

Born to be wild



Canadian Geographic's January/February 2017 issue examines a partnership that includes Parks Canada and the aquaculture industry, which aims to boost the wild Atlantic salmon population. Atlantic salmon was declared endangered on the east coast and has been on a steep decline since the 1970's. With your students, use the infographic and the following questions to explore this successful initiative and the multiple steps in the process to increase the salmon population.



Check for understanding

1. List and explain some of the reasons why the wild Atlantic salmon have almost disappeared from Eastern Canada?

2. Where was the world's first marine wild salmon conservation farm established? What might be some of the reasons for this choice of location?

3. Explain the premise of the Fundy Salmon Recovery Project.

4. In your own words and with sketches, outline the approach taken to grow and release wild Atlantic salmon:

Step 1	Step 2	Step 3	Step 4

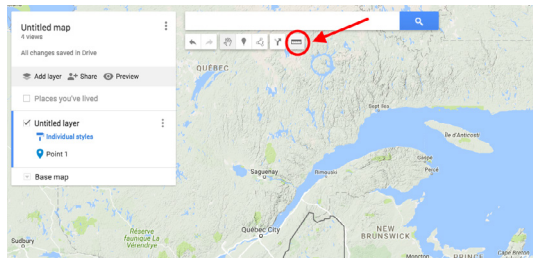
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Extend your geographical thinking

1. On the path to growing and releasing wild salmon

Using Google My Maps, map out the steps taken to grow and release wild Atlantic salmon. Add markers on the map with text and pictures to document the steps. Using the ruler function, measure the total distance travelled by the salmon throughout the process. You can find the ruler function below, indicated by the arrow and circle.



2. The best way to raise salmon

Research the techniques used to raise farmed salmon in Canada. Discuss the similarities and differences between growing farmed and wild salmon. Pair up and choose which you think is better. Consider the following ideas when formulating your arguments: modes of transportation, the land use and economic activity, environmental impact, sustainability, etc. In your group, prepare for a class debate by using the Debate worksheet provided. During the debate, two groups from opposing sides will each present their position, address a rebuttal, prepare a response and finish with a summary of their respective positions.

3. Food miles (kilometres)

Use your own lunches or invent your own. On a blank map of Canada from Can Geo Education or an international map, map out the sources of the ingredients in your lunch and calculate the number of kilometres each food ingredient has travelled to get to your house. As a class, discuss the issues related to the potential and limits of the physical environment, the transportation of goods, the environmental impact and the benefits of locally grown food.

Resources

- Fundy Salmon Recovery
- Huntsman Ocean Sciences
- Fisheries and Oceans Canada
- David Suzuki Foundation
- Food Miles calculator

Debate worksheet

Name: _____

1. What is your position?

2. Brainstorm Ideas

3. Group similar ideas and arguments together

4. Decide who will present which arguments and handle any rebuttals on that topic

5. Prepare visuals (if required)

Arguments	Possible rebuttals

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Inside an innovative partnership to recover wild Atlantic salmon in the Bay of Fundy

By Alexandra Pope

Since the 1970s, wild Atlantic salmon have all but disappeared from Eastern Canada, decimated by overfishing, development and other threats. But recently, endangered Inner Bay of Fundy Atlantic salmon have been returning to two rivers in Fundy National Park in numbers not seen for 20 years thanks to an unlikely partnership that includes Parks Canada and the aquaculture industry.

The Fundy Salmon Recovery Project grew out of a simple premise: the less time a young salmon spends in captivity, the greater its chances of survival in the wild, so why not restock the rivers with adult salmon that will spawn naturally, producing numerous offspring that will never experience captivity?

In the late 2000s, the park and its Fisheries and Oceans Canada partners approached Cooke Aquaculture, which operates commercial salmon farms in New Brunswick, Nova Scotia, Newfoundland and Maine. "They grow millions of Atlantic salmon, so we asked if they would grow wild Atlantic salmon for us," says Corey Clarke, a Parks Canada ecologist.

Cooke agreed, and has since established the world's first marine farm dedicated to growing wild Atlantic salmon off Grand Manan Island, N.B. Last fall they celebrated the release of more than 500 adult salmon into Fundy National Park to spawn. Here's how they do it.

2 The smolts are held in a containment pen, designed to simulate conditions in the wild. At 70 metres in diameter, it's smaller than a conventional salmon-farming pen but fish density is kept much lower. Walkways allow staff to feed the smolts by hand and monitor their health and the quality of the water. At any given time, there may be as many as 3,000 salmon in the facility at Dark Harbour.

1 Wild Inner Bay of Fundy salmon are captured from their home rivers when they are two- to four-year-old smolts. At this stage they have yet to migrate to the ocean, where they face the biggest threats to their survival and from which relatively few would return. From here, they are transported southwest to Cooke's ocean facility at Dark Harbour, where the fish will be grown to spawning age.

3 After about a year, the salmon are moved to a 12-metre-square steel adult pen, giving them more room to grow and making space for new smolts. Adults are fed a special blend that includes animal proteins and fats, plant ingredients, vitamins and minerals.

4 In the fall, it's time for the adults to return to the rivers. Using a special pump and hose, the fish are transferred from the containment pens to a large transport tank on a truck. They will travel some 250 kilometres by truck and ferry (see route on map) back to either Fundy National Park or the Petitcodiac River. Those destined for the park take a further journey by helicopter to their release points, where they are returned individually by hand.



Read about more innovative projects saving endangered species in Canadian parks at cangeo.ca/jfl7/endedangered.

