Certainly! Let's delve into the topic of ship pollution in the Great Lakes. These vast freshwater bodies are crucial for commerce, transportation, and ecological balance. However, ships operating in the Great Lakes region can have significant environmental impacts. Here are some key points:

1. Emissions Inventory:

- The Great Lakes-St. Lawrence Seaway (GL-SLS) is an essential commercial waterway spanning over 3,700 kilometers. It hosts more than 110 ports and facilitates the transportation of over 143.5 million tonnes of cargo annually.
- While ships are relatively efficient for cargo transport, they rely on fossil fuels that contribute to air pollution and climate change.
- In 2012, the United States Environmental Protection Agency (EPA) estimated ship emissions in the Great Lakes at 541,336 tonnes of carbon monoxide (CO) in 2002, with a predicted increase to 704,390 tonnes by 2020.
 However, this only accounted for certain vessel categories within the U.S. portion of the Great Lakes.
- A more recent inventory for 2019 covers all ships operating in the GL-SLS, providing a broader perspective on emissions 1.

2. Cruise Ships and Carbon Emissions:

- Cruise ships that travel through European ports, accommodating around 4,000 passengers, can emit as much carbon dioxide (CO₂) as 85,000 cars.
- However, the vessels set to sail the Great Lakes are much smaller, carrying about **385 passengers each**. While their impact is lower, it's essential to monitor emissions 2.

3. Airborne Contaminants:

- Large ships are significant producers of nitrogen oxides (NO_x), sulfur oxides (SO_x), and tiny particulate matter (PM). These pollutants contribute to smog, acid rain, respiratory ailments, and potentially cancer.
- The Great Lakes region faces challenges in managing ship emissions near ports and coastlines, as well as hundreds of miles inland 3.

4. Plastic Pollution:

• Beyond emissions, the Great Lakes are also grappling with plastic pollution. Plastic waste, including bags, bottle caps, and tiny fibers, litters beaches and poses risks to wildlife and water quality 4.

In summary, while ships play a vital role in trade and transportation, efforts to reduce their environmental impact are crucial. Striking a balance between economic activity and ecological preservation remains a challenge for the Great Lakes region. $\square \triangleq \bigcirc$

