

# Salmon

spirit of the land and sea



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## The Salmon Circle of Life

FOR MILLIONS OF YEARS the wild salmon has helped nourish the plant and animal life of the temperate rain forest. Born in the streams and rivers of the forest, the salmon travels to the ocean where it lives for up to five years before returning to the stream or river in which it was born.

There are six species of salmon that are common to the Pacific Northwest: Chinook, Chum, Coho, Pink, Sockeye and Steelhead. From the waters of the Pacific to those of the temperate forests, salmon are a crucial link in the health of both ecosystems. Sadly, many wild salmon populations have been threatened because of habitat destruction, over-fishing and other causes.

Follow One World Journeys' online photo documentary expedition, "Salmon: Spirit of the Land and Sea," and learn what the Expedition Team experienced in its quest to understand the importance of the wild salmon. As part of classroom journal activities, have your students use the *Expedition Notes* page to record what they learned by following the Expedition Team's daily dispatch during the *Live Journey* at: <http://www.OneWorldJourneys.com/salmon/>  
Use the other worksheets and activities as tools to study the wild salmon.

## MATERIALS SUITABLE FOR GRADES 5–8

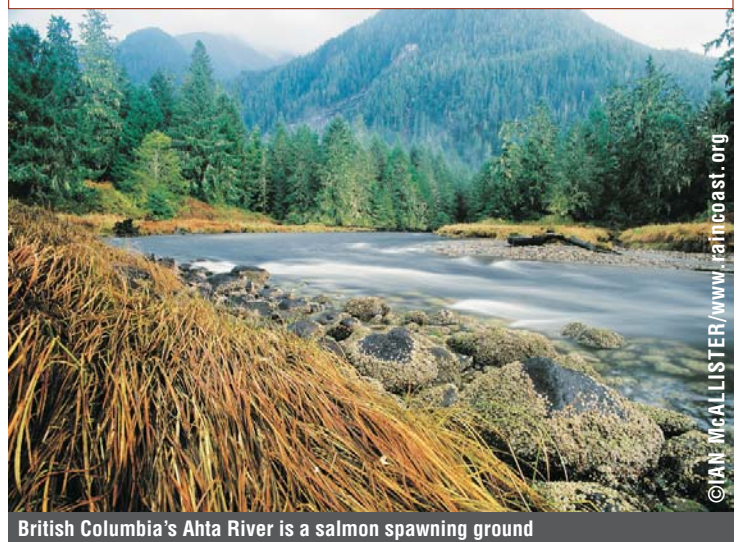
### Subjects

Art, Language Arts, Math, Science, Social Studies

### Objectives

Students will be able to:

- identify the interdependence between salmon and the temperate rainforest ecosystem;
- identify and compare the physical characteristics and behaviors of five salmon species; and
- summarize the hardships of salmon migration.



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British Columbia's Ahta River is a salmon spawning ground

### Activity 1 — Which is Which?

Materials: computer with Internet access, colored pencils, Venn diagram

Begin the activity by discussing what students know about salmon. Ask the students to guess how many species of salmon there are and how they might be different. Brainstorm a list of characteristics that may differ (size, color, patterns, etc.). To observe the characteristics of five different salmon, complete the activity, *Species Identification Check List*, at the Pacific Coast Salmon Fisheries site and also use the *Species Identification Web Site*.

<http://www.tbc.gov.bc.ca/culture/schoolnet/pacific/teacher/species.html>

[http://www.pac.dfo-mpo.gc.ca/ops/biosample/chapt\\_1/chapt\\_1.htm](http://www.pac.dfo-mpo.gc.ca/ops/biosample/chapt_1/chapt_1.htm)

Add information about their behaviors to the checklist when you visit the following sites:

<http://www.OneWorldJourneys.com/salmon/>

<http://www.wa.gov/wdfw/outreach/fishing/salmon.htm>

<http://www.state.ak.us/adfg/notebook/notehome.htm>

When completed, discuss the similarities and differences between the five species of salmon. Print the Venn diagram and have the students compare the traits of two different species of salmon. For finishing touches, they can color their diagrams.



Salmon die after swimming up river to spawn

### Activity 2 — Fish and Forests

Materials: large outdoor space, activity cones, 20 cutout fish shapes, street map of your area, ruler

Ask students to brainstorm how a fish may be related or connected to a forest. We often don't associate fish with forests, but worldwide there is a major link. Forested slopes control soil erosion which in turn keep the soil fertile; this also prevents a build-up of sediment in our waterways and protects aquatic organisms such as fish. Many forests are being cleared at alarming rates, and one such example is in the Pacific Northwest. Show pictures of forested and deforested areas of the temperate rainforest of the Pacific Northwest. A good site to visit is:

<http://www.raincoast.org/greatbear/>

Discuss how deforestation affects aquatic life in the streams. Tell the students they will play a game to investigate the movement of water down a forested slope and a deforested slope.

**FIELD SET-UP:** Establish a playing field approximately 20 yards by 40 yards. Use activity cones to mark the boundaries. Choose one end of the field to represent a stream and use activity cones to mark this area approximately 5 to 10 yards in from the end. Here, lay the fish cutouts on the ground to represent salmon in the stream. The remainder of the field is the forested slope.

**GAME:** Divide half of the class into raindrop people, and instruct them to stand at the end opposite of the stream. Have the remaining students find a partner to represent soil and trees, and instruct them to spread out along the playing field. A soil person must crouch down next to a tree person. A tree person is allowed to move only around the soil person. This represents the tree roots holding the soil in place.

