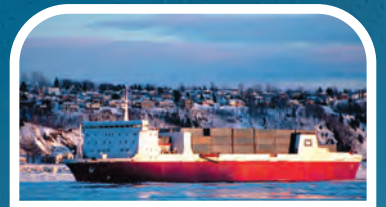


Freight Transportation

on the **St. Lawrence**

since 1995

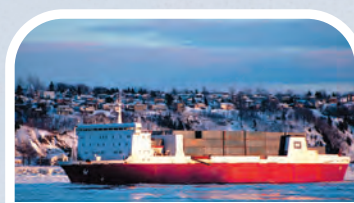
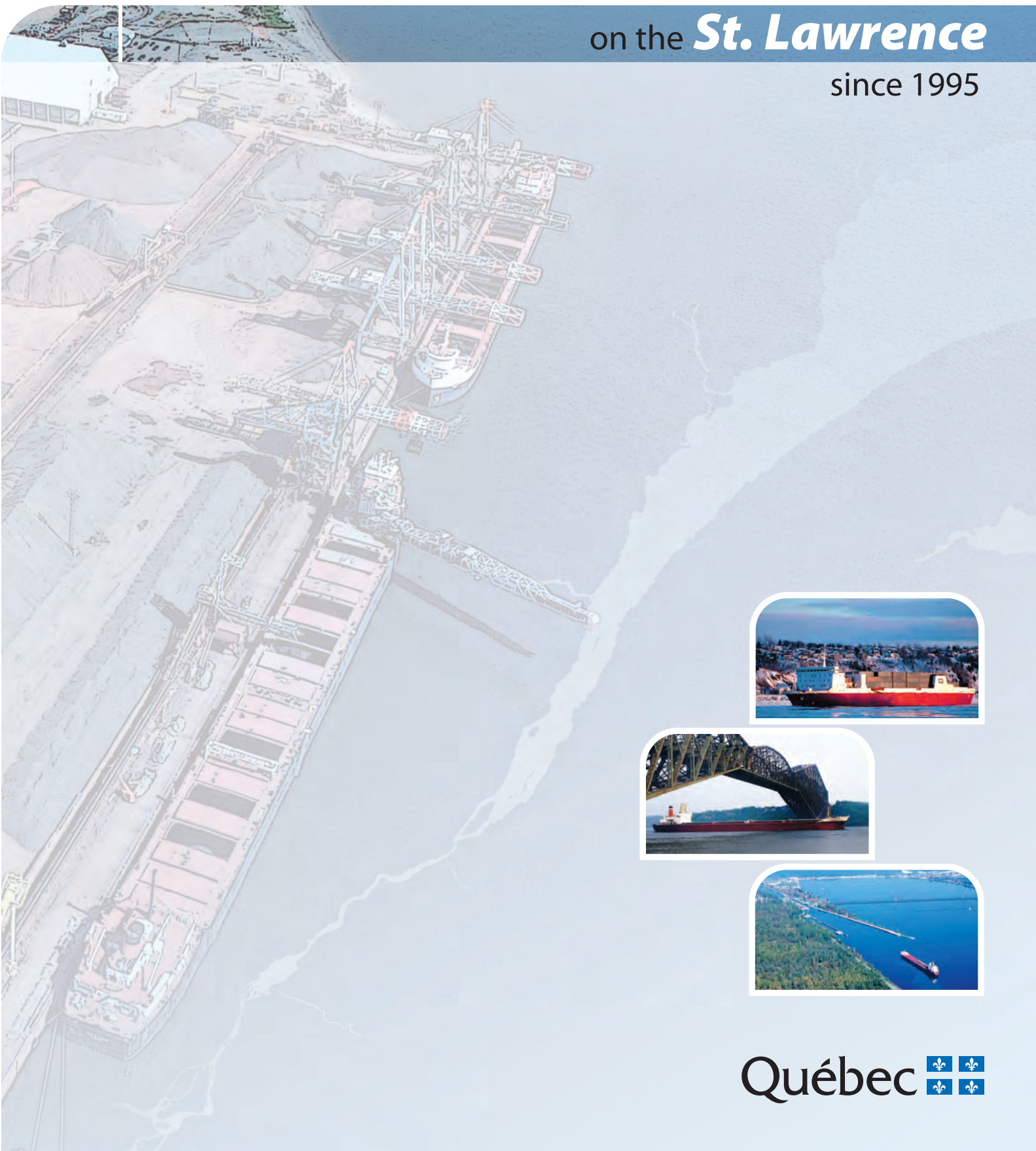


Québec 

Freight Transportation

on the ***St. Lawrence***

since 1995



Québec 

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Executive Summary

The purpose of the report entitled *Freight Transportation on the St. Lawrence Since 1995* is to provide a better understanding of recent developments in marine freight transportation in order to encourage the use of the St. Lawrence River, a vital axis for trade in Québec.

- From 1995 to 2005, the total freight tonnage handled at Québec ports generally varied between 90 Mt and 105 Mt. Over the years, exports have decreased while imports have increased. In 2005 exports exceeded imports by a mere 2.4 Mt.
- While total tonnage has remained relatively stable, the trade structure has changed: in particular, less business is being done with the ports on the Great Lakes while overseas markets have grown considerably. Québec port traffic using the Seaway has decreased by over 7 Mt when compared to 1995 levels. In contrast, the predominantly international flows moving in the Gulf of St. Lawrence increased by 9 Mt from 1995 to 2005.
- Although it represents less than 10% of the total volume handled at Québec ports, intra-Québec marine traffic generates significant economic benefits, since it consists mainly of natural resources shipments from the Côte-Nord, which supply Québec's processing industries, in particular in Sorel and Contrecoeur.
- Over 90% of traffic at Québec ports is oriented towards foreign markets, and a third of this trade is with Europe.
- Moreover, almost all 11 Mt of containers at the port of Montréal are traded with Europe. The approximately 50% increase in container traffic is one of the main reasons for the over 5 Mt growth in freight handled at the Port of Montréal during the 1995–2005 period.
- Half of all tonnage handled at Québec ports can be attributed to the minerals sector. Between 1995 and 2005, mineral cargo, essentially iron ore, decreased by 5 Mt. Despite a strong increase in service to the Asian market, mainly China, shipping to the United States, Europe, and Ontario dropped. It should be noted that in recent years Québec has witnessed a mining boom attributable to heightened demand for iron ore, with evident effects on traffic including a significant increase at the ports on the Côte-Nord between 2005 and early 2008. Since then the economic slowdown has resulted in a decline in these shipments.
- Québec ports are transshipment points for a significant portion of grain loaded onto lakers at the Great Lakes ports, then unloaded at Québec ports and redirected by ship to the rest of the world. The volume of grain transported in 2005 was considerably less than in 1995.
- Between 1995 and 2005, 50% more fuel and basic chemicals were unloaded at Québec ports. This cargo type consisted mainly of petroleum products shipped to the Port of Québec and, to a lesser extent, to the Port of Montréal. In fact, this increase in petroleum and chemical product imports was the impetus for growth at the Port of Québec. In 2008, the volume handled at the Port of Québec (27 Mt) was comparable to that of the Port of Montréal.
- A number of ports (Chandler, Forestville, Gaspé, Pointe-au-Pic, and Portneuf) have seen lower traffic volumes due to reductions in industrial activity within the regions they serve.

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Introduction

The St. Lawrence River links the Atlantic Ocean to the Great Lakes. Within Québec, 21 commercial ports provide service to industries and support domestic and foreign trade.

Since it is vital for overseas trade, marine transportation is greatly dependent upon the world's economy. The volume of freight handled at Québec ports was on average 98 Mt from 1995 to 2005 (Fig. 1.1). Over 90% of this traffic was oriented towards external markets. In 2006 and 2007, traffic continued to increase, particularly in relation to foreign trade, especially due to favorable conditions in the resource sector (this sector is entirely dependent upon marine transportation, and Québec is an active participant). In 2008, despite a very active first quarter, business stabilized somewhat due to the worldwide economic slowdown during the second half of the year.

Over the past decade, the economies of Québec and the world changed in ways that are reflected in the geography of commerce in Québec, within both domestic and foreign markets. The networks and modes of transportation that support trade have adapted to these new economic realities. Marine transportation responded directly to these transformations, begun earlier, including reduced use of the St. Lawrence Seaway for shipping iron concentrates and grain. With regard to this type of cargo, it should be noted that the drop in grain shipments is a structural phenomenon, while the cycles linked to iron reflect the economic situation.

Structural changes taking place within significant economic sectors in Québec, the decline in certain regional economies, heightened demand for raw materials, new export markets for iron ore, and increased cargo containerization have all had a hand in modifying the geography and structure of maritime trade.

Steady growth in demand for petroleum products, bauxite, and alumina to supply Québec aluminum plants has resulted in a considerable rise in the tonnage of our imports.

Markets in Asia, Latin America, Oceania, and Africa showed the largest increase in maritime trade with Québec (in tons) from 1995 to 2005. Increased traffic with Asia can be explained mainly by Québec's iron ore exports, while increased trade with Latin America, Oceania and Africa is mainly attributable to Québec's raw materials and petroleum imports.

The aim of this document is to present the status of marine transportation in Québec in relation to markets served and according to the type and volume of cargo shipped. This overview of marine flows generated by Québec ports draws on an analysis of the evolution of tonnages transported over the course of the 1995–2005 period and looks at recent business levels up to 2008. The study aims to describe changes in the different segments of Québec's marine network (the Seaway, river, estuary, and gulf) and its ports.

Note that the analysis of trends in marine transportation is derived from

a study of flows expressed in tons. While it would have been interesting to draw a parallel with maritime trade value, the methodological underpinnings of the databases differ—one being based on monetary value, the other on tonnages—making it infeasible to link the two variables¹.

Yet it is clear that marine transportation supports significant economic activity. For instance, Québec exported over \$740 million² worth of "iron ore and concentrates" in 2007. It is self-evident that these exports were conveyed exclusively by marine transportation. In contrast, less bulky cargo that is crucially important to Québec's economy is also shipped in part by the marine mode, but this is largely overlooked in the highlights of maritime cargo handling. This is the case for aluminum producers, who use marine transportation for short and long distances to ship products (aluminum in raw form: billets, blocks, ingots, etc.) for which exports total \$6.4 billion and which in themselves represent 9% of the total value of all Québec exports. However, these products represents only a small portion of all marine cargo, and their visibility in this document will be minimal, since the marine flow indicator used herein is associated with tonnages.

This document paints a portrait of the evolution of all marine flows tied to Québec ports and presents an overview of their characteristics with respect to Québec's main geographic zones: Côte-Nord, Gaspésie and Bas-Saint-Laurent, Southern Québec, and Saguenay and Charlevoix. It then illustrates marine network use

¹ As will be seen later, analysis is based on data produced by Statistics Canada: "Shipping in Canada," catalog no. 54-205-X. These data are consistent with those of the port administrations. However, they provide only tonnage information. Only international trade data based on Statistics Canada customs information would make it possible to paint a portrait of economic activity supported by marine transportation. However, comparing tonnage handled in Québec ports according to the two databases reveals major inconsistencies between them; therefore it is impossible to use them together. http://www.statcan.gc.ca/imdb-bmdi/document/2201_D7_T2_V1-eng.pdf

² <http://diff1.stat.gouv.qc.ca/hkb/hkb.php?lang=30&headFootDir=/headfoot&productType=HS6&toFromCountry=CDN&cacheTime=962115865#tag>

of the St. Lawrence River by market: intra-Québec, other provinces and international markets, in addition to in-transit movement. It ends with a description of the distribution of loading and unloading operations at Québec ports by regions of the world. This section provides an understanding of the geographic evolution of marine traffic generated by port activity in Québec.

