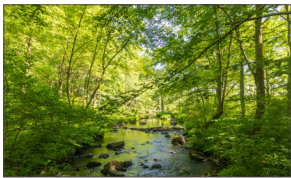


4th-5th Grade SCIENTISTS ON THE GO

Go on a Salmon Habitat Hunt

1. Visit a stream, drainage ditch, or some other body of water.
2. Draw a line to match the habitat picture with the descriptions.
3. Observe your potential salmon habitat location. Compare the quality of your habitat with the pictures and descriptions. Then, answer the questions.



Water: Salmon need clean, clear, and moving water.

What could pollute the water?



Small Stones: Salmon lay their eggs in stream beds with small stones. Their nest is called a redd. Observe and describe the bottom of the stream:



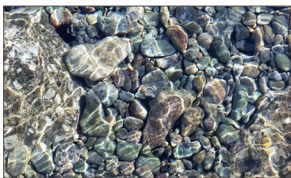
Large Woody Debris: Small salmon love to hang out near the logs.

How might the wood change how fast the water moves?



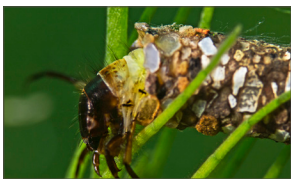
Trees: They provide shade and keep the water from warming up too much.

Describe the trees. How big are they? Do they have leaves or needles?



Dissolved Oxygen: As water moves, oxygen mixes and dissolves.

What animals in this area might need oxygen?



Streambugs: Salmon love to eat little bugs. Streambugs tell us the water quality. Some, like this caddisfly, only live in very clean water! Draw and name your own streambug on the back of this activity.



Rate your habitat for salmon by coloring a face.

We'd love to see your finished activity!

Email a photo to Thurston ECO Network at thurstoneetac@gmail.com.



Clean Water and Salmon

Like every living thing on earth, salmon need water to survive. Their **habitat** or home is water. Salmon live in rivers, streams and oceans. They depend on clean water to stay healthy and produce the next generation of fish. Water pollution is a major problem for salmon. When the water is polluted, the salmon are in danger of dying before they have a chance to complete their life cycle.

Fresh and Salt Water

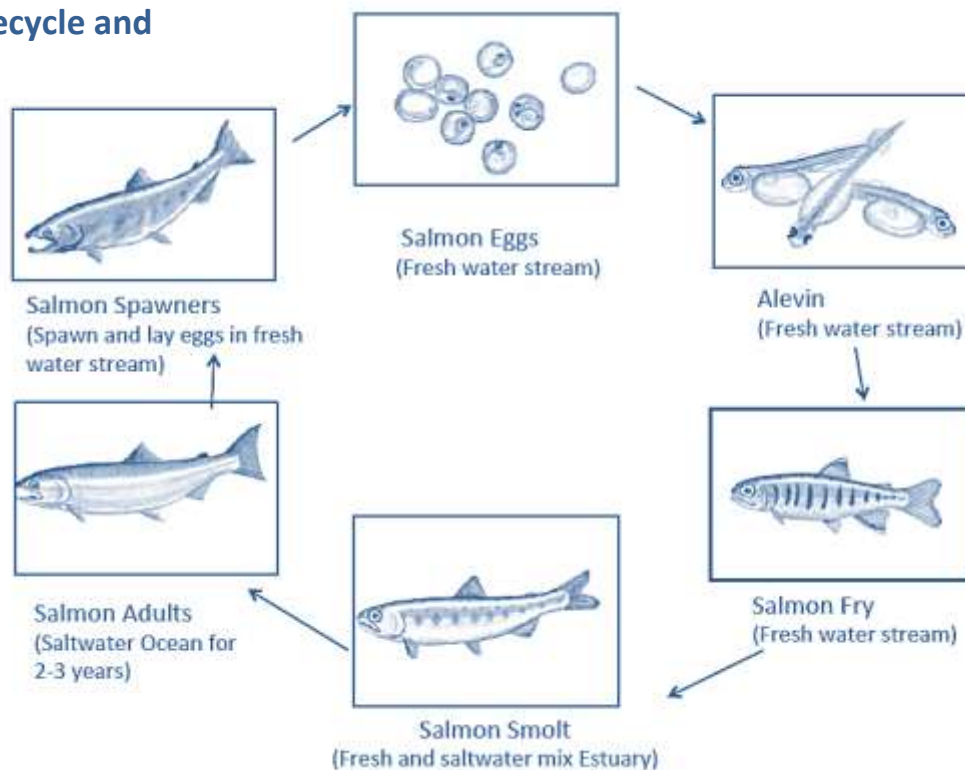
Salmon live in two different habitats. One habitat is fresh water and the other is salt water. Salmon begin their life cycle in the shallow fresh water of a stream. Adult salmon lay eggs in the stream. When the salmon eggs hatch, the small fish (alevins) begin their lives. The salmon continue to grow larger in fresh water until they are big enough to begin their journey as adults to the ocean.



