ESA-Listed Salmon and the Four Lower Snake River Dams

High School Social Studies: Causes of Conflict CBA

LESSON 1: HISTORY of DAMS, SALMON, and TRIBES

HYDRO	**Subject Area(s):** Social Studies: History	**Duration:** One 50 min. period
	Description: Students will learn more about the history of dams in the lower Snake River; endangered status of salmon, steelhead, and bull trout; and about Native American tribes in that region and their connection to this natural resource.	
	Key words: natural resource, salmon stocks, hydropower, harvest, hatchery, habitat, sustainable, Native Americans, Congress	
	Materials: Handouts for groups	
State Standards: WA, OR, and ID	WA: EALR 3: Geography. Component 3.2: Understands human interactions with the environment. GLE: 3.2.1: Analyzes and evaluates human interactions with the environment in the U.S. in the past or present. OR: Social Science Analysis. SS.HS.SA.04: Analyze an event, issue, problem from varied perspectives or points of view. OR: Geography. SS.HS.GE.04: Analyze changes in the physical and human characteristics of places and regions, and the effects of technology, migration, and urbanization on them. ID: Standard 1: History. Goal 1.3: Identify the role of American Indian in the development of the United States. Objective 2: 6-12 USH1.1.3.2 Explain how and why events may be interpreted differently according to the points of view of participants and observers. ID: Standard 2: Geography. Goal 2.2: Explain how human actions modify the physical environment and how physical systems affect human activity and living conditions. Objective 1: 9-12 USH 2.2.2.1 Explain ways in which people responded to their physical environment in the development and emergence of the modern U.S.	
Focus Questions:	What are the functions of the dams on the lower Snake River for residents of Washington, Idaho, and Oregon? How do these dams impact salmon survival? What are the social and cultural perspectives of the dams in this region? What is the role of hydropower in reducing greenhouse gases?	
Learning Objectives:	At the end of this lesson students will be able to: • Name the 4 lower Snake River dams. • Explain the Congressionally authorized purposes of the dams and describe their impacts on salmon and society. • Identify some of the significant historical fishing grounds of native tribes in this region	
Engage and Encounter	Ignite a conversation about the function of dams. Have these dams been the best tool to accomplish their goals? What were the alternatives? What did people do before the dams were built? How have society's needs changed since then? How are they changing now?	
Explore and Investigate	Salmon Brainstorm: students will explore the importance of this natural resource, the historical and current threats and their endangered status, and discuss what it means to have sustainable solutions. Discuss what would happen if salmon populations were to go extinct. How would this affect people/economy, other wildlife (especially other endangered species like southern resident killer whales whose main diet is salmon), and other factors.	
Reflect and Explain Assessment:	Students will write a persuasive paper using the Washington State Classroom Based Assessment (CBA), Causes of Conflict http://www.k12.wa.us/assessment/WASL/SocialStudies/BridgingDocuments/HighSch08/HSEcon-CausesofConflict-CBA.pdf	
Apply and Extend	Students can evaluate the history of other dams (either along the Columbia, throughout the US, or even worldwide, like the Three Gorges Dam in China).	
Contact NOAA	For a guest speaker in lesson 5: email NWR.education@noaa.gov	
Reference suggestions	• Cohen's Handbook of Federal Indian Law < http://bookstore.lexis.com/bookstore/product/57318.html> • Anything by Charles F. Wilkinson: especially Blood Struggle: The Rise of Modern Indian Nations, but also Messages from Frank's Landing: A Story of Salmon, Treaties, and the Indian Way • Washington State Governor's Office of Indian Affairs <www.goia.wa.gov> • Center for Columbia River History < http://www.ccrh.org/river/history.php#indigenous> • Northwest Power and Conservation Council < http://www.nwcouncil.org/history/IndianTribes.asp>	

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Lesson 1 Procedures: HISTORY of DAMS, SALMON, and TRIBES