Note that the French-language version of this document contains a second part, which presents highlights for each Québec port with respect to the evolution of tonnages, markets, and goods, for both loading and unloading activities.

Symbols:

Mt : million metric tons
kt : thousand metric tons
t : metric tons

Data

Essentially, all data underpinning the analysis presented in this document come from Statistics Canada. A special compilation of the data was prepared by Innovation maritime, a center for applied maritime technology research at Institut maritime du Québec³. This compilation describes cargo transported by marine mode for every year from 1995 to 2005, according to geographic market, for all ports of Québec. The data set also includes volumes that transited on the St. Lawrence River between Ontario and United States ports (on the Great Lakes) and the rest of the world. It should be noted that at the time of writing, the most recent detailed data available were those for 2005. For-

tunately, Transport Canada's Marine Outlook newsletter, which presents marine news highlights for Québec, allowed a summary update of overall tonnages loaded and unloaded for the majority of ports, up to the third quarter of 2008.

Marine data were sourced from two surveys: Coastwise Shipping Survey (survey no. 2751) and Marine International Freight Origin and Destination Survey (survey no. 2791). These surveys collected data on:

- Coastal and interior marine freight: transportation of cargo by ship between Canadian ports on Canadian water;
- International marine freight: transportation of cargo between Canadian ports and foreign ports, whether in the United States or elsewhere.

The target populations tracked in the Coastwise Shipping Survey and the Marine International Freight Origin and Destination Survey are all ships transporting cargo between Canadian ports, or between Canadian and foreign ports. For more detailed information on the scope and limits of this data, consult the Statistics Canada document titled Shipping in Canada (catalog no. 54-205-X) at : <http://dsp-psd.tpsgc.gc.ca/Collection-R/Statcan/54-205-XIB/54-205-XIB-e.html>.

Between the points of origin and destination, a good portion of the cargo transported by ship are also conveyed using other modes. In fact, more than any other mode marine transportation drives multimodality. For instance, containers may leave Asia, transit through European ports, and be directed to the Port of

Montréal before being sent by rail to a sorting yard in the Midwest and finally delivered to their destination by truck. While this travel is significant in volume and value, and very important to the economy, no database currently collects information on the sequence of modes for freight transported by ship. This report therefore rests strictly on data that provide us with a summary of the maritime portion of freight flows between Québec ports and the rest of the world.

For the purpose of analysis and illustration, the cargo in question has been grouped into nine broad categories. For the international market, available data are much more detailed. This data refinement is often used in the text to support the description of certain marine flows or port activities. Appendix 1 presents the nine broad categories of goods and their breakdown into approximately 65 goods sub-categories for the Québec market. Note that data related to cargo is available for the Canadian domestic market only as aggregated into broad categories.

Appendix 2 presents the composition of the broad Canadian and American geographic entities to which we will refer throughout the document. ■

³ <http://www.innovationmaritime.ca/An/index.htm>.

Overview of Marine Flows for Québec Ports

Background

In 2005 traffic on the Great Lakes and St. Lawrence navigable network was roughly 255 Mt⁴. Marine traffic through Québec ports was about 105 Mt (or 40%). Other than volume, Québec port activities are notable for their broad geographic scope, as loading and unloading operations mainly involve overseas markets. A third (34.9 Mt) of Québec port activities (105 Mt) are conducted with Europe, which is the main region of the world where shipping is used. Moreover, 95% of the 11 Mt of containerized cargo loaded and unloaded in Québec (Port of Montréal) had Europe as a destination or point of origin. However, it should be noted that this figure also includes containers whose origin or destination is not Europe but which transit through European ports for transshipping via a Europe-Montréal route.

Still in 2005, almost another third of trade was conducted directly with Africa (10.8 Mt), Latin America (9.7 Mt), Asia (7.9 Mt), the Middle East (790 kt) and Oceania (2.4 Mt). Approximately 28 Mt (27%) was also traded by ship, with our two main economic partners: the United States and Ontario. A significant portion of these goods transit via Ontario and United States ports on the Great Lakes, or to/from overseas destinations via ports on the St. Lawrence, although some goods are transshipped between ships and lakers (vessels whose dimensions are compatible with Seaway locks), or vice versa.

Short sea shipping between Québec ports represented only

7% (7 Mt) of the 105 Mt of cargo handled in Québec in 2005. The ports along the Great Lakes coastlines generate most of this type of cargo movement. Trade between U.S. Great Lakes ports accounted for nearly 90 Mt⁵. Corresponding short distance traffic between Ontario ports (9.5 Mt in 2005) and between these same ports and U.S. Great Lakes ports (43.3 Mt in 2005) represented 52.8 Mt.

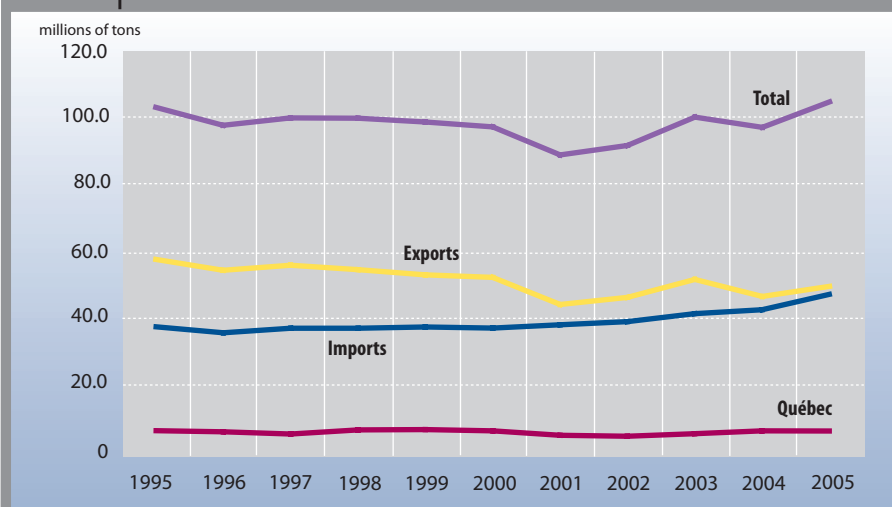
From 1995 to 2005, total freight tonnage handled at Québec ports generally fluctuated between 90 Mt and 105 Mt (Fig. 1.1). While total tonnage remained relatively steady, this does not mean that there was no change. In fact, the structure of trade was considerably modified, leading among other things to reduced use of the Seaway (the portion of the St. Lawrence connecting Montréal to the Great Lakes by a network of canals and locks) and to heightened

activity in the estuary and Gulf of St. Lawrence.

Both in 1995 and 2005, heavy cargo, for example iron ore products, represented about 90% of all tonnage handled at Québec ports. Fewer goods in the group "Agriculture and food products," particularly grain, were transported in 2005: 14.2 Mt, compared with 22.8 Mt in 1995. This reflects a trend that began in the 1980s towards reduced North American grain exports to Atlantic overseas markets.

In contrast, 7 Mt more "Fuel and basic chemicals," mainly petroleum products, were unloaded. A little less "Minerals" (52.2 Mt in 2005 versus 53.4 Mt in 1995) and "Coking coal" (2.4 Mt in 2005 versus 2.7 Mt in 1995) was handled in 2005 than ten years earlier. "Forest and wood products" and "Pulp and paper products," handled at Québec ports fell by 500 kt

Figure 1.1 Evolution of tonnages handled at Québec Ports



⁴ 105 Mt (traffic at Québec Ports) + 11.2 Mt (in-transit traffic on the St. Lawrence: direct travel to Great Lakes ports and the rest of the world without transshipment at St. Lawrence ports) + 9.5 Mt (intra-Ontario traffic) + 43.3 Mt (trade between Ontario ports and United States ports on the Great Lakes) + 87.3 Mt (internal travel between United States ports on the Great Lakes).

⁵ www.marad.dot.gov/documents/US_Water_Transportation_Statistical_snapshot.pdf.

(from 2.7 in 1995 Mt to 2.2 Mt in 2005) mainly due to reduced demand for processed forest products. "Manufactured and miscellaneous goods" handled at Québec ports have seen the greatest increase, with this category growing 200% between 1995 (2.3 Mt) and 2005 (7 Mt). ■

Evolution of Loaded and Unloaded Tonnages at Québec Ports

A number of Québec ports serve as import and export transit sites for Québec and its North American economic partners. In short, Québec port activity is clearly dependent upon its resources and its economy, but also rests upon its neighbors' market circumstances. Québec ports are also transshipment points where cargo is transferred between ships and lakers (or vice versa) for a significant portion of solid and liquid bulk cargo traveling between Canadian and American Great Lakes ports and the rest of the world. In addition, the Port of Montréal acts as a transfer point for international maritime containers between ocean-going vessels and land-based networks, not only for Québec and Ontario markets, but also for those of the Northeastern and Midwestern United States, in competition with the ports of New York and Norfolk.

In 2005 the use of Québec port facilities for exports originating in Québec and its Canadian and American neighbors was lower than in 1995. The difference was approximately 8 Mt, while imports during the same period increased by 9.6 Mt (Fig. 1.1). Reduced grain and especially iron ore exports to Europe explain a portion of this decrease. The increase in imports is largely explained by trends in petroleum products.

Let us examine the details of these developments in each of Québec's main regions. ■

Côte-Nord

Côte-Nord block of four major ports (Sept-Îles, Port-Cartier, Havre-Saint-Pierre and Baie-Comeau) has long dominated Québec ports with respect to tonnage handled (Fig. 1.2). In 1995 these ports handled 55% of the total

tonnage of cargo transported by ship in Québec. Ten years later, their share had slipped by over 10%: in 2005, they represented only 44% of total trade (in tons) at Québec ports. The ports of Baie-Comeau and Port-Cartier have experienced the most significant drop in activities from 1995 to 2005 (2 Mt and 9.5 Mt, respectively). This is mainly due to reduced shipments of grain, which used to be loaded onto lakers at Great Lakes ports and sent to ports on the St. Lawrence, particularly Baie-Comeau and Port-Cartier, where they were transhipped yet again onto vessels heading for overseas markets. Both loading and unloading activities have dropped during the 1995–2005 decade.

It should be noted however that in recent years Québec has experienced a mining boom attributable to high demand for ore. This has led to increased traffic in Côte-Nord ports since 2005. For example, if we compare the first quarter of 2007 to the same quarter of 2008, activities at the Port of Sept-Îles grew by 45%, while activities at the ports of Port-Cartier and Baie-Comeau were up 18% for the same period. At that time, forecasts for iron ore demand suggested a promising future, but this must be mitigated somewhat by the uncertainties of the economic slowdown observed in the second half of 2008. Moreover, traffic in the first three quarters of 2008 at the ports of Baie-Comeau and Port-Cartier was lower than in the same period in 2007. In 2008, however, the Port of Sept-Îles showed a slight increase in traffic.

Since barge transportation of wood chips between Forestville and a paper mill in Trois-Rivières was discontinued in 2007, port activities at Forestville have been minimal. ■

Gaspésie and Bas-Saint-Laurent

On the other shore (Fig. 1.2), the closing of the copper mine and the pulp and paper plant on the Gaspé Peninsula sorely affected port activities in Chandler (4.4 kt in 2005) and Gaspé (67 kt in 2005), whose operations in 2005 were reduced to meeting local and regional needs for abrasives.

