

Maritime Traffic and Marine Life

Safe navigation in busy waters

Maritime Traffic and Marine Life Activity Cards

Shipping Routes and Trade

Role/Aspect: Understanding Shipping Routes

Description: Shipping routes are pathways used by ships to transport goods and materials across the world.

Activity:

- Use ropes to trace major shipping routes along the St. Lawrence River and into the Great Lakes.
- Identify key ports along these routes and discuss what goods might be transported through them.

Questions:

1. How do shipping routes help support local and international economies?
2. Why are these routes important for communities along the St. Lawrence River?
3. How might the presence of shipping routes impact marine life in these areas?

Map of major shipping routes:



(Adapted from: [Source](#))

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Noise Pollution

Role/Aspect: Examining the Causes and Effects of Noise Pollution

Description: Noise pollution from ships can disrupt marine animals' communication, navigation, and behaviour.

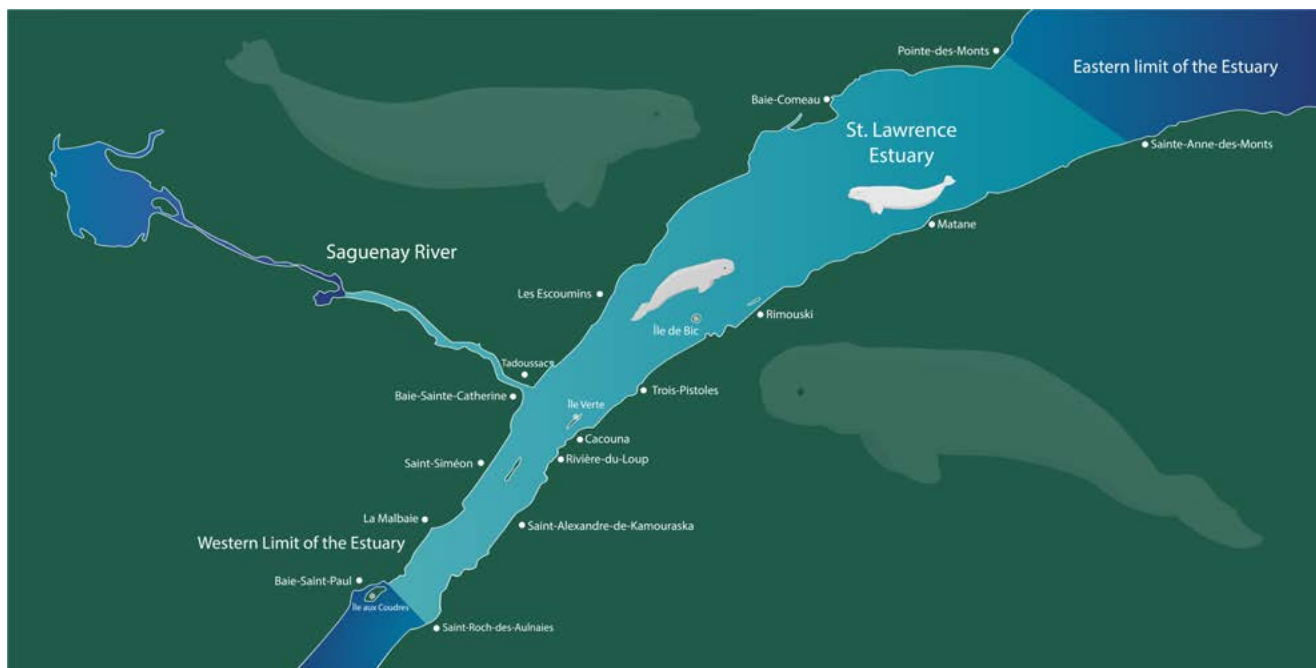
Activity:

- Locate and outline with rope the St. Lawrence estuary on the Giant Floor Map
- Discuss how noise from ships passing through the estuary might affect marine animals like whales.

Questions:

1. What types of noises do ships produce, and why are they harmful to marine animals?
2. How might noise pollution change the behaviour of beluga whales in the St. Lawrence river?
3. What measures could be taken to reduce the amount of noise pollution from maritime traffic in the St. Lawrence estuary?

Map of beluga habitat:



(Adapted from: [Source](#))

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Ballast Water and Invasive Species

Role/Aspect: Exploring Ballast Water and Invasive Species

Description: Ballast water is essential for the stability and manoeuvrability of ships. However, when discharged in a marine environment it can introduce potentially harmful invasive species to new areas.

