane River Arm of the Roosevelt.

1. Open Waters and South Shore of the Spokane River Arm of Lake Roosevelt.

The Tribe and the WDFW shall enforce their respective laws, rules and regulations regarding fish and wildlife on the open waters and south shore of the Spokane River Arm of Lake Roosevelt, emphasizing joint enforcement patrols as a practical approach for avoiding conflicts during enforcement contacts.

2. North Shore of the Spokane Arm of Lake Roosevelt and Adjacent Secondary Shorelands of the Spokane Indian Reservation.

The Tribe shall enforce its applicable laws, rules and regulations regarding fish and wildlife on the north shore of the Spokane Arm of Lake Roosevelt on the Spokane Indian Reservation.

3. "Seamless" Fishing Opportunities For Anglers

To avoid confusion and provide seamless fishing opportunities, the Tribe and WDFW agree that, from the perspective of the "average" angler, the parties' fishing regulations must be aligned ("match" if possible). Therefore, under the Act:

a. A valid State or Tribal (for enrolled Spokane tribal members) fishing license shall authorize fishing on the open waters and south shore of the Spokane River Arm of Lake Roosevelt.

b. A valid Tribal fishing license or permit shall authorize fishing from the north shore of the Spokane River Arm of Lake Roosevelt on the Spokane Indian Reservation for non-members. The Tribal fishing license or permit for non-members will include a requirement for a valid State fishing license.

4. Cooperative Assistance Agreement

Consistent with applicable laws, the Tribe and WDFW shall assist one another cooperatively in their respective enforcement responsibilities and activities, emphasizing coordinated joint enforcement strategies as provided above, and develop a specific agreement, which provides for broad geographic and temporal coverage and addresses elements such as logistics, tools, and scheduling.

CHAIRMAN
SPOKANE TRIBE OF INDIANS

Dated: 2/22, 2007

DIRECTOR
STATE OF WASHINGTON
DEPARTMENT OF FISH & WILDLIFE

Dated: 5/1, 2007

A10

"Open Letter to Sport and Recreational Users of Lake Roosevelt."
http://www.spokanetribe.com/userfiles/file/st_resp_ad_8_09_spokes.pdf

AN OPEN LETTER TO SPORT AND RECREATIONAL USERS OF LAKE ROOSEVELT:

THE SPOKANE TRIBE SETTLEMENT BILL WILL NOT DENY ACCESS TO FISHING, HUNTING AND BOATING IN THE WATERS OF LAKE ROOSEVELT

An August 27, 2009 article by Rich Landers in the Spokesman Review (Outdoors section) contains misconceptions about the jurisdictional implications of legislation now pending in Congress to compensate the Spokane Tribe of Indians for the devastating impacts caused by the creation of Grand Coulee Dam.

Without talking to the Spokane Tribe or Washington Department of Fish and Wildlife (WDFW), Mr. Landers elected to shoot from the hip by using scare tactics. Now, the Spokane Tribe wishes to set the record straight for the sporting and recreational users of Lake Roosevelt. The goal of Landers article seems to be to arouse alarm about the public's continued access to and use of Lake Roosevelt and its shores if the federal legislation becomes law.

Mr. Landers' article posed four questions to which the Spokane Tribe responds below:

1. "If the tribe assumes jurisdiction, who will define where an angler is legal to fish or where a water fowler is allowed to hunt or water skiers allowed to cut turns?"

SPOKANE TRIBE RESPONSE: The Tribe will **reassume** jurisdiction over the **uplands** within the Reservation returned to Tribal ownership by the pending legislation which does not grant Tribal jurisdiction over non-members on the water. The basic principles for cooperative enforcement of applicable State and Tribal laws with respect to fishing, hunting and boating on the water and the uplands are set forth in the 2007 WDFW-Tribe Agreement.

2. "Can the tribe require its own fishing or recreation licenses?"

SPOKANE TRIBE RESPONSE: The 2007 WDFW-Tribe-Agreement states that with respect to fishing on the open waters and south shore of the Spokane Arm of Lake Roosevelt, a valid State or Tribal (for enrolled Spokane Tribal members) fishing license shall be required.

That 2007 Agreement also states that with respect to fishing from the north shore of the Spokane Arm on the Reservation, a valid Tribal fishing license or permit shall be required.

Other recreational uses of those north shore uplands will be subject to Tribal regulation consistent with existing National Park Service authorities preserved by the pending legislation.

3. "Can the tribe ban fishing by non-Indians?"

SPOKANE TRIBE RESPONSE: The pending legislation does not give the Spokane Tribe any jurisdiction to ban or regulate fishing by non-members on the water. The 2007 WDFW-Tribe-Agreement provides that: "The Tribe and State shall enforce their respective laws, rules and regulations regarding fish and wildlife on the open waters and south shore of the Spokane Arm." The Tribe will regulate fishing from the north shore, on the Spokane Indian Reservation, consistent with the 2007 Agreement in Principle.

4. "Will tribal enforcement officers be out flexing their muscles on honest sportsmen?"

SPOKANE TRIBE RESPONSE: This question, like the tone of Mr. Landers' article, reflects his bias. After the legislation becomes law, State as well as Spokane Tribal officers will be implementing cooperatively the 2007 WDFW-Tribe Agreement in Principle. The Agreement also calls for the development of a more detailed Cooperative Assistance Agreement based on those mutual principles.

In conclusion, the Spokane Tribe has worked to address all legitimate concerns in this settlement bill. The Tribe has been forced to exert significant effort to retain its homelands since the original Agreement with the United States in 1877. The Spokane Tribe has strived to secure the benefit of the promises made by the United States to fairly compensate for the use of our lands and resources. The Tribe continues to endure enormous impacts to our way of life such as the loss of our ceremonial and cultural grounds, flooded cemeteries of our people, the loss of salmon which was used as a resource to feed many Spokane Tribal families and the many homes that now sit beneath the rising Lake Roosevelt waters due to construction and the operation of Grand Coulee Dam.

Grand Coulee delivers enormous benefits to the region. Benefits such as electricity, subsidized irrigation for agriculture, water for recreation, beaches for camping, and a lake filled with fish for the many anglers on the water. Benefits also include the multi-million dollars generated with the daily operations of Grand Coulee Dam.

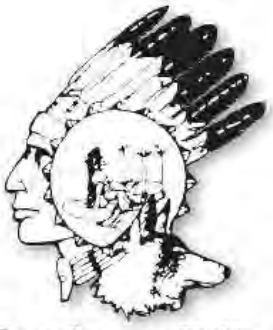
The extreme disparity between the losses suffered by the Spokane Tribe, in contrast to the pervasive benefits Grand Coulee provides to the nation and the region, is striking. Spokane Tribal Members deserve fair and honorable treatment by its federal trustee, and the region, in this settlement of compensation due to the use of our lands for the production of hydropower and many other purposes. The Spokane Tribe of Indians has endured a long road of negotiations in search of fair compensation following the construction of Grand Coulee Dam.

Now is the time to finalize Legislation so that the Spokane Tribe of Indians can work with our neighbors in Lincoln and Stevens Counties and the State of Washington to enhance Lake Roosevelt and protect its assets.

The Spokane Tribe has lost many Tribal Elders during the long negotiation process it's finally time to send Legislation through for a final resolution to this injustice that began with the 1933 construction of Grand Coulee Dam.

The Spokane Tribal Business Council invites you to visit our website; www.spokanetribe.com to gain accurate details about the Spokane Tribe by the Spokane Tribe. We encourage you to view the in-depth video that highlights the losses to the Tribe since the creation of Grand Coulee Dam and hear from our Tribal Elders of what life was like prior to the Grand Coulee Dam.

Sincerely,
Spokane Tribal Business Council
Gregory Abrahamson, Chairman
Glenn Ford, Vice Chairman
Michael Spencer, Secretary
Jim Sijohn, Councilman
David C. Wynecoop, Councilman



Spokane Tribe of Indians

This advertisement paid for by the Spokane Tribe of Indians
PO Box 100, Wellpinit, WA 99040

A11

Confederated Tribes of the Colville Reservation Upper Columbia River Books of Legends.
http://colville.whydevelop.com/book_of_legends.php

II. Folk-Tales of Salishan and Sahaptin Tribes, Okanogan Tales

(By James A. Teit, Edited by Franz Boas, 1917)

Figure 14. How Coyote got his name and power

20. Coyote (snk'aʔlíp)

Coyote (snk'aʔlíp) was sent by Chief to set the world in order. Chief saw that the people were having a hard time and were preyed upon by many evil beings. They were about to be killed off. Chief did not want the people to be

exterminated, so he sent Coyote to help them. He endowed him with great magical power, so that he could surmount all obstacles. He gave him power to transform evil beings, and he gave him wisdom and cunning. He also gave to Coyote's excrements the power to be his friends and advisers. He told him to travel all over the world and to set it right. Coyote had to travel much and to work hard. Chief said that when Coyote's work was finished, he would meet him, see his work, and then give him a rest.

21. Origin of the Columbia River

Coyote (snk'aʔlip) was traveling, and heard water dropping. He said, "I will go and beat it." He sat down near it, and cried, "Hox-hox-hox hox!" in imitation of water dripping. He tried four times, but the noise never ceased. He became angry, arose, and kicked the place where the water dropped. The noise ceased. He thought he had beaten it, and laughed, saying, "I beat you. No more shall water drip thus and make a noise."

Shortly after he had gone, the water began to drip as before. He became angry, and said, "Did I not say water shall not run and make a noise?" The water was coming after him, and increased in volume as it flowed. He kept on running; but still he heard the noise of water, and was much annoyed. Now he traveled along the edge of a plateau. There was no water there, nor trees. He looked down into the coulee, but everywhere it was dry. It was warm, and he became very thirsty. He heard the noise of water, but saw none. Then he looked again down into the coulee, and saw a

small creek flowing along the bottom. It seemed a long distance away. He went down and drank his fill.

He ascended again, but had barely reached the top when he became thirsty. He heard more noise of water, and, looking over the edge, saw a large creek running.

He went down, drank his fill, and ascended again, but had not reached the top when he was thirsty, as before. He thought, "Where can I drink?" The water was following him. He went to the edge of a bench and looked down. A small river was now running below.

He descended and drank. He wondered that much water was running where there had been none before. The more he drank, the sooner he became thirsty again. The fourth time he became thirsty he was only a little way from the water.

He was angry, and turned back to drink. The water had now risen to a good-sized river, so that he had not far to go. He said, "What may be the matter? I am always thirsty now. There is no use of my going away. I will walk along the edge of the water."

He did so; but as he was still thirsty, he said, "I will walk in the water." The water reached up to his knees. This did not satisfy him; and every time after drinking, he walked deeper, first up to the waist, then up to the arms. Then he said, "I will swim, so that my mouth will be close to the water, and I can drink all the time."

Finally he had drunk so much that he lost consciousness. Thus the water got even with Coyote for kicking it; and thus from a few drops of water originated the Columbia River.

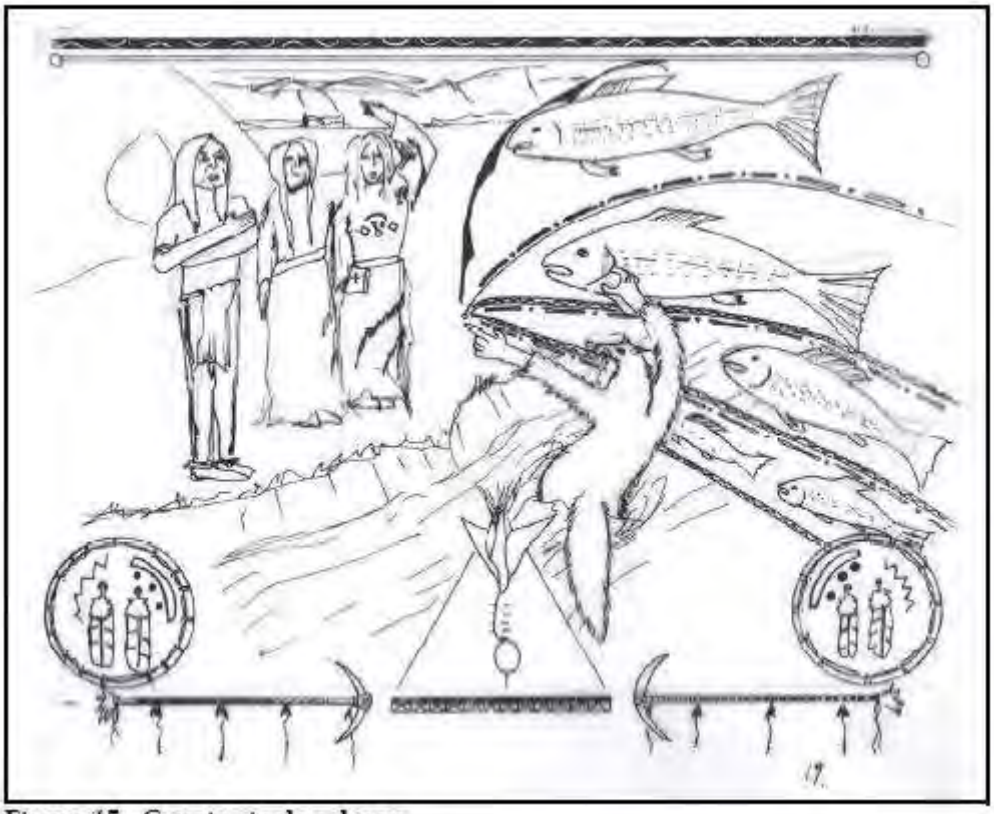


Figure 15. Coyote steals salmon

23. Introduction of Salmon

Now, there was a large river, and Coyote floated along in it. After drifting a long time, he regained consciousness. When he discovered himself in the middle of a large, swift-running river, he became afraid, and changed himself into a small canoe.

Now, away down below, somewhere above the place where Portland is now, and where there is a fall in the river, there lived the two (we'lwil) sisters, who owned a weir that extended across the stream. Below the weir the river was full of salmon; while above it, in the interior, there were none.

The Indians above the weir knew nothing of salmon at that time. They lived on game, roots, and berries. Coyote which still had the form of a canoe bottom up, struck the weir and remained there.

In the morning the two sisters came out to clean the weir of driftwood which had floated against it, for the river was very high. They saw the small canoe bottom up; and the younger one said, "We must save it. It will make a fine dish for us to hold our salmon in." The elder sister said, "Do not touch it. It has been made by some one. Possibly it is Coyote."

The younger sister took it home and put boiled salmon into it. Then the sisters went out root-digging; and when they returned, the salmon in the dish had disappeared, and also some of the fish that they had been drying.

The elder sister said, "I told you!" The younger sister became angry, and tried to break the dish on a rock. As she was about to do so, the dish in her hands assumed the shape of a baby, which began to cry. She took pity on it, and said, "Oh, he will make a nice younger brother for us!" Coyote grew fast; and when the women went root-digging, they tied him up in the house.

When they were out of sight, he unfastened himself, and ate their roots and their dried salmon. On their return he tied himself up, and appeared quiet and meek. The women would say, "How good our younger brother is!" Coyote planned to break the women's weir and to let the salmon pass up river.

The fourth day, when they were out digging roots, the root-digger of the elder sister broke. She was surprised, and said, "There is something wrong. My root-digger should not have broken. It was made of very strong wood. Let us go

home! Something has happened. Perhaps our younger brother has fallen into the water." They hastened home.

Meanwhile Coyote had put a sheep's-horn spoon on his head and was breaking the weir. It was nearly broken when the women arrived. The elder one said, "I told you so! We have been fooled by Coyote." They rushed at him, and beat him over the head with sticks; but he kept on working faster than ever. The horn spoon protected him from their blows. When the weir was broken, he ran up the opposite bank, and the king-salmon were ascending the river in great numbers. The sisters sat down on the bank and wept. They cried, "You have stolen our salmon for your Coyote people! You people of Coyotes! You are all Coyote people! You are bad people!" He answered, "You thought you had a little boy, a little brother. You thought he knew nothing, but he was greater than you!" Then he transformed them into bird's sandpipers, saying, "Henceforth you shall be (we'lwil) birds, and shall run by the water's edge. You shall no longer have control over salmon. Salmon shall henceforth run up the river."

The place where the weir was is now a fall in the river. Coyote walked along the river-bank, and the salmon followed him. He became hungry, and wanted to eat salmon. He said, "I wish the king-salmon to jump ashore!" A king-salmon jumped out; but it was a rocky place, and smooth, and the fish was so slimy that he could not hold it. Thus it slipped back into the water.

Again he wished; but the shore was clayey, and the same happened. The fourth time the fish jumped on a sandy shore, and there he managed to catch it. He cooked the salmon, and, after eating his fill, wrapped the rest up and carried it on his back.

As he went along, he asked a young girl at every camp to marry him; but they all refused. Their mothers advised them to take him, because Coyote had plenty of the new, fine kind of food. Then Coyote thought, "The Similkameen girls will have me. They are rather poor." He left the salmon at the mouth of the Similkameen River, and went up alone.

He met the people above, and asked one of their daughters in marriage. All the old people gathered together to consider his proposal. He told them, "If I marry a girl here, I shall always give you plenty of salmon." They asked the girls one after another, but all refused him because he was so ugly. The old people did not like to offend him by telling him what the girls said: so they said, "You know that salmon is not our food. The back of the head of the mountain-ram is our food. We are afraid of strange food." Coyote said, "Very well, you shall have plenty of that, sheep shall be numerous here, but salmon you shall not have. You will have to travel long distances to obtain your salmon."

He returned, and made small, poor fish, such as sucker's, to run up the Similkameen River. He said, "No salmon shall run up this river." So he made a barrier to prevent them from passing. Then he led the salmon up the Okanogan River to the falls. Above this place he asked to marry a maiden, but the people did not want him: so he made a rock barrier there at the falls that the salmon should not ascend to the people above.

He returned to the mouth of the Okanogan River, and ascended the Columbia. The salmon followed wherever he went. He came to a place called q'al'ácmən (near present day Box Canyon). Here all the old people wanted to marry their daughters to him. He was glad, and made a fine salmon-

fishing place by contracting the river so that the rocks almost met in the middle.

He smoothed and flattened the tops of the rocks, so that the children could play there. He also made a salmon-weir. When he had finished, he learned that the girls would not have him.

Then he became angry, and kicked the weir, so that it broke and drifted downstream. Then he thought, "The girl alone is bad. It is not the old people's fault. They were good to me." So he left the place as he had made it, and people have always been able to capture salmon there.

Then he went up Nespe'lim Creek. Here the same happened as before. The people accepted him, and the girl was good to me. There shall always be some salmon here." His little daughter was walking with him at this place, and he transformed her into a stone.

Then he went to (spu qinx) Spokan. At a place called (sƛ̓**ə**x̌**á**tkʷ) Spokane the same happened. He made a canyon, saying, "The girl was bad; but the old people were kind, and thought much of me. People shall always get salmon here during part of the summer."

Then he went to (snxʷaʔmínaʔx) Lower Spokane. Here he asked a salmon to jump ashore. After cooking it and eating half, he threw the rest into the river. It was transformed into a rock which looks like the side of a king-salmon. There are other rocks there which were made from scraps of the salmon.

Coyote went on, and came to (sƛ̓**ə**x̌**á**tkʷ) Spokane where the town of Spokane now is. Here he found a barrier across the stream, and began to dig it away. He had dug a large hole, when he thought, "Perhaps the people above are bad and will not give me a wife. Why should I favor them?"

He went there and saw the people who refused him. Then Coyote left the hole the way it was. It forms now Spokane Falls, and not many salmon go up there. Therefore the (ski c'uʔx) Coeur d' Alène have no salmon.

A12

Interview with Randy Peone, Spokesman for the Spokane Indian Tribe. The National Museum of the American Indian.

He returned to a place called (st'əqəm cínx) Palouse. He was hungry, and asked a salmon to jump ashore. A king-salmon did so; and after catching and cooking it, and eating his fill, he threw the leavings into the water. The pieces of salmon became rocks, which form a circle at this place, and make an eddy. He said, "Henceforth people shall find king salmon dead at this place. Some salmon of the first run will always die here."