The port of Iles-de-la-Madeleine (1.2 Mt in 2005) tripled the tonnages handled between 1995 and 2005. Taking relative proportions into account, this is one of the highest increases (in %) in tonnage handled at Québec ports. Tonnage at the Port of Matane (1.1 Mt in 2005) grew by 32%, mainly due to activities generated by the Georges-Alexandre-Lebel railcar ferry connecting Baie-Comeau to Matane.

Despite a significant decrease between 1995 and 2004, the Port of Gros-Cacouna rebounded in 2005 (220 kt). Finally, activities at the Port of Rimouski slowed very slightly over the years, but the port still handled 200 kt in 2005. ■

Southern Québec

Several Southern Québec ports experienced significant increases in tonnage handled, mainly due to increased unloading activities. The largest ports in volume are Québec City (22.6 Mt in 2005) and Montréal (24 Mt in 2005), which both saw a 30% increase in volumes handled from 1995 to 2005 (Fig. 1.2). Petroleum products essentially explain the increase at the Port of Québec but are only partially responsible for the increase at the Port of Montréal, which is also due to higher container traffic.

The Port of Sorel (5.2 Mt in 2005) managed to preserve its activity level (Fig. 1.2), as did the Port of Trois-Rivières (2.5 Mt in 2005) although the latter have known a change in the kind of goods handled.

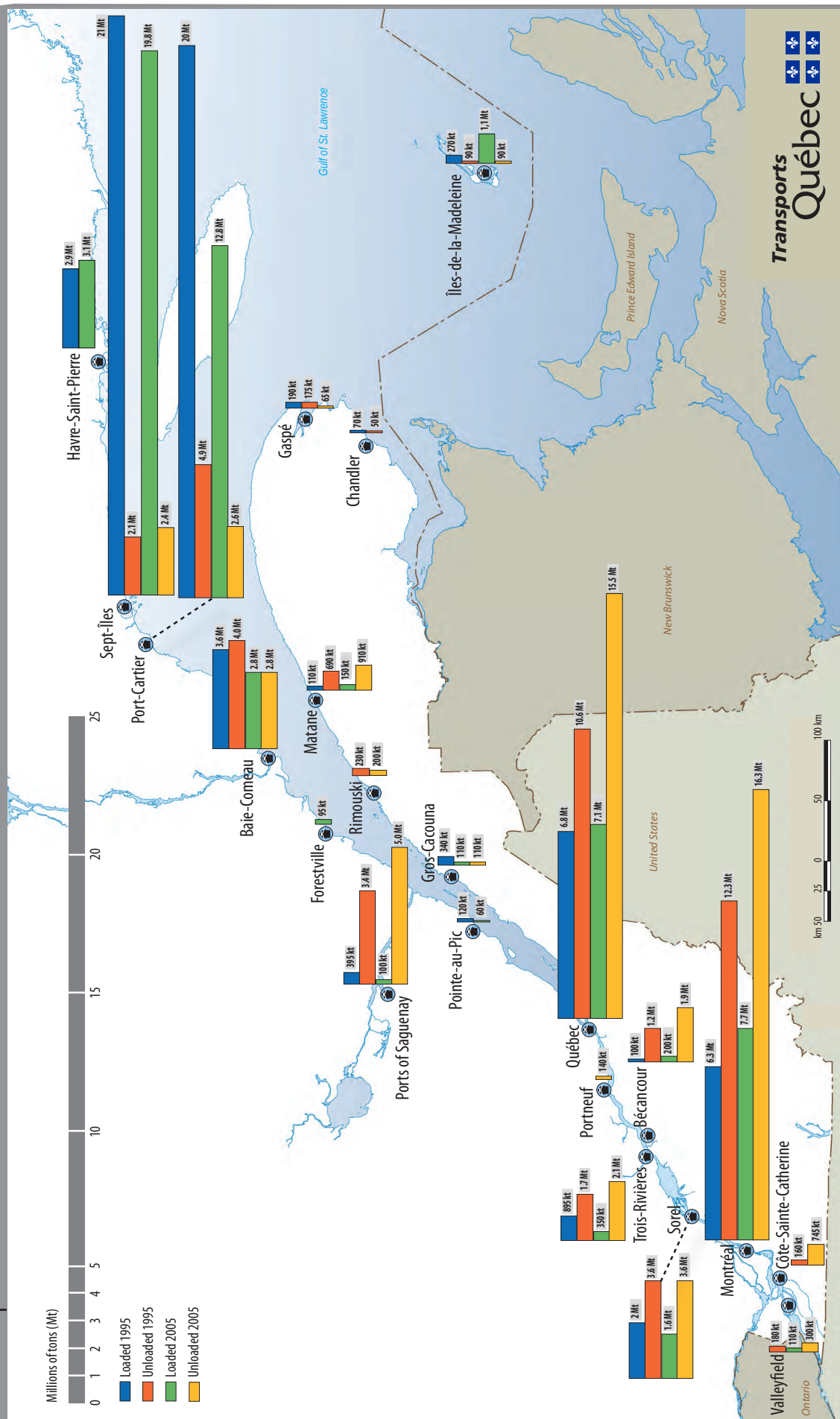
In 2005 cargo tonnage transhipped at the Port of Bécancour (2.1 Mt) was 60% greater than that handled in 1995. During the same period, 1995 to 2005, the smaller ports of Côte-Sainte-Catherine and Valleyfield respectively quadrupled and doubled the volume of goods they handled. However, it seems that commercial activity will be abandoned at the Port of Portneuf. ■

Saguenay and Charlevoix

Tonnage at the ports of Saguenay (Port Saguenay and Port-Alfred: 5,1 Mt in 2005) has increased by more than a third since 1995 (Fig. 1.2), particularly due to increased alumina imports to supply the Saguenay–Lac-Saint-Jean region aluminum plants.

Tonnages handled at the Port of Pointe-au-Pic dropped nearly by half between 1995 (120 kt) and 2005 (60 kt). ■

Figure 1.2 Evolution of tonnages loaded and unloaded at Québec ports



Trade Conducted Throughout the Maritime Network

Intra-Québec Flows

As shown in Figures 1.3 and 1.4, short sea shipping traffic between Québec ports mainly traveled upstream on the St. Lawrence River in both 1995 and 2005, and the bulk of tonnage handled was restricted to a limited number of connections.

Of the 7.1 Mt of cargo moved between Québec ports in 2005, 80% (5.7 Mt) was carried on boats traveling upstream on the St. Lawrence (Fig. 1.4). A significant portion of this traffic was attributable to activities at Côte-Nord ports, which shipped 3.9 Mt to Québec ports upstream of the St. Lawrence estuary. The Port of Havre-Saint-Pierre alone shipped 2.7 Mt of ilmenite to the Port of Sorel-Tracy. Significant quantities of iron ore pellets and concentrates were loaded and shipped from Port-Cartier to Contrecoeur (615 kt). Transportation by barge between the ports of Forestville, Sept-Îles and Trois-Rivières created roughly 200 kt more traffic in 2005 than in 1995. However, barge transportation from Forestville was discontinued in 2007. In addition to traffic originating in Côte-Nord, almost 1 Mt of petroleum products are shipped further upstream, from the Port of Québec to the Port of Montréal, and 800 kt of de-icing salt moved from Îles-de-la-Madeleine to several ports along the St. Lawrence.

It should be noted that in 2005 the majority of reverse marine movements, that is, from upstream to downstream zones, was generated by petroleum products shipped from the Port of Québec to other ports on the estuary and gulf (410 kt).

Also in the short sea shipping market category, maritime crossings made perpendicularly to the St. Lawrence totaled 820 kt and were conducted by railcar ferry between Baie-Comeau and Matane.

The same phenomenon of flows moving predominantly upstream on the St. Lawrence existed in 1995. In fact, 7 Mt of cargo was shipped between Québec ports in 1995 and was even more consolidated than in 2005. The main generators were the same, but their contribution to traffic was greater (Fig. 1.3). Trade between Havre-Saint-Pierre and Sorel (2.5 Mt) was comparable to that of 2005, 1.1 Mt transited from Port-Cartier to Contrecoeur (2.5 times more than in 2005), and petroleum product traffic from the Port of Québec to the Port of Montréal was higher (1.5 Mt).

In both 1995 and 2005 we observe a significant directional imbalance of flows between Québec ports. This implies that a significant portion of maritime movement occurs without cargo on board.

It is also interesting to note that intra-Québec flows essentially consist of bulk cargo, with a good portion shipped to processing industries in Québec, particularly in Sorel and Contrecoeur. Hence, providing this service to domestic markets generates significant economic benefits, even though these shipments may consist of lower tonnages than in external or foreign trade.

In 2005 marine flows within the domestic market included 4.4 Mt of

“Minerals,” primarily iron ore and ilmenite, as well as 1.5 Mt of “Fuel and basic chemicals,” mainly petroleum products shipped from the Port of Québec. These two categories alone represented 84% of some 7.1 Mt of cargo circulating between Québec ports. ■