Alevins

The ocean is made up of salt water. The salmon become large and strong by swimming and feeding in the ocean. After three or four years, depending on the type of salmon, the fish return to their homes in the fresh water of the streams. They travel from salt water into the mouths of rivers and swim up them to the streams where they were born. Here, the salmon will spawn and lay their eggs. This begins a new life cycle for the salmon.

Salmon Lifecycle and Habitat



Water Pollution

Salmon call water their home as do many other plants and animals. When the water is polluted, the salmon cannot stay healthy. Trash in rivers and streams can block the salmon from swimming to their birthplaces. Chemicals and certain bacteria can also harm the water. Chemicals that we use on our lawns and gardens can be **toxic** to fish. Soap from washing our cars can find its way down storm drains and out into the rivers and ocean. Pet waste is another major way that water is polluted. Here are some actions you and your families can take to help save our salmon:

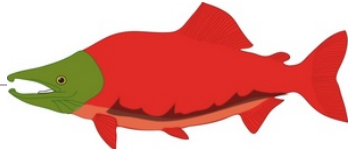
What can YOU do?

- ✓ Use lawn and garden products that are safe for the environment.
- ✓ Wash cars on grass or at car washes where the water is recycled
- ✓ Pick up pet waste and dispose in the garbage
- ✓ Buy cleaning products for the home that are free of **toxic** chemicals
- ✓ Do not dump garbage in streams, rivers or oceans
- ✓ Volunteer to pick up trash along water ways, including ocean beaches

Water is the home to many living creatures including the Northwest salmon. When chemicals, garbage, and pet waste pollute these habitats, salmon may not be able to survive. Can you imagine life without salmon? Salmon are an important food source for people all over the world. **Clean water is one way we can Save Our Salmon.** Do your part to protect the habitat of these amazing fish!



Task: **Saving Our Salmon: Clean Water**



NOTE TAKING TEMPLATE

As you read the article, take notes about the following topics.

<i>Clean Water and Salmon Article</i>	
Why Salmon need clean water	
How water becomes polluted	
Actions we can take to keep the water clean	

Salmon Lifecycle

Cut out the stages of a salmon with the facts. Arrange the stages to create a complete salmon life cycle. If you'd like, glue them onto another piece of paper and draw arrows between the stages. How is the salmon life cycle similar to other animals? How is it different from other animals?



Salmon begin their journey back to spawn in the same stream where they were born. They often travel hundreds of miles to reach home.



Baby salmon, called fry, live and grow in freshwater streams. Slow-moving water and side channels are extremely important to keep them safe from predators.



When salmon hatch from their eggs, they are called alevin. The alevins have a yolk sac attached to their stomach. This is their first food source.



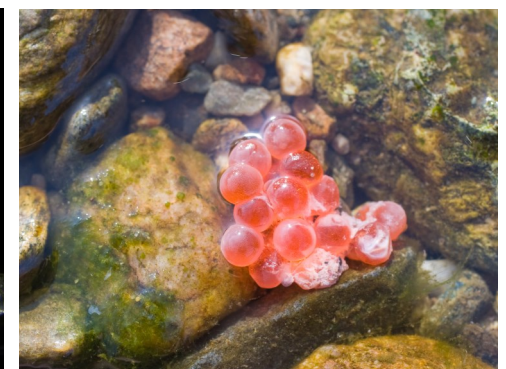
Adult salmon spend 2 to 6 years in the ocean. Salmon develop a pink color in their flesh from krill and other foods they eat.



Salmon spawn, lay eggs, and then die. Their bodies return nutrients back to the ecosystem. Salmon are keystone species. Salmon support 137 other species from bald eagles, orcas, river otters, and even more if you count invertebrates.



Young salmon, called smolt, migrate to the estuary and then to the ocean. Their bodies adapt to the saltwater along the journey.



Salmon begin their lives as eggs in a gravel nest called a redd. Of the 3,000 eggs laid by a female, only 1-2 adult fish return years later.

