

## Fish in the Fraser

### **Background Information on the Fraser River:**

The Fraser River starts as a trickle of melted snow at the top of Mount Robson, which is in the Rocky Mountains, sitting on the border of British Columbia and Alberta. The river travels 1,375 kilometres through BC and empties into the Pacific Ocean. There are many tributaries (a river or stream that flows into a larger river or lake) that add water to the Fraser as it travels through BC. The Fraser River is the longest in BC, and one of the largest in all of Canada.

The landscapes of the Fraser River change from the beginning of its journey to its end. As you exit the headwaters on Mount Robson, the water is crystal clear, shallow, and extremely cold. The middle portion of the river is called the Fraser Canyon, where the river is squeezed between mountain ranges, increasing the speed and creating many impressive rapids. The point at which the fresh water of the Fraser River meets the salty water of the Pacific Ocean is called the estuary (also sometimes called “between land” by the First Nations people because, as the tides ebb and flow, the estuary changes from land that is covered with water to dry land). Because estuaries have access to both riparian (river) and marine nutrients, they are home to an incredible diversity of life. The Lower Mainland is located in the estuary portion of the Fraser River.

The Fraser River Estuary is as rich in its biodiversity as it is an ideal habitat for many organisms, such as salmon. Salmon are a keystone species because their life cycle contributes greatly to the health and biodiversity of numerous ecosystems. They transport nutrients found in the ocean to freshwater environments as they migrate inland to spawn. These nutrients can also reach land as their bodies wash upon shore, feeding hundreds of other species, from bears and eagles to towering forests and microorganisms.

The Fraser River is also the home of the White sturgeon. White sturgeon are a primitive species of fish dating back to the time of the dinosaurs. Proof of their existence can be seen as far back as 200 million years in the fossil record. They are the largest freshwater fish in North America. Sturgeon have bony plates called scutes, similar to those found on dinosaurs, on their back and sides that they use as protective armor. A healthy female sturgeon can lay up to 4 million eggs, which hatch into larvae with a yolk sac. After about a month’s time, the larvae metamorphose into juvenile sturgeon. Juvenile sturgeon reach sexual maturity between 15 and 30 years of age. Adult white sturgeon can live up to 150 years in age.

Indigenous people have been living in what we now call Canada for time immemorial, meaning that Indigenous communities have no stories of arriving here. They have always been here. There are many different First Nations along the River; each group is unique, with its own language or dialect, specific traditions, particular relationships with the landscape, stories, etc. The river has been used by Indigenous communities for thousands of years, and they have specialized technologies, traditions and celebrations related to the river, nature, and biodiversity. Hul’q’umi’num’, Halq’eméylem, and hənqəminəm are Indigenous language dialects spoken in the lower portion of the Fraser River. In Halqeméylem, the language dialect spoken in the upper portion of the lower Fraser, the word for river is Stolo. In hənqəminəm, a language dialect spoken in the lower portion of the lower Fraser, the word for river is stalə w. Indigenous communities throughout BC speak other languages and dialects and will have other names for the river. The Fraser River Discovery Centre is located on the traditional and unceded territory of the hənqəminəm and Halqeméylem speaking peoples. Territory acknowledgement is one small part of Reconciliation. We ask you to take a

moment to think of other ways you can participate in Reconciliation with Indigenous communities.

### Program Overview:

The Fraser River is home to incredible fish, like salmon and sturgeon! Through stories, movement, and hands-on play, children will discover the life cycles of these remarkable fish, explore what they need to survive, and learn how we can help care for the Fraser River.

The 60-minute program begins with an introductory presentation and is split into two activities:

1. Read-along to *Salmon Stream* by Carol Anne-Reed
2. Sturgeon Survival Felt Board

### Program Objectives

- To introduce students to salmon and sturgeon as two fish that live in the Fraser River.
- To identify the basic things fish need to survive, including clean water, food, and safe places to live.
- Explore how fish interact with other living things as part of the Fraser River Community.
- To encourage curiosity, care, and respect for fish and their river habitat through storytelling, movement, and play.