He left the Spokane River, and journeyed up the Columbia until he reached (sx̌ʷɪʔy'iʔɬp) Colville. Here a stream enters the Columbia, across which the people had a weir for catching fish. The latter were very small. The people expected Coyote to come, and had ordered two of their daughters to marry him. They said, "He has much fine food, which will do us good. We shall get fine large fish if you take him." They were the (q'ʷəɬtəm'ayn) Wolverine people.

Coyote had heard what they thought, so he hurried there as soon as he arrived. The old people met him, and said, "Come in and sit between your wives!" They made room for him, and he sat down between the girls, who thus accepted him as their husband. The people said, "We are very poor, and have no good fish to offer you." Coyote excused himself, saying he must defecate, and went outside. He went to the salmon, and caught two king-salmon, which he put into Wolverine's fish-trap or weir. The next morning, when Wolverine went to look at the weir, he found them, and was very glad. Each morning more king salmon were in Wolverine's weir. The people wondered. They considered Coyote a great man, and the salmon fine food. All the people gathered there to fish.

The other people said to Wolverine, "If you had not given your daughters to Coyote, we should have given him ours." They were lying. Near this place Coyote made a dam across the river, and there he showed the people the methods of fishing with dip-nets and spears.

http://blog.nmai.si.edu/main/2014/12/meet-native-america-rudy-peone.html

Meet Native America: Rudy Peone, Chairman, Spokane Tribe of Indians

In the interview series Meet Native America, the Smithsonian National Museum of the American Indian invites tribal leaders, cultural figures, and other interesting and accomplished Native individuals to introduce themselves and say a little about their lives and work. Together, their responses illustrate the diversity of the indigenous communities of the Western Hemisphere, as well as their shared concerns, and offer insights beyond what's in the news to the ideas and experiences of Native people today. —*Dennis Zotigh*

Please introduce yourself with your name and title.

Rudy Peone, chairman, Spokane Tribe of Indians.

Where is your tribe located?

The Spokane Indian Reservation is in northeastern Washington State.

Where was the Spokane Tribe originally from?

Central/northeastern Washington, encompassing all of the current greater metropolitan area of the city of Spokane, northern Idaho, and western Montana.

What is a significant point in history from your tribe that you would like to share?

Chairman Rudy Peone, Spokane Indian Tribe.

In defense of their homelands, the Spokane and allied tribes fought the U.S. Army at the battles of Steptoe, Four Lakes, and Spokane Plains. In 1881, President Rutherford B. Hayes formally established the Spokane Indian Reservation by executive order. The 160,000-acre reservation is bounded by water on three sides—the Columbia River to the west, the Spokane River to the south, and Tsimikin Creek to the east. The construction of Grand Coulee Dam destroyed the abundant salmon runs that lie at the center of traditional Spokane life ways. The dam was completed in 1942. To date, the federal government has not fairly compensated the tribe for the loss of its salmon runs or the inundation of its reservation lands.

How is your tribal government set up?

Like most tribes we adopted a "cookie-cutter" constitution provided to us by U.S. government officials. Our constitution was adopted in 1951, though we have amended it over the years. Th constitution confers legislative and executive authority upon the Tribal Business Council, or simply Tribal Council, and provides the Tribal Council with the authority to establish a judicial branch. Many years ago, the Tribal Council established the Spokane Tribal Court, an independent court consisting of a chief judge, associate judges, and a court of appeals. Also, the Tribal Council has delegated substantial executive authority to an appointed executive director.

Is there a functional, traditional entity of leadership in addition to your modern government system?

Right now there is not, but over the last few years our tribe has adopted numerous constitutional amendments with a vision of moving closer to a more traditional form of government.

How often are elected leaders chosen?

The five members of the Tribal Council are elected to 3-year staggered terms by all tribal citizens 18 years and older. Currently, people must vote in person on Election Day, the first Saturday in June. Each year after the general election, the five sitting members of the Tribal Council vote for chairman, vice chair, and secretary.

How often does your Tribal Council meet?

As per our constitution, we have a meeting of the General Council—made up of all enrolled tribal members—twice per year, once in April and once in November. Along with these two constitutionally required meetings, this Tribal Council has implemented an additional two meetings per month that rotate amongst four locations throughout our current reservation and ancestral homelands, as well as four "Unity" meetings that coincide with the seasonal equinox and solstices. The Tribal Council typically meets at least once per week.

U.S. Vice President Joe Biden and Spokane Tribal Chairman Rudy Peone at a Women of Valor Ceremony co-sponsored by Senator Maria Cantwell. Seattle, Washington; October 9, 2014.

A13

Excerpts from Salmon and his People. Dan Landeen and Allen Pinkham. Confluence Press.

What most people don't realize is that the destruction of Celilo Falls entailed more than just eliminating a traditional fishing site. Celilo was a gathering place. It symbolized a very important social event that the Indians looked forward to every year. Celilo was a celebration for the people to watch the salmon run and to be a part of it.

—Rod Wheeler (Nez Perce)

On the day that the Celilo salmon would arrive, the first thing my aunt or grandmother would do was to boil the salmon heads for my grandfather. That was his favorite part of the fish, and he considered the eyes to be a delicacy. He would also drink the broth that the salmon heads had been boiled in.

—Donna Powaukee (Nez Perce)

Those rocks at Celilo would soak up a lot of the heat from the sun during the day. At night when we fished we would lay on those rocks because they would stay warm for several hours after the sun went down.

—Julius Ellenwood (Nez Perce)

During many of the treaty negotiations on the Columbia River, people have tried to make the claim that the Nez Perce did not do much fishing at Celilo. Nothing could be farther from the truth. For many years the Nez Perce fished there. They had their own reserved sites, or they fished on the sites that were controlled by their relatives.

—Leroy Seth (Nez Perce)

I can remember the excitement around our home when my father-in-law, Corbett Lawyer, would come back from Celilo with the back of his pickup truck full of salmon packed in layers of ice. As a youngster it was my job to clean and scale them before they were canned.

—Doug Nash (Nez Perce)

Dad told me about an old man at Celilo whose Indian name was Water Ouzel. The water ouzel is a small water bird also known as a dipper who swims under the water in search of food. This particular fisherman caught salmon in a dip net at a place where there was hardly any room to pull out a salmon, and he wouldn't tie himself off with a safety rope. When he would catch a large salmon, it would pull him in the river and away he would go down the river through the white water. The other fishermen who would be watching would say, "Keep watching. Pretty soon he will pop up out of the water. Pretty soon." Sure enough he would come up and swim to shore with the salmon and his net in tow. He did this routinely, even when he was an old man.

—Allen Pinkham (Nez Perce)

Celilo has been gone nearly four decades, yet still reverberates in the heart of every Native American who ever fished or lived by it. If you are an Indian, you can still see all the characteristics of the waterfall. If you listen, you can still hear its roar. If you inhale, the fragrances of mist and fish and water come back again."

—Ted Strong (Columbia River Inter-Tribal Fish Commission)

To me Celilo was the eighth wonder of the world. I was there that day in 1957 when the water covered up that area. That experience was probably the most heart-breaking time of my life. The government paid us each $3,494.26 to make up for the loss of Celilo. When you think that many of our people at that time were sometimes able to earn anywhere from $1,000 to $4,000 a week from catching and selling salmon, the amount we got does not even come close to making up for the loss of the Celilo fishery.
—Kathleen Gordon (Cayuse)

I can still recall as a youngster of four or five going to Celilo with my father and uncles. There I always knew that something special was taking place and never imagined that my eyes would have to lock that in for remembrance for the times that we would know today when it is gone and doesn't exist anymore. I am honored that I have that remembrance of watching my elders fish from those platforms. It gave me a feeling and assured me that all Indian people honored the Salmon in the same way. They respected Mother Earth and the strength of those great rivers. They not only respected the life that they gave but also respected the life that they could take as well.
—Levi Holt (Nez Perce)

Celilo was one continuous, deafening roar. It had a sound and smell all its own. There were lots of holes in the rocks that were formed by the wave action, and many times eels would become trapped in these holes and die and contribute to the overall smell.
—Julius Ellenwood (Nez Perce)

I fished Celilo as a boy during the last two years of its existence. I can remember that my thoughts about seeing Celilo for the first time as a boy were the same thoughts I had when I saw Niagara Falls for the first time as an adult. Both places were awe inspiring, and it is difficult to put into words how I felt about those places.
—Del White (Nez Perce)

A14

Spokesman-Review. June 17, 1940.
https://news.google.com/newspapers?nid=0klj8wIChNAC&dat=19400617&printsec=frontpage&hl=en

FAREWELL IS BID TO KETTLE FALLS

KETTLE FALLS, Wash., June 16.—"We can build more airplanes and tanks and can train more pilots for national defense than any other nation or combination of nations, and the quicker we do it the better," said former Senator C. C. Dill, speaking to a crowd of 1000 people at the celebration of the farewell to Kettle Falls on the Columbia river by the Colville Indians Sunday. "We know now that the only thing in this world which Hitler will respect is more force than he controls.

"But solidly united as the American people are for preparing a national defense against attack with modern weapons they are even more united against a national policy that will get us into the European war."

Speaking of what the loss of Kettle Falls as a fishing ground means to the Indians, Mr. Dill said: "The Indians have fished here for thousands of years. They love this spot above all others on their reservation because it is a source both of food and of beauty.

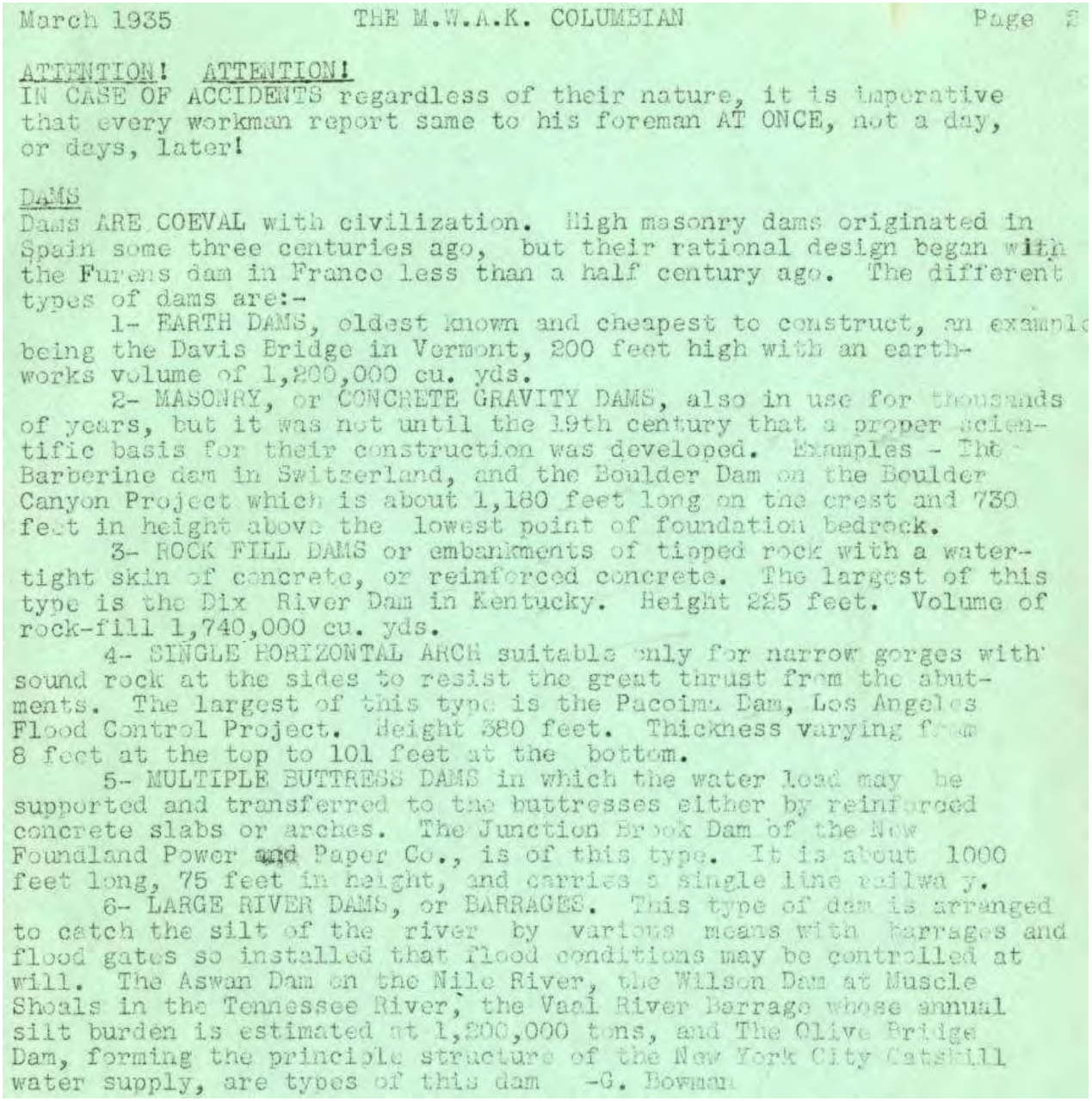
"We should see to it that the electricity which the great dam at Grand Coulee produces shall be delivered to all the people without profit, so that the Indians of future generations, as well as the white men, will find the change made here a great benefit to the people."

Six Indian chiefs of the Colville tribe experienced another innovation in their tribal customs when they used a loud speaker to address their people. Each chief spoke into the microphone, as did the interpreter who repeated their remarks, and all seemed to enjoy hearing their voices carried far through the pines among which their tepees stand for the last time.

Group B

B1

Columbian, Vol 1, No. 1. Credit: Eastern Washington University Digital Commons. http://dc.ewu.edu/mwak_columbian/



March 1935 THE M.W.A.K. COLUMBIAN Page 2

ATTENTION! ATTENTION!
IN CASE OF ACCIDENTS regardless of their nature, it is imperative that every workman report same to his foreman AT ONCE, not a day, or days, later!

DAMS
Dams ARE COEVAL with civilization. High masonry dams originated in Spain some three centuries ago, but their rational design began with the Furens dam in France less than a half century ago. The different types of dams are:-

1- EARTH DAMS, oldest known and cheapest to construct, an example being the Davis Bridge in Vermont, 200 feet high with an earth-works volume of 1,200,000 cu. yds.

2- MASONRY, or CONCRETE GRAVITY DAMS, also in use for thousands of years, but it was not until the 19th century that a proper scientific basis for their construction was developed. Examples - The Barberine dam in Switzerland, and the Boulder Dam on the Boulder Canyon Project which is about 1,180 feet long on the crest and 730 feet in height above the lowest point of foundation bedrock.

3- ROCK FILL DAMS or embankments of tioped rock with a water-tight skin of concrete, or reinforced concrete. The largest of this type is the Dix River Dam in Kentucky. Height 225 feet. Volume of rock-fill 1,740,000 cu. yds.

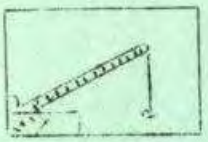
4- SINGLE HORIZONTAL ARCH suitable only for narrow gorges with sound rock at the sides to resist the great thrust from the abutments. The largest of this type is the Pacoima Dam, Los Angeles Flood Control Project. Height 380 feet. Thickness varying from 8 feet at the top to 101 feet at the bottom.

5- MULTIPLE BUTTRESS DAMS in which the water load may be supported and transferred to the buttresses either by reinforced concrete slabs or arches. The Junction Brook Dam of the New Foundland Power and Paper Co., is of this type. It is about 1000 feet long, 75 feet in height, and carries a single line railway.

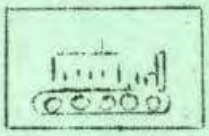
6- LARGE RIVER DAMS, or BARRAGES. This type of dam is arranged to catch the silt of the river by various means with barrages and flood gates so installed that flood conditions may be controlled at will. The Aswan Dam on the Nile River, the Wilson Dam at Muscle Shoals in the Tennessee River, the Vaal River Barrage whose annual silt burden is estimated at 1,200,000 tons, and The Olive Bridge Dam, forming the principle structure of the New York City Catskill water supply, are types of this dam -G. Bowman

Artifacts: Group B

Artifacts: Group B



AROUND THE DAM



MAYOR OF MASON CITY

Mr. E. L. Kier has the distinction of being our first Mayor. Most of the boys are still looking for the cigars that go with the usual political campaign.

THANKS

The COLUMBIAN acknowledges with thanks the kindness of Mr. Jack Hargrove's Department in the designing of our Title plate, and the faithful execution thereof.

KEEP CLEAR OF FALLING OBJECTS

GENERAL SAFETY COUNCIL

A General Safety Council has been formed consisting of one workman from every department combined with the Safety Division. This group will make an inspection tour of the entire project every two weeks. It is the intention of the M.W.A.K. Co., to stop carelessness, to prevent accidents and safeguard their workmen at all times.

SAND AND GRAVEL

Sand and gravel for use on the dam will be brought from a pit on the East Side about a mile and a half downstream.

HIGH DAM

If high dam is authorized by Congress it possibly would not affect the operations of M.W.A.K. for their contract is a unit contract and they would go ahead unit by unit.

LITTLE MISTAKES CAN MAKE BIG ACCIDENTS

RECORD FOR MOVING DIRT

A total of 42,000 cubic yards of overburden were hauled away over belt conveyor during a 21 hour day in February. Let's make it more! What do <u>you</u> say?

CEMENT SILOS

Eight silos, each with a capacity of 5,000 barrels of cement will be constructed before June.

These silos will be built on the East side near the trestle bridge.

The machinery for mixing various blends of cement will also be installed in the same locality.

WEAR SAFETY GOGGLES AND SAVE YOUR EYES.

BREAKFAST

An OMELET containing 150 dozen eggs accompanied by 4,500 "little-pigs" or 32 sides of bacon, or 30 hams; 3,000 hot cakes; 1000 doughnuts; 35 gallons of oatmeal and 75 gallons of coffee; besides fruit, milk, sugar, honey, syrup and other commodities seems a sizable meal but that is at present an average breakfast for the M.W.A.K. Co., employees.

On holidays about 1,100 pounds of turkey are used. Four heavy veal to an average meal, 750 chickens; 1200 lbs of lamb, and 900 to 1000 lbs of potatoes are other food items used in a day.

PAYROLL

This <u>small</u> item at Coulee Dam now runs $121,000.00 per week. M.W.A.K. has $100,000.00 and other contractors on the project $21,000.00.

MASON CITY

What three months ago was only sage brush waste, is now an ultra modern city, with efficient sewage and water system. The forty bed hospital has two fully equipped operating rooms, and is in every respect equal to any large city hospital. It is under the able supervision of Dr. Ross D. Wright. On the ground level of the hospital Dr. G. D. Beasley has opened for the public a modern dental office.