The Salmon Forest

An ecosystem is a community of living and non living components interacting in an environment. Salmon have an important role in our ecosystems. While you watch the video, be thinking about how salmon are connected to the other living organisms. Video link: <https://www.youtube.com/watch?v=g00fAKG31lw>

During the Video:

Take notes on interesting facts and new ideas from the video below:

After the Video:

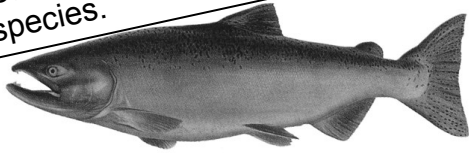
The narrator focuses bears in this video. Can you name 3 (or more) other living things in the forest that depend on salmon and live in Washington?

List two ways salmon help the forest:

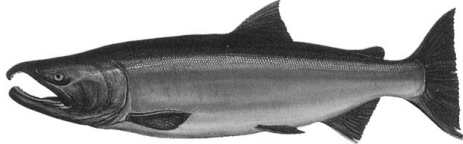
List two ways forests help salmon:

With the information you gathered from the video, create a diagram below that shows how salmon nutrients move and cycle through the forest. Draw plants, animals, and arrows to show how everything is connected.

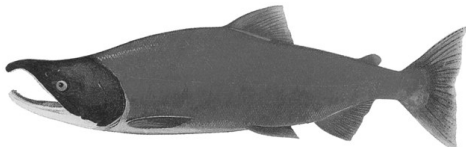
Lushootseed Salmon Names
 Lushootseed is the traditional language used by Puget Sound Coast Salish communities —see the name spelled out by each species.



yubəč



skʷəxʷic



scəqi?



ʔxʷay?



hədu?

Name that Salmon!

CHINOOK ‘King’ - The largest of the Pacific salmon. Average weight is a whopping 22 pounds (some over 120 pounds!). Prized by commercial, sport, and tribal anglers alike. You may find them spawning in small streams or even large rivers.

COHO ‘Silver’ - Looking much like a ‘King’, but smaller. They spawn in the smaller streams and rivers of the Pacific Northwest.

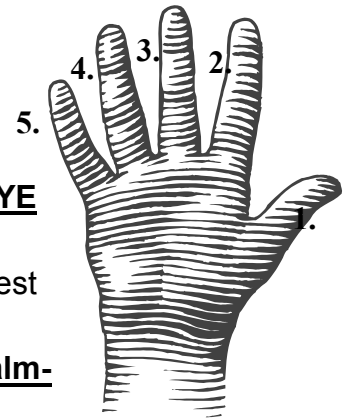
SOCKEYE - A very complex Pacific salmon species. They stay in freshwater one to three years before the ocean journey, or perhaps never go to sea. Sockeye are the only Pacific salmon that spawn in lakes.

CHUM - The lowermost reaches of rivers and streams are where you will find this species spawning. They migrate almost immediately after hatching, reaching ocean waters long before their coho, chinook, and sockeye cousins.

PINK ‘Humpback’ - Pink salmon are the smallest and most abundant of the Pacific salmon. During their spawning migration, males develop a pronounced humped back.

An easy way to remember the names of Pacific salmon:

1. Your thumb rhymes with chum, for **CHUM salmon!**
2. You may use your pointer finger to sock someone in the eye, for **SOCKEYE salmon!**
3. Your middle finger is the largest finger for the **CHINOOK ‘KING’**, the largest salmon!
4. Your ring finger is where you might wear silver...for a **COHO ‘SILVER’ salmon!**
5. And your pinkie finger is the **PINK salmon!**



