

Report in Focus

THE VALUE OF COMMERCIAL MARINE SHIPPING TO CANADA

As a maritime nation, Canada's economy, culture, environment, and security have long been interlinked with commercial marine shipping. Critical to Canada's historical development, marine shipping continues to be vital to international trade and the development of communities. It is often the only means by which food and essential goods reach Canada's island, remote, and northern communities. Marine shipping transports about 20% of Canadian exports and imports by dollar value. In 2015, marine trade was valued at \$205 billion, with about 80% occurring outside North America.

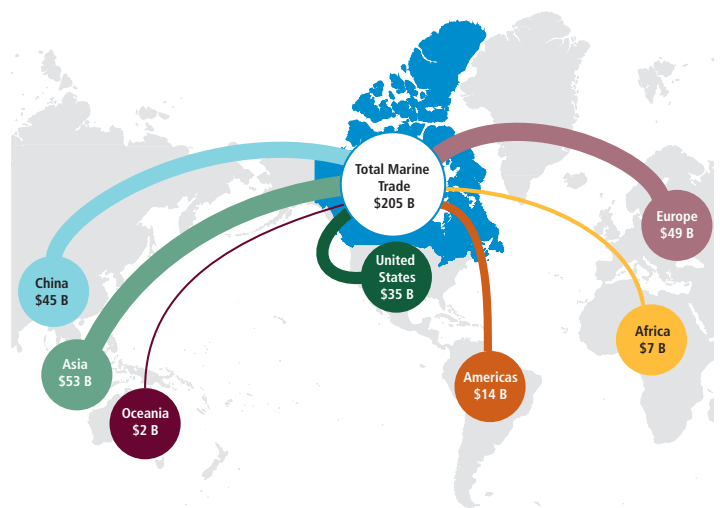


Key Findings

- By moving goods and people, marine shipping has played a formative role in Canada's history. Today, despite other competing modes of commercial transportation, marine shipping remains an important part of Canada's economy and culture.
- The GDP of Canada's marine shipping industry is about \$3 billion. The positive national economic impact of commercial marine shipping, however, is estimated at approximately \$30 billion due to its role in facilitating international trade.
- The negative environmental impacts of marine shipping in Canada are mostly declining. Commercial marine shipping produces only 1% of Canada's GHG emissions.
- The regional and local impacts of marine trade and shipping employment are unevenly distributed across Canada. Some negative cultural, environmental, and security impacts tend to be concentrated locally.
- Commercial marine shipping is evolving in response to global and domestic social trends. The overall effect of these trends will likely increase future shipping activity in Canada.

While it is evident that marine shipping is of critical importance to Canada, its value has never been comprehensively assessed. For this reason, Clear Seas Centre for Responsible Marine Shipping (Clear Seas) asked the Council of Canadian Academies (CCA) to undertake an expert panel assessment on the topic. To address the charge, the CCA assembled a multidisciplinary, multi-sectoral panel of 10 experts with a range of expertise, experience, and demonstrated leadership in economics, anthropology, the marine shipping industry, and marine shipping-related public policy.

The Panel determined that no single estimate or perspective could account for the value of commercial marine shipping to Canada, but that a comprehensive approach was required. The Panel defined four dimensions of value: economic, cultural, environmental, and security. The assessment was informed by both academic and grey literature, original data analysis and case studies, and a novel quantitative trade modelling exercise to help understand the role of marine shipping in the Canadian economy.



The figure presents an overview of Canada's major international trade flows in 2015. The dollar value indicates total marine trade (i.e., sum of marine exports and imports).

ECONOMIC IMPACTS

At the national level, the Canadian commercial marine shipping industry directly contributes \$3 billion to gross domestic product (GDP). However, conventional measurement of GDP fails to capture its primary economic impact. For a deeper understanding of the economic impacts on national income and welfare, the Panel commissioned a quantitative trade model to measure the effects of international marine trade on the economy. It estimates that without shipping, Canada's long-run real GDP would be permanently reduced by 1.8% or around \$30 billion. This is about nine times larger than the industry's GDP and roughly the size of the Canadian agricultural sector or New Brunswick's economy.

The Canadian marine shipping industry itself is a direct and indirect source of some 99,000 jobs across the country. These jobs account for approximately \$4.6 billion in labour income nationally, and are a substantial source of local employment in some coastal regions and port communities.

ENVIRONMENTAL IMPACTS

Environmental impacts associated with commercial marine shipping include localized air and water pollution, effects on marine ecosystems and species, port-related noise and light pollution and traffic congestion, the introduction of invasive species, and risks arising from marine accidents and spills. The magnitude and costs of these impacts can be significant where they occur; however, many are declining because of new regulations and port initiatives.

In Canada, marine shipping produced 6.7 megatonnes (Mt) of GHG emissions in 2013, accounting for 8% of the commercial transportation total, or about 1% of total Canadian GHG emissions. Marine shipping remains the least GHG emission-intensive mode of commercial transportation and emission intensity is expected to continue to decline as vessels become more efficient and use lower-carbon fuels.

CULTURAL IMPACTS

Marine shipping is tightly woven into Canadian culture, influencing symbols, beliefs, and identities. Marine ships, such as the canoe, *Bluenose*, and *Amundsen*, are important national symbols. Most Canadians believe that they are citizens of a maritime or seafaring nation and that marine shipping is an important part of Canada's culture.

Shipping activity has contributed to the cultural development of Canada's port cities and coastal regions. The Pacific region, the Great Lakes, Atlantic Canada, and the Arctic have distinct maritime cultures and traditions that are often represented in local maritime museums and cultural events.

Negative impacts of shipping tend to be localized, arising in response to port and shipping operations. These impacts can be particularly acute for Indigenous peoples. Marine shipping can damage culturally and ecologically sensitive coastal areas and disrupt traditional fishing and hunting.

SECURITY IMPACTS

Individuals employed in the marine shipping industry experience direct risks to their personal health and safety through occupational hazards. Working in freight transportation carries several distinctive risks related to the operation of heavy equipment and machinery, the movement of large volumes of cargo, and potential exposure to hazardous chemicals and materials. Marine shipping caused an average of 14 serious human injuries per year in Canada in 2011–2015.

Ports are also linked to a number of localized safety and security issues due to their status as a potential vector for hazardous materials or illicit goods entering the country.

FINAL THOUGHTS

Despite other competing modes of commercial transportation, including road, rail, and air, marine shipping is vital to Canada. Marine shipping is more than just a conduit for connecting Canadians to the world outside of North America. For some types of goods, there is no viable alternative to getting them to market or receiving them from abroad. When assessed in totality and from all angles — considering economic, environmental, security, and cultural impacts at the national, regional, and local levels — the Panel concluded the net overall value of marine shipping to Canada is positive and sizable.



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This *Report in Focus* was prepared by the CCA based on the report *The Value of Commercial Marine Shipping to Canada*. It does not necessarily represent the views or opinions of the sponsoring organization, Clear Seas.