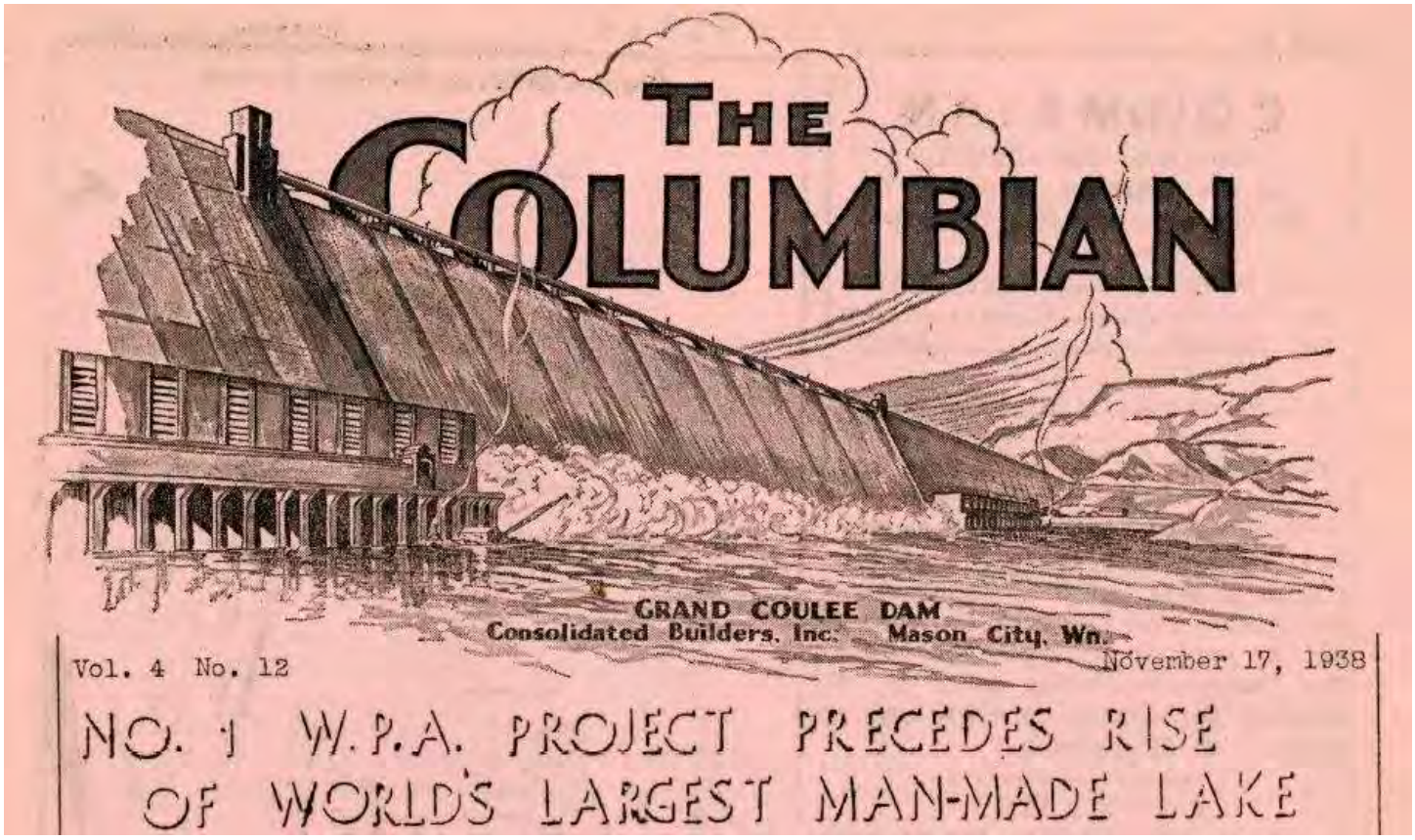
The store building of the Coulee Trading Company houses the general store, soda fountain, post-office, bank and general offices of the Trading Company; this unit is under the direction of Mr. W. E. Kier.

A theater, girl's dormitory, school, city hall, State Police Patrol and a hotel with a capacity of 30 rooms complete the city.

Domestic life in Mason City is on the up grade. There is now being constructed 64 new homes for families, which will range in rentals from $18.00 to $22.00 per month. These houses consist of living room, kitchen and bath. This brings the total of family houses up to 322. The M.W.A.K. Co., can well be proud of their great experiment - The Million Dollar Electric City!!!

B2

Columbian, Vol 4, No 12. Credit: Eastern Washington University Digital Commons. http://dc.ewu.edu/mwak_columbian/



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Artifacts: Group B

70,000 Acres to Be Cleared--Bridges, Highways, Railroad Moved

A 64-foot diesel-operated barge nearing completion on the east forebay above the dam would hardly attract attention if no important story were related to it, because it is only half the size of several barges that have been used in the construction of Grand Coulee dam.

But the 64-foot barge, for transportation of men and equipment, is the only visual tie-in for employees here to the largest WPA project in the nation--- one which will employ over 3000 men and entail an expenditure of $10,000,000. The project is the clearance of all lands within the limits of waters backed up by the dam, work which must keep ahead of the rising lake. Sundry considerations in connection with the artificially - formed lake or reservoir are interesting, from the point of view of the work itself and of the results of the rising water.

Already the backwater of the dam has climbed 30 feet and now reaches a point five miles upstream. Assuming that flood seasons, weather and other conditions are average and work schedules on the dam are met, by June of next year waters will have backed up to Keller, 20 miles away; one year later to Hunters, 65 miles away, and in June of 1941 the backwater will have swallowed the historic 30-foot Kettle falls and have reached Marcus, nearly 130 miles away.

Ultimately the lake surface will extend 151 miles to the Canadian line and will vary in width from an average of 4000 feet up to five miles for the main body of the lake, excluding backwater into tributaries (water will back 32 miles up the Spokane river). The lake will have a maximum depth of 375 feet and will encompass 84,000 acres (over 130 square miles) or 89,000 acres by including government-acquired lands inside flood lines or between elevation 1290 (lake surface) and 1310 (flood level). Lands bordering the present lines of the river to be acquired by the government and cleared by the WPA program total 70,300 acres, of which about 60 per cent have already been taken over, the Bureau of Reclamation explains. Of this right-of-way land 18,300 acres are tribal or allotted lands of the Colville Indians.

More specific duties for the Bureau of Reclamation, the Works Progress Administration or individuals directly concerned

(Continued on Page 3)

IF YOUR JOB IS IMPORTANT, SO IS SAFETY!!

COLUMBIAN

Published Semi-Monthly
in the Interest of Safety
by Consolidated Builders, Inc.

Todd Woodell.....Managing Editor
Ray Tribble.....Editor
Hal Babbitt.....Artist

F.W.Johnson..... Safety Engineer

Telephone..... Ext. 140

Each of the two 300 horsepower boilers recently installed at the mixing plants can heat water for the plants and for work on concrete at the rate of 8000 gallons per hour. The heaters can bring water to 200 degrees for mixing concrete and aggregate to 62 degrees.

F O U N D !!!!

One Roamer bicycle; now at main CBI guard office.

THREE BLOCK ROWS DEAD-- TEMPORARILY

Near the eastern side of the river channel blocks 52, 54 and 56 rea[d] at elevation 968 probably until som[e]

Special Offer to Reckless Drivers

Artifacts: Group B

time in March when concrete will be added before flood season to bring them up to 995.

Other blocks to be included in the same elevations are 32, 34, 36, 38 and 58.

First snow of season: Nov. 8, two inches.

"I am not much of a mathematician," said CARELESSNESS, "but I can add to your troubles; I can subtract from your earnings; I can multiply your ache and pain; I can divide your attention; I can take interest from your work, and discount your chances of safety."

---Kansas City Fair Lead

Mary had a little lamp,
She filled it with benzine;
She went to light her little lamp,
And hasn't since benzine.

Lowest temperatures: Nov. 10, 25 degrees; Nov. 11, 22 degrees.

THE DOG HAS HIS DAY, THE CAT ITS NIGHT, BUT THE ROADHOG HAS ALL DAY SUNDAY.

HOW DAMSITE COMMUNITIES VOTED ON INITIATIVE 130--

Precinct	For	Against
Mason City	106	101
Coulee Dam	124	64
Elmorton	54	107
Grand Coulee	181	408
Grand Coulee Center	235	425
Osborne	214	311
Total	914	1416

The candidate for the office of sheriff was defeated ignominiously. He got 55 votes out of a total of 3500, and the next day he walked down main street with two guns hanging from his belt.

"You weren't elected; you've got no right to carry guns," fellow citizens told him.

"Listen, folks," he said, "a man with no more friends than I've got in this country needs to carry guns."

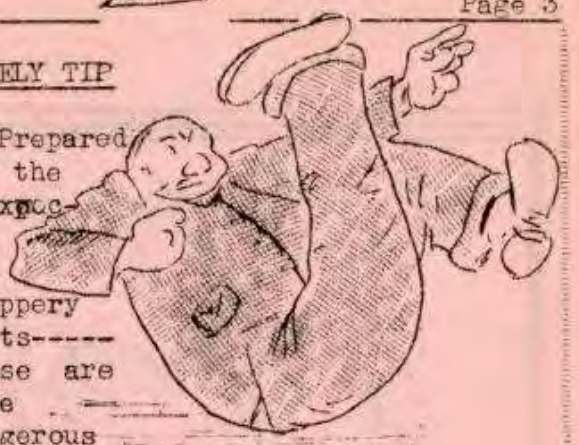
GRAND COULEE LAKE

(Continued from Page 1)

include the removal of such towns as Keller, Boyles, Lincoln, Kettle Falls, Inchelium and Marcus and eight other communities; the acquisition by the government of 6800 town lots and from 500 to 600 farms; the removal of many graves and the relocating to higher ground of 66 miles of railroad, 135 miles of highway and the building of 14 bridges.

On some of the vacated land in the path of the steadily rising lake, WPA

TIMELY TIP



Be Prepared for the Unexpected and Slippery Spots----- These are More Dangerous than the Obvious Frosted or Frozen Areas.

BE CAREFUL!

Artifacts: Group B

clearance crews are well along in the building of their first permanent camp near Lincoln, at the junction of the Spokane and Columbia rivers. Scheduled for completion in the early part of December, this will be one of a probable 10 camps to shelter WPA employees. The barge under construction here will be used for transportation of men and equipment upriver.

The end in view for the WPA is to remove from within limits of the Columbia river reservoir all objects, such as logs or trees, that might float down to catch on trashrack structures of the dam or accumulate on the surface of the lake. To facilitate this work, certain timber rights have been sold to individuals by the government.

These lands, several years hence, will be the bottom for the world's largest artificially-formed lake. The lake will contain 10 million acre-feet (enough water to cover 10 million acres one foot deep, an average 10-year water supply for the city of New York); and will have a shore line of over 500 miles.

The weight of the huge stretch of water in the lake will be so tremendous that some question arose as to seepage, but studies brought conviction that such losses would be negligible because the reservoir will occupy a river cut into indurated rock. --The annual evaporation has been estimated at 200,000 acre-feet, with most evaporation taking place between May and September inclusive, when more than enough water is supplied by the flood season for all requirements.-- The length of the reservoir and the height of the dam were determined by the elevation of the Canadian line, 151 miles away.

Future upstream elevations, until completion of the dam, can only be assumed for the backwater, depending upon concrete progress which in turn depends upon variable conditions of nature. With such assumptions in mind, engineers calculate that by the early part of December until some time in February the upstream elevation of the water at the damsite may be in the neighborhood of 975, approximately 40 feet higher than water on the downstream side. Elevation 975 is beyond any flood mark reached at the damsite (at highway bridge) since active work began here in 1934.

By March backwater may approximate elevation 995, higher than any flood mark on record here in more than 30 years; and by the following June, flood peak month, upstream readings may shove up to elevation 1025, beyond the mark for the highest known flood back in '94. Respective elevations for the flood season backwater of 1940 and 1941 may not be far from 1100 and 1200. In their calculations engineers assume an average flood season peak of 450,000 second-feet and also consider the amount of water which will pass through any or all of the three sets of 20 outlet tubes at 100-foot elevations through the dam.

An interesting note in hydrographic considerations is the seasonal ebb of the river which will occur year in and year out. A possible minimum elevation upstream, Jan. 1, 1940, would be 960 (140 feet below the possible maximum for the average flood season (Continued on Page 7)

Artifacts: Group B

GRAND COULEE LAKE

(Continued from Page 3)

flow for the June following--and lower than the upstream elevation now). The maximum drawdown behind the completed dam will be 80 feet (5,028,000 acre - feet).

First direct work on the upriver scene began five years ago when field parties of the Bureau of Reclamation established their headquarters at Colville and headed into retracement work. They located markers for section lines set more than 30 years previously, some of which had disappeared. Then they located permanent monuments for visible and workable use. This was followed by the taking of levels with the focal point of interest in elevations below 1310, flood level for the reservoir behind the completed dam. This showed what lands would be inundated and what markers planted by the geodetic survey would have to be raised beyond the 1310 level. Then engineers took topog or continuous levels for the charting of all elevations of lands to be flooded. After them came the appraisal board, which made offers and bought lands not already property of the government, so that owners would not be losers.

This was the first of the two major steps upriver which followed PWA construction work on the Grand Coulee dam. The next step is that now in the hands of clearance crews hired by the WPA in the state of Washington, with the assistance of the United States Bureau of Reclamation.

Sherlock Holmes: "Ah, Watson, I see you have on your winter underwear."

"Marvelous, Holmes, marvelous! How did you deduce that?"

"You forgot your pants."

HE MIGHT NOT HAVE BEEN HERE TO TELL IT

Walter Olson, CBI carpenter, escaped death only because he wore a hard hat.

A rock catapulting 160 feet downward jarred his head and neck and dented his hat. He required treatment at the hospital for a minor laceration of the head.

Had that rock struck him without a hard hat he'd have gone to a land beyond this, leaving a wife and several children who want and need him. His is only one of several recent cases of a hard hat paying dividends to the wearer and family.

The lesson it teaches: Use protective equipment whenever you can.

And a wider application: Accidents do occur, from stumbling, slipping, falling, from sharp objects, machinery, electricity, nails ---- Obviously this thing called "luck" cannot possibly be with you forever if you take chances of any kind.

Grand Coulee dam may provide the locale for another novel--

Reed Fulton, Seattle author and damsite visitor of last Saturday, plans to write a novel on Grand Coulee dam. His central figure, he explained, would be a young civil engineer.

A STAIR-WELL HANGOVER"

The jumbo with its leyner drills began work on No. 12 of the pump plant discharge tunnels on Nov. 2. This, the southernmost tunnel, was the only one not drilled back at least 36 feet.

Bill Smith, on his day off, went to Spokane to buy some goods. They were sent immediately and arrived before he did. When the boxes were delivered, Mrs. Smith uttered a scream, seized a hatchet and began frantically to open the largest one.

"What's wrong?" asked her neighbor.

Pale and faint, Mrs. Smith pointed to an inscription on the box. It read, "Bill inside."

Artifacts: Group B

B3

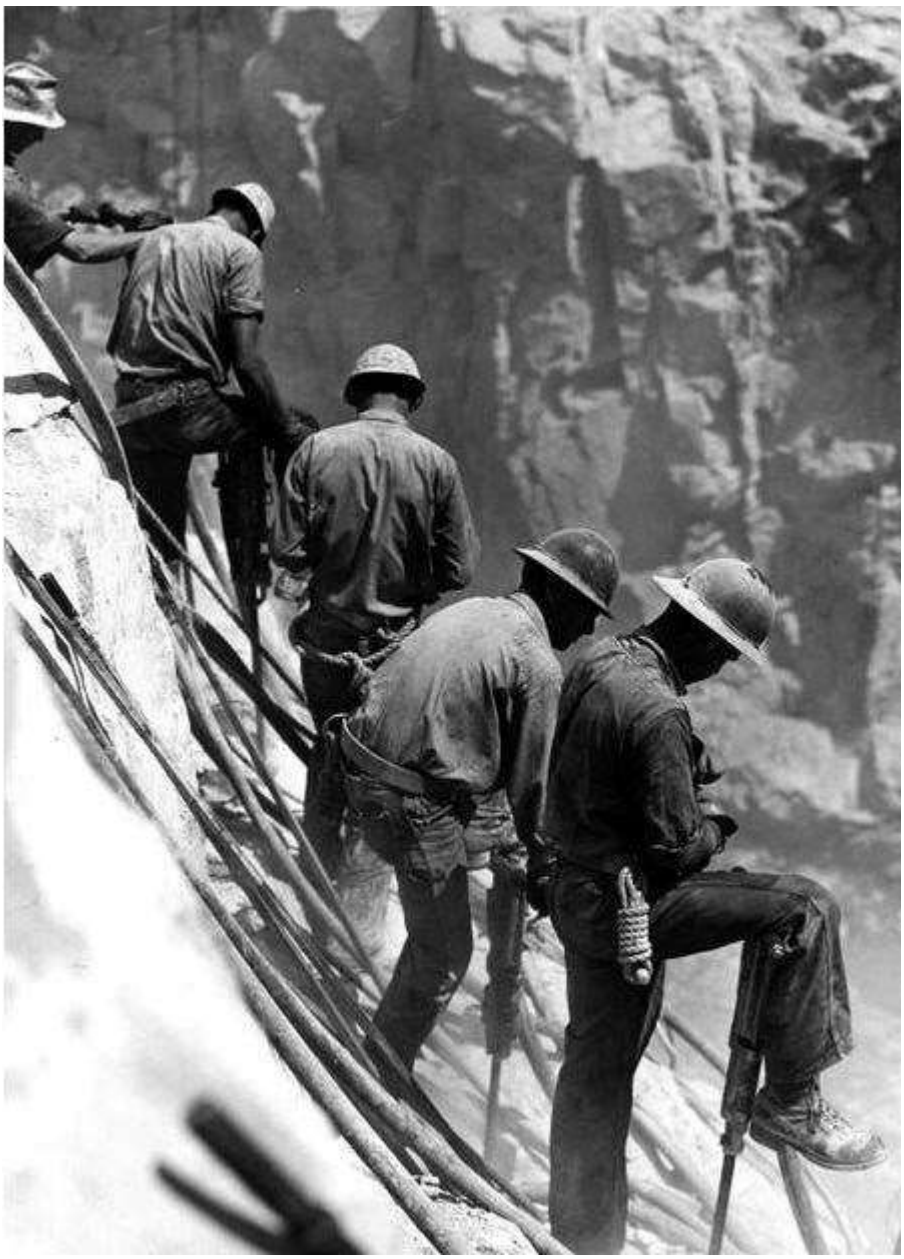
Credit: Barry K. Jones. The Spokesman-Review. Fred K. Jones, at the podium, President of the Spokane Chamber of Commerce in 1933 and 1934, presided over the opening of bids for the construction of the Grand Coulee Dam on Riverside Avenue in front of the Chamber of Commerce Building on June 18, 1934. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

B4

The Spokesman-Review. It was a wintry day in 1935, on December 6, with the ground covered with snow, when Governor Clarence D. Martin tripped the first bucket of concrete into Grand Coulee Dam. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

B5

The Spokesman-Review. Just making more holes in the rock for some of the million and a quarter pounds of dynamite being used to clear off a firm foundation for the Grand Coulee Dam, first unit under construction on the Columbia Basin Reclamation project. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/



B6

The Spokesman-Review. The construction of the Grand Coulee Dam from 1935 to 1940 created jobs, electricity and irrigation for the Inland Northwest region. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

B7

The Spokesman-Review. From his official car President Roosevelt inspected the Grand Coulee Dam in October of 1937, which when completed, will be the largest structure ever built by man. The Chief Executive is sitting on the far side in the back seat. With were U. S. Reclamation Engineer Frank

Banks, center, and Senator Louis Schuellenbach. http://www.spokesman.com/picturestories/historical-grand-coulee-dam/

B8

The Spokesman-Review. The construction of the Grand Coulee Dam from 1935 to 1940 created jobs, electricity and irrigation for the Inland Northwest region. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

B9

The Spokesman Review. Brawny men of steel who raise the skeleton of Grand Coulee Dam above the concrete work in 1939. The trick vests are for unexpected drops into the water.
http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

B10

Harry Truman's Address at the Dedication of the Grand Coulee Dam. May 11, 1950.
https://trumanlibrary.org/publicpapers/index.php?pid=749

THANK YOU, Senator Magnuson. I didn't know I was that good. I appreciate very much the cordial words of welcome from Governor Langlie. I am more than happy to see so many Governors and exGovernors and Members of the Congress here today.

This is a great occasion. And I thank all you good people for taking the trouble to come out to see me. I take it as a compliment. I take it that you are interested in the public welfare and that you are interested in national public works.

As you know, I am on my way up at this time to make things more plain and understandable with the people who run this country. This Government is a government of and by and for the people. The only two men who are elected by all the people are the President and the Vice President; and I will say to you that the Vice President has been doing his duty in going around all over the country explaining to the people what we are trying to do and why we are trying to do it.

I made it a point this time, when I agreed to come out here, to dedicate this great public project, to travel across the country and report to the people just as I report to Congress once a year.

This is a great occasion. We have come here to dedicate Grand Coulee Dam--one of the mightiest structures man has ever built.

I stood over there a while ago and listened to the statistics of it. And it is almost unbelievable-it is almost unbelievable.

With this dam, man's ingenuity and perseverance have dramatically transformed the energy of a mighty river into a great new source of national strength.