The object of the game is for the rain people to run down the field to tag a soil person and take them down to the stream to pick up one fish. This symbolizes soil erosion, which degrades water quality and harms the salmon. The rain people must not get tagged by a tree person. If tagged by a tree person, they are "absorbed" into the ground and must leave the playing field.



After the first round, discuss the results. How many fish were affected by sedimentation? Try other rounds where 30% of the class is rain and 70% is soil and trees, and where 50% is rain and 50% is soil only. Discuss the results after each round and determine which scenario is best.

Back into the classroom, visit the following sites to see other measures people are promoting to protect stream quality and the salmon population. Discuss how these measures affect the link between the land and salmon.

<http://www.OneWorldJourneys.com/salmon/>

<http://www.salmoninfo.org/homefriendly.htm>

To further reinforce the connections between the land, health of local streams and rivers and fish populations, ask students to find their “water address” and calculate the distance between their house and the closest body of water. Distribute rulers and post a street map of the area. Have students write their house number and street name, followed by the name of the closest body of water, the next body of water that it feeds into, and so on. Using rulers and the map legend, have students calculate the distances between their house and each body of water. Discuss the distances and the measures that they could take to improve their local stream health.



Clearcutting practices threaten watersheds and the health of salmon

### Activity 3 — Salmon Migration Madness

Materials: computer with Internet access, posterboard, markers or colored pencils

Ask the students what they think “anadromous” means. Anadromous refers to fish that spend different stages of their lives in both saltwater and freshwater. Salmon are anadromous, starting their life in a freshwater river, spending their adult lives in the ocean, and migrating back into freshwater streams to spawn. Brainstorm the hazards of such a life cycle. Answer the following questions:

- What are the stages of a salmon’s life cycle?
- Why do salmon migrate?
- When do they migrate?
- What threatens the salmon?
- What is the spirit bear?
- What threatens the spirit bear?
- What is a temperate rainforest?
- What threatens the temperate rainforest?
- What is the relationship between the salmon, the spirit bear, and the temperate rainforest?

Visit the following sites to investigate further:

<http://www.nwf.org/wildalive/salmon/bigpicture.html>

<http://www.OneWorldJourneys.com/salmon/>

<http://www.pbs.org/wnet/nature/ghostbear/html/intro.html>

<http://www.nps.gov/olym/edurain.htm>

<http://www.raincoast.org/greatbear/salmon.html>

<http://www.raincoast.org/greatbear/spirit.html>

Allow students to work in pairs or small groups to investigate the answers and discuss them as a class. In addition, have the students take the King County Metropolitan Services *Salmon Challenge*.

<http://www6.metrokc.gov/salmon/index.htm>

Next, have pairs or teams of students create a board game based upon a salmon’s journey through life. Complete the activity with a game day, where teams of students rotate trying all the games.



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Name \_\_\_\_\_

Date \_\_\_\_\_

## EXPEDITION NOTES

Summarize the expedition team's findings and observations from the Daily Dispatch or Special Report in the Live Journey section at:  
<http://www.OneWorldJourneys.com/salmon/>

Day # \_\_\_\_\_

Dispatch/Report Title: \_\_\_\_\_

**Summary:**

**My Thoughts About the Expedition:**



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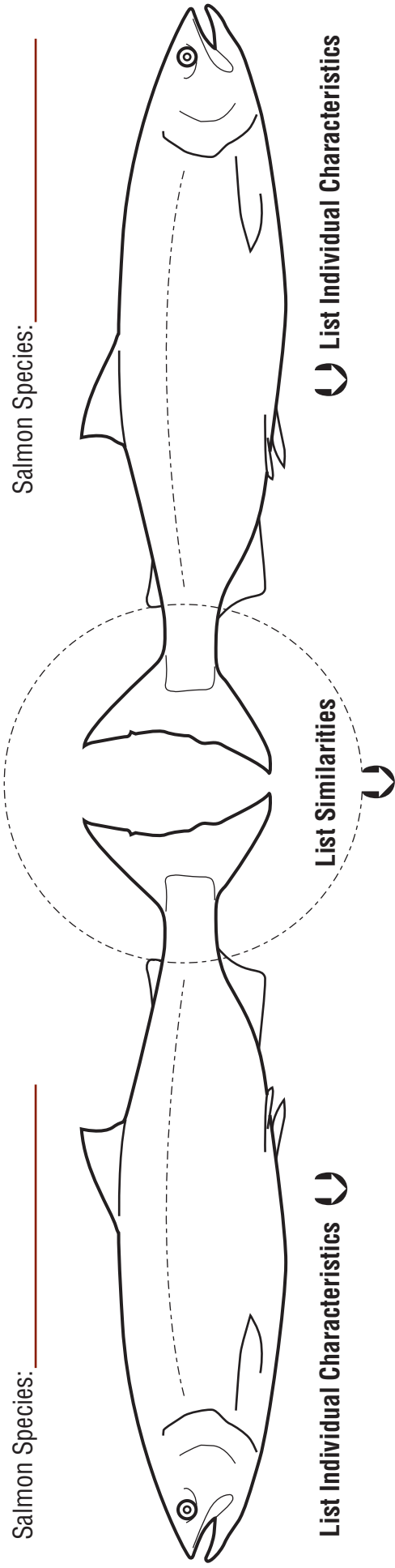
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Name \_\_\_\_\_

Date \_\_\_\_\_

## SALMON VENN DIAGRAM

Salmon Species: \_\_\_\_\_



Salmon Species: \_\_\_\_\_

List Individual Characteristics ↪

↪ List Individual Characteristics



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