Background: *The population and economy of the Pacific Northwest were much smaller before the dams were built. Have students investigate how these dams transformed the region's economy, geography, and the environmental impacts they have had on wildlife, especially salmon ("salmon" will include steelhead throughout this curriculum). The US Army Corps of Engineers (COE) and the United States Bureau of Reclamation (USBR) are the owners and operators of the 31 federally owned hydro projects on the Columbia and Snake Rivers. Following America's entry into World War II, some of these dams provided low-cost power, the Pacific Northwest was the logical location for aluminum plants needed to produce the metal for airplanes. This curriculum focuses on the Snake River Basin, but some background information on the larger Columbia River basin can be explored as well.* http://www.bpa.gov/power/pg/fcrps_brochure_17x11.pdf *Have students learn about current salmon populations and economic growth, then examine the costs and benefits of the dams in modern times.*

I. Whole Class: (15 minutes)

A. Discuss the functions of the lower Snake River dams in our region (hydropower, transportation of goods, and irrigation). What other means of power, transportation and irrigation were available in the 1970s, when these dams were built, and now? Encourage students to put these functions in historical perspective. How did these people accomplish these goals before the dams were put in? Analyze costs and benefits of alternatives for the future or address carbon footprints of various types of energy production.

II. Small Groups: (35 minutes)

A. Have students work with a partner and brainstorm why salmon are an important natural resource (socially, culturally, historically, economically, recreationally, etc.). Discuss the main threats to Snake River salmon (direct human impacts through hydropower, harvest, hatcheries, and habitat; indirect human impacts through climate change). Then emphasize the importance of creating sustainable solutions.

B. Make a group of 3: Have this new group compare the work they just did in a team of 2 (why an important natural resource, main threats to salmon and the importance of sustainable solutions). Then explain that homework tonight has three parts, so each student will choose which worksheet to do individually tonight.

III. Homework/ Assessment:

A. Worksheets provided: Have students finish their research and be prepared to share with the class the next time they meet. See rubric.

1. History of the lower Snake River dams
2. History of the endangered status of salmon in the Snake River Basin
3. History of Native Tribes and Salmon in the Snake River Basin

HISTORY: Background on Lower Snake River Dams – 5 W's

Who built them/manages them?	
What are their Congressionally authorized purposes? How do they accommodate salmon passage (adult fish ladders, juvenile bypass systems, spill, etc.)	
When were they built?	
Where were they built? What population area do they serve?	
Why the particular interest in the four lower Snake River dams?	

HISTORY: Background on Salmon and Steelhead – 5 W's

Which species/stocks are listed as threatened or endangered in the Snake River Basin?	
When were they listed (timeline)	
Where in the Snake River Basin do they spawn and rear?	
Explain the importance of this resource to the general population, to the regional economy, and to American Indian Tribes.	
What are the historical and current numbers of Snake River salmon?	

HISTORY: History of Native Tribes and Salmon in the Snake River Basin – 5 W's

Suggest references for material on tribes:

- Cohen's Handbook of Federal Indian Law < http://bookstore.lexis.com/bookstore/product/57318.html>
- Washington State Governor's Office of Indian Affairs <www.goia.wa.gov>
- Center for Columbia River History < http://www.ccrh.org/river/history.php#indigenous>

Which tribes are present in the Snake River Basin?	
How are salmon significant to these people?	
Where are the reservations if any? Where are their historical and cultural fishing grounds?	
How have the dams impacted the culture and fishing heritage of these people?	
What was US v. Oregon, or the Boldt decision?	

ESA Listed Salmon and the Four Lower Snake River Dams-CBA Research Worksheets Rubric

Rate on a scale of 1-4 4=Above standard 3=Right at standard 2=Needs improvement 1=Does not meet standard	Lesson 1 Worksheet: **20 points**	Lesson 2 Worksheet: **20 points**	Lesson 3 Worksheet: **20 points**	Lesson 4 Worksheet: **20 points**	Lesson 5 worksheets: **20 points**
Content Accuracy: Did students correctly answer the questions and complete their research?					
Ideas: Ideas were expressed in a clear and organized fashion. It was clear that you understood the concepts.					
Completeness: Did student answer all of the questions in full detail?					
Objectives from each lesson addressed					
Neatness: Did student take pride in this work? Was it clean, not wrinkled, and easy to read with no distracting error corrections?					
Add up the total point for each worksheet					

Total score:

Comments: