



Big Idea: There are 27 different species of sturgeon living in varied habitats throughout the world. All of the 27 species are found in the northern hemisphere and can reside in fresh and/or salt water. Locally, the Fraser River is home to the white sturgeon, *Acipenser transmontanus*. In this lesson, students will examine the general locations of the sturgeon species around the world and examine the specific habitat of the white sturgeon within British Columbia.

Objectives: Students will...

- recognize that sturgeon live in different habitats around the world
- label a map of the Fraser River watersheds to show where the Fraser River white sturgeon reside

Curricula Links: Soc. St., Science

Suggested Grade Levels: 4 - 6

Materials:

- Overhead of World Sturgeon Distribution Map (Appendix 2.1)
- Copies of World Sturgeon Distribution Map (Appendix 2.1)
- Overhead of Labels for the Map of BC (Appendix 2.4)
- Copies of Map of BC (Appendix 2.5)
- Atlases

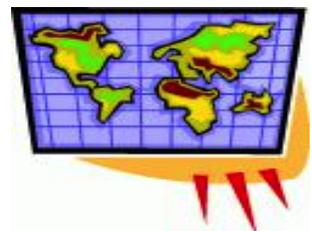
Lesson Two (a) - Sturgeon Habitats

Opening Motivator:

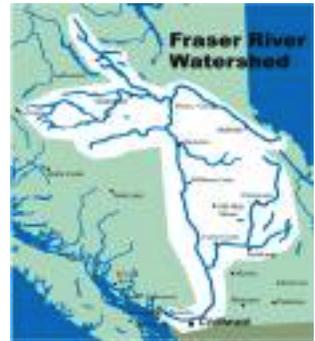
Have students look at a map of the world (atlas or wall map) and play the game "Field Trip Around the World". Tell students you are going on a field trip around the world, but only to certain countries (in this case, only those in the northern hemisphere). For students to go on the field trip, they need to provide a correct example. Begin the game by providing a few correct examples, then ask students to guess. If they guess correctly, they can join you on the trip. If they are incorrect, they can't go on the field trip and have to stay at school. Only one guess per student. Eventually, most students will get the idea that you are only going to countries in the northern hemisphere.

Classroom Activity:

1) Hand out the map of the world to the students and put up an overhead of the same map (shade the sturgeon habitats with red on the overhead). Examine the map of the world and ask students what they notice about where the sturgeon lives in the world. Discuss the fact that sturgeon live throughout the northern hemisphere and in various countries in North America, Europe and Asia. Have students shade in the sturgeon habitats on their own map. Ask students if they can name any countries where sturgeon reside. Also, point out to the students that there are other areas in Canada where sturgeon reside, and that different species of sturgeon live in these locations.



2) Hand out the map of British Columbia and ask the students “What are the series of branching lines that extend half way up the province?” Hopefully the students will recognize this as the Fraser River.



Inform the students that white sturgeon also live in the Kootenay and Columbia rivers. Since the scope of these lessons only focus on the Fraser River, the Kootenay and Columbia sturgeon are not examined. A suggested activity about these sturgeon is provided in the extension section.

Have students use an atlas to draw in and label the following locations on the map of British Columbia: Fraser River, Thompson River, Nechako River, Chilcoltin River, Pacific Ocean, Vancouver, your home town/city, Hope, Lytton, Prince George, Victoria, Vancouver Island, Strait of Georgia. Teachers may select only a portion of these specific map locations, or may include more labels (e.g. Yukon, Alberta, Williams Lake, Quesnel). Appendix 2.2 provides a list that can be printed out and placed on an overhead or photocopied for the students.

All teachers have their own method for labeling maps; however, you may suggest the following to your students:

- use blue for outlining the rivers
- use dots to mark the location of towns/cities
- challenge older students to use three different sized dots for towns, small cities, and large cities
- use capital letters to start each word
- print city/town names straight across the page
- names for bodies of water may follow the contour of the water
- include a compass rose to indicate North direction
- include a legend to explain different symbols on the map.

Conclusion and Reflections:

If they have any questions about world sturgeon habitats, the Fraser River or the white sturgeon, they should write them down in the question section of their Science notebooks. Remind students that as these questions are answered, they should record this information.

Extension Ideas:

1) Research the location of hydroelectric dams on the rivers that are connected to the Fraser, Kootenay and Columbia River system. Find out what problems arise for the white sturgeon when dams are built on rivers.



2) Research the movement of continents during the last 200 million years to see if there is a connection to the distribution of sturgeon in the northern hemisphere.

3) Use the distance scale on a map to determine how far it is between specific points along the Fraser River and its tributaries.

4) Carefully examine the entire Fraser River watershed on a detailed map from an atlas. Discuss the fact that a snowflake or raindrop that falls somewhere on the west side of the Rocky Mountains could eventually find its way to the mouth of the Fraser River. Ask students what the implications are with respect to pollution of water and/or land in any part of the Fraser River watershed.