### Helpful Vocabulary

- **Community:** Different living things that share a place and are connected to one another.
- **Fraser River:** A large river in British Columbia that is home to many plants, animals, and people.
- **Habitat:** the natural home or environment of an animal, plant, or other organism.
- **Larvae:** is the active immature form of the fish, hatched from the egg, that differs greatly from the adult
- **Life Cycle:** The continuous sequence of changes through the development of an organism (i.e. – salmon from birth to death).
- **Predator:** An animal who hunts other animals for food.
- **Salmon:** A fish that hatches in freshwater, travels to the ocean, and returns to freshwater to lay eggs.
- **Scutes:** Hard, bony plates along a sturgeon's body that help protect it from predators.
- **Sturgeon:** A very large fish that lives in the Fraser River and can live over 100 years old.

### In-class activities:

Here are some ideas to help prepare your class for the program, and to continue the learning back in the classroom.

#### Pre-visit:

1. Take your class on a short walk around your school, playground, or neighbourhood and look for the different living things that share the space such as plants, birds, insects, animals, and people. Encourage children to notice what they see and think about what each living thing might need to survive. Afterwards, explain that the Fraser River is a community too, where many different living things share the same environment. Ask students to guess what living things they might discover in the Fraser River community during our visit!
2. Ask your class what they think lives in the Fraser River? What does a fish need to live? Don't worry about finding all the answers – we'll investigate these questions together during your visit!
3. Watch and listen to "Run Salmon Run" by Bobs and Lolo to introduce the changes a salmon undergoes, and the actions salmon take throughout its journey to and from the river.
  - a. <https://youtu.be/fi5b1qUQ7xI?si=rcBfwgIDZT05Tikc>
4. Review the salmon life cycle, and what the journey looks like specifically for the Northwest Pacific Salmon
  - a. [https://www.youtube.com/watch?v=gFswGt7o\\_08](https://www.youtube.com/watch?v=gFswGt7o_08)
  - b. Watch this beautiful video that illustrates the life cycle of salmon, told from the salmon's perspective. This video shows how salmon affects all aspects of life inside and outside the water. It outlines Indigenous importance as well.

#### Post visit:

1. Take your class on a short walk around your schoolyard, park, or another natural area and see how many different living things you can find. Look for plants, insects, birds, and other animals, and talk about where each one lives. Ask children, "What does this living thing need to survive?" Compare their ideas to what they learned about fish during their visit: clean water, food, and a safe place to live. Discuss how different living things may have different kinds of homes and food, but they all depend on their habitat to provide what they need.
  - a. Refer to this "take a kid fishing" activity for some further extensions of this habitat hunt.
    - i. <https://4-hontario.ca/wp-content/uploads/2022/01/Take-A-Kid-Fishing-Part-2.pdf>
2. If you can find it, read [Tale of a Great White Fish: A Sturgeon Story](#), by Maggie de Vries and Renne Benoit. This beautifully illustrated story takes the reader through this sturgeon's long life, and through the history of the area, as she witnesses all the changes to her habitat starting before the gold rush. Note: in the story, this sturgeon lives to be 177. There is no confirmed case of a white sturgeon living that long, but there is still much we don't know about these fish, so perhaps one did live that long.
  - a. Youtube read-through link: <https://www.youtube.com/watch?v=KJlwe5Qh06g>
3. Colouring pages:
  - a. Salmon: <https://www.friendsofnwhatcheries.org/wp-content/uploads/2020/04/Coloring-Sheet-Salmon.pdf>

- b. White Sturgeon: <https://wakethekids.com/sturgeon-coloring-pages/>

#### Additional Material

1. Salmon children's books: <https://eadn-wc02-5494031.nxedge.io/wp-content/uploads/2021/08/NATURE-KIDS-Salmon-Book-List.pdf>