Figure 1.3 Intra-Québec marine flows, 1995

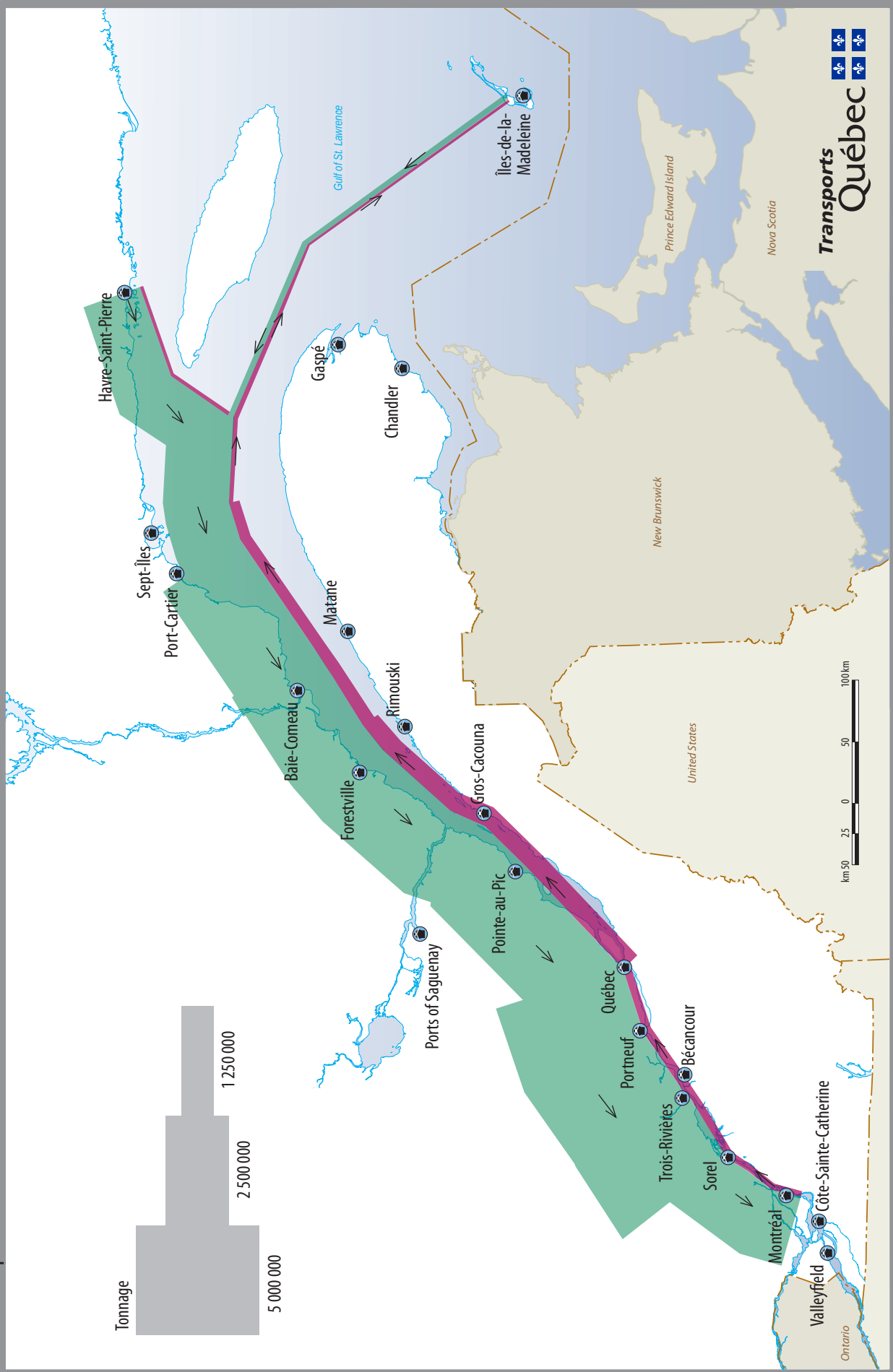
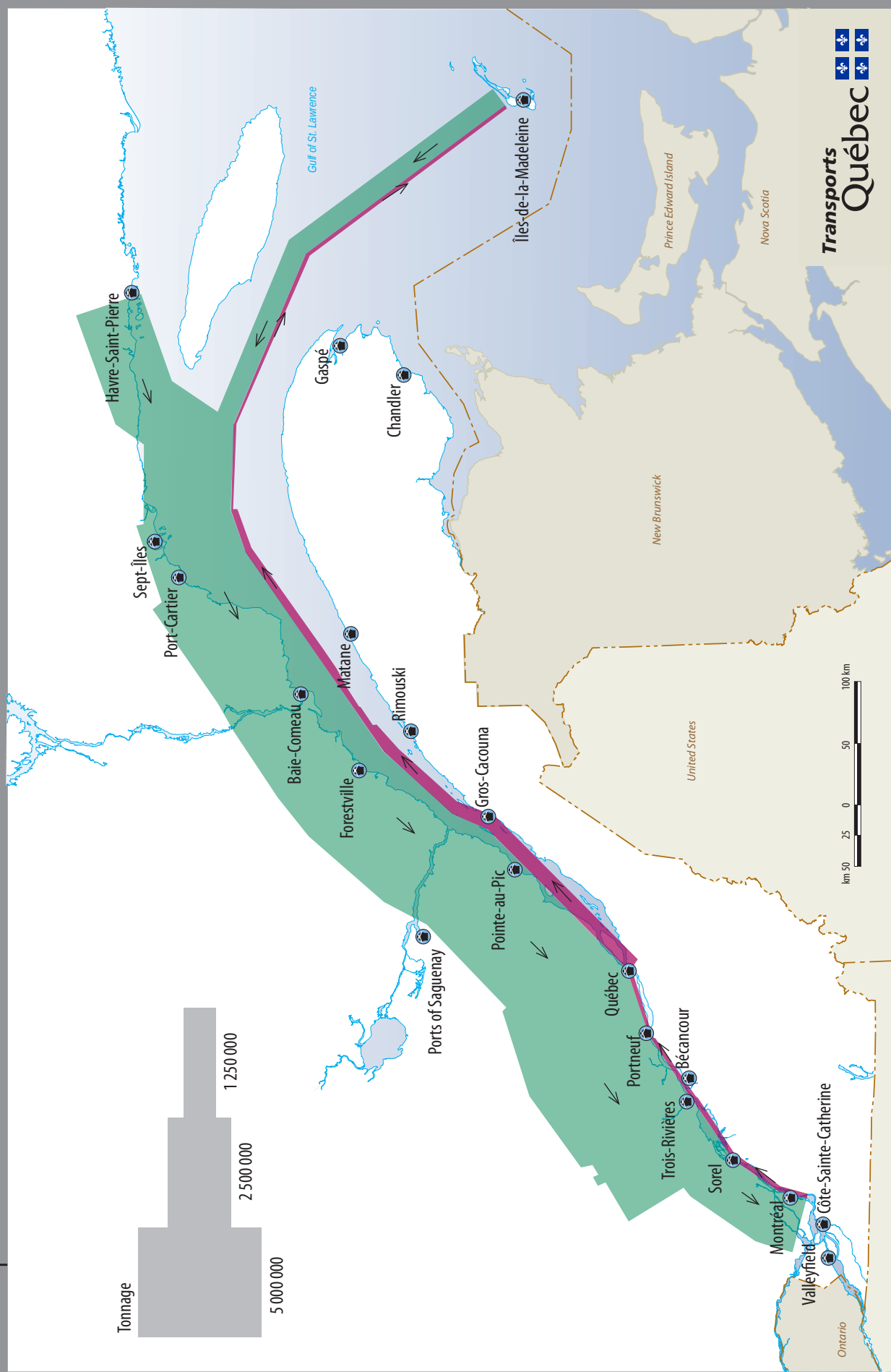


Figure 1.4 Intra-Québec marine flows, 2005



Marine Flows between Québec and Other Provinces

As shown in Figure 1.6, cargo tonnage exported from Québec to Ontario in 2005 by marine mode (5.2 Mt) was fairly close to the volume imported from that province (5.7 Mt). Boats traveled upstream carrying mainly iron ore and concentrates (3.9 Mt). The ports of Sept-Îles and Port-Cartier were the source of nearly all (3.8 Mt) iron ore shipments to Ontario ports. The principal destination port was Hamilton (4 Mt).

In the other direction, from the Great Lakes towards the St. Lawrence River, almost two-thirds of the flows involved cargo in the “Agriculture and food products” category. This essentially consisted of grain shipped primarily from the Port of Thunder Bay, at the extreme western tip of Lake Superior, and redirected by ship to overseas markets. Thunder Bay is the main maritime port through which Western Canada’s grain production is sent by lakers to Québec ports. The ports of Port-Cartier (1.5 Mt), Baie-Comeau (1.1 Mt), Québec City (1 Mt), and Montréal (815 kt) handled 4.5 Mt of the 5.7 Mt shipped from Ontario ports.

Marine transportation between Québec and Ontario dropped by 17% in 2005 (Fig. 1.6) relative to 1995 (Fig. 1.5). Note that the volume of the

two main cargo groups, “Agriculture and food products” and “Ore,” fell by over 30% during this time.

Marine transportation flows between Québec and the Atlantic Provinces grew from 1.9 Mt in 1995 to 2.8 Mt in 2005—a total increase of almost 1 Mt (fig. 1.5 and 1.6). Imports doubled in volume during this period (from 950 kt in 1995 to 2 Mt in 2005). “Ore” shipments almost tripled during the same period, largely explaining this increase. Shipments from the ports of Nova Scotia (865 kt), Newfoundland and Labrador (780 kt), and New Brunswick (395 kt) went mainly to Sept-Îles (540 kt), Montréal (555 kt), and Port-Cartier (210 kt). ■

Figure 1.5 Marine flows between Québec and other provinces, 1995

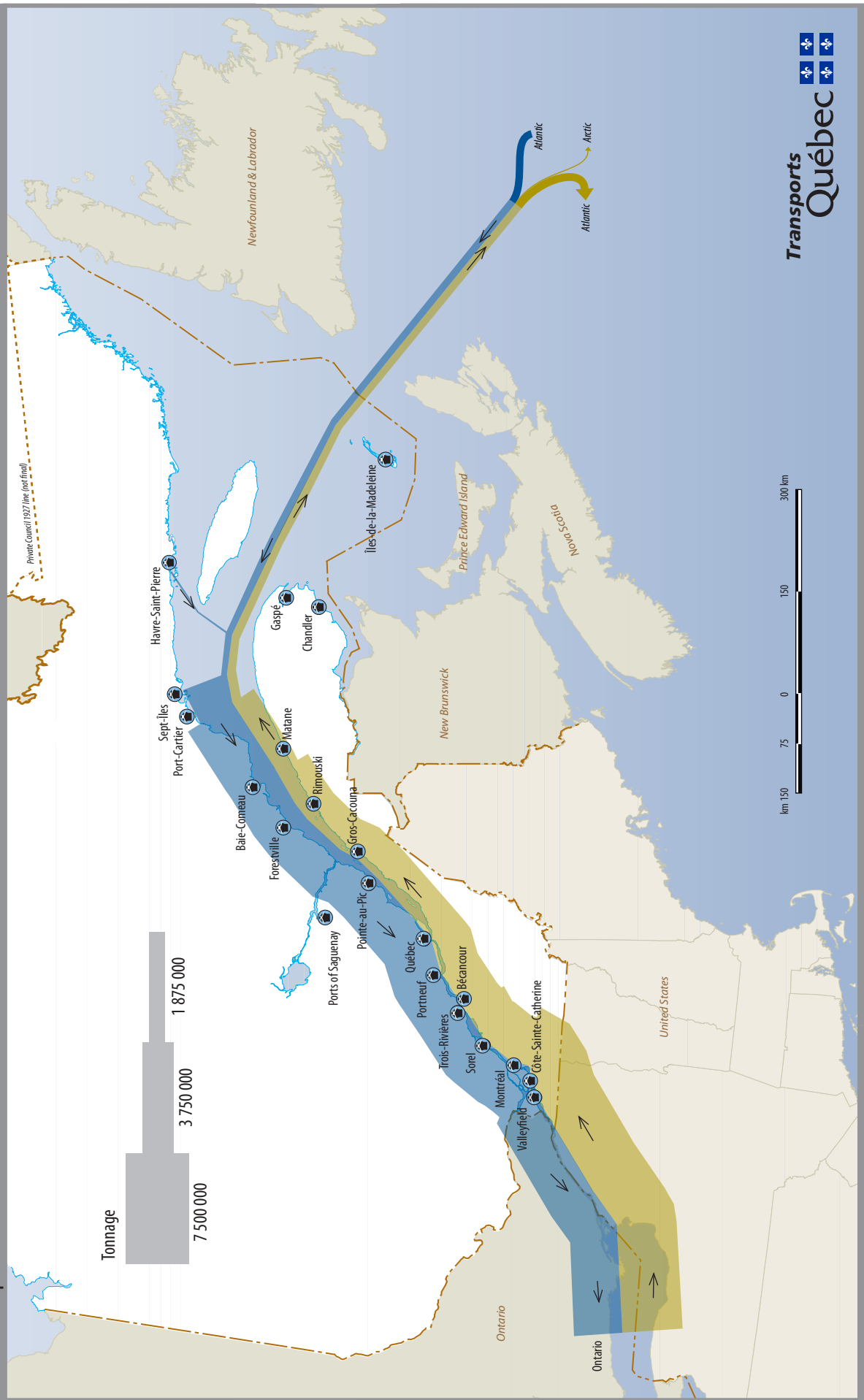
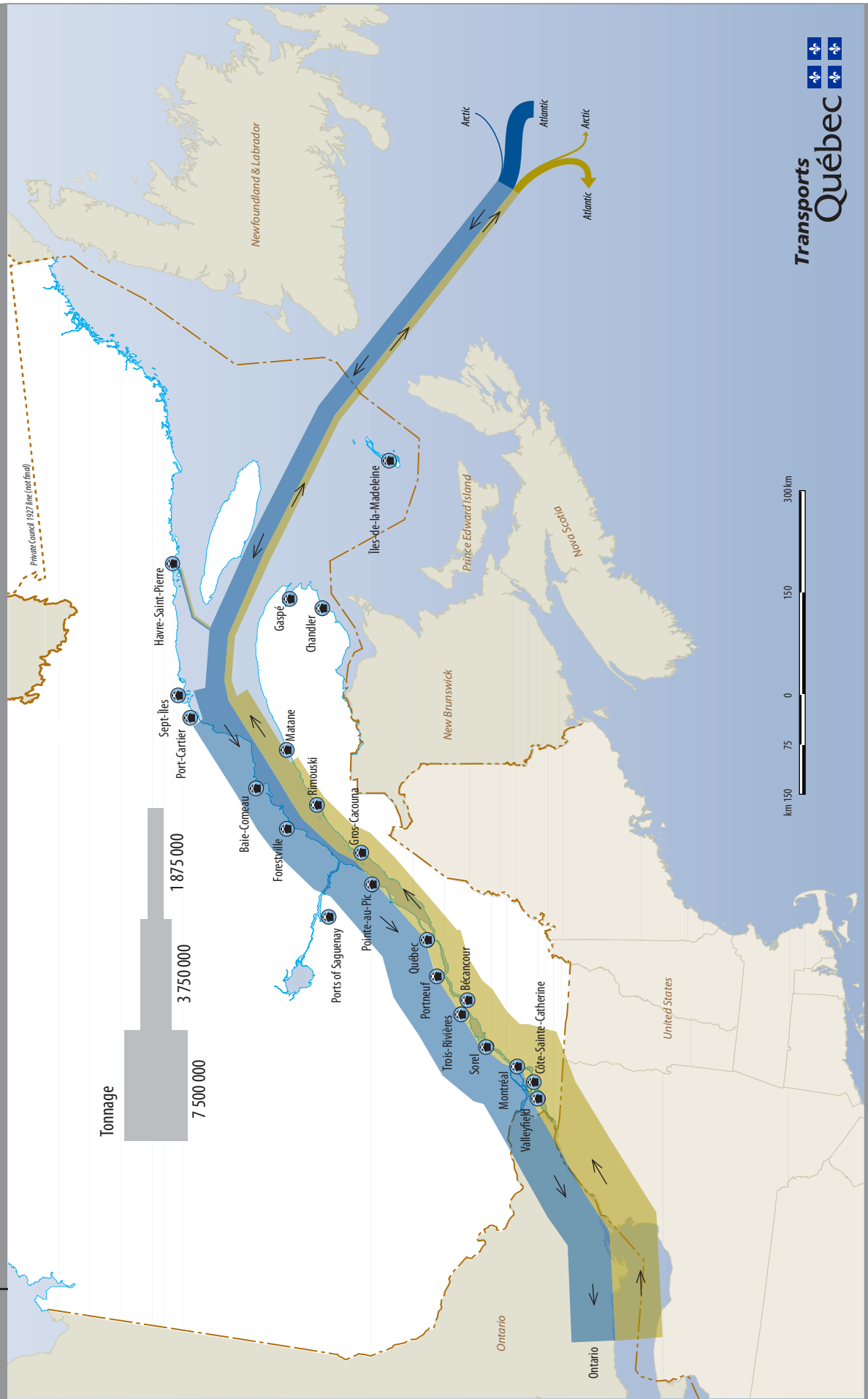