Save the Salmon



Words to Find

Anadromous

Chinook

Coho

Dams

Egg

Gravel

King

Ocean

Overfishing

Pink

Pollution

Redd

Responsible

River

Sediment

Silver

Sockeye

Spawn

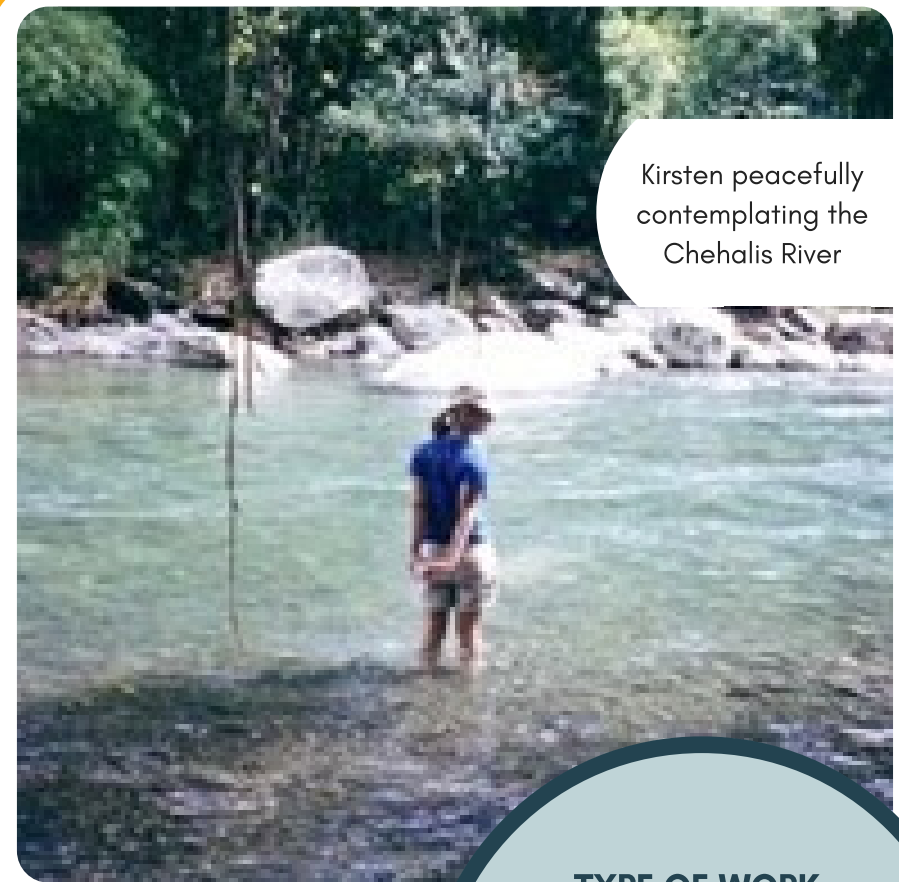
B	U	N	E	Z	G	L	A	E	J	W	B	W	P	Y
P	T	O	L	G	O	N	O	Y	S	A	E	E	P	V
R	I	I	B	N	R	H	I	E	X	M	A	G	N	S
H	O	T	I	M	W	C	O	K	R	Q	N	R	M	W
F	B	U	S	C	E	A	T	C	O	I	A	A	C	Q
I	O	L	N	K	V	U	P	O	H	C	D	V	G	O
H	L	L	O	A	O	O	A	S	E	R	R	E	D	D
S	P	O	P	C	R	O	I	E	S	T	O	L	A	P
N	D	P	S	G	E	F	N	D	Z	F	M	N	J	U
V	A	I	E	G	R	A	W	I	R	Q	O	P	P	S
V	R	N	R	E	I	N	N	M	H	O	U	W	F	G
L	E	K	V	X	V	K	G	E	B	C	S	R	Y	W
J	E	O	X	F	E	B	E	N	J	Z	Q	P	K	F
A	K	S	O	P	R	X	U	T	S	I	L	V	E	R
Z	C	C	R	O	Z	I	T	K	B	C	R	Q	K	J

EnviroKIDS

Reduce · Reuse · Recycle · Respect · Responsible



Kirsten peacefully contemplating the Chehalis River



TYPE OF WORK
I coordinate efforts to restore and protect salmon habitat in the Chehalis River Watershed. Every day is different and exciting!

Kirsten Harma
Watershed Coordinator
Chehalis Tribe

TYPICAL DAY: Most of the time, I work at my computer, answering questions over the phone and email, or I facilitate conversations at group meetings. Every now and then I get to go out and see locations for potential salmon habitat restoration or protection projects. A lot of what we look for are undersized culverts (the pipes that go under roads) that don't allow adult and juvenile fish to move up and down the river. I spend a lot of time providing constructive ideas on how we can get funding, how to communicate the benefits of our work, and how to collaborate.

CAREER PATHWAY:
My career path started with a project I worked on during my senior year of high school. I wanted to understand what was polluting a creek running by my house. My research led me to understand the concept of a "watershed" and I have been working to improve watershed health ever since!



Chehalis River floodplain

IMPORTANT SKILLS
General environmental science, fisheries biology, restoration techniques, creating and tracking a budget, project management, communications skills, and community planning.

EDUCATION
Master's Degree

SALARY RANGE
\$50,000 - \$75,000

TOOLS OF THE TRADE
Computer with GIS and Microsoft Office - especially Word and PowerPoint.

"I love that I get to use my science knowledge and my "soft" skills of working with people to build collaborative relationships to improve fish passage and create healthy wetlands that are protected in perpetuity." - Kirsten Harma