

Shadows of the Fraser

Background Information on the Fraser River:

The Fraser River was named after Simon Fraser (1776-1862) who explored the river in 1808 on behalf of the North West Company in search of a navigable route for fur trading. Simon Fraser believed that he was traveling on the Columbia River to its ocean outlet. It was another explorer, David Thompson, who later named the river after Simon Fraser.

First Nations people had lived along the Fraser River for thousands of years before Simon Fraser's arrival. Some of the archaeologists estimate up to 9000 years before. (A site under the Alex Fraser Bridge has been dated back that far).

The Fraser River starts as a trickle at Mount Robson (Headwaters) and ends in the Strait of Georgia in the Pacific Ocean. There are many tributaries that add water to the Fraser, including the Thompson River (22% of the total water flow).

The Fraser River is 1 375 kilometers long. If it was stretched out across Canada, it would span the distance between Vancouver and Regina, Saskatchewan. The Fraser River is the fifth largest river in Canada. It is less than 15 000 years old.

The characteristics and landscapes of the Fraser River change from the beginning of its journey to its end. As you exit the Headwaters and enter the Upper Basin region, the river's sediment load increases creating more turbulent waters with the water appearing grey or brown in colour. The river then passes through the Drylands with low vegetation as a result of little rainfall and hot temperatures. In the Canyon, the river is squeezed between the Coast and the Cascade 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). Other estuaries include the mouths of great rivers such as the Amazon, the Nile and the Mississippi.

The Fraser River Estuary is as rich in its biodiversity as it is an ideal habitat for many organisms. A habitat can be defined as a place where an organism can get food, water and shelter. The major habitat types along the Fraser River include: brackish and freshwater marshes, salt marshes, tidal flats, sloughs, and flood-plain forests among others.

The Fraser River watershed is also home to 60% of BC's population, approximately 2.7 million people. S watershed is an area of land that drains all the water into one main river. The Fraser River watershed is also called a drainage basin, since it collects so much water and drains such a large area (25% of BC's area).

Program Overview:

White sturgeon is 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. The Fraser River is the only river in the world where white sturgeon still spawn on their own, without the assistance from hatchery facilities. However, their numbers have greatly declined in the past 100 years, so they are now listed as endangered. By examining their life cycle and talking about the white sturgeon we hope to teach individuals how we can help these incredible fish.) Students explore the life cycle and habitat of the elusive white sturgeon through real specimens and a fun felt storyboard. Students also learn how people's actions can impact sturgeon in the Fraser River, fostering a sense of responsibility to the local environment.

This 90-minute program begins outside where students can see for themselves all of the different activities happening along the river. They will then watch a puppet show where they will be introduced to sturgeon George and he will tell them all about himself and his life cycle. The class is then split into three groups that will rotate between the following stations:

- Felt story board- following the sturgeon life cycle
- Anatomy station- students will see our specimen jars and learn about all the different body parts of the sturgeon.
- Sturgeon Survival game- students will learn all the challenges that face the sturgeon living and growing in the Fraser River

Program Objectives

- To introduce the unique characteristics of the white sturgeon
- To understand the importance of the Fraser River habitat to the white sturgeon
- To learn about the anatomy of the white sturgeon
- To compare the anatomies of the white sturgeon to a great white shark
- To discover how the white sturgeon lives from day to day

Helpful Vocabulary

Barbels: a fleshy filament growing from the mouth or snout of a fish.

Conservation: preservation, protection, or restoration of the natural environment, natural ecosystems, vegetation, and wildlife.

Dredging: clean out the bed of (a harbor, river, or other area of water) by scooping out mud, weeds, and rubbish with a dredge.

Dyke: an embankment for controlling or holding back the waters of the sea or a river

Ecosystem: a biological community of interacting organisms and their physical environment.

Endangered: (of a species) seriously at risk of extinction.

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

Extinct: (of a species, family, or other larger group) having no living members.

Fry: (also referred to as the juvenile) the stage in a sturgeon's life before adulthood

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

Milt: the semen of a male fish.

Population: all the inhabitants of a particular area.

Predator: an animal that naturally preys on others

Prey: an animal that is hunted and killed by another for food.

Scutes: a thickened horny or bony plate

Spawn: (of a fish) release or deposit eggs

Tributary: a river or stream flowing into a larger river or lake.

Watershed: an area or ridge of land that separates waters flowing to different rivers, basins, or seas.

Yolk Sac: a membranous sac containing yolk attached to the larvae of some fish.

In- class activities:

Pre-visit:

1. Search through newspapers, magazines, and books to find any pictures relating to the Fraser River or other local water bodies. As a class, share the clippings or drawings and classify them under the following headings: Jobs on the river, Ways people use the river for fun, animals along the river, river habitat.
2. Check out the Fraser River Sturgeon Conservation Society at <http://www.frasersturgeon.com/> for photos and videos of white sturgeon in the river.
3. Students should be able to recognize the Fraser River on a map. Have students identify the major cities and tributaries found along the Fraser River.

Post visit:

1. Either as a class, or individually, draw a picture of a sturgeon and label as many important body parts as you can (barbels, scutes, fins, mouth, nostril, snout, tail fin, dorsal fin, pectoral fin, pelvic fin, anal fin, gill cover)
2. Discuss how sturgeon are adapted to their environment and which body parts help them live for so many years and survive since the time of the dinosaurs (barbells, scutes, counter-shading, etc).
3. Have students pretend they are a sturgeon and write a story about their life from egg to adult. What kinds of things would happen? How are people influencing the lives of sturgeon both good and bad?
4. Check out the Fraser River Sturgeon Conservation Society at <http://www.frasersturgeon.com/> for more information and lesson plans.