Figure 1.6

Marine flows between Québec and other provinces, 2005



International marine traffic generated by Québec ports totaled 83.8 Mt in 2005. While this volume may seem similar to that seen in 1995 (81.2 Mt), the markets served and the distribution ratios of loaded and unloaded freight have changed considerably. As can be seen in Figures 1.7 and 1.8, import tonnages have increased by a third (from 30 Mt in 1995 to 39.8 Mt in 2005), while exports have dropped by 14% (from 51.2 Mt in 1995 to 44 Mt in 2005).

There has been a great increase in flows with regions of the world that supply Québec's economy with raw materials. This is true of our trade (Fig. 1.7 and 1.8) with Latin America, which grew from 6.1 Mt (in 1995) to 9.7 Mt (in 2005), with Africa, where the maritime trade volume went from 7.7 Mt (in 1995) to 10.8 Mt (in 2005), and Oceania (from 1.7 Mt to 2.4 Mt). Maritime trade between Québec and Asia also grew between 1995 (4.6 Mt) and 2005 (7.9 Mt), although a strong asymmetry between exports (6.9 Mt) and imports (980 kt) can be observed.

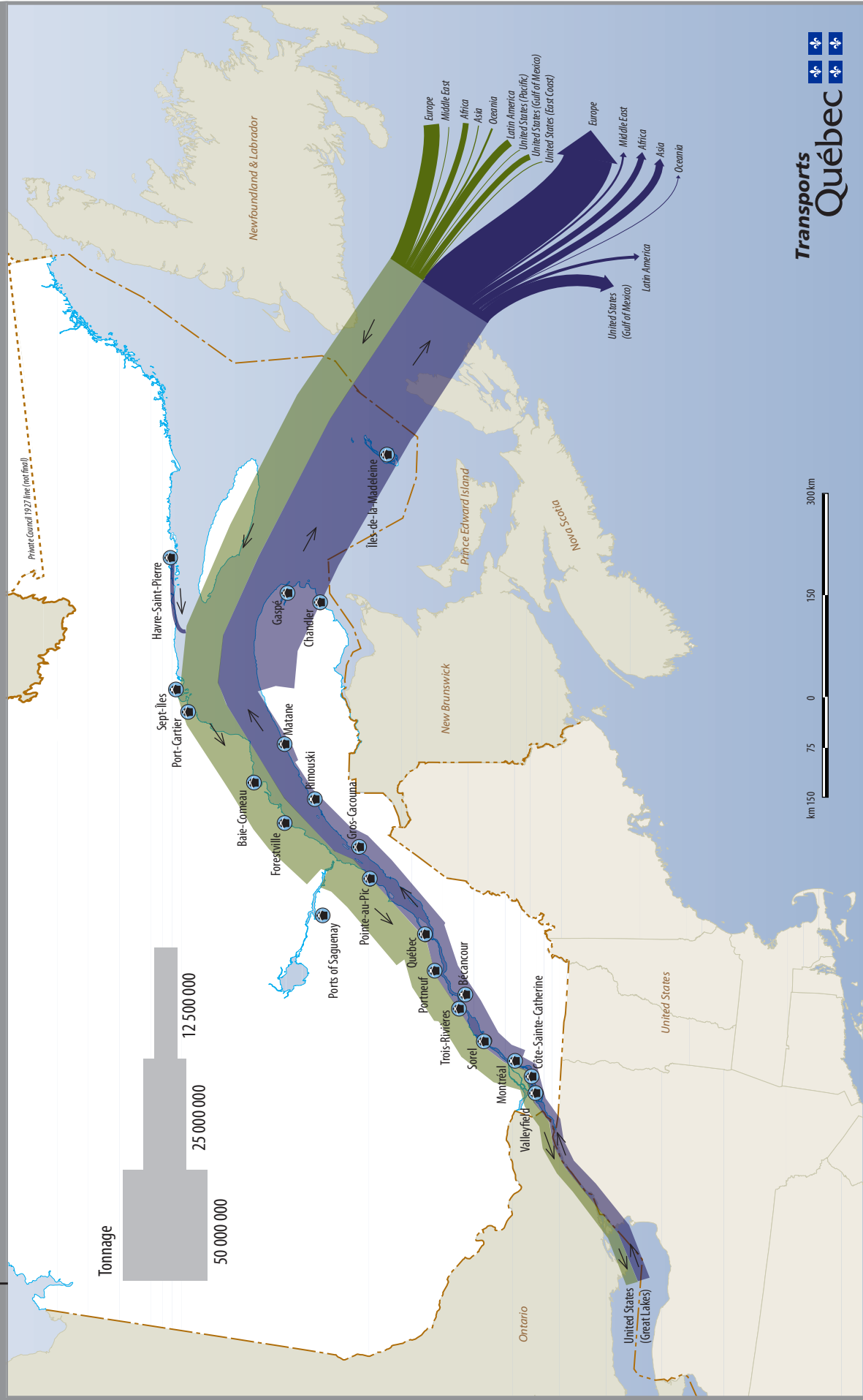
Trade volume between Québec and the United States dropped by nearly 6 Mt from 1995 (23.1 Mt) to 2005 (17.2 Mt). This reduction has affected certain maritime routes in particular, such as the one linking the St. Lawrence River to the Great Lakes. Specifically, as shown in Figures 1.7 and 1.8, less trade was conducted in 2005 (8.6 Mt) than in 1995 (13.7 Mt) between American ports on the Great Lakes and ports in Québec. Generally speaking, Québec shipped less iron ore and concentrates to Great Lakes ports. But in particular, Québec ports received less grain from Great Lakes ports in 2005 than in 1995. These observations are further examined in the sections that follow.

Traffic between Québec ports and international markets is intense in the Gulf of St. Lawrence. In 2005 the volume was 75.2 Mt, compared with 67.2 Mt in 1995. In 2005 these flows were relatively balanced, with 38.6 Mt of cargo exported versus 36.6 Mt imported. Approximately 46% of this tonnage is related to trade between Québec and its European partners.

Much of the maritime traffic in the gulf was generated by grain and iron ore and concentrates exported from Côte-Nord ports. For this reason the estuary saw less traffic, as shown in Figure 1.8. The marine flow generated by trade between Québec and its international partners fell to 51.4 Mt at Rimouski and was carried mainly by ships traveling up the St. Lawrence, as most of this freight was imported (37.8 Mt) and a large share was headed to the Port of Québec (upstream of which import flows dropped to 21 Mt) and especially the Port of Montréal. A significant portion of the traffic on the river and estuary was also attributable to the 6.2 Mt of freight exported from the Port of Montréal to external markets (other than American and Great Lakes ports), including 5.4 Mt to Europe. In addition, 3.6 Mt of cargo was exported from the Port of Québec to external markets downstream from it. ■

Figure 1.7

Marine flows between Québec and the international market, 1995



Marine flows between Québec and the international market, 2005



Although lakers largely dominate the traffic on the navigable passage between the Great Lakes and the ports of the St. Lawrence River, some ships also transit via the St. Lawrence Seaway. Therefore, transit traffic exists on the St. Lawrence whose cargo is not transhipped in Québec's ports. This traffic flows between Great Lakes ports, from both sides of the border to the Atlantic seaboard or the rest of the world.

Navigation by these ships raises the volume of marine traffic on the St. Lawrence, and it is worth noting the precise volume and characteristics of these flows.

In 2005 ships transiting on the St. Lawrence to supply Great Lakes ports without transhipment at Québec ports carried 11.2 Mt of cargo, with a slight predominance (6 Mt) in upstream flows (to the Great Lakes). Comparing Figures 1.9 and 1.10 shows that this type of transit traffic on the St. Lawrence was much lower in 1995 (4.6 Mt) than in 2005, when it was actually two and a half times greater. In both instances, trade between Great Lakes and European ports was greatest (62% in 1995 and 47% in 2005).

One market segment, however, increased sharply beginning in the late 1990s: trade with Latin America. This market segment almost quintupled between 1995 (445 kt) and 2005 (2.1 Mt). In 2005 exports from Latin America (1.4 Mt) represented almost two-thirds of all maritime trade conducted with Great Lakes ports (imports accounted for 680 kt).