At the foot of this dam is the world's largest power plant. It is already generating more low-cost electric energy than any other plant in the world. And it isn't through yet.

Behind this dam is a reservoir which extends 150 miles to the Canadian border. The water in that reservoir not only generates electricity. It helps to prevent floods. And soon, it will pour forth to irrigate thousands of acres of land which are now desert.

Grand Coulee Dam--with its tremendous power and irrigation benefits--is an instrument of our democracy, forged to contribute to a better life for ourselves and our children.

This dam was not built by accident. It is here because men with vision and determination fought for its construction. Men in the State of Washington--many of whom are here today--saw what this dam could mean to the Northwest and to the Nation. President Franklin Roosevelt, whose name honors the reservoir behind the dam, transformed their vision into reality.

This dam had to be fought for. It had to be built over furious opposition. You remember what its opponents said. One Congressman said: "Up in the Grand Coulee country there is no one to sell power to except coyotes and jack rabbits, and there never will be." I hope he is here today-I sure hope he is here today. The other opponents of Grand Coulee said it would be a "white elephant." They said it would be of no more value than the Pyramids.

We can laugh today at such foolishness. Right now, the generators at this dam are being run at

overcapacity, straining to meet the soaring demands for power. All about us in the Pacific Northwest--in this land that was called the land of "coyotes and jack rabbits"--new jobs, new industries, new opportunities have been created.

Today, those who opposed Grand Coulee are trying to cover their tracks. They are trying to jump on the bandwagon.

But they can't erase the record. They did not understand then, and they do not understand now, the progressive steps that are necessary to keep our democracy strong, and confident, and moving forward.

The fundamental error of those who opposed Grand Coulee was their failure to understand that the United States is a growing, dynamic country. They saw no need to plan and work for a greater future. The way things were, was good enough for them.

But the American people have never been satisfied with the way things have been in the past. Our whole history is a record of eager striving to make things better.

One hundred years ago, out here in the Northwest, men and women were opening up new frontiers along the Oregon Trail. They struggled and fought to create farms and cities out of the wilderness.

The opponents of progress would have you believe that the frontiers are closed. They think we should now relax and struggle no more. Well, my friends, these are men of little faith.

I say to you that the American spirit which blazed the Oregon Trail is not dead. Here in the Northwest you are still pushing back frontiers.

There is no better example of that than this great dam. Less than 15 years ago, the energy of the Columbia River poured unused into the Pacific Ocean. It flowed past cities which were hampered by lack of power, and past farmlands which had been abandoned for lack of water.

In those days the people of the Northwest made their living primarily from timber and farming. They exported raw materials and imported finished goods. They lacked the power needed to process and manufacture their own raw materials.

Yet, through the heart of their rich country flowed the greatest potential source of hydroelectric power in the Nation--the Columbia River system. This area, tremendously rich in natural resources, was stifled, its future was limited, because it was unable to tap its own native source of power.

Today we are well on the way to harnessing that power. The imagination and vigor of free men have put the Columbia River to work.

The results are clear. The Northwest is no longer a backward colony. It is now one of the fastestgrowing parts of the country. In the past 10 years, the population of Washington and Oregon has increased more than 30 percent.

Jobs--permanent, productive jobs--have been made available in new industries that have been established to use the Columbia's low-cost power. In the past 12 years, 11 new plants alone have paid more than $135 million in wages and nearly $50 million in taxes.

Power from the Columbia has not only served industry. It has made life easier in homes and on farms. The use of electricity on homes and farms in the State of Washington is more than twice the national average.

When Grand Coulee was being built, some thought it would hurt other parts of the country by drawing plants and industries from them. Of course, that has not happened.

The plants that have sprung up here were not moved from other States. They are new enterprises, adding to the productive capacity of the whole country.

The growing payrolls of the Northwest have made bigger markets for producers in every State. The products turned out here are needed elsewhere. Nearly half the aluminum of the United States is being produced along the banks of the Columbia. This aluminum is used everywhere in the country. A single rolling mill 90 miles from here--at Spokane--is providing basic materials for 600 factories, from Boston to San Diego.

And when we were trying to get those aluminum plants constructed, every effort was made to prevent us from getting it done. I was the chairman of the committee in the Senate which was working with all it possibly could to get more aluminum to win the war, and we were informed by the so-called aluminum experts that we were making too much aluminum then and we didn't need any more, we were turning out 300 million pounds a year now. Now we are turning out 3,800 million pounds, and we are short--and that's the reason we want to look forward and not backward or standing still.

What has happened here is what happens in the case of underdeveloped areas everywhere--in our country and the world. Sound, productive investment always makes bigger markets and more jobs.

Not only is Grand Coulee contributing to the growth and strength of the Nation. It is also a paying proposition from the standpoint of the taxpayers.

When the dam was being built, it was attacked as a colossal waste of public funds. Well, that was just a colossal misstatement. The investment in the power facilities of Grand Coulee is being repaid right now, and with interest. And in a broader sense, the entire investment has already been repaid several times over in the increased national wealth that it has brought about.

We are not stopping our work at this point. The Grand Coulee project itself is not finished. More power generators are being added. And over the next several years we shall begin to put water on the land below here. Thousands of family-size farms will replace the present sagebrush.

Elsewhere in the Northwest, work on other dams is proceeding. Hungry Horse Dam in Montana, Chief Joseph Dam just down the Columbia from here, McNary Dam on the Oregon-Washington border, are all under construction. These and other dams are part of the great work that must be done to produce power, promote inland navigation, reclaim land for cultivation, and prevent destructive floods.

But even more than this is involved in the development of the resources of this area for solid growth. Forests and grasslands should be placed on a permanent, sustained yield basis. Soil should be conserved and improved. Fisheries should be protected and enhanced. Mineral resources should be opened up and developed.

All this work can and should go forward together. I can't emphasize that too strongly. Resources that occur together in nature must be developed and improved together.

This is the goal we are working toward here in the Northwest. It is the same goal for which we are working in other parts of the country.

In the Central Valley of California, we are developing great power resources. With the help of that power, we are redirecting the available water of the Sacramento and San Joaquin Rivers to bring about the most productive agricultural use.

In the Colorado River Basin we are working to achieve the most sensible uses of the very limited water supply, and to expand the power supply throughout the basin.

Down in the Texas, Oklahoma, and Arkansas area, a number of dams are producing power, and others are being built. In that area also, as in the lower Mississippi Valley, soil conservation, flood control, drainage, and navigation work is going forward.

In the Southeastern States, we are moving ahead with the construction of flood control and power dams on the Savannah River, the Roanoke, and

other streams. In that area, also, it is necessary to shift land uses to conservation farming and to restore the pine forests.

The Northeastern part of the country has great possibilities for the development of additional hydroelectric resources. Power from the redevelopment of Niagara Falls and from the St. Lawrence Seaway project will be nearly as cheap as the power out here in the Northwest. And it is just as badly needed. We should construct these projects as soon as possible. And there are also power sites on the rivers of New England which should be developed soon.

In the Ohio Valley, and around the Great Lakes, the principal work that is being done is on flood control, navigation, and soil conservation. There is also much need for reforestation.

The Missouri River basin is so large that it requires consideration of all aspects of resource development. From the high plains in the West to the humid areas of the lower Missouri, this basin presents perhaps the most complex problem of all. The work that is necessary includes extensive development of flood control, irrigation, and power works, as well as increased conservation efforts on crop and rangeland.

I have left until last the mention of the Tennessee Valley. In that valley we have made more progress than in any other. There the idea of coordinated planning for all resources was first worked out and most completely applied. The Tennessee Valley Authority has been outstandingly successful in its area.

We have worked out a set of recommendations for a Columbia Valley Administration which builds on that successful experience but recognizes the different circumstances out here. Take one simple example. In this area, a farmer's right to the use of water is vital to his livelihood, and is protected by State laws. This is the way it should be, and the Columbia Valley Administration I have recommended would have no power to tamper with anyone's water rights.

The private power lobby, and other people who have selfish interests to maintain, say the Columbia Valley Administration would be a "superstate." Of course, that is not true. Ask the people in the Tennessee Valley. Ask the mayors of the cities and the Governors of the States in that valley whether the State and local governments are stronger or weaker as a result of the progress the TVA has brought. Ask them whether they have more or less influence on what happens in their valley with an agency that has its headquarters right there where they can deal with it at first hand.

They will tell you that the TVA is the greatest thing that ever happened in their part of the country.

I believe the Columbia Valley Administration is a necessary step in the sensible, democratic development of the resources of the Northwest. I believe the people in this area think so, too. And when they make their voices heard, I am sure the Columbia Valley Administration will be established.

We have embarked, all over the country, on the task of fully developing our resources for all the people. This is a job that will take many years to complete. It will require sound and careful planning.

But it is a work that fires the imagination. We are undertaking to use the resources we have so that they will grow, not diminish, over the years. We intend that our children, and their children, shall live in a more productive and a more beautiful land than we do.

We shall not get the job done, however, by sitting still. We must continue to take positive action. And we shall have to continue to overcome the opposition of those who do not understand the greatness of our goal, and who fear some impairment of their selfish interests.

We will meet opposition from private power groups. Many of them--there are, of course, honorable exceptions--many of them do not want the energy of our rivers put to use as power and sold to the people at cost.

We have already met this opposition in building Federal projects. And the people have met the same opposition in localities where they wanted to establish local public power agencies, such as public utility districts and REA cooperatives.

This opposition of the private power companies is wrong. It would deny the people the benefits of low-cost power they themselves have brought about through public investment.

I am sure we will continue to overcome this opposition, just as we already have been doing and as we did in building Grand Coulee--just as the people already have in Nebraska, in large parts of Washington and Oregon, and other sections of the country, where they decided to distribute power through public bodies and cooperatives.

The benefits of public investment must be passed on to the people whose tax money is being used. Those benefits must not be diverted for private profit. We will continue to fight--and win--for that principle.

No doubt we shall also have to fight those who think expenditures for resource development are a waste of public funds. They should have disqualified themselves by now. Their fantastic claims about Grand Coulee prove that they can't tell the difference between a waste of funds and a sensible investment.

Finally, we still have to fight those who imagine that every progressive action is another step down that famous "last mile to socialism." The facts continue to make that claim ridiculous. They called Bonneville and Grand Coulee steps to socialism. Now, I ask you--is private enterprise in the Pacific Northwest stronger or weaker as a result of these dams? Have you lost or gained industries and jobs? Do the people out here have less or more freedom? The answers are perfectly obvious.

It is clear that we must go ahead in every part of the country with our resource development work. And proceed we shall. We shall not be stopped by those who are timid or shortsighted or selfish. We shall not be stopped by discredited claims and tattered slogans.

Our whole future depends on the wisdom and the maturity we bring to bear on our national problems. We are engaged in a great struggle to achieve peace in a world beset with danger and threatened by Communist imperialism. We shall be engaged in the struggle for peace for years to come.

If we are to be successful, we must display the adventurous spirit, the firm courage of our pioneering fathers. We shall not succeed if we follow the advice of those who look backward, sighing for the fancied security of an earlier time. We must have strong minds, ready to accept the facts as they are, and to make bold, new plans based on those facts.

We shall need the same kind of wisdom that saw Grand Coulee Dam when there was nothing there but desert.

We shall need the same kind of steady perseverance that built this mighty dam over the opposition of men with narrow minds and faint hearts.

With that kind of vision and determination we can build a world in which men can be free under laws of their own making and can live at peace with one another.

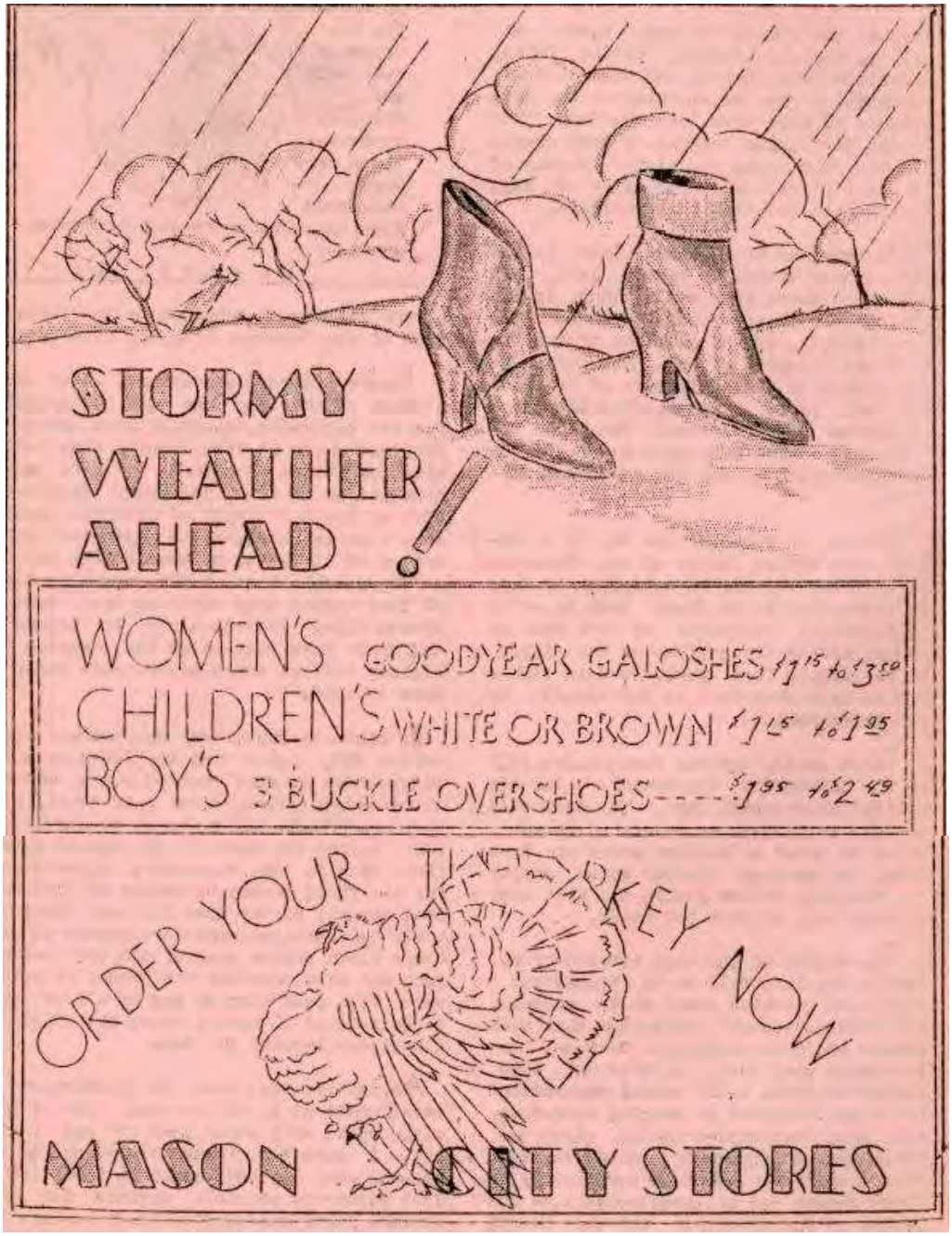
NOTE: The President spoke at 11:15 a.m. at Mead Circle in Coulee City, Wash., after an introduction by Senator Warren G. Magnuson of Washington. In the course of his remarks he referred to Governor Arthur B. Langlie of Washington.

Artifacts: Group B

Group C

C1

Columbian, Vol 4, No 12. Credit: Eastern Washington University Digital Commons. http://dc.ewu.edu/mwak_columbian/



Artifacts: Group C

C2

Spokane Chronicle, October 27, 1934.
http://kaga.wsulibs.wsu.edu/cdm4/results.php?CISOOP1=any&CISOFIELD1=CISOSEARCHALL&CISOROOT=/clipping&CISOBOX1=sh87-239

MAY GIVE MEALS FEMININE TOUCH AT MASON CAMP

COULEE DAM, Oct. 26.—(Special.)—Waitresses instead of men "flunkies" may be used in the messhall of the MWAK.

This was the announcement of officials of the general contractors at the dam site yesterday.

Unheard of in western construction circles, the innovation of using girls to serve food to the hard-working laborers engaged on projects of the Grand Coulee dam startled the average workmen here, when told about it.. Never before on the larger projects in connection with the building of the northwest has such a plan been tried.

Will Need Many Girls.

Company officials said that if the arrangement is agreed upon, a great number of girls would be required to take care of the 1000 men who are to be fed in the giant eating room.

Several reasons were given by authorities in favor of the use of girls. The presence of capable, high-type waitresses is expected to have a wholesome effect on the camp as a whole. Girls, it was pointed out, would keep the messhall considerably cleaner than men.

As construction men have been known to be free with "cusswords" at mealtime, they would find it considerable harder to explode their feelings in the presence of ladies, one official pointed out.

Plan Rigid Discipline.

The use of girl servants in a construction camp of large size is the coming thing, it was explained. At Norris dam the entire messhall and all work connected therewith is handled by female help.

Every move made here in connection with the building of the dam by the MWAK has been such as to point to rigid discipline in regard to the actions of men on and off the job. Careful supervision of the new setup would be required if the company finally agrees upon the plan.

Looming up in immense size on the east-shore plateau, the giant messhall was rapidly nearing completion and meals are expected to be served about Wednesday. Many men now fed in the Addison-Miller camp will be transferred.

Artifacts: Group C

C3

Spokane Chronicle, March 16, 1935.
http://kaga.wsulibs.wsu.edu/cdm4/results.php?CISOOP1=any&CISOFIELD1=CISOSEARCHALL&CISOROOT=/clipping&CISOBOX1=sh87-171

Mason City Plans Landscape Contest

COULEE DAM, March 16.—(Special.)—With spring coming on and all, Mason City is getting ready to do a little landscaping on its own.

In a bulletin sent to all residents of the contractor's camp, notification was made of a lawn and beautification contest, part of an extensive campaign to line the avenues in the family house section with shade trees. This will be done by the company and the company men will water these trees for 30 days.

To stimulate interest in planting early, $100 in cash prizes will be offered by the MWAK to be paid to those residents of a family house who, in the opinion of the judges, have done the most to beautify his property by planting flower seeds and shrubs or in other ways making his grounds more attractive by July 1.

A similar set of prizes are to be offered to those residents of family houses who under existing circumstances have done most to beautify their property by the addition of fences, rock gardens, trelises, shrubbery and other landscaping.

Artifacts: Group C

C4

Spokane Press, October 02, 1934,
http://kaga.wsulibs.wsu.edu/cdm4/results.php?CISOOP1=any&CISOFIELD1=CISOSEARCHALL&CISOROOT=/clipping&CISOBOX1=sh87-229

HOMES TO BE ALL-ELECTRIC

The 360 residence and other buildings to be erected at Mason City, the Mason-Walsh - Atkinson - Kier company's contractors' town at the Grand Coulee dam site, will all be without chimneys.

All of the buildings will be heated by electricity, Juan Hargrove, architect for the company, said Tuesday.

Hargrove first announced that Mason City would be an electric city at Ephrata Friday.

He said Tuesday that it would require 2800 electric heaters of the forced convection type to heat the 360 buildings. The plans call for heaters of from one and one-half kilowatts to six kilowatts in each room of each building.

COST WILL NOT BE HIGH

Hargrove said that the heaters would cost about $5 per kilowatt, and that the cost of installing and equipping a five-room house with electric heaters would be approximately $160, as against $250 for a furnace.

He said that the electricity would be furnished to the MWAK company by the Washington Water Power company at a low figure, and that the cost of operation of the electric heaters would be very much lower than any other means of heating the new city. A five-room house can be heated for $60 a year, Hargrove said.

The electric heating equipment planned for Mason City houses contemplates comfortably heating the homes when the temperature is 29 below zero, the lowest recorded temperature in the vicinity of Grand Coulee during the last 22 years.

FORESEES SPOKANE ALL-ELECTRIC

Hargrove said that the electric heating of the town of Mason City would be carefully watched by government engineers during the first year. He said that he believed that Spokane would be heated by electricity after the completion of the Grand Coulee dam.