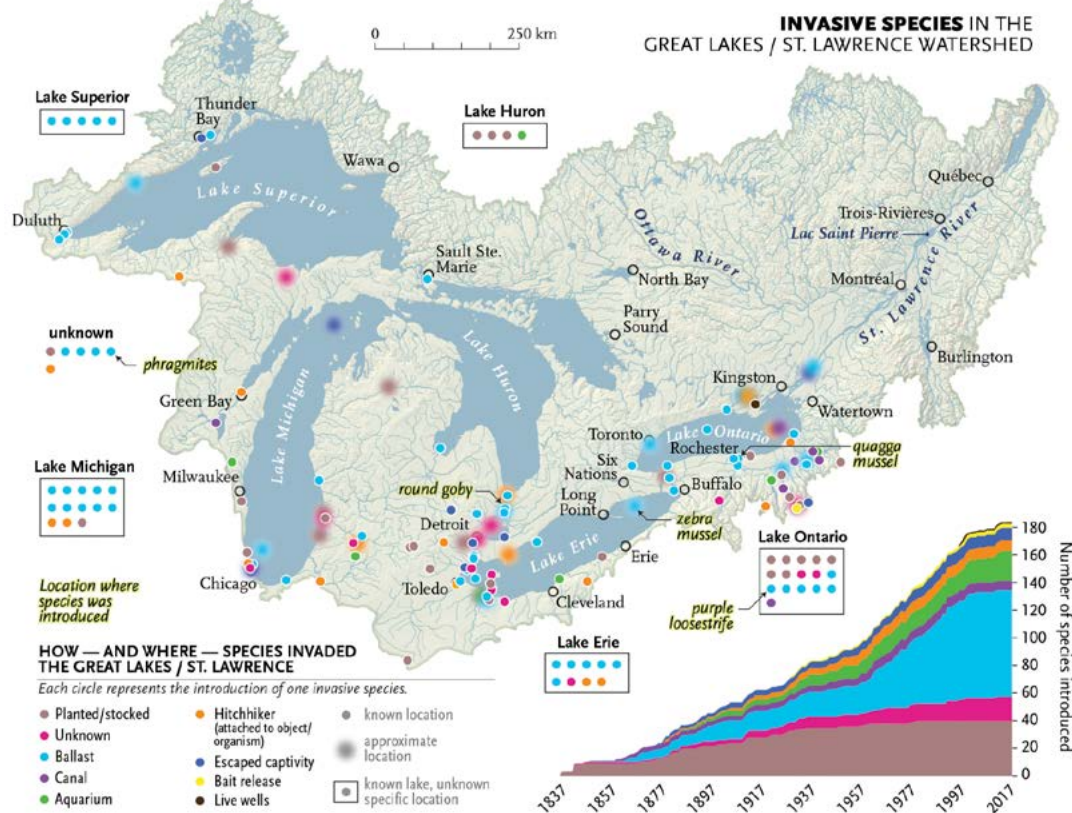
Activity:

- Using pylons, identify on the Giant Floor Map all of the locations where invasive species were introduced to the Great Lakes via ballast water from maritime shipping.
- Discuss the impact of invasive species on local ecosystems.

Questions:

- How does ballast water introduce invasive species to new environments?
- What effects do invasive species have on native marine life and ecosystems?
- What measures can be taken to manage and treat ballast water to prevent the spread of invasive species?

Map of invasive species from ballast water:



Source

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Economic Benefits

Role/Aspect: Analyzing the Economic Benefits of Maritime Shipping

Description: Maritime traffic plays a crucial role in supporting trade and economic growth. In 2022, a total of 135.7 million metric tons of cargo valued at \$33.9 billion moved through the Great Lakes-Seaway system, supporting 241,286 U.S. and Canadian jobs and generating a total of \$8.3 billion in federal, state/provincial, and local tax revenue.

Activity:

- Using pylons, identify on the Giant Floor Map the 3 biggest ports in the region in terms of economic output.
- Discuss the types of goods that are transported via these ports and their importance to the economy.

Questions:

- How does maritime traffic contribute to the economy of communities along the St. Lawrence River?
- What types of jobs are created by the maritime industry?
- How might reducing maritime traffic to protect marine life impact the economy?

Top 3 largest ports by economic output:

Port of Duluth-Superior (Minnesota/Wisconsin)	Port of Montreal (Quebec, Canada)	Port of Hamilton (Ontario, Canada)
<p>Top Exports: Iron ore, coal, grain (wheat, soybeans, corn)</p> <p>Top Imports: Limestone (used for road and building construction), cement, salt</p>	<p>Top Exports: Grain (wheat, corn, soybeans), machinery and equipment, wood and paper products</p> <p>Top Imports: Petroleum products, consumer goods (electronics, clothing, furniture)</p>	<p>Top Exports: Steel and steel products, grain (wheat, corn, soybean), machinery and equipment</p> <p>Top Imports: Coal, petroleum products (fuel and plastics), iron ore</p>

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Conservation Efforts

Role/Aspect: Highlighting Conservation Efforts

Description: A conservation area is a region designated for the protection and maintenance of natural environments and wildlife. The Lake Superior National Marine Conservation Area (NMCA) is part of Canada's efforts to preserve marine ecosystems, aiming to protect marine life from the impacts of maritime traffic and other human activities.

Activity:

- Find Lake Superior on the Giant Floor Map and trace the boundaries of the Lake Superior NMCA with rope.
- Discuss how this and other conservation areas help protect marine life.

Questions:

- What conservation measures help protect marine life from maritime traffic?
- How do protected zones benefit marine animals and their habitats?
- What additional steps can be taken to balance maritime traffic with marine conservation?

Map of the Lake Superior National Marine Conservation Area:



Source

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Research and Monitoring

Role/Aspect: Assessing ongoing research initiatives

Description: Ongoing research and monitoring are essential for understanding and mitigating the impacts of maritime traffic on marine life.

Activity:

- Using pylons, identify on the Giant Floor Map the four research and monitoring centres listed below.
- Discuss the type of data collected at these sites and how this information helps protect marine life from the impacts of maritime traffic.

Questions:

- Why is research and monitoring important for protecting marine life?
- What types of data are collected to study the impact of maritime traffic?
- How can research findings be used to improve conservation efforts?

Key research and monitoring stations:

Great Lakes Institute for Environmental Research (GLIER)	St. Lawrence River Institute of Environmental Sciences	Group for Research and Education on Marine Mammals (GREMM)	Cooperative Institute for Great Lakes Research (CIGLR)
Location: Windsor, Ontario	Location: Cornwall, Ontario	Location: Tadoussac, Quebec	Location: Ann Arbor, Michigan
What They Monitor: Water quality, invasive species, and the health of aquatic ecosystems.	What They Monitor: Water quality, fish populations, and habitat health in the St. Lawrence River.	What They Monitor: Marine mammals, particularly whales, their behaviours, and habitats in the St. Lawrence Estuary.	What They Monitor: Great Lakes water quality, climate change impacts, and ecosystem health.