It should also be noted that appreciable trade (2.3 Mt in 2005) existed between the ports of the Atlantic Provinces and those of the Great Lakes. In 1995 trade between these

ports was much less (510 kt). A total of 56% (1.3 Mt) of 2005 traffic (2.3 Mt) consisted of cargo exports from Atlantic Provinces to Ontario ports. ■

Figure 1.9

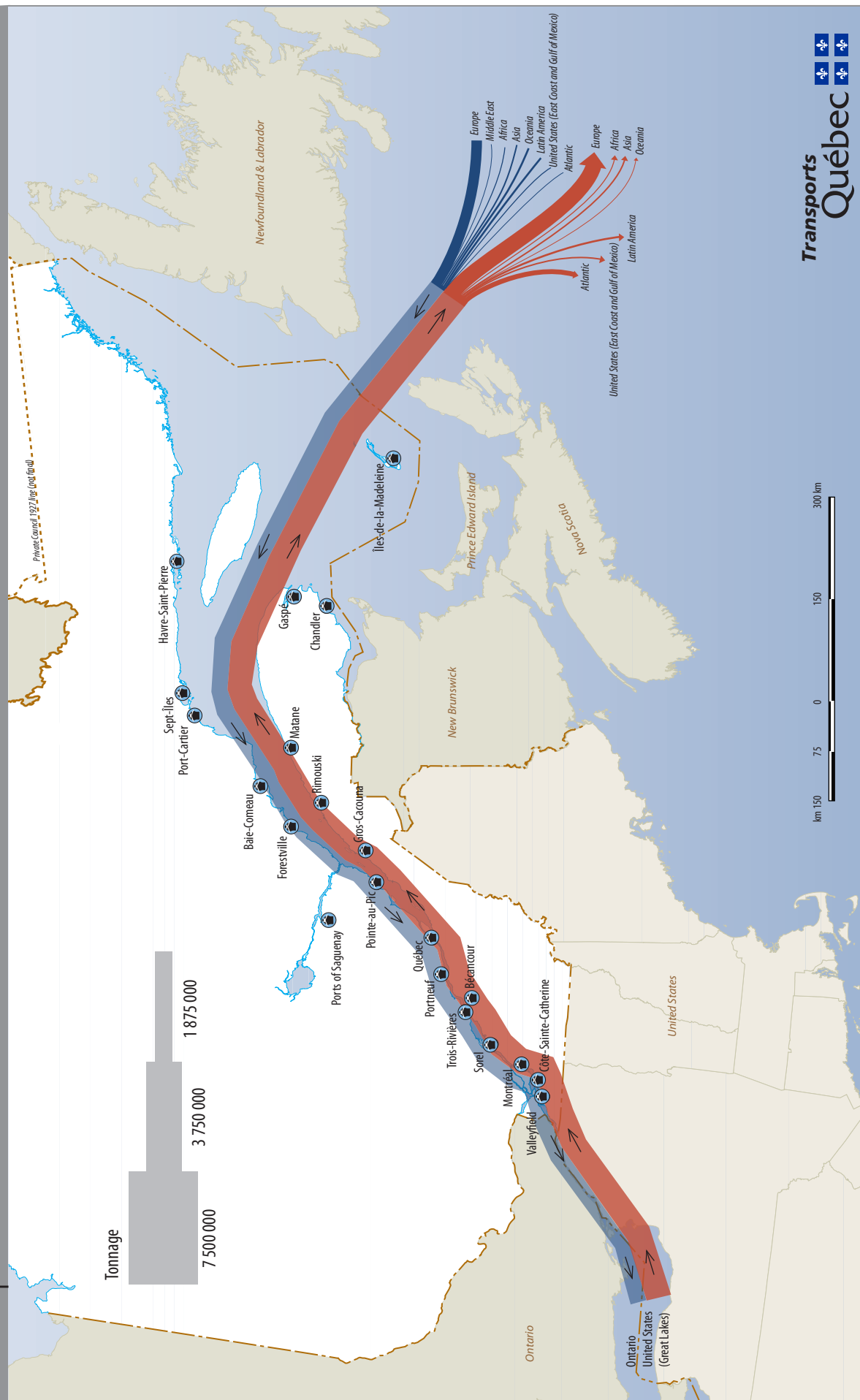
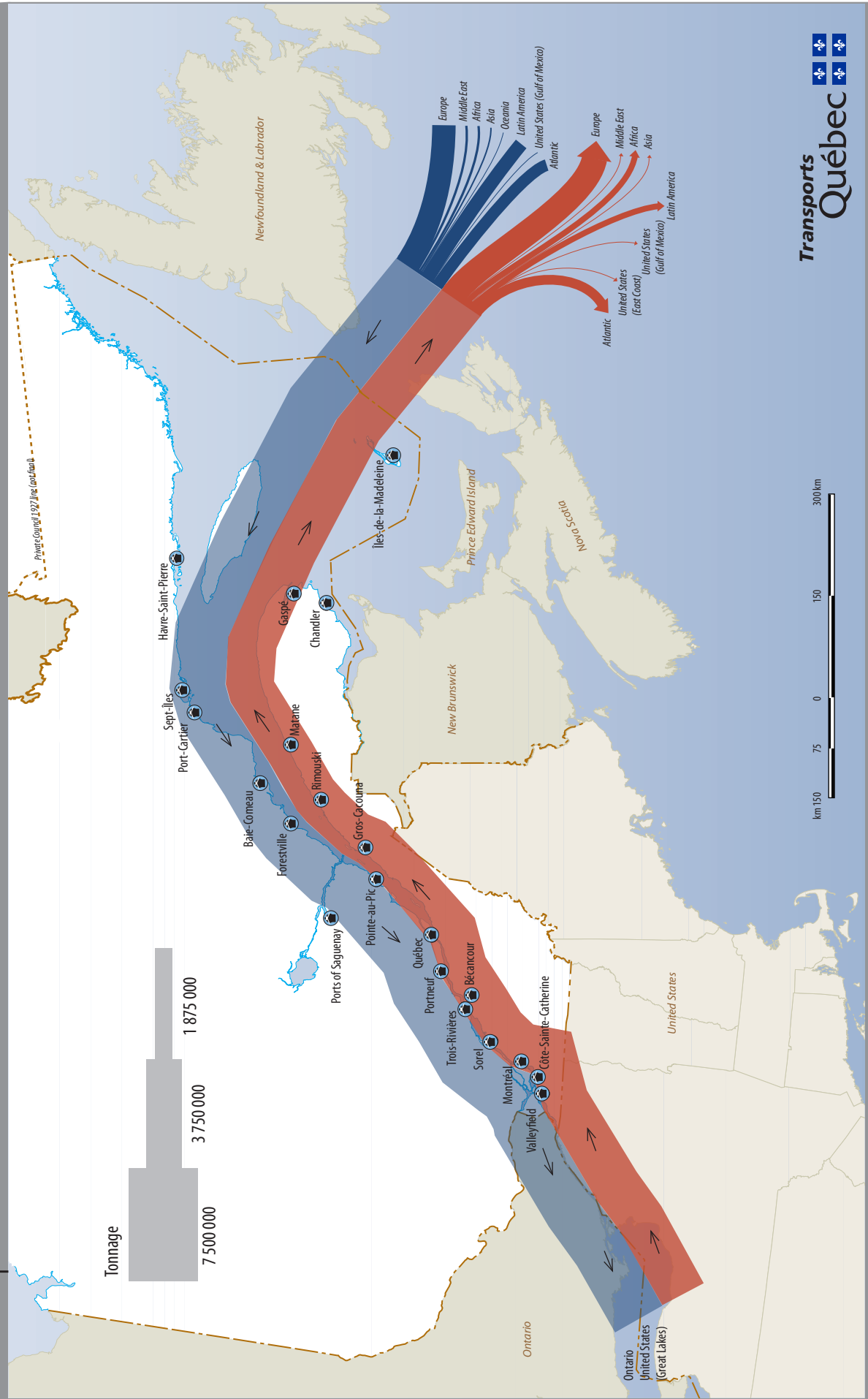


Figure 1.10

Flows in transit on the St. Lawrence, 2005



Solicitation of St. Lawrence Segments

Figure 1.11 shows the composition of flows by tonnage on the various segments of the river network, according to broad markets served. The first notable fact to be observed is the level of trade in the St. Lawrence Seaway between Lake Ontario and the Port of Valleyfield. In 2005 the tonnage of commercial trade conducted by marine transportation between ports in Québec and the Great Lakes, both on the American and the Ontario side, declined by over 25% relatively to 1995. The drop was about 7.3 Mt (26.8 Mt in 1995; 19.5 Mt in 2005). While traffic between the ports of Québec and Ontario dropped by 2.3 Mt from 1995 to 2005, travel involving American ports on the Great Lakes decreased even more, by 5.1 Mt from 1995 (13.7 Mt) to 2005 (8.6 Mt).

In contrast, the flows in the Gulf of St. Lawrence, upstream of Îles-de-la-Madeleine, attributable to trade with Québec ports, went up by 9 Mt from 1995 to 2005. Marine traffic increased in all broad markets served by ships in this zone with a Québec port of origin or destination. International flows grew by 7.4 Mt, while trade with the Atlantic Provinces

grew by 1.2 Mt and intra-Québec traffic (with Îles-de-la-Madeleine) by 625 kt. Preliminary data suggest this growth continued after 2005.

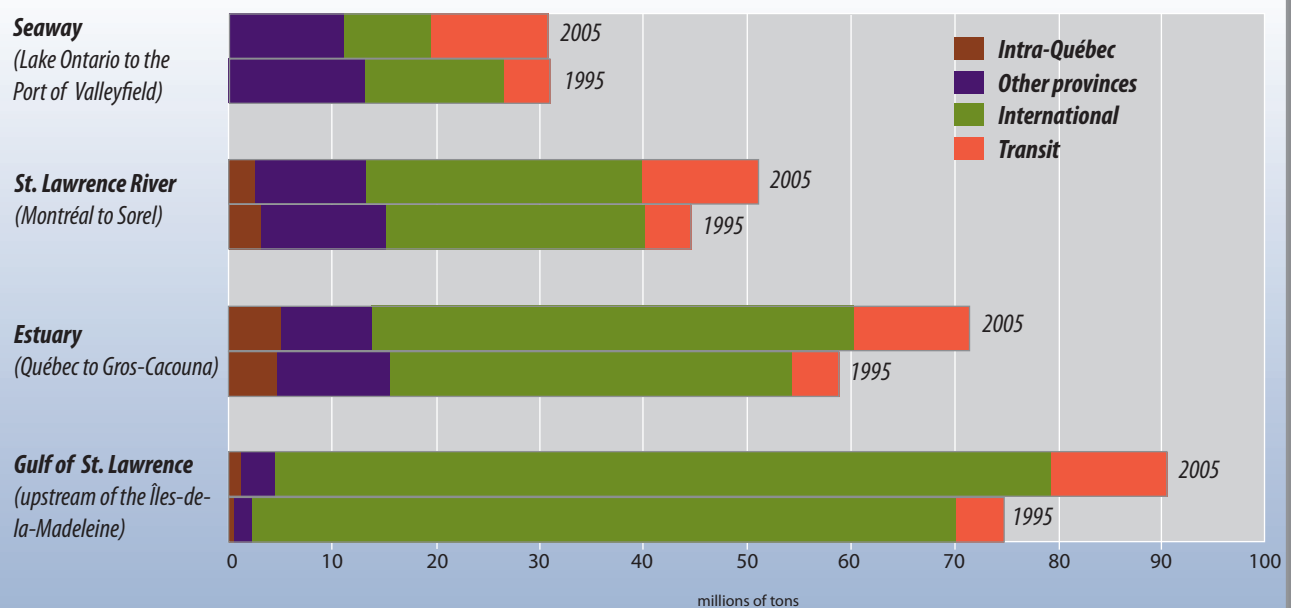
Québec's still very substantial port activity downstream from the Port of Québec (a segment identified as "estuary" in Figure 1.11) also grew significantly, by 6.2 Mt, from 54.2 Mt in 1995 to 60.4 Mt in 2005, specifically, as indicated previously, due to growth in freight volumes handled in the ports of Montréal and Québec City, as well as several other ports along the St. Lawrence. The international trade market niche largely explains this increase. However, declining trade with other Canadian provinces in this segment must be pointed out, especially in relation to reduced iron ore and grain traffic between ports downstream of Québec City and Ontario ports.