Hargrove estimates that it would cost $2,500,000 a year to heat Spokane by electricity.

Mason City houses will be completly equipped with other electric devices, refrigerators, cooking stoves, water heaters and so forth, Hargrove said.

NO DANGER OF FIRE OR SHOCK

The conventional type heater planned for heating Mason City is absolutely safe, Hargrove said. There is no danger of fire, shock or burning from them.

Garbage and waste paper at Mason City, which cannot be burned in the kitchen stoves and furnaces, will be collected and disposed of in a central incinerator for the purpose, Hargrove said.

Contracts for the 2800 electric heaters have not yet been awarded.

C5

Spokane Chronicle, December 8, 1934, http://www.bigbendrailroadhistory.com/2016/08/queen-of-

columbia-is-crowned.html

Lou Turner of Harrington is "Queen of the Columbia."

The choice was made late this afternoon by a committee of judges from Spokane, after beautiful girls from more than a score of Columbia basin towns had paraded across the stage of he new Roosevelt theater in Grand Coulee.

Governor Martin presented Miss Turner with a wide blue ribbon bearing the legend, "Queen of the Columbia."

The "princess of honor" named by the judges is Miss Mildred Smith of Wilbur.

The "maid of honor" is Miss Lorraine Morgan of Grand Coulee Center.

Braving heavy fog banks which made driving difficult, automobiles by the hundreds converged on the Coulee dam site towns early this morning to witness today's golden spike driving ceremony; the selection and crowning of the "Queen of the Columbia," and other festivities.

Before noon, parking space was at a premium along the main streets, and early afternoon saw still more cars pouring in in seemingly endless stream.

From All Points.

It was a gala day for the entire region. Visitors from all sections of the state, from Seattle and the Coast and from Spokane, Yakima and the southwestern counties, joined in the idea of having a good time and doing honor to the two dozen princesses selected as representing various towns and communities of the districts surrounding the dam site. Senator C. C. Dill of Spokane was among the early arrivals, and many other dignitaries also were on hand early.

The princesses gathered in Grand Coulee and Grand Coulee Center, and at 11 o'clock were escorted by American legion men in a caravan to Mason City, America's first all-electric city. There they were entertained at luncheon by officials of the MWAK company in the huge dining hall that seats 2200.

t 1:30 they were escorted back to Grand Coulee Center, where the judging and other ceremonies took place.

From towns throughout the Columbia basin country came the beautiful girls—each a princess in her own right—to take part in a pageant of pulchritude, principal feature in the golden spike ceremony that marks completion of the United States Construction railway to the dam site.

Another page in the history of the vast Grand coulee project was turned as the "Queen of the Columbia," Senator C. C. Dill, Governor Martin and others drove the last spike in the ribbon of steel leading from the Northern Pacific main line at Odair to the dam.

C6

Spokane Chronicle, February 16, 1935,
http://kaga.wsulibs.wsu.edu/cdm4/results.php?CISOOP1=any&CISOFIELD1=CISOSEARCHALL&CISOROOT=/clipping&CISOBOX1=sh94-93

Place For Women Is Also Arranged

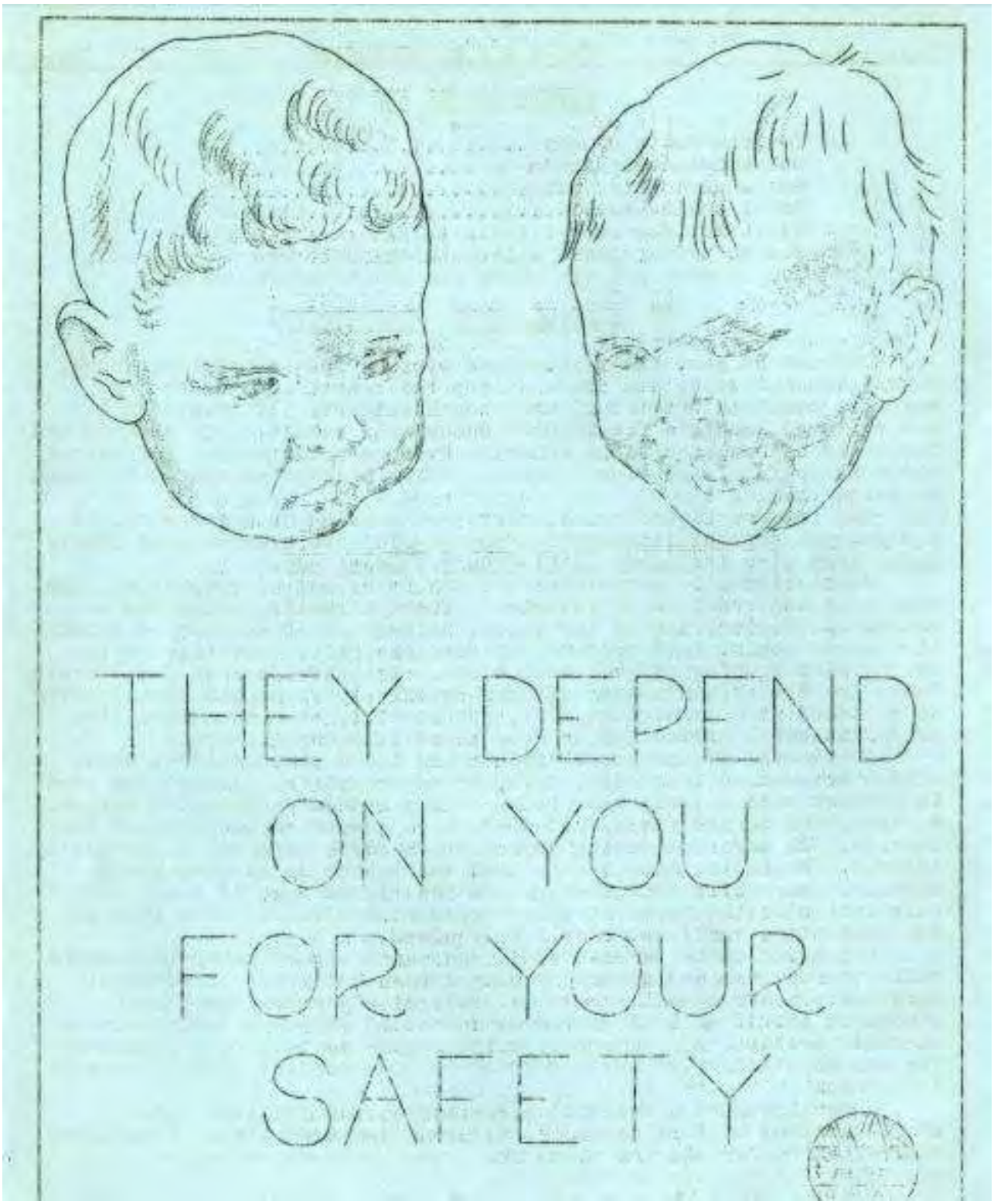
GRAND COULEE DAM, Feb. 16.—If the men need a big recreation hall at the dam site, certainly the women are entitled to at least a little one.

With this in mind the MWAK ias opened up a women's recreaion room in the main recreation uilding in Mason City. The room s equipped with booths and a iano and is proving to be a very opular place.

Artifacts: Group C

C7

Columbian, Vol 1, No 5. Credit. Eastern Washington University Digital Commons. http://dc.ewu.edu/mwak_columbian/



Artifacts: Group C

Artifacts: Group C

Group D

D1

Columbia Basin Irrigation League, "Food and population: a problem for immediate consideration in the United States of America,"
http://digitalcollections.lib.washington.edu/cdm/compoundobject/collection/grandcoulee/id/665/rec/7

Food and Population — A Problem

THE United States is soon to face the problem of supplying foodstuffs for an overwhelming population. How that problem shall be met in order to sustain the American standard of living, has in recent months become a subject of profound study.

Statesmen in the American Congress are giving the matter serious study as it relates to agriculture and the apparent necessity for not only making every available acre of present day farms produce to the limit, but for reclaiming waste and desert lands against the day (only 72 years distant) when the United States will have attained a population of more than 184,000,000 according to the Pearl-Reed theory, or 322,000,000 if the annual increase of population is maintained at 1.4 percent.

Scientists are at work to produce synthetic foods.

Discussing the problem in the *Scientific American* for October, 1928, Sir George H. Knibbs, Fellow of the Royal Anthropological Society, and president of the Australasian Association for the Advancement of Science, presented a convincing paper.

"Anyone who has an interest in the future of his nation *for even the existing century*, is called upon * * * to recognize that we are faced with a problem of supreme difficulty, a problem to which publicists and economists may well give their profound attention," wrote Sir George in reaching his conclusions.

"In the United States," he continued, "from 1790 to 1860 the population increased at the uniform rate of about 3 per cent per annum, but since then it has fallen off considerably." He points out that the rate of increase has fallen between the years 1910 and 1920 to 1.4 percent per annum, but even at that rate the food problem becomes alarmingly acute when the area of agricultural land in the United States and the world, as well as possible food animals, are considered in relation to population of America and the globe. Tabulating his estimates on a 1.4 percent growth, Sir George finds the population of the United States will be as shown in the middle column below. The right hand column gives the lowest possible increase used by any scientist:

FUTURE POPULATION OF THE UNITED STATES

Year	*At 1.4 Percent*	*At Lowest Estimate*
1930	121,500,000	121,400,000
1940	139,700,000	136,300,000
1950	160,500,000	148,700,000
1960	184,500,000	159,200,000
1970	212,100,000	167,900,000
1980	243,700,000	174,900,000
1990	280,100,000	180,400,000
2000	322,000,000	184,700,000

It is agreed between Sir George and other noted scientists that the United States cannot ever carry, at the existing standard of living in this country, more than 197,274,000 people.

The United States will reach that limit in 30 years, according to one of the above methods for computing growth of population; certainly in 72 years if the other method is used. One result is inevitable.

The babe born into your home this year will live to see it come about.

FUTURE POPULATION OF THE WORLD

Through the *Scientific American*, Sir George points out that if the world makes an increase of population at the rate of 1 per cent the total number of inhabitants of the globe in the years named will be:

Year	*Population*
1928	1,950 millions
1930	1,989 millions
1940	2,197 millions
1950	2,427 millions
1960	2,681 millions
1970	2,962 millions
1980	3,271 millions
1990	3,614 millions
2000	3,992 millions
2050	6,565 millions
2100	10,797 millions

Between 1928 and 1960 (32 years) the population of the world will have increased by the astounding number of 731,000,000 people—all demanding food.

With a minimum population of 184,700,000 in the year 2000 the United States will have approximately 106.38 persons per square mile of territory and will have reached, or exceeded, its limit of maintenance at the present standard of living.

If the United States, according to Sir George, should increase in population up to 1980 as it did between the years 1910 and 1920, this country would have to double the production of its lands for the year 1930 in order to feed the people as well as it is doing today. He takes into consideration the progress that science is making with synthetic foods, as well as the present day demands of such countries as Germany and Japan, where insufficient food stuffs are grown for the use of the population, and says "the outlook is disquieting for the future, if it is hoped to maintain the present standards of living."

Future migrations of peoples from densely populated countries are not looked upon by Sir George as likely to be helpful. Differences in color, habits and the repugnance to intermixture of races, all have weight against such migrations, as well as the physical difficulties that are to be overcome in making a new country inhabitable to the migrants from an old and well established country.

THE REMEDY IN THE UNITED STATES

Land utilization to the limit of our agricultural areas for the production of foodstuffs is the remedy that the United States Congress can apply as a wise and statesmanlike precuation against the demands of the people in the next few decades.

Congressional action is being urged for the purpose of providing American farmers with a market that will make it profitable for them to farm the twenty million acres of land which have gone out of production since 1920.

The next action, and of equal importance, is the reclamation by irrigation of every acre of desert land for which water is available in the West, and the drainage of swamp lands which may be redeemed to agriculture in the South.

In the West, the outstanding plan for expanding agriculture through irrigation is the Columbia Basin Irrigation Project in the State of Washington, *which, after Congress adopts it as a federal project, will require from 25 to 30 years to construct and settle with farmers*—by which time the United States will be struggling with the problem of feeding at least 157,000,000 people. Foodstuffs in large quantities cannot begin to go out from the Columbia Basin inside of 30 years. By that time 731,000,000 more people will have been added to the world as a whole, and other countries will be begging the United States to send them shiploads of such foodstuffs as America can spare.

A recent survey of future markets, based on population in the United States, and made by the Department of Conservation and Development of the State of Washington, indicates that the Pacific Coast will have a population of more than 15,000,000 in the year 1960. That region will alone consume the products of the Columbia Basin project.

Therefore Columbia Basin does not offer a menace to present day farmers or their future market.

For 10 years the Columbia Basin Project has been studied by eminent engineers. It is pronounced feasible of construction, and if no other reason existed than the demands of our future population for foodstuffs it would be economically sound. Government, state and Columbia Basin Irrigation League have expended $614,000.00 to prove the project plan sound.

WHAT IT IS

The Columbia Basin Irrigation Project embraces 1,883,000 acres of arable desert land in South Central Washington.

Less than one-third of the wasting water of the upper Columbia River will irrigate it.

Thirty years will be required to construct and people it with farmers.

When completed it will provide a market annually for $180,000,000 of Eastern manufacturers.

The project has been declared feasible by four sets of engineers, and has been endorsed by numerous conservative organizations, among them the Investment Bankers' Association of America.

PRESIDENT COOLIDGE said: "The Columbia Basin Project is not far distant."

SECRETARY OF THE INTERIOR HUBERT WORK: "Just so sure as time passes the Columbia Basin Project will be built."

SPEAKER NICHOLAS LONGWORTH: "It seems to me that Congress can well afford to provide credit that will enable that land to be flooded with water."

SECRETARY OF COMMERCE HERBERT HOOVER: "The initiation and construction of the Columbia Basin Project is inevitable. It should not be delayed until we are overwhelmed with population."

COMMISSIONER OF RECLAMATION ELWOOD MEAD: "We * * * believe that its economic features are sound and feasible."

Issued by the Columbia Basin Irrigation League, Roy R. Gill, Chairman, Spokane, Washington

Artifacts: Group D

D2

Excerpted from Charles Cone, "Irrigation and You," Columbia Basin Commission, 1947, http://digitalcollections.lib.washington.edu/cdm/search/collection/grandcoulee/field/order/searchterm/dam213/mode/exact

Irrigation and You

By

CHARLES E. CONE

Picture Below of Grand Coulee Dam

"Where Rolls the Oregon" Photo, Bureau of Reclamation

A picture of Grand Coulee Dam, which generates the power to lift the water from the reservoir 280 feet into the irrigation system of the Columbia Basin project.

Artifacts: Group D

Acre Foot

The acre foot is the unit of water storage. An acre foot is defined as the water required to cover one acre one foot deep. The unit contains 43,560 cubic feet of water. One second foot of water running twenty-four hours supplies 1.9835 acre feet of water. Water users usually figure that one cubic foot per second furnishes two acre feet per day. The fractional error is disregarded. The total annual flow of streams is also measured in acre feet. Farmers pay for water delivery by the acre foot.

Miner's Inch and Second Foot

By law in some states 50 miner's inches equal one second foot. Other states by law declare that 40 miner's inches are equivalent to one second foot. Except in pioneer irrigation districts the use of the term, "miner's inch" has been abandoned.

Water Master

A person appointed by the state reclamation officer to divide the waters of a stream is called a "water master." Irrigation districts employ water masters or ditch riders to apportion the water to each farmer from the canals.

Where Irrigation Is Needed

In 1842, when the Webster-Ashburton Treaty was under discussion in the United States Senate, a Senator McDuffie delivered the following poor opinion about the West.

"What is the character of this country? Why, as I understand it, that seven hundred miles this side of the Rocky Mountains is uninhabitable, where rain scarcely ever falls—a barren and sandy soil—mountains totally impassable except in certain parts, where there were gaps or depressions, to be reached only by going some hundreds of miles out of the direct course. Well now, what are we giong to do in a case like this? How are we going to apply steam? Have you made anything like an estimate of the cost of a railroad running from here to the mouth of the Columbia? Why, the wealth of the Indies would be insufficient. You would have to tunnel through mountains five or six hundred miles in extent. * * * Of what use will this be for agricultural purposes? I would not, for that purpose, give a pinch of snuff for the whole territory. I wish it was an impassable barrier to secure us against the intrusion of others. * * * If there was an embankment of even five feet to be removed, I would not consent to expend five dollars to remove that embankment to enable our population to go there. I thank God for his mercy in placing the Rocky Mountains there."

Daniel Webster, who negotiated the Webster-Ashburton Treaty on behalf of the United States, had a low opinion of the Oregon Country. He said in part:

"Oregon is a barren, worthless country, fit only for wild beasts and wild men. * * * Oregon is shut off by impassable mountains and a great desert which make a wagon road impassable. * * * What do we want with that country of desert wastes, of mountains that are covered to their bases with eternal snow? What do we want with that cheerless Pacific Coast with not a harbor in it? Mr. Chairman, I will not give one dollar to bring the Pacific Coast one mile nearer Washington than it is today."

Webster and McDuffie had not heard of irrigation. They did not know that within a century after they made their speeches that the West would have 20,500,000 acres of irrigated land, with plans being made to irrigate an additional 20,000,000 acres. The limit of irrigation is water supply, not land. There will always be arid western lands that need water. As population presses food supply, engineers will find ways and means to pump water to higher elevations to irrigate lands situated several hundred feet above water sources. Improvement of irrigation practice may conserve water for additional acreage.

