

Name: _____
Salmon 101 - The importance of Salmon to Washington's Communities

Lesson objective: Students will be able to:

Define and recognize the ecological systems that allow for the survival of native salmon species

Explain the importance of salmon to Washington communities, specifically the Nisqually Indian tribe

Demonstrate what they as students can do to help preserve salmon habitats

Salmon are vital to the history and ecosystem of Washington state. Many tribes, including the Nisqually, continue to rely on salmon as both a food source and as an essential part of their culture and lifeways. In this series of lessons students will learn the terms necessary to understand how salmon survive and prosper. Students will also read the story of Salmon Boy which provides Native teachings on the importance of respecting the salmon. Then, students will learn what Native and non-native communities in the Puget Sound are doing to rebuild and preserve salmon spawning grounds. Finally, students will explore ways that they and others can help preserve salmon habitat.

CCSS Standards Covered:

Reading - ELA 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text; ELA 4.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Hercules).

Writing - ELAW 4.1b Provide reasons that are supported by facts and details; ELAW 4.9b Apply *grade 4 Reading standards* to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text").

SAVING THE OCEAN: RIVER OF KINGS PART 1

Prior to watching the movie make sure you are familiar with these terms:

Delta: Silt and sand left at the mouth of a river at the spot it empties into the sea.

Chinook Salmon (also called the King salmon): A large salmon important to the Nisqually Indian tribe as well as other tribes and fishermen.

Glacier: A moving mass of ice. In this case, the Nisqually Glacier.

Extinct: No longer here. A species that is extinct has disappeared.

Hatchery: A place to hatch fish to release into the rivers.

Tributary: A stream that flows into a larger river or other body of water.

Spawn: the mass of eggs deposited by fish

(Teacher Note: Video Link: <http://chedd-angier.com/savingtheocean/Season1/Episode5.html> Watch Episode 1 from the beginning to 21:21 for questions 1-7)

1. What State has the Nisqually River? Can you locate it on a map?

2. Where is the source (beginning) of the Nisqually river? Hint: it is a large mountain.

3. In the movie, River of Kings, the narrator states:

A hundred years ago Puget Sound was a major wild salmon highway, with five different species returning to the 14 rivers that run into the Sound. The settlers couldn't believe the bounty. Every year thousands of tons of fish were pulled out to supply a major canning industry.

a. What do you think the narrator means when he talks about a wild salmon highway?

b. Based on what you just read, what do you think the word bounty means?

4. In the movie, River of Kings the narrator, Carl Safina, also states:

It couldn't last. Overfishing combined with dams that blocked rivers, development that polluted the water, and logging that destroyed spawning streams. The once-abundant salmon became a trickle. Some species are extinct in some rivers – especially the chinook, which is now officially endangered.

a. After listening to and reading the narrator, what are three reasons the narrator claims fish populations began to shrink?

5. Draw a picture that shows how salmon are marked by hatcheries to identify hatchery and “wild” salmon. Why does the narrator say it is important to be able to identify hatchery and “wild” salmon?

6. The Nisqually Indian tribe, along with the Washington State and United States government are working together to restore salmon habitat in the Ohop valley near Eatonville. Based on what you heard in the movie, draw and label three things being done to improve the salmon habitat there?

7. In the Film the narrator, Carl Safina, talks about a man named Billy Frank:

This is Billy Frank, a leader of the Nisqually Indian tribe...

The Nisqually and 19 other tribes here were salmon people, and Billy Frank never lost sight of that...

...In this boat behind me is Billy Frank. In the 1960s, when people were trying to keep the Indians out of the river where they had always fished, he insisted on fishing here, insisted on his rights, got arrested dozens of times, and it's really because of his force of personality and his perseverance that he's still fishing, all these guys are still fishing, the river still has fish and the river is being restored for the wild fish.

Based on these quotes, describe what you know about Billy Frank?

SAVING THE OCEAN: RIVER OF KINGS PART 2

Prior to watching the movie make sure you are familiar with these terms:

Estuary: The tidal mouth of a river, where the tide meets the stream.

Dike: A long wall or embankment built to prevent flooding from the sea.

Biologist: A person who studies the animal and plant life of a particular region.

Slough: A marshy or reedy pool, pond, inlet, backwater, or the like.

Salinity: Salty water.

(Teacher Note: Video Link: <http://chedd-angier.com/savingtheocean/Season1/Episode6.html> Watch Episode 2 from the beginning to 21:39 for questions 8-14)

8. When talking about surge forest, Nisqually Wildlife Refuge's manager Jean Takekawa says, "*It turns out that the highest densities of juvenile chinook salmon can be found in [surge forest]*" because it provides _____, _____, nutrients, and shelter.

9. According to Carl Safina, "*Healthy salmon rivers need a lot of things. Adult fish have to get upstream, into cool, clean spawning grounds. Young salmon need places to hang out, feed and get ready to head out to the ocean – this is becoming one of those areas.*"

Based on what you are seeing and hearing, what are three things being done in the Nisqually Wildlife Refuge to make it a healthy place for salmon?

1. _____
2. _____
3. _____

10. Draw a picture that illustrates how the different layers of *salinity* at the mouth of the Nisqually river help Salmon adapt to a saltwater environment:

11. According to Safina and Nisqually Tribe biologist Florian Leischner, why are log jams important for young salmon?

12. Safina says “...*the river is becoming more varied, so different fish can use it in different ways. In nature variation is strength, because not all your eggs are in one basket. That means the Nisqually’s fish are becoming more resilient.*”

Explain why you agree or disagree with Safina that *In nature variation is strength*:

What would be a good definition for resilient?

13. Draw and label a picture that illustrates how forests or rain gardens, like those being planted in Eatonville, help rivers and salmon.

14. What do you think you can do to help salmon habitats where you live?