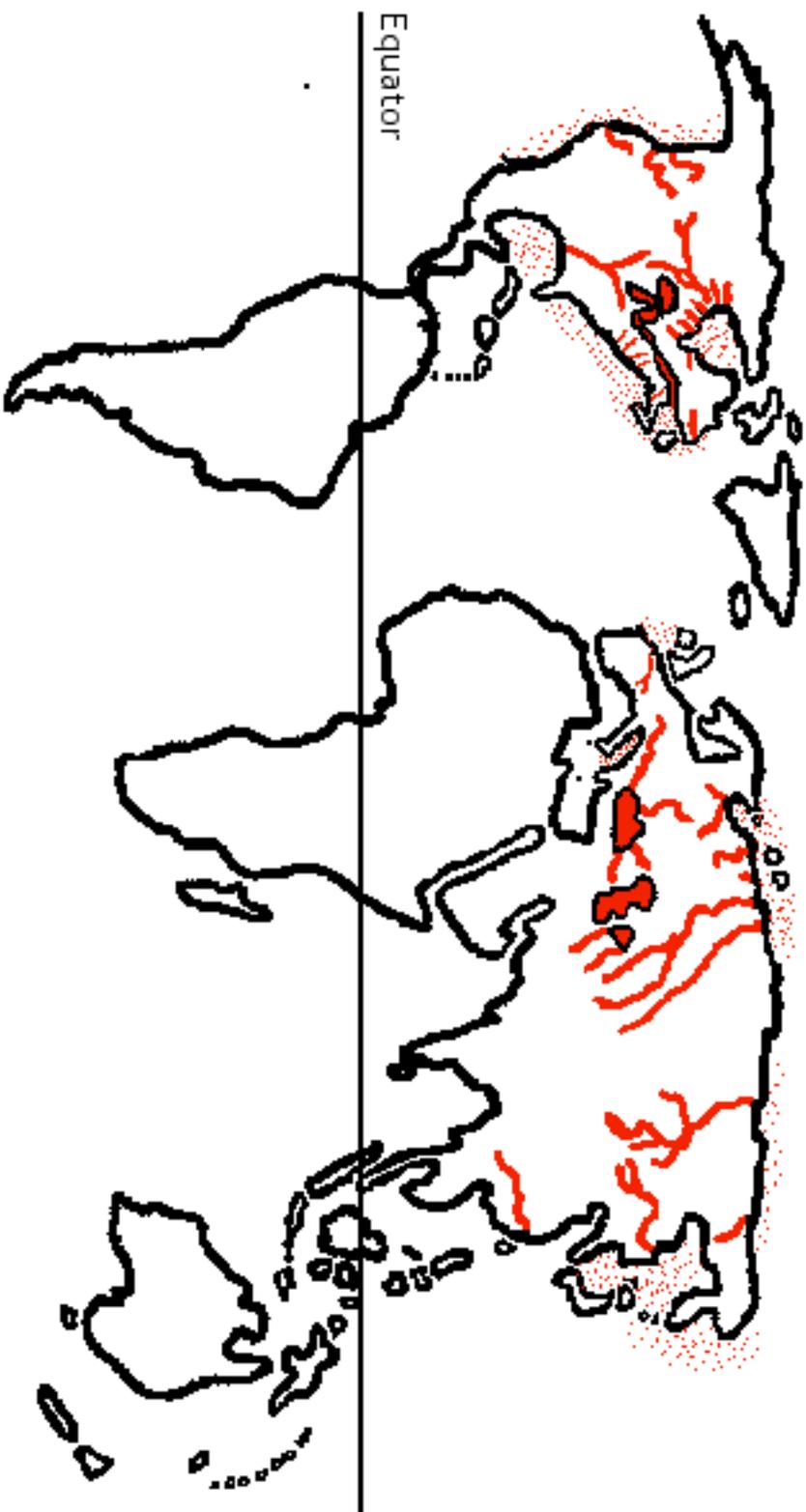
Web Links:

Kidfish - this kid-friendly website has information on the different rivers, lakes and fish in British Columbia. Although it is a website that promotes fishing, it does so in a responsible manner and has a lot of environmental information throughout the site. <http://www.kidfish.bc.ca>

World Sturgeon Society - this website provides information on the different species of sturgeon around the world. <http://www.worldsturgeonsociety.com>

The Fraser Basin Council is an organization that looks at all issues related to the entire Fraser River Watershed. The [Fraser Basin Council website](http://www.fraserbasin.bc.ca/fraser_basin/watersheds.html) has a very detailed explanation of all parts of the Fraser River Watershed. http://www.fraserbasin.bc.ca/fraser_basin/watersheds.html

Appendix 2.1 - Map of World Sturgeon Distribution





Appendix 2.2 - Labels for the Map of British Columbia

Draw in and label the following on your map of British Columbia. Remember to capitalize the first letter of each name and print neatly in black. All labels must be horizontal, except the labels for bodies of water.

- | | |
|-------------------------|--------------------------|
| 1) British Columbia | 2) Alberta |
| 3) Yukon Territory | 4) Northwest Territories |
| 5) Fraser River | 6) Thompson River |
| 7) Nechako River | 8) Chilcoltin River |
| 9) Vancouver | 10) Prince George |
| 11) your home town/city | 12) Hope |
| 13) Lytton | 14) Pacific Ocean |
| 15) Victoria | 16) Vancouver Island |
| 17) Strait of Georgia | |



Appendix 2.3 - Map of British Columbia