Extent of Irrigation In the United States

West of 97th Meridian seventeen states have irrigated lands with acreages and investments reported by the 1940 census as follows:

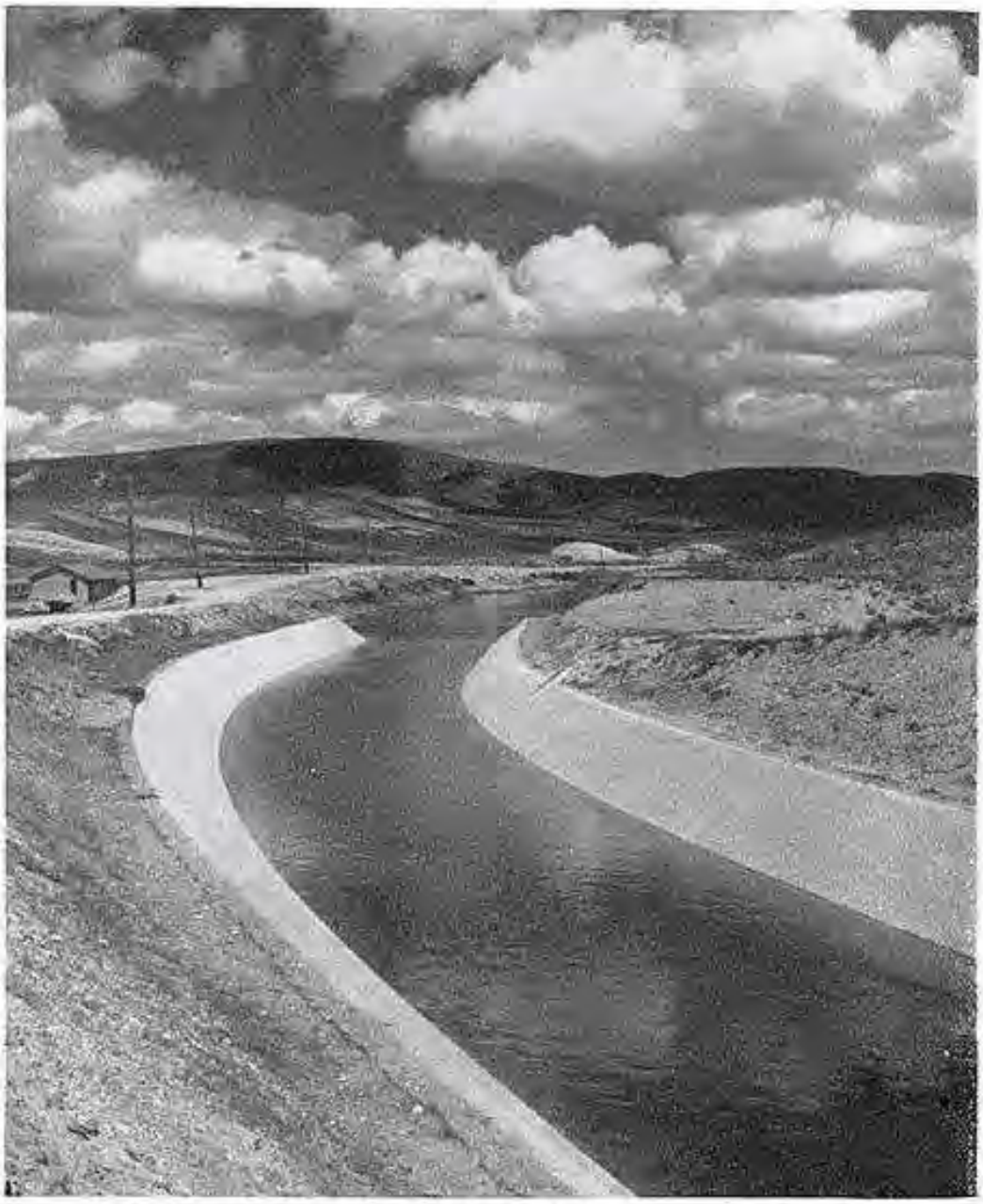
STATE	Acreage	Private Investment	Government Investment	Total Investment
North Dakota	21,615 acres	$346,462	$1,409,027	$1,755,489
South Dakota	60,198 acres	497,960	4,897,650	5,395,610
Nebraska	610,379 acres	24,396,397	11,659,810	39,056,207
Kansas	99,960 acres	2,153,886	.....	2,153,886
Oklahoma	4,160 acres	182,531	89,655	272,186
Texas	1,040,114 acres	63,069,236	3,147,764	66,217,000
Colorado	3,220,685 acres	93,210,072	13,639,271	106,849,343
Wyoming	1,486,498 acres	23,853,406	17,669,395	41,522,801
Montana	1,696,063 acres	26,465,300	40,118,625	66,583,934
Idaho	2,273,949 acres	58,494,104	44,060,942	102,555,046
Utah	1,176,239 acres	28,027,113	13,806,349	41,833,462
New Mexico	553,174 acres	21,508,343	11,199,535	32,707,878
Arizona	652,806 acres	28,565,303	56,155,637	84,720,940
California	5,177,650 acres	301,676,562	6,907,975	308,584,537
Oregon	1,048,076 acres	23,462,514	27,350,235	50,812,749
Washington	615,114 acres	23,495,238	32,946,213	56,441,451
Total	20,568,953 acres	$726,283,069	$298,072,825	$1,024,355,894

There is a probability that irrigation may move to areas east of the 97th Meridian. Periodic droughts often afflict the Dakotas, Nebraska, Kansas, Missouri, Oklahoma, Arkansas and Texas. Sometimes the droughts are so severe that farm animals cannot survive for lack of feed. Then it is that irrigation could prevent complete loss of crops. Building hundreds of reservoirs designed to hold water for such emergencies may permit farmers to sprinkle their wilting crops sufficiently to prevent complete loss of grain and forage crops. Electricity, pumps, portable aluminum pipe lines and reservoirs for water supply may enable many middle-west farmers to mock the drought. Dams built across the thousands of small streams and intermittent waterways may provide water to extend irrigation eastward to the so-called humid States west of the Mississippi River and east of the mythical irrigation boundary known as the 97th Meridian.

Artifacts: Group D

Water Duty

How much irrigation is needed? There is now no blanket answer to this question. Water duty (amount of water required for maximum production of crops) varies widely with different sections of the country, kinds of soil, types of crops, and length of growing season. Usually irrigation is practiced in the regions having less than twenty inches of rainfall per year. Rainfall at Boise, Idaho, averages thirteen inches per year. At Salt Lake City the average is fifteen inches per year. On the great Columbia Basin project of central Washington the average annual rainfall varies from six inches per year on Wahluke Slope to nine inches in the northeastern area. The average for the entire



A lined canal on the Yakima project. Photo, Bureau of Reclamation.

project is about seven inches per year. Most of the precipitation falls between October and March. Rarely does any considerable amount of rain occur during July and August. West of the Cascade Mountains in Washington and Oregon irrigation is required during those months only. In central Washington the irrigation season begins in April and ends about September 15. Irrigation projects in Idaho, Oregon and Washington average about 3.4 feet of water per acre delivered to the farmer. Evaporation, seepage, and waste may take twenty to thirty per cent of the water received at the weir. Crops like sugar beets, which are planted in March and harvested in October, require more water than grain crops which mature in July. In areas where the irrigation season is only two months, six inches or less of water per acre may mean the difference between no production and maximum production. Sandy soils usually require more water than heavy loam soils. The maximum water duty estimated for the Columbia Basin project is five acre-feet per year. The minimum water duty will be about 2.5 acre-feet per season. The average water duty is estimated at 3.4 acre-feet per year for the whole Columbia Basin project.

Plans for Regional Development

In the early stages of irrigation and power development each project was treated as a separate undertaking with little concern as to what happened elsewhere on a river system. Army engineers tried to control floods by building levees. They paid little attention to holding water upstream. Irrigation projects were built for irrigation only. In 1902 when the first reclamation act was passed the largest generator in the world had a capacity of less than 5,000 kilowatts and the maximum transmission distance for alternating current was 50 miles. In 1902 many cities had only direct current dynamos. Direct current could not be transmitted for great distances.

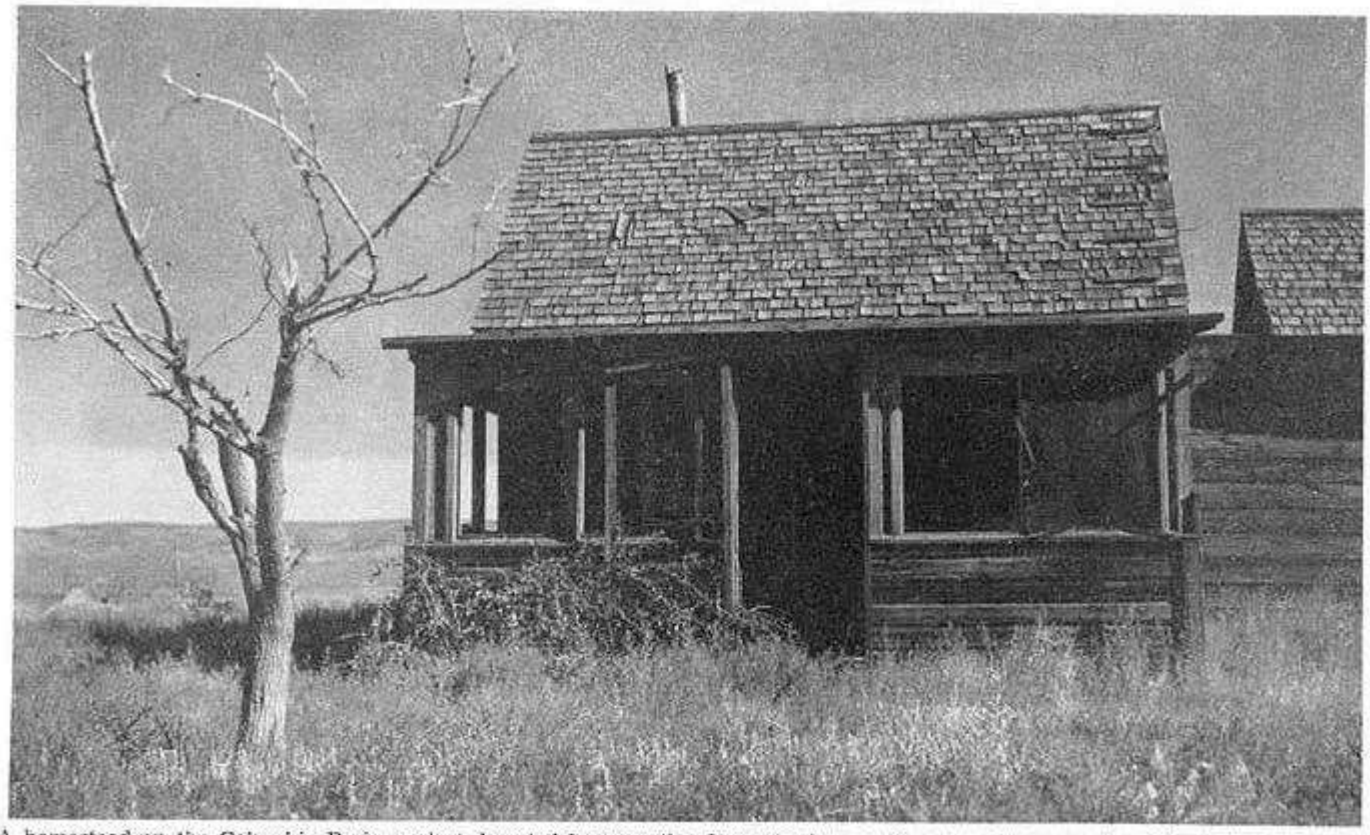
As engineers began to plan bigger generators and to build high voltage transmission lines 200-300 miles long, the importance of rivers was realized. Moreover, the power that can be generated at big dams can be made to pay for river improvements. Floods can be controlled by a system of dams. Irrigation water can be made available for the dry seasons when river flow is normally low. Navigation is improved by the increased flow from water stored up stream. Hydroelectric power therefore becomes the key for regional development of river systems. We shall consider three great rivers, the Missouri, the Colorado and the Columbia and the plans to develop them for irrigation, navigation, flood control and power.

Here are the statistics on how much water each of three great rivers discharge toward the sea annually at specified gaging stations:

Big Plans for the Columbia River

Recently the United States Bureau of Reclamation has published a vast plan for the Columbia River to irrigate 3,844,555 acres of new land in Nevada, Wyoming, Montana, Oregon, and Washington and to supply additional water to 1,523,300 acres now partially supplied with water. In all, 238 projects are

Sheep grazing on sage brush land to be irrigated by water from the Columbia River. Photo, Bureau of Reclamation.



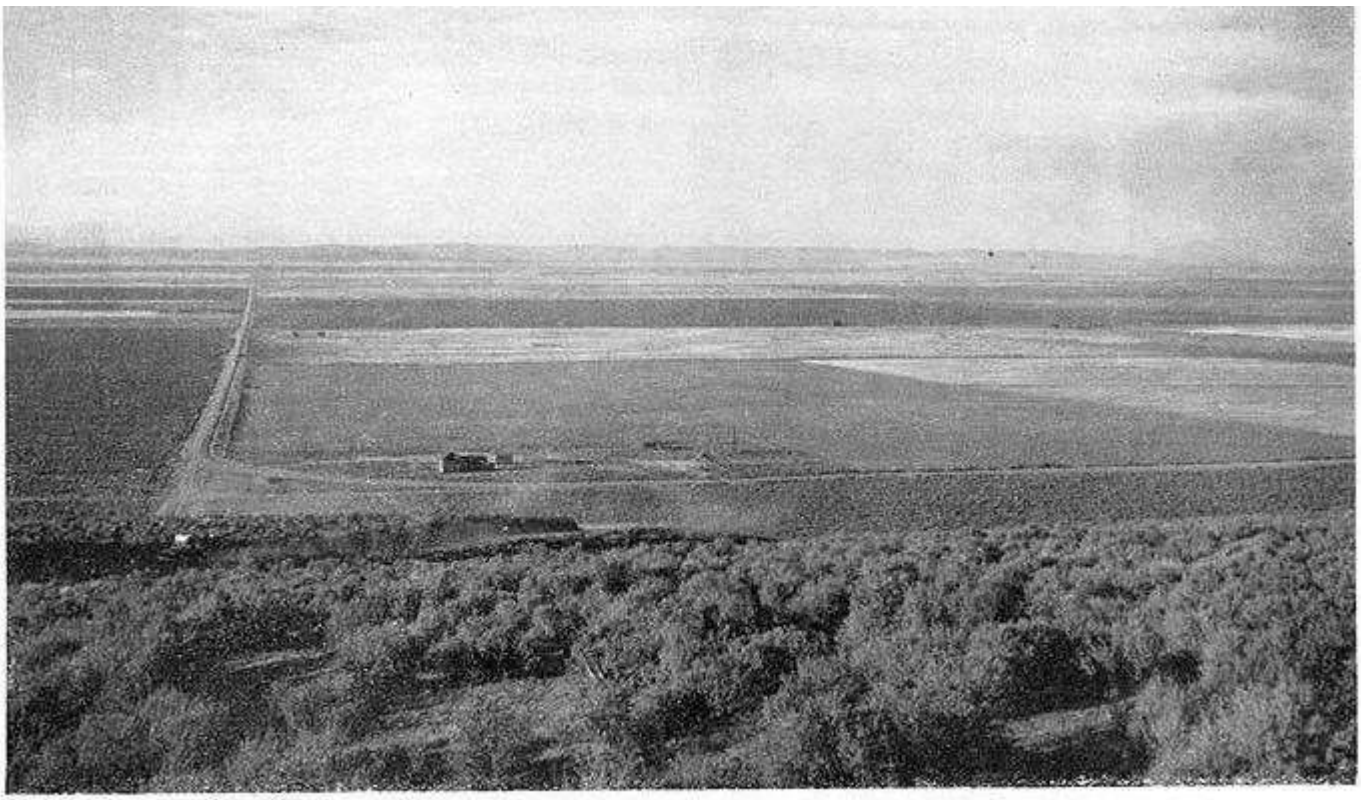
A homestead on the Columbia Basin project deserted because the homesteader could not raise enough without irrigation to support his family. Photo. Bureau of Reclamation.

Size of Columbia Basin Project

To give you some idea of the size of the Columbia Basin project a few statistics are offered:

Acreage of project	1,029,000 acres
① Cost of irrigation system	$330,000,000
Canals and laterals	4,000 miles
Excavation for dams, canals and laterals	75,000,000 yards
Water required each season	4,000,000 acre feet
Storage in reservoirs to be built	1,450,000 acre feet
Storage that can be used for irrigation	1,050,000 acre feet
Lake surface of irrigation reservoirs	47,000 acres
Homes to be created on project farms	15,000 to 17,000
Estimated future population on farms	63,000 to 71,000
Estimated future homes in towns on project	30,000 to 34,000
Estimated future population in project towns	120,000 to 136,000
Time required to complete the project after 1946	10 to 20 years

① Only $26,465,000 of this cost will be paid by water users. Power revenues will pay $243,535,000 on irrigation costs.



A desert scene on the Columbia Basin project. The flat valley between the two ridges is some of the best land in the Columbia Basin project. Photo, Bureau of Reclamation.

Typical desert scene on Columbia Basin project. Vegetation is grass and sage brush. Photo, Bureau of Reclamation.

Grand Coulee Dam

As Grand Coulee Dam is the main structure of the Columbia Basin project, we list some more facts:

Date of starting work on Grand Coulee Dam	1933
Date of completion (except generators)	1941
Reinforced concrete in Grand Coulee Dam	10,400,000 cubic yards
Cost of Grand Coulee Dam to date	$186,000,000
Cost of Grand Coulee Dam with all generators installed	$220,000,000
Power production, January 1944	960,000 kilowatts 1,280,000 horse-power
Power production when 18 generators are installed	2,000,000 kilowatts 2,600,000 horse-power
Power to be used for pumping water for the Columbia Basin project	650,000 horse-power
Pumps to be used	10
Pumping capacity of each pump	1,600 second feet 12,000 gallons per second
Pumping capacity of ten pumps	16,000 second feet 120,000 gallons per second
Cost of power for pumping	½ mill per kilowatt hour
① Total cost per irrigation season for 1,029,000 acres	$850,000

Production on Columbia Basin Project

Products which will probably be raised on the Columbia Basin project are estimated as follows:

Milk, per day	1,500 tons
② Milk cows	200,000
Sugar beets	800,000 tons
Potatoes	250,000 tons
③ Grain (wheat, oats, barley)	300,000 bushels
Alfalfa	1,000,000 tons

Other crops which may be raised on the project are apricots, cherries, peaches, apples, berries, root vegetables, garden seeds, lima beans, peas, sweet corn, and field corn.

(All the above statistics are estimates, as the project will not receive water before 1950, except for a unit of 5,400 acres near Pasco which will be watered in 1947.)

The Columbia River

The Columbia River, from its source in Columbia Lake in southeastern British Columbia, flows northwesterly for 150 miles and then turns southward through upper Arrow Lake and Lower Arrow Lake to the International Boundary, 600 miles from the mouth of the river. In that 600 miles the river falls 1,287 feet or slightly more than two feet per mile. Principal tributaries

① Waste and seepage water will be recaptured from drainage canals and used again for irrigation.

② Milk cattle supply forty per cent of the beef consumed in the United States.

③ Since 1920 production of cereals on irrigated land has declined. When horses were used on farms, farmers raised oats for horse feed. Use of tractors has released millions of acres of farm land for production of cash crops.

Artifacts: Group D

of the Columbia are the Kootenai, Clarks Fork, Spokane, Little Spokane, San Poil, Okanogan, Methow, Chelan, Entiat, Wenatchee, Yakima, Snake, Deschutes, John Day and Willamette. The Snake River is the largest tributary of the Columbia River, supplying thirty per cent of the flow of the Columbia below their junction. The Snake has its source from lakes in Yellowstone National Park seven hundred miles from its mouth. Principal tributaries of the Snake River are the Palouse, Clearwater, Salmon, Grand Ronde, Burnt, Weiser, Payette, Malheur, Owyhee, Boise, Little Wood, Big Wood, Lost, Little Lost, Thousand Springs, Portneuf, Big Springs and Teton. Most of these tributaries have some irrigation. The Boise River irrigates more than 300,000 acres.

The Snake River and its tributaries irrigate more land than any other river system in the world, a total of 3,000,000 acres in southern Idaho and eastern Oregon. Plans for additional irrigation in Idaho and Oregon may add 2,000,000 more acres to the huge total for Snake River system.

The Columbia River system above the Snake River mouth supplies water to less than 600,000 acres, mostly from the Yakima River. The Entiat, Wenatchee, Chelan, Methow, Okanogan and Spokane Rivers irrigate a total of 80,000 acres. There is limited irrigation by direct pumping from the Columbia River between Wenatchee and Pateros. The Yakima is the principal irrigation stream in the state of Washington, furnishing water for 400,000 acres.

Benefits of Irrigation to the Nation

Irrigation of arid lands is a benefit to the entire nation and a proper function of the federal government. In the early history of the West the government sent soldiers to protect settlers from the Indians. When floods devastated farm lands and cities along the rivers of the Mississippi river system, the government built levees to protect the wealth and lives of the inhabitants of the river valleys. When railroads were pushing westward to the Pacific coast, the railroad companies received land grants from the public domain to the total of 136,000,000 acres to encourage railroad construction. River improvement for navigation has been a job for army engineers since the founding of our nation. River control projects upon which billions have been spent from the federal treasury never return a dollar directly to the federal treasury.

Irrigation Reimburses Cost

Irrigation projects built by the United States Bureau of Reclamation pay back their construction costs. Since power has become an important by-product of reclamation construction the sale of power returns money to the United States treasury. Cost of Boulder Dam is being repaid rapidly by sale of power to city and private power systems. Grand Coulee and Bonneville Dams are producing a gross revenue of $20,000,000 per year from sale of power with only six of the possible eighteen generators installed at Grand Coulee Dam. Farmers on all government reclamation projects are repaying construction costs at the rate of $5,000,000 per year. As the great Columbia Basin project in Washington comes into production the water users will repay $2,000,000 a year to the government plus the entire cost of operating and maintaining the irrigation system. But money to be repaid by power and water users is not the only source of revenue. Settlers on the farms and in the towns of irrigation projects pay millions of dollars in income taxes to the federal treasury besides additional millions in property and sales taxes to the states and counties having irrigated lands.

Artifacts: Group D

But there are greater benefits to the nation. To date the United States has invested about $275,000,000 in completed irrigation projects. In 1945 the total value of farm products grown on these projects amounted to $435,000,000. Production on the Yakima project in Washington in 1945 totaled $78,000,000, two and a half times the entire cost of the Yakima project.