International traffic linked to Québec port activities on the maritime segment downstream of Montréal (segment identified as "St. Lawrence River" on Figure 1.11) also grew by approximately 1.9 Mt between 1995 and 2005. Over the same period, the

total volume traveling over this segment remained essentially the same, or approximately 40 Mt. The flow therefore dropped within the Québec domestic market, especially with regard to petroleum products moving between Québec City and Montréal, and trade weakened with Ontario.

Note that between 1995 and 2005, a 7 Mt drop in trade volume on the Seaway attributable to less trade between Québec and Great Lakes ports was offset by an increase in transiting marine transportation, with 6.6 Mt of cargo between Great Lakes ports and the rest of the world. All destinations combined, traffic in the Gulf of St. Lawrence upstream of Îles-de-la-Madeleine was therefore 90.3 Mt in 2005, which represents an increase of 15.8 Mt compared to 1995 (74.5 Mt). ■

Figure 1.11 Total marine flows on the St. Lawrence by market, 1995 and 2005



Destination of Freight Loaded at Québec Ports, by World Region

Figures 1.12 and 1.13 show how the destinations for cargo loaded at Québec ports have evolved. Overall, freight loading in Québec ports dropped by 8 Mt from 1995 (65.2 Mt) to 2005 (57.2 Mt). At that time, loading represented 60% of the tonnage handled at Québec ports, while in 1995 they represented only 51%.

In general, a decline can be noted in shipments of "Ore" (42.6 Mt in 1995; 37.6 Mt in 2005) and cargo (especially grain) in the category "Agriculture and food products" (11.4 Mt in 1995; 7.5 Mt in 2005). Yet shipments of "Manufactured and miscellaneous goods" loaded at Québec ports were up in 2005 (2.6 Mt) compared to 1995 (1.1 Mt). ■

Europe⁶

Europe was the main destination of cargo loaded at Québec ports (Fig. 1.13). Almost 38% (21.5 Mt) of total cargo tonnage originating from Québec's port network was sent to Europe—11.5 Mt more than maritime exports to the United States (10 Mt).

As indicated in Figures 1.12 and 1.13, traffic towards European markets dropped almost by a quarter since 1995, when it was still 27.6 Mt. Despite the fact that container traffic grew from 3.5 Mt to 4.9 Mt and expanded considerably (40%) from 1995 to 2005, other sectors have seen an appreciable drop. Shipments under the "Ore" cargo category, 92% of which consists of iron ore concentrates, fell from 18 Mt in 1995 to 12.8 Mt in 2005—a 30% drop. ■

The "Agriculture and food products" category, strongly dominated by grain, also lost nearly a third of its tonnage shipped to Europe (declining from 5.5 Mt in 1995 to 3.8 Mt in 2005). This decade's early years were an even greater challenge, as total traffic dropped by almost half (2.4 Mt in 2003) due to a drought in the Prairies. ■

Great Lakes

The second "maritime" market consists of the Great Lakes ports on both the American and Canadian side of the border. In 2005 ships originating from Québec ports that took the Seaway to Great Lakes ports carried 10.6 Mt of cargo, including 5.4 Mt destined for American ports and 5.2 Mt for Ontario ports (Fig. 1.13). The flow destined for the Great Lakes, 12.1 Mt in 1995 (Fig. 1.12), had therefore dropped by 13% in one decade. In 1995, 97% (5.7 Mt) of Québec's shipments to Ontario (5.9 Mt) consisted of ore, essentially iron ore and concentrates. In 2005 this type of cargo had lost importance, both in absolute volume (3.9 Mt) and relative share (76%). The 6.2 Mt sent in 1995 to the American side of the Great Lakes also consisted largely (92%) of "Ore," again mainly iron ore concentrates. In 2005 this proportion had fallen to 85%.

However, a considerable increase in less significant cargo flows can be observed. Cargo in the "Fuel and basic chemicals" category shipped from Québec ports to Ontario ports rose tenfold between 1995 (95 kt) and 2005 (990 kt). Cargo in the "Agriculture and food products" category with

the same origin and destination quintupled over the same period (from 50 kt in 1995 to 250 kt in 2005).

In addition, the volume of Coal loaded at Québec ports and destined for American ports on the Great Lakes rose more than tenfold between 1995 and 2005, from 20 kt to 220 kt. In 2005, 320 kt of "Fuel and basic chemicals" was also unloaded at these ports, 30% more than in 1995 (245 kt). Shipments of "Primary and fabricated metal products" to Great Lakes ports were at the same level in 2005 (245 kt) as in 1995. ■

⁶ Regions of the world are presented according to the volume of goods destined for each region from Québec ports. Therefore this section begins with a description of flows to Europe, where the greatest cargo tonnage loaded in Québec ports is sent.

Asia

Asia's economic rise has had a considerable impact on the steel market and, consequently, on demand for iron ore. From 1999 to 2005, China almost tripled its steel production, becoming the leading producer of steel worldwide⁷. Hence, its natural resource requirements are great. This explains the 70% growth in tonnage for products exported from Québec to Asia between 1995 (4.1 Mt) (Fig. 1.12) and 2005 (6.9 Mt) (Fig. 1.13).

In 2005 about 95% (6.5 Mt) of all cargo sent to Asia consisted of iron ore and 65% was destined for China. Other destinations for iron ore exports included mainly Japan, Taiwan, and South Korea.

In 1995 Québec ports sent 505 kt of cargo in the "Agriculture and food products" category to Asia, mainly grain. In 2005 the total volume had dropped to 295 kt, including 215 kt destined for Iran. ■

Africa

Ships destined for Africa carry mostly grain. In 1995 (Fig. 1.12) the "Agriculture and food products" category represented over 90% (3.9 Mt) of all shipments destined for the African continent (4.2 Mt). A third was sent to Egypt and a fifth to Algeria. The rest was delivered mainly to Morocco, Tunisia, and Nigeria.

Freight traffic destined for Africa dropped considerably over the years. In 2005 (Fig. 1.13), it was 2.8 Mt, or 35% less than in 1995 (4.2 Mt). Cargo in the "Agriculture and food products" category decreased by almost 50% (from 3.9 Mt to 2 Mt). In 2005 the volume of this category was approximately 2 Mt, including 1.6 Mt of wheat:

28% destined for Morocco, almost 20% for Egypt, 15% for Algeria, and the rest mainly for Ghana and the Sudan. Africa, which received 162 kt of "Minerals" from Québec in 1995, imported 690 kt of this commodity in 2005, mainly iron ore destined for Egypt (400 kt) and Libya (285 kt). ■

East Coast (United States)

In 1995 (Fig. 1.12), over 75% (3.1 Mt) of the total cargo volume (4.1 Mt) loaded at Québec ports and destined for the East Coast of the United States consisted of "Minerals," in particular iron ore concentrates, with Maryland being the primary drop point. Ten years later (Fig. 1.13) iron ore shipments had fallen by 45% (1.7 Mt in 2005). Loads destined for the East Coast of the United States, 2.5 Mt in 2005 (down by approximately 40% compared to 1995), included 605 kt of "Fuel and basic chemicals," 170 kt less than in 1995. ■

Gulf of Mexico (United States)

Quantities of cargo exported by seagoing vessel to the Gulf of Mexico have not fluctuated much since 1995 (fig. 1.12 and 1.13), except for a significant drop in 2001 (405 kt). Otherwise tonnages have held steady at approximately 2 Mt over the years. To a great extent shipments consisted of "Minerals," mainly iron ore (concentrates): 90% (1.9 Mt) in 1995 and 75% (1.6 Mt) in 2005. The "Fuel and basic chemicals" category grew by 250% (from 135 kt in 1995 to 460 kt in 2005). Finally, in 2005, 120 kt of "Primary and fabricated metal products" such as aluminum ingots and primary iron and steel were shipped to this region, while Québec ports sent a very small amount of this cargo (7kt) in 1995. ■

Latin America

Exports to Latin America were 1.6 Mt in 1995 (Fig. 1.12), including 980 kt in the "Agriculture and food products" category, 310 kt of "Pulp and paper products," 145 kt of "Minerals," and 145 kt of "Fuel and basic chemicals."

Exports dropped slightly over time, to 1.5 Mt in 2005 (Fig. 1.13), including 915 kt in the "Agriculture and food products" category, 90% of which was wheat. The main market for these food products was Venezuela (580 kt). A total of 210 kt of "Minerals," almost exclusively iron ore, was shipped to Mexico (110 kt) and Trinidad and Tobago (100 kt), and 205 kt of "Fuel and basic chemicals" were sent mainly to the Bahamas (155 kt). ■

⁷ <http://www.unctad.org/infocomm/anglais/iron/sitemap.htm>.

Middle East

This market experienced a 62% drop in tonnage between 1995 (1.1 Mt) (Fig. 1.12) and 2005 (420 kt) (Fig. 1.13). Shipments in the “Agriculture and food products” category alone, mostly grain, fell by almost 70% (from 495 kt in 1995 to 160 kt in 2005). Québec also exported almost 205 kt of “Forest and wood products” and 150 kt of “Raw and manufactured metal products” in 1995. In 2005 very little of these niche markets remained.

The Middle East also received 130 kt of “Minerals” in 2005, essentially iron ore, from Québec ports, a little less than in 1995 (160 kt). ■

Atlantic Provinces

Exports to the Atlantic Provinces dropped by 20% between 1995 (930 kt) (Fig. 1.12) and 2005 (750 kt) (Fig. 1.13). Essentially, cargo loaded at Québec ports destined for the Atlantic Provinces was sent to Newfoundland and Labrador. Volumes have remained more or less steady over the years, fluctuating between 600 kt and 700 kt.

The relative share of goods exported has changed over the timeframe covered by the analysis. In 1995 shipments of “Fuel and basic chemicals” from Québec were relatively significant (600 kt), representing two-thirds of Québec’s exports to Atlantic Provinces. In 2005 this cargo represented no more than a third.

“Manufactured and miscellaneous goods” accounted for 24% in 1995 and 44% in 2005 of all freight loaded at Québec ports destined for the Atlantic Provinces. Cargo of this type totaled 225 kt in 1995 and grew by

nearly 50% to 330 kt in 2005. It was shipped mainly from Montréal (the Port of Bécancour also shipped 5 kt) and was sent to Newfoundland and Labrador.

Finally, Québec ports exported 100 kt of “Minerals” in 1995 and 155 kt in 2005 (50% more), mainly from the Îles-de-la-Madeleine. ■

Oceania

Cargo shipments to Australia, essentially iron ore, almost quintupled between 1995 (Fig. 1.12) and 2005 (Fig. 1.13). These shipments increased from 165 kt in 1995, to 845 kt in 2005. ■

Arctic

Marine traffic destined for the Arctic almost quintupled between 1995 (50 kt) (Fig. 1.12) and 2005 (230 kt) (Fig. 1.13). The cargo categories shipped remained essentially the same, but their relative significance clearly changed. In 2005 165 kt of “Fuel and basic chemicals” was shipped from the Port of Montréal, 10 times more than in 1995. In addition, Arctic ports received 25 kt of “Manufactured and miscellaneous goods” from Québec ports in 1995, and received 50 kt more in 2005. ■

Pacific Coast (Canada)

In 1995 (Fig. 1.12), Québec shipped 5 kt of “Manufactured and miscellaneous goods” to Canadian ports on the Pacific seaboard, although no activity was observed between these ports⁸ in 2005. ■

⁸ Such travel is highly marginal and limited to exceptional cases, since the cost of ship transportation between the west and east coasts via Panama is prohibitive compared with the cost of land transportation. Most often, this sort of travel is carried out by Canadian ships traveling on one coast, then sold to an active shipowner on the other coast.