And there are other benefits. One small government reclamation project in north central Washington has been producing better than $500 per acre in food stuffs, mostly apples, for the past ten years. Citrus fruit in Texas, New Mexico, Arizona and California is produced wholly by irrigation. Sugar beets, alfalfa hay, pasture, potatoes, vegetables, grapes, cherries, apricots, prunes, garden seeds, beef, wool, mutton, and dairy products worth $1,600,000,000 per year come from irrigated farms.

In a country where population is increasing at the rate of 1,000,000 per year, the government and its citizens must plan for an enlarged food supply. The former inexhaustible farm lands have been exhausted. A hundred million acres of farm land has been abandoned. One hundred million acres more is producing less than good crops. The only hope of increasing food producing acreage is by irrigating western lands. The vast investments now required to build great hydro-electric dams and canals are too large for private undertaking. Therefore we must look to the federal treasury for the capital to keep the reclamation program ahead of population increase.

A farm home on irrigated land. Photo, Bureau of Reclamation.

Other means of using land for higher production are (1) improvement of breeds of animals and farm crops, (2) recovery of products, formerly wasted, for all their economic value, (3) use of electric power to increase the efficiency of farm labor, (4) better marketing and processing methods to provide complete delivery of foodstuffs to the consumer.

The challenge then resides in broad economic planning without narrow regard for immediate balancing of costs against benefits to be derived. If it takes fifty years or one hundred years for a power and irrigation project to repay in cash the cost of its construction, that matters not at all. The important purpose of the long-range investment is national security in food and homes for a future that will be very long.

Irrigation Saves Western Communities

Irrigation has saved many pioneer communities from extinction. In the early history of Idaho, Boise was primarily the mining, stock growing and lumbering center of southwest Idaho. Mining ended before the 20th century started. Exhaustion of saw timber forced the sawmills out of existence. A large sawmill near Boise was dismantled about 1925. Stock growing remains as an important industry, but the 400,000 acres of irrigated land in the Boise Valley provide the principal income for Boise and the other cities of that region. Stock raising and dairying have become the biggest sources of cash income received by the farmers and business men of the irrigated Boise Valley. Without irrigation Boise would be just the state capital of Idaho.

Ellensburg, Washington, is another city that had its future saved by expansion of the irrigated acreage in the Kittitas Valley. Until 1930 Ellensburg was a division point on the Northern Pacific Railway. When the shops were moved away, a bleak future was predicted for Ellensburg. The Kittitas irrigation project added rich acres to the agricultural land in the valley and offset the removal of the railway shops.

Irrigation Allows Diversity

Irrigation projects have another feature that appeals to progressive farmers. That feature is diversification, which means raising a variety of crops every year. In the regions where wheat is the only crop raised on account of light annual rainfall, drought may cause a complete failure of the wheat crops. Then the whole region is without income. Irrigation permits the farmer to plant a variety of crops. He does not fear drought. Markets are his main concern, so he derives his income from several crops. If he has to sell one crop too cheap for profit, he may sell another at a profitable price and avoid loss on the entire operation.

Artifacts: Group D

Here is the list of products grown on a typical 160 acre irrigated Idaho farm in 1944:

Crop	*Yield*	*Value*
Sugar beets	900 tons	$10,800
Alfalfa hay	100 tons	1,500
Wheat	400 bushels	600
Barley	300 bushels	300
Alfalfa seed	28 bushels	672
Turnip seed	1,200 pounds	720
Lettuce seed	5,000 pounds	2,000
Onion seed	900 pounds	450
Hybrid sweet corn seed	2,300 pounds	345
Sweet corn for the cannery	12 tons	300
Milk from 15 cows	70,000 pounds	2,800
Wool and lambs from 100 ewes		1,100
Eggs from 500 hens	5,000 dozen	2,000
Total		$23,587

(Minor items have been omitted)

The gross value of the products sold on the market was $23,587. The cost of that water for that year for the entire farm was $240, or a little more than 1 per cent of the value of the products sold. Without water that land would be valueless.

Irrigation Creates Permanent Communities

Irrigation of arid lands creates new permanent communities. The example of a town created and sustained wholly by irrigation is Twin Falls, Idaho. In 1904 the first load of lumber was unloaded on the present site of that city. Water was first delivered to the Twin Falls project in 1906. When the writer first visited Twin Falls in 1910, the city had a population of 5,000. Today Twin Falls has a population of 9,000. Caldwell, Idaho, is another town largely dependent upon irrigation for its growth and livelihood.

In the state of Washington, Yakima, Prosser, Toppenish, Ellensburg and Wenatchee are thriving communities that owe their existence to irrigation agriculture.

In marked contrast to communities created by irrigation are those founded on mining and lumbering, which create cities that thrive for a while and then perish when the ores and forests are exhausted. Leadville, Colorado, once had a population of 25,000 people. Today only a few hundred live in that abandoned mining town.

In 1864 the Boise Basin, of Idaho, famous in the 1860's for its placer mines, had a population estimated at 20,000 people. Today fewer than 200 people live in the Boise Basin. Silver City, Idaho, in 1880 was a thriving silver mining community, a true western town with saloons, gamblers, bad men and plenty of silver from the rich but limited silver ores. By 1900 the ore lodes were exhausted and Silver City was just the county seat of Owyhee County. A few years ago Silver City lost its court-house. At last reports the old mining town is uninhabited.

There are a hundred examples of once-thriving lumber towns now abandoned because the forests which supported them were quickly exhausted.

The sawmills are gone; the people are gone. Perhaps again in three generations new forests will restore the lumbering industry, but not the ghost towns. They are gone forever.

Communities which depend upon irrigation have a bright future. So long as winter snows restore each winter the water supply in the mountains, the farms and towns of the irrigated West will thrive and provide a high standard of living for the people who live there.

Lettuce growing on irrigated land near Moses Lake, Washington. Photo, Bureau of Reclamation.

Artifacts: Group D

D3

"Grand Coulee Dam, the Eighth Wonder of the World, State of Washington," Souvenir Company, 1947, http://digitalcollections.lib.washington.edu/cdm/search/collection/grandcoulee/field/order/searchterm/dam211/mode/exact

DESOLATION AND RECLAMATION

Parched and baked by withering sun, the arid wastelands of the Columbia Basin will provide fertile farms through the efforts of man

Settlers Given Low Rates for Water

Annual costs of irrigation operation and maintenance, and construction charges have been determined. The portion of irrigation costs chargeable to the land, to be repaid over a 40-year period, will average $85.00 per acre. The charge would be without interest. It is estimated that during the first 10 years of irrigation the cost of operation and maintenance will average $5.50 per acre, including the power pumping cost.

Under this plan, the total indicated payments by the settler would be $5.50 an acre per year for operation and maintenance, and no fee for construction for a period up to ten years. After that time, he would add the construction charges each year to operation and maintenance costs. The government stresses the need for placing the cost of settling the reclaimed land at a minimum. Operation and maintenance charges will be dictated by experience, but it is believed every effort will be made to conform to these charges as far as possible. Construction of the irrigation project is under way. The work is being done by private contract and it was 1952 before irrigation water reached any sizeable acreage of land. It is estimated that a quarter century or more will be required to irrigate the entire one million acres. During the 50 years of its existence, the Bureau of Reclamation, which is responsible for the construction of the Columbia Basin project, has built more than 150 dams and reservoirs to regulate streams and conserve water, now irrigating in excess of 6,500,000 acres of once dry and useless lands, growing crops worth $600,000,000 annually. Through this endeavor has been created more than 1,000,000,000 worth of taxable property. Homes for nearly 1,000,000 people have been made on these watered deserts.

Project Built by World Renowned Organization

No small charge has been placed in the hands of this bureau of the United States government. Each phase of the engineering, which has made possible the development of the Grand Coulee Dam and irrigation program, has been made possible by the Bureau of Reclamation, recognized throughout the globe as the world's outstanding engineering organization in the fields of irrigation and hydroelectric power. Frank A. Banks was supervising engineer in charge of the project during its dam building phase. Night and day his counsel sought to solve the many and, oftentimes, nearly heart-breaking problems arising in the general course of events. His charge was the construction and supervision of man's greatest undertaking. Under him was assembled a first class staff headed by the late James Miner, Office Engineer, through whose hands passed the minute details of the actual construction work.

D4

"Benefits of Columbia Basin Project" (2014). Rufus Woods Photographs. 537.
http://digitalcommons.cwu.edu/rufus_woods/537

They see water-starved fields and abandoned farm homes in the Columbia's valley—proof of irrigation's need on land like this . . . . . .

But on nearby land, they see how abundant water, wisely used, can release the high fertility of mineral-rich soil to yield several valuable harvests each season

The miracle of water's use

To help them understand the character of the land, Rufus Woods took Wesley and Peggy to the project area, where more than 1,000,000 acres await the water which the Grand Coulee program will make available. On a high plateau in the great bend of the Columbia, they saw thousands of acres of dry farmland like the one pictured, where abandoned homes and fields gruesomely mutant crops of grass gave mute testimony to man's hopeless struggle to survive without water.

But they also saw how the same land, given water, will produce with prodigal abundance. On one group of farms near Quincy, they watched the harvest of garden peas from fields irrigated by well water, and saw for themselves how the sacred land, scientifically watered, can be made to produce not one but several high-profit harvests each year.

Veterans interested may obtain additional information by writing to Bureau of Reclamation, Coulee Dam, Washington.

3 **Wesley, Peggy and Rufus Woods** [illegible] while workmen [illegible] While [illegible] the crop [illegible] will be quick-frozen.

Artifacts: Group D

Group E

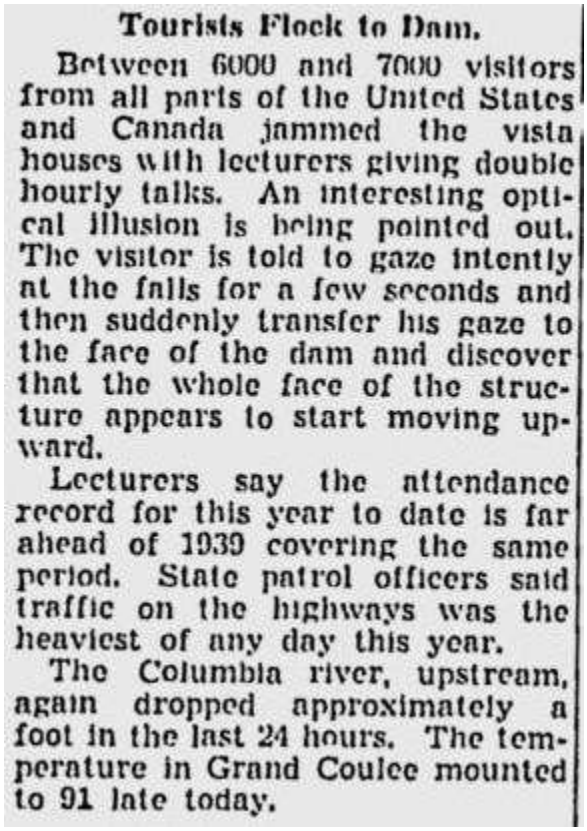
E1

The Spokesman-Review. http://www.spokesman.com/picture-stories/historical-grand-coulee-dam/

Merry Oldsmobile: Mr. and Mrs. George C Green, Lambertville, N. J., chugged into Grand Coulee this week in their 1904 Oldsmobile for a view of the world's largest river barrier. They are making a transcontinental tour in the car they have owned since 1907. In spite of its 75,000 miles, the ancient Olds took the grand award in the recent Golden Anniversary parade of the automobile industry at Detroit. The Greens were permitted to drive their 42-year-old car across the 4173-foot roadway atop the dam

E2

Spokesman-Review. June 17, 1940.
https://news.google.com/newspapers?nid=0klj8wIChNAC&dat=19400617&printsec=frontpage&hl=en



Tourists Flock to Dam.

Between 6000 and 7000 visitors from all parts of the United States and Canada jammed the vista houses with lecturers giving double hourly talks. An interesting optical illusion is being pointed out. The visitor is told to gaze intently at the falls for a few seconds and then suddenly transfer his gaze to the face of the dam and discover that the whole face of the structure appears to start moving upward.

Lecturers say the attendance record for this year to date is far ahead of 1939 covering the same period. State patrol officers said traffic on the highways was the heaviest of any day this year.

The Columbia river, upstream, again dropped approximately a foot in the last 24 hours. The temperature in Grand Coulee mounted to 91 late today.

E3

Excerpted from Charles Cone, "Irrigation and You," Columbia Basin Commission, 1947, http://digitalcollections.lib.washington.edu/cdm/search/collection/grandcoulee/field/order/searchterm/dam213/mode/exact

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Irrigation and Recreation

Another benefit of irrigation not often mentioned is recreation made possible by the creation of large artificial lakes to store water for power and irrigation. The great American Falls reservoir in Idaho is favorite fishing ground for Idaho sportsmen. The lake behind Owyhee Dam in Oregon is now well stocked with bass, trout and croppie. Lake Roosevelt, made on the Columbia River by Grand Coulee Dam, may become one of the greatest boating lakes in the world. Its length of 151 miles with 120 square miles of water surface offers the inland seaman unrivalled opportunity for trying out speed boats and yachts. The great reservoir is being stocked with game fish to lure the fishermen.

Lake Lowell, a storage reservoir on the Boise project, is a migratory bird refuge. In the fall when ducks and geese are going south, Lake Lowell is the resting and feeding place for millions of birds which feed upon the irrigated fields of the valley.

On the Elephant Butte Reservoir in New Mexico regattas are held annually.

The great dams like Boulder and Grand Coulee are unparalleled tourist attractions. As many as 350,000 tourists have seen Grand Coulee Dam in a single year. Before Boulder Dam was built, the Colorado River at that point was seldom visited. In fact Lieutenant Ives of the U. S. Army who travelled upstream on the Colorado as far as Boulder Canyon in 1857 had this to say about that region,

"The region last explored is, of course, altogether valueless. It can be aproached only from the South, and after entering it, there is nothing to do but leave. Ours is the first, and doubtless will be the last, party of whites to visit the profitless locality. It seems intended by nature that the Colorado River along the greater portion of its lone and majestic way shall be forever unvisited and unmolested."

Today Lake Mead, created by Boulder Dam, is a clear blue lake that lures tourists from all over the world. Completion of the Columbia Basin project will add 50,000 acres of lake surface to Grant County in the state of Washington.

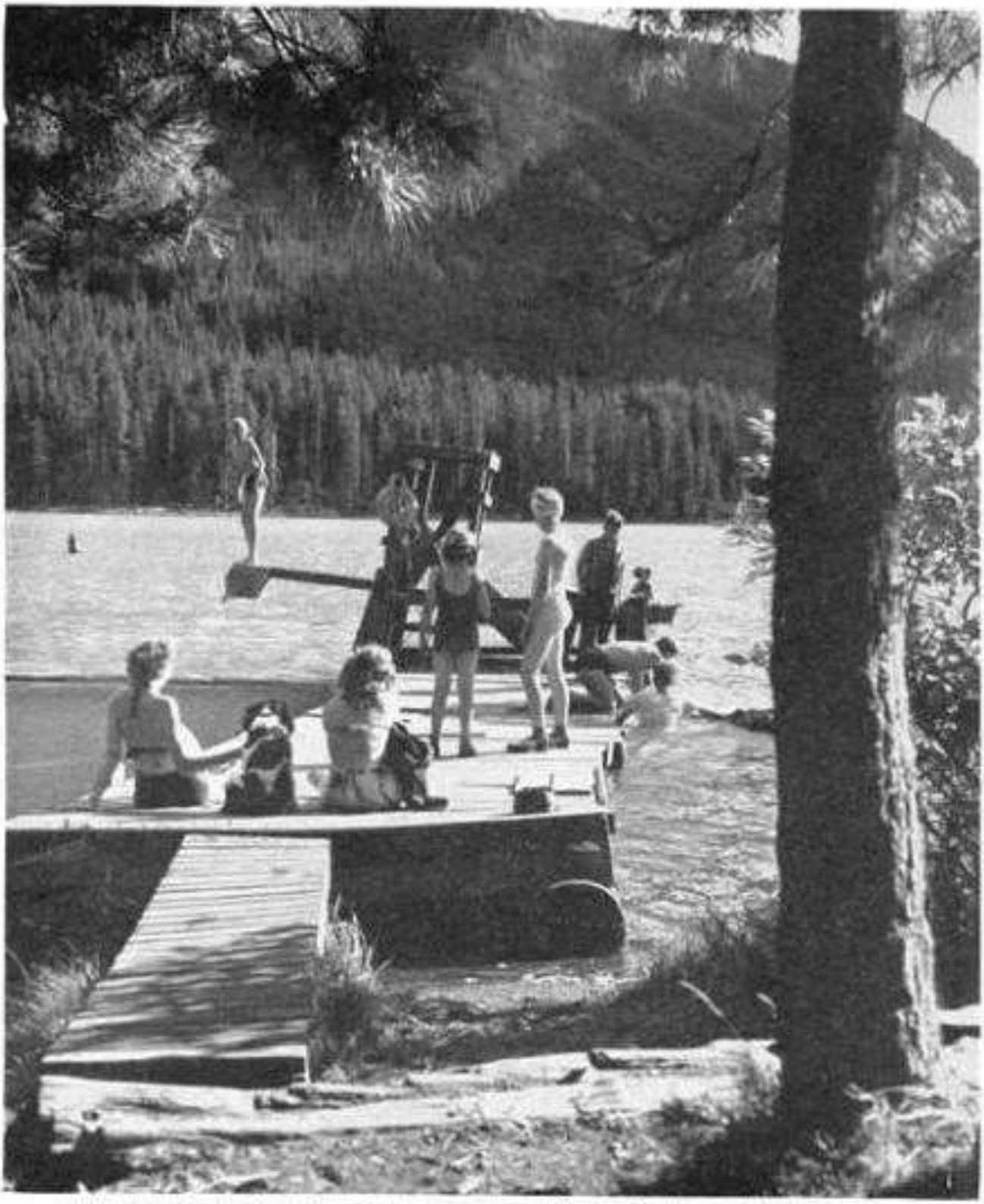
Many years ago dam builders neglected to clear reservoir sites. As the water flooded the region trees and brush died to leave an unsightly mess on the shore line. Now the reservoir sites are carefully cleared to avoid the ugliness of dead forests. When the water level in the reservoir recedes, the belt of shoreland between timber-line and water-line is clean.

Hundreds of men were employed for three years clearing timber and brush from the reservoir above Grand Coulee Dam. As the water gradually rose behind the growing dam, the land clearers who lived in house boats on

the river, cleared the area. Today very little trash comes down the Columbia River and no ugly dead forests desecrate the landscape.

Plans in the Missouri Valley call for conducting water by canal from the Missouri River to Devil's Lake in North Dakota to restore that lake, whose shore line has receded 20 miles from its location of 50 years ago. At one time the city of Devil's Lake was a lake town. Now the people of that town never see the lake unless they travel 20 miles by car. Restoring Devil's Lake will restore recreation facilities to the people of North Dakota.

Bass fishermen on a reclamation reservoir. Photo, Bureau of Reclamation.

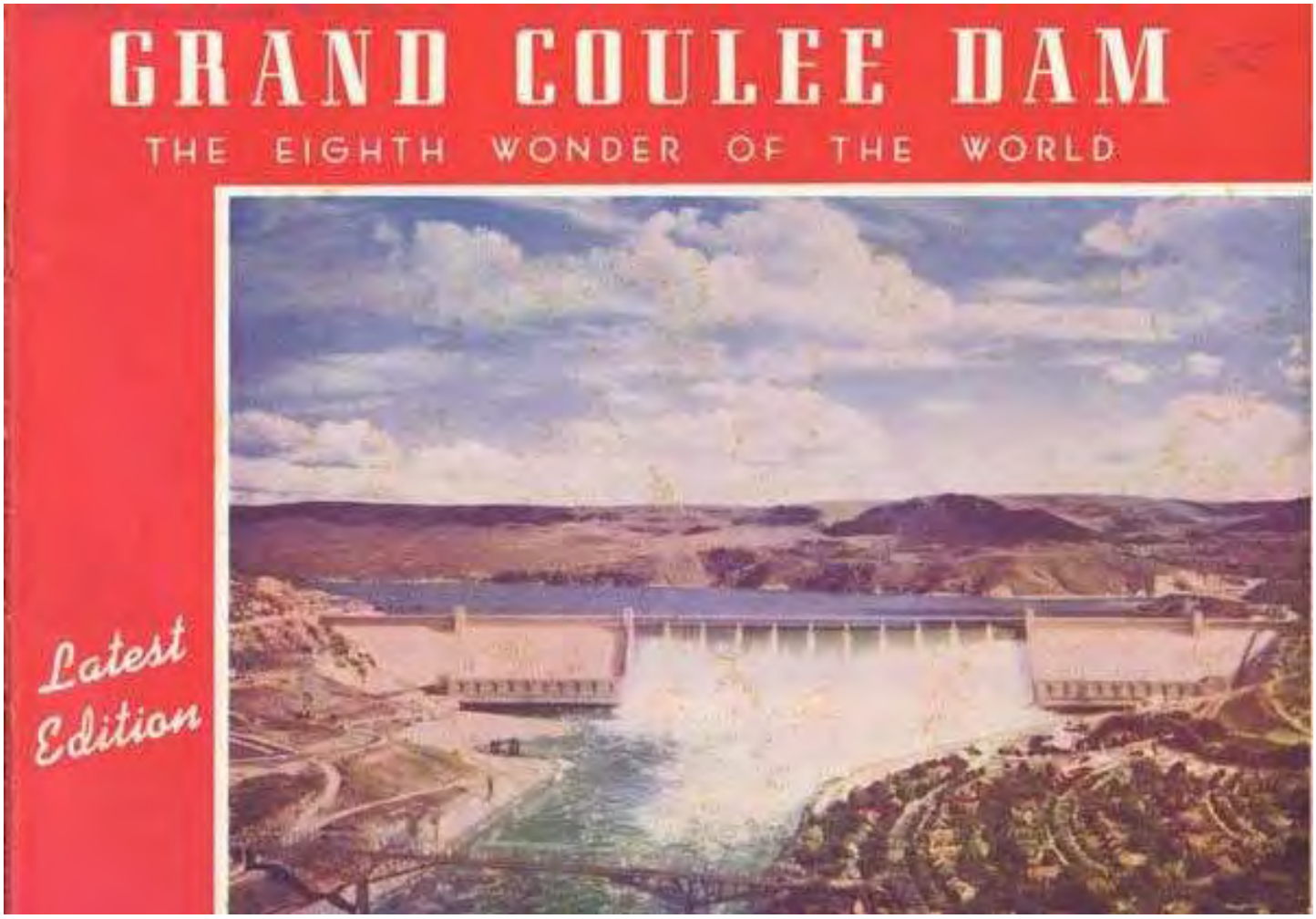


Summer scene on reclamation reservoir. Photo, Bureau of Reclamation.

Artifacts: Group E

E4

"Grand Coulee Dam, the Eighth Wonder of the World, State of Washington," Souvenir Company, 1947, http://digitalcollections.lib.washington.edu/cdm/search/collection/grandcoulee/field/order/searchterm/dam211/mode/exact



Artifacts: Group E

Countless Thousands Have Found Romance in the Night

People from all walks of life stood before the slowly-rising concrete giant and spoke with awe of the scene unfolding before their eyes. Others failed to find words to express the emotion of their feelings in the face of such a work. Each who looked upon the growing mass of man-made stone and steel felt in his heart the thrilling response to the gigantic undertaking, slowly but surely taking shape and rearing itself above the swirling waters of the river on its way to the sea.

Crowned heads have become humble at the feet of this handicraft of the lowly worker. Even the mightiness of a kingdom seems insignificant in comparison to the potential wealth here being harnessed by man as the crawled, ant-like about on the mammoth dam as its work progressed, day by day, and night by night—never-ending. Truly, the hugeness of the project is beyond the scope of one's imagination, as each hour new height was gained in man's embattlement against the forces of nature. No estimated number of persons who have visited the site of the dam since work was begun can be given. They, too, have moved in silent procession through the picture in the building. Literally, millions have been counted, but countless thousands more it is estimated, have come and looked and then gone their several ways.

Each has carried with him a new faith—and mayhap, hope—for over and above all obstacles man's determination to succeed has proved that "it can be done," as evidenced in this heroic endeavor.

But even more impressive is this massive structure rising between the rocky cliffs of the Columbia River chasm when viewed under the glare of electric lights, after the velvet darkness of night has fallen over the northwest desert wastelands.

Words could not describe the extreme beauty and majesty of the scene as the pulsating motivation was broken by signal whistles and offset by the roar of rushing water which, day and night, grew in its mighty undertone as the block of concrete and steel rose at the direction and through the toil of man.

Night Magnifies Beauty

Bright and blinking lights turn the falling cataracts of water into churning foam, each moment reflecting new brilliance to the noisy yet thoroughly engrossing picture panorama, framed by a blackness found only in the desert. The majesty of the project by day is magnified manifold by darkness, and, truly, only the most fortunate have seen the Grand Coulee Dam to advantage when ample time has been taken to view the work both by the light of day and at night under the glare of the electrics. One and all must exclaim over such mighty grandeur.

DAM IS FAIRYLAND AT NIGHT
All the romance of the gigantic project has been caught by the camera in this remarkable night scene photograph.

E5

Spokane Press, October 02, 1934,
http://kaga.wsulibs.wsu.edu/cdm4/results.php?CISOOP1=any&CISOFIELD1=CISOSEARCHALL&CISOROOT=/clipping&CISOBOX1=sh87-229

HOMES TO BE ALL-ELECTRIC

The 360 residence and other buildings to be erected at Mason City, the Mason-Walsh - Atkinson - Kier company's contractors' town at the Grand Coulee dam site, will all be without chimneys.

All of the buildings will be heated by electricity, Juan Hargrove, architect for the company, said Tuesday.

Hargrove first announced that Mason City would be an electric city at Ephrata Friday.

He said Tuesday that it would require 2800 electric heaters of the forced convection type to heat the 360 buildings. The plans call for heaters of from one and one-half kilowatts to six kilowatts in each room of each building.

COST WILL NOT BE HIGH

Hargrove said that the heaters would cost about $5 per kilowatt, and that the cost of installing and equipping a five-room house with electric heaters would be approximately $160, as against $250 for a furnace.

He said that the electricity would be furnished to the MWAK company by the Washington Water Power company at a low figure, and that the cost of operation of the electric heaters would be very much lower than any other means of heating the new city. A five-room house can be heated for $60 a year, Hargrove said.

The electric heating equipment planned for Mason City houses contemplates comfortably heating the homes when the temperature is 29 below zero, the lowest recorded temperature in the vicinity of Grand Coulee during the last 22 years.

FORESEES SPOKANE ALL-ELECTRIC

Hargrove said that the electric heating of the town of Mason City would be carefully watched by government engineers during the first year. He said that he believed that Spokane would be heated by electricity after the completion of the Grand Coulee dam.

Hargrove estimates that it would cost $2,500,000 a year to heat Spokane by electricity.

Mason City houses will be completly equipped with other electric devices, refrigerators, cooking stoves, water heaters and so forth, Hargrove said.

NO DANGER OF FIRE OR SHOCK

The conventional type heater planned for heating Mason City is absolutely safe, Hargrove said. There is no danger of fire, shock or burning from them.

Garbage and waste paper at Mason City, which cannot be burned in the kitchen stoves and furnaces, will be collected and disposed of in a central incinerator for the purpose, Hargrove said.

Contracts for the 2800 electric heaters have not yet been awarded.

Artifacts: Group E

E6

"Visitors at Grand Coulee Dam" (2014). Rufus Woods Photographs.
http://digitalcommons.cwu.edu/rufus_woods/551

E7

Franklin Roosevelt. Address to the Third World Power Conference, Washington, D.C. September 11, 1936. http://www.presidency.ucsb.edu/ws/?pid=15125

I desire to add my personal greeting to the official greeting which it has been the pleasure of the Government of the United States of America to extend to you. The United States considers it an honor and a privilege to be the host of the Third World Power Conference and of the Second Congress of the International Commission on Large Dams.

The World Power Conference and its associated International Commission are very notable institutions.

It is one of the achievements of our generation that business men, engineers, lawyers, social workers and other people of affairs should meet in international assemblies not merely for promotion of the abstract sciences and techniques in which they may respectively be engaged, but for exploration of the application of these to national welfare and betterment of the conditions of human life.

There are very special reasons why we in the United States prize the opportunity to provide the forum for discussion of the problems which are being presented to your Conference.

We are relatively a young Nation, facing now the problems of matured national life. Many among you represent Nations of far longer experience.

We have a strong conviction that any success we may have in organizing the household of this Nation, now come of age, will depend in large measure on the degree to which and the manner in which we make available the natural energies which have been given us in great abundance. We shall therefore study the records of your proceedings with painstaking care.

For a century, for longer than that, population in the United States has increased, both naturally and by immigration, at an exceptional rate; but recently there has set in a decline in the rate of increase. Experts in vital statistics now calculate that we shall have reached a point of stationary population within approximately the next twenty-five years.

For two centuries the dramatic aspect of national growth was territorial expansion—successive waves of human beings from the Atlantic to the Allegheny Mountains, to the Mississippi Valley, to the prairies, to the Rocky Mountains and at last to the Pacific Coast. The addition of improved lands has come to a stop; in fact, in many parts we have overdone it and must restore some of them to more natural conditions.

With these have appeared other evidences of maturity. For a period following the establishment of the Union about 85 percent of our people lived on farms; today, however, nearly 75 percent live in cities and villages. During our earlier years the proportion of young people in the population increased much more rapidly than the proportion of old people. Today, for various reasons, the proportion of old is increasing more rapidly than the proportion of young people.

With such changes have come also changes in social habits and in points of view.

Under conditions of maturity of a Nation there is, justifiably, an increasing concern on the part of nearly every citizen for his economic security. In the earlier days of our Nation's youth there was no such dominating concern. As a people we could then be happy-go-lucky—a characteristic of youth.

National maturity requires that we have new points of view, and that we do some things at least in different ways.

This matter of economic security, I take it, is not to be achieved by aiming for restriction of national income—real national income-but by aiming for more abundant and more widely distributed national income. A satisfying standard of living and security for a national household of nearly one hundred thirty million people are to be realized only by high productivity, broadly and equitably distributed, and wisely proportioned with respect to its drain on national natural resources and to the variety of human wants that it is destined to satisfy.

It is for such reasons that your deliberations are of significance to me, and will be followed with minute attention. Your scientific and engineering genius is destroying one world—the world of relative scarcity—but has it yet undertaken to create the new world of abundance which is potential in your command over natural energies? Is creation of greater abundance dependent on further scientific and engineering achievements so much as on suitably organizing and utilizing the engineering already incorporated into your technique?

These two questions, more simply stated, resolve themselves into this: Are you and I paying enough attention to "human engineering"?

Granted, there are many aspects of the problem. For example, it is possible to conceive—for us to conceive at least—that the conversion and application of energy, in the coming generation, will be so directed that half of the population can provide the basic machine-made products necessary for the welfare of the whole of the population. We can conceive that this would mean that the people between twenty and fifty years of age may be able to produce the basic commodities for themselves and also for all others below and above those ages.

If that condition should arise, it is the duty of you who would be so greatly responsible for it to think what would be the effect on our leisure, our culture and our way of life. May I respectfully suggest that the answer should not be left wholly in the hands of bankers, Government officials or demagogues?

In anticipation of all manner of possibilities and simultaneously with the study of their far-reaching results, we can and must take every preparatory step now within our power.

Fundamental among these is conservation of resources, their evaluation in terms of the services they may render, including the conditions under which these may be rendered, and their utilization in the light of such evaluation. Although it is a principle of physics that energy cannot be destroyed, it has been revealed by experience that man can destroy those particular forms of energy in which energy is usable by him. In such an evaluation the physical and mental energies of human beings must be included with coal, petroleum, gas, electricity and many other forms.

To make such an evaluation, a higher form of accounting than any yet developed by commerce and industry appears to be essential. It must be a form of accounting that takes social values, now left to mere assumption, into its calculations and measures them. If a Nation were to establish in its social balance sheet a capital account for its energy

assets, and were to charge against that account the water that it permits to go unused, as well as the coal and the .oil that are used; or if the petroleum industry were charged with the gas that it permits to go to waste—a quantity, by the way, that is enormous in these United States; then perhaps all citizens would perceive that public policy and private conduct in respect of our natural resources should be quite different from what they now are.

It seems to me, as a layman, that the outstanding gift of modern science and engineering to society is greater knowledge of the characteristics of electric energy, together with a very substantial degree of command over it. Its flexibility is what makes electrical energy impressive; its transportability; its divisibility. The invention and adaptation to use of the steam engine was a great event in human history. It caused an industrial revolution. In a very large sense it remade the world. It created new social-industrial problems, many of which are still far from solution. It is not irrational to believe that in our command over electric energy a corresponding industrial and social revolution is potential, that it may already be under way without our perceiving it.

One of the social changes brought on by the invention and use of the steam engine was the concentration of workers into large factories and of people into large cities. We have not known what to do about it. Workers had to go to the steam engine, whose energy could not be divided into parts and sent out to them.

Now we have electric energy which can be and often is produced in places away from where fabrication of usable goods is carried on. But by habit we continue to carry this flexible energy in great blocks into the same great factories, and continue to carry on our production there. Sheer inertia has caused us to neglect formulating a public policy that would promote opportunity for people to take advantage of the flexibility of electric energy; a policy that would send it out wherever and whenever wanted at the lowest possible cost. We are continuing the forms of overcentralization of industry caused by the characteristics of the steam engine, long after we have had technically available a form of energy which should promote decentralization of industry. What is economically sound is to be determined by social accounting more than by our present methods.

I had occasion recently to visit the Great Plains area of the United States where the greatest drought in history has thrown an oppressive burden upon the people of those States. In planning for the better use of those millions of acres, power is a factor of vital importance— power to be used primarily for the conserving of the water supply—power, the application of which is essential not only to the cities, but to the farms and ranches of that whole area.

I speak of power in its many forms. It may be true, as I understand some of the authorities among you prophesy, that the world's oil reserves, because of their limited supply, some day may have to be apportioned to specific uses. It may be true that new applications of alcohol, processed from the products of the soil, may increase the usefulness of the internal combustion engine; but in any event it seems most probable that a greater use of electrical energy is absolutely essential in every sector, rural as well as urban, in the United States, and, indeed, in the whole world.

A sound and courageous public policy will lead toward its consummation.

One who considers the matter with forthright vision cannot convince himself that public policy for promotion of availability of electric energy can really harm the electric industry that exists today. It

would give opportunity for that industry to add to achievements already great. The more integrated its sources of energy, the less it would require of excess capacity and the lower would be its costs. The broader the base of consumers of a product that is now classed as a necessity, the lower would be its costs and the greater its stability. A great many years ago Dr. Steinmetz observed that electricity is expensive because it is not widely used, and at the same time it is not widely used because it is expensive. Notwithstanding reductions in rates and increase of consumption since his day—which, by the way, have demonstrated the truth of his words— his observation still holds true. There is a vicious circle which must be broken, and a wise public policy will help to break it.

I still hold to the belief of two years ago, when I spoke as follows:

"We are going to see, I believe, with our own eyes electricity and power made so cheap that they will become a standard article of use, not only for agriculture and manufacturing, but also for every home within reach of an electric-light line.

"The experience of those sections of the world that have cheap power proves very conclusively that the cheaper the power the more of it is used."

These words were spoken at Grand Coulee. The Government of the United States has promoted the construction of several great reservoirs, which I trust that you will inspect on your grand tour, primarily for navigation or reclamation, but with incidental values for flood control and the regulation of stream flow. Among other incidentals is the generation of electric power. This may prove to be the force that breaks the vicious circle to which I have referred. If these are not sufficient, the influence of additional meritorious projects awaiting development can be added.

Two great dams of the Tennessee Valley Authority have been completed and are making their contribution to the public weal. Grand Coulee is far enough along to enlist your interest, as also is Bonneville of the Columbia River. At Boulder Dam on the mighty Colorado the gates were closed months ago; a great lake has come into being behind the dam; generating equipment has been installed in the power plant; and at this moment the powerful turbines are awaiting the relatively tiny impulse of electric current which will flow from the touch of my hand on the button which you see beside me on the desk, to stir them to life, to stir them into creative activity—to generate power.

Boulder Dam, in the name of the people of the United States, to whom you, Boulder Dam, are a symbol of greater things in the future, and in the honored presence of guests from many Nations, I call you to life!

Name _____

Writing History

HISTORY IS A STUDY OF THE PAST; IT IS NOT THE PAST ITSELF. In order to produce knowledge in History, historians focus on specific questions, then they gather, analyze, and evaluate sources, and use evidence to draw conclusions and develop well-supported interpretations.

For this activity, your group will assume the role of historian and will use evidence from the fact sheet and artifacts provided to write a historical account for a high school history textbook.

Your inquiry will focus on the cause and effects of The Grand Coulee Dam. Use the following questions to guide your work:

Who/what made the change happen?
Who supported the change?
Who did not support the change?
Which effects were intended?
Which effects were accidental?
How did the events affect people's lives?

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Example Textbook Entry

Defeat Brings Change Eventually, Russia's lack of development became obvious to Russians and to the whole world. In 1853, Czar Nicholas I threatened to take over part of the Ottoman Empire in the Crimean War. However, Russia's industries and transportation system failed to provide adequate supplies for the country's troops. As a result, in 1856, Russia lost the war against the combined forces of France, Great Britain, Sardinia, and the Ottoman Empire.

After the war, Nicholas's son, **Alexander II**, decided to move Russia toward modernization and social change. Alexander and his advisers believed that his reforms would allow Russia to compete with western Europe for world power.

Reform and Reaction The first and boldest of Alexander's reforms was a decree freeing the serfs in 1861. The abolition of serfdom, however, went only halfway. Peasant communities—rather than individual peasants—received about half the farmland in the country. Nobles kept the other half. The government paid the nobles for their land. Each peasant community, on the other hand, had 49 years to pay the government for the land it had received. So, while the serfs were legally free, the debt still tied them to the land.

Political and social reforms ground to a halt when terrorists assassinated Alexander II in 1881. His successor, Alexander III, tightened czarist control over the country. Alexander III and his ministers, however, encouraged industrial development to expand Russia's power. A major force behind Russia's drive toward industrial expansion was nationalism. Nationalism also stirred other ethnic groups. During the 1800s, such groups were uniting into nations and building industries to survive among other nation-states. D

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Group Members _____

Writing History Reflection

As a group, discuss the following questions. At the end of the discussion, one member should summarize the discussion by recording five (5) key points.

1. Which facts/artifacts were not used in your historical account? Why did you choose to exclude these artifacts?
2. Which facts/artifacts would have been useful to have to create a better historical account? How might you obtain these artifacts?
3. What biases are present in your historical account?
4. How comfortable would feel with having your historical account included in a school textbook? What is certain about your account? What is tentative?
5. Reflect on your journal. What counts as a fact in history? How accurate is it to say that history is a collection of facts?

Key Points

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JOURNAL: HISTORY AND IMAGINATION

Jane Austen notes that "it is surprising that history should be so dull considering that so much of it is invented." How accurate is this claim? In what way is history dull? In what way is history invented? What is the role of imagination in history?

Group Members _____

Writing History REMIX

Share the historical accounts you wrote in the previous lesson. Then, develop a revised history that accounts for new evidence and different interpretations.

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JOURNAL: HISTORY HUSBANDRY

Respond to the following Tom Robbins quote:

"Hardly a pure science, history is closer to animal husbandry than it is to mathematics, in that it involves selective breeding. The principal difference between the husbandryman and the historian is that the former breeds sheep or cows, and the latter breeds (assumed) facts. The husbandryman uses his skills to enrich the future; the historian uses his to enrich the past. Both are usually up to their ankles in bullshit."