Figure 1.12 Destination of tonnages loaded at Québec ports, 1995

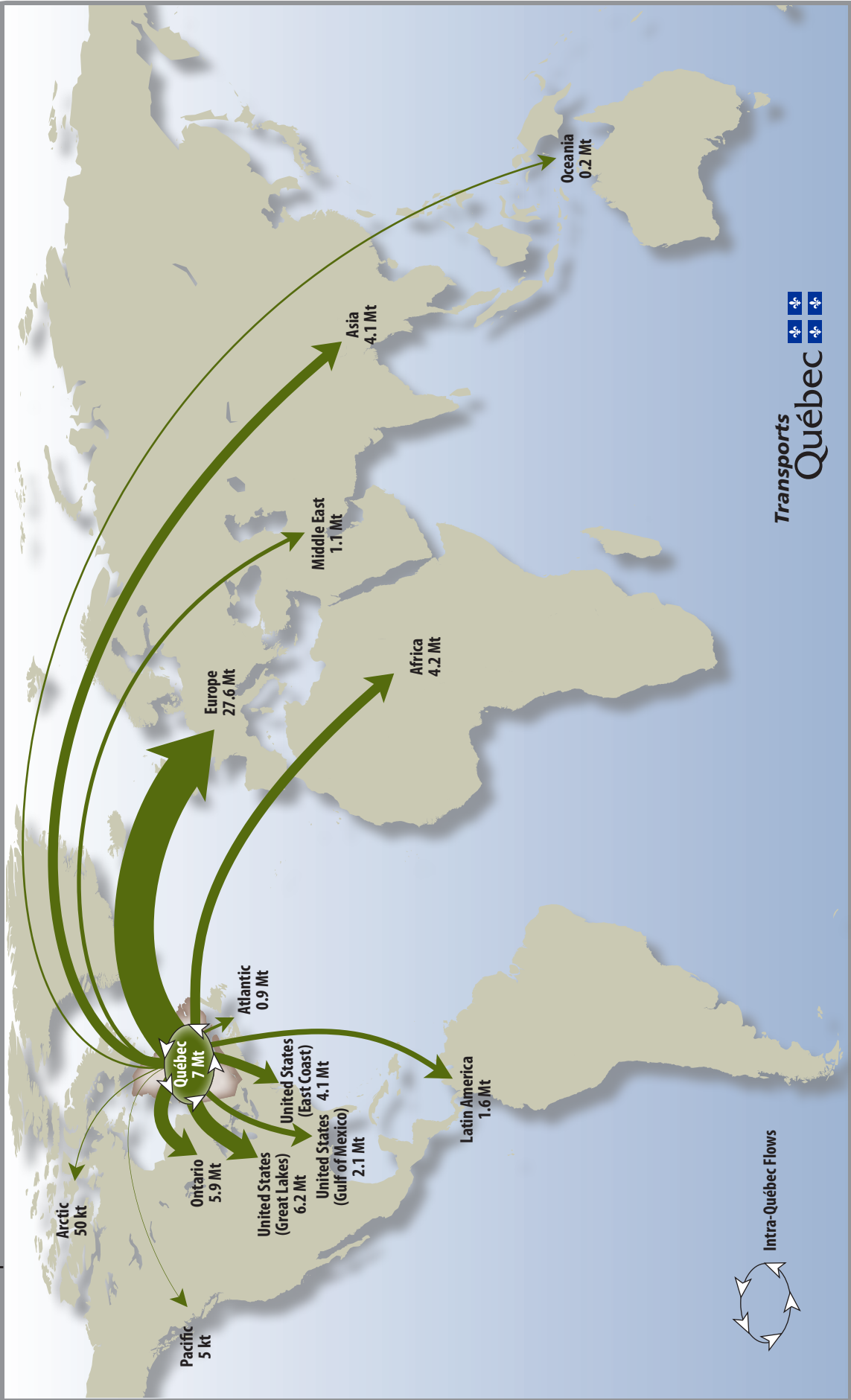
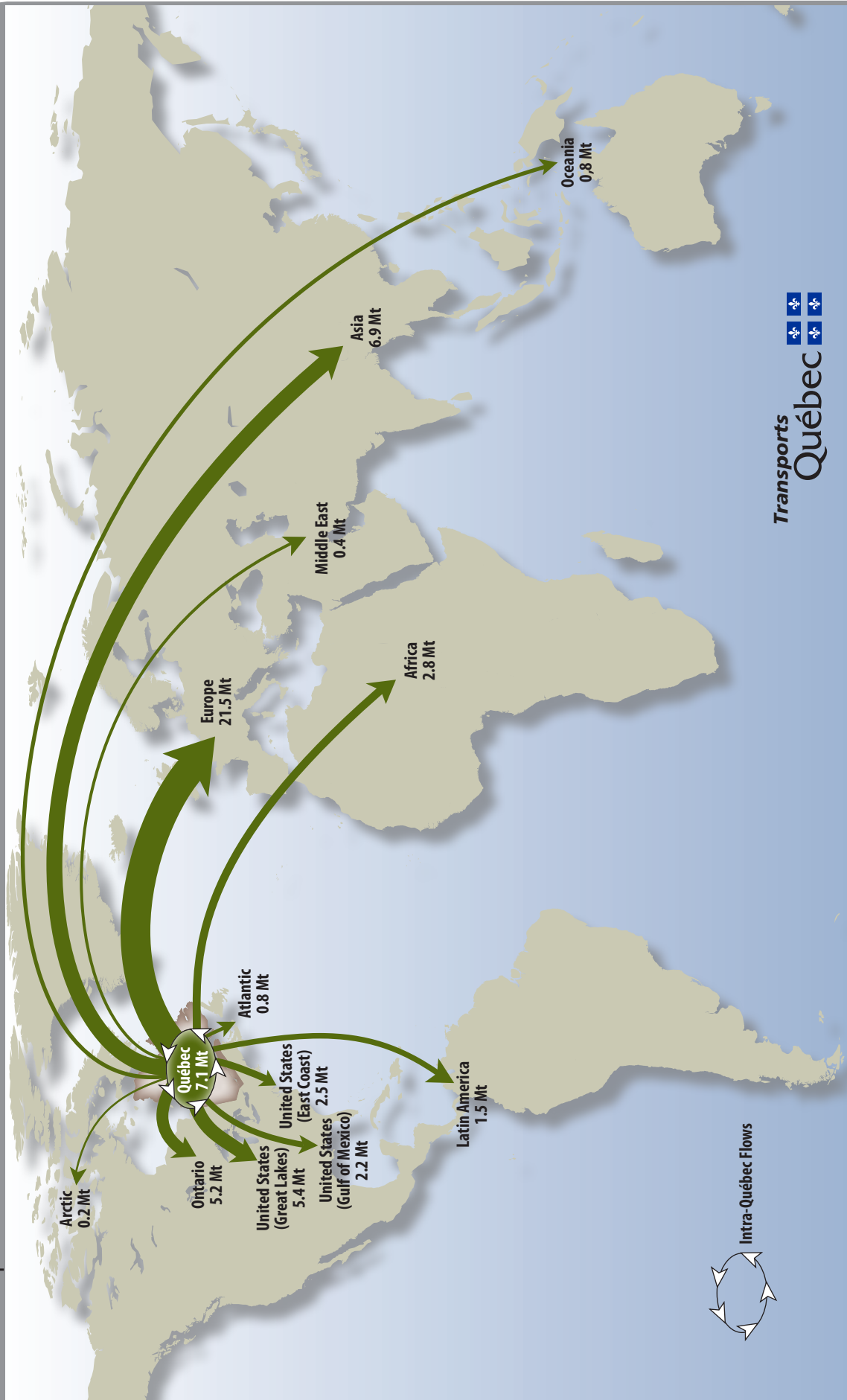


Figure 1.13

Destination of tonnages loaded at Québec ports, 2005



Origin of Freight Unloaded at Québec Ports, by World Region

Freight unloaded increased by 9.6 Mt from 1995 (45.2 Mt) (Fig. 1.14) to 2005 (54.8 Mt) (Fig. 1.15), which represents growth of over 20%. The share of this freight relative to all marine flows at Québec ports also grew, from 44% in 1995 to 52% in 2005.

Cargo unloaded in the “Fuel and basic chemicals” (13.3 Mt in 1995; 19.4 Mt in 2005), “Minerals” (14.8 Mt in 1995; 19.1 Mt in 2005), and “Manufactured and miscellaneous goods” (1.3 Mt in 1995; 4.4 Mt in 2005) categories increased significantly during this period. On the other hand, fewer “Agriculture and food products,” particularly grain, were unloaded at Québec ports in 2005 (6.7 Mt) than in 1995 (11.4 Mt). ■

Europe

European ports were the leading source of cargo unloading traffic at Québec ports. In 2005 13.4 Mt (Fig. 1.15) of products loaded in European ports were sent to ports along the St. Lawrence, representing about a quarter of the 54.8 Mt unloaded in Québec (Fig. 1.15). Over 40% (5.6 Mt) of cargo imported from European shores was containerized. Furthermore, Europe alone was the source of 98% of the containerized marine traffic unloaded in Québec (5.7 Mt in 2005), and the majority of this cargo is unloaded at the Port of Montréal.

Tonnage originating at European ports increased greatly (by about 50%) between 1995 and 2005 (from 9.1 Mt to 13.4 Mt); in 1995 it represented only 20% (Fig. 1.14) of all cargo deliveries to Québec ports (45.2 Mt). Figures 1.7 and 1.8 also illustrate this increase in marine flows from Europe.

In both 1995 and 2005, imports from Europe consisted mainly of pro-

ducts in the “Fuel and basic chemicals” category. Over the course of this last year, this category accounted for over 50% (6.8 Mt) of cargo shipped from Europe to Québec. A significant portion of these tonnages, over 86% (5.9 Mt), was attributable to petroleum products (crude petroleum, gasoline, aviation turbine fuel, petroleum coke, and fuel oil). In 2005 about 340 kt of “Fuel and basic chemicals” were shipped by container.

Northern Europe (4.9 Mt in 2005), especially Norway (4.1 Mt in 2005), is the origin of a high proportion of shipments to Québec of goods categorized as “Fuel and basic chemicals.” Over 1.7 Mt of goods of this category were sent in 2005 from ports in Western Europe, mainly Belgium (645 kt), the Netherlands (270 kt), Germany (220 kt), and Italy (175 kt). Finally, tonnage associated with this category grew by over 25% from 1995 to 2005.

The second category, “Manufactured and miscellaneous goods,” totaled 3.9 Mt in 2005, almost all of which was containerized and sent to the Port of Montréal. Compared to 1995 (1 Mt), these shipments increased by 290%. In 2005 nearly 60% of these goods were shipped from the ports of Belgium and Germany.

In 2005 Europe was the source of 670 kt of “Minerals” sent to Québec ports. A portion of “Minerals” was sent to ports serving industries that use it as an input for manufacturing products. Over 310 kt of “Coal” intended for this use was also unloaded in 2005.

In 2005 Europe provided 715 kt of “Primary and fabricated metal products” consisting mainly of products containing iron or steel. It also shipped 400 kt of “Machinery and transportation equipment” to Québec ports. In 2005 these ports also

received 430 kt of cargo from Europe in the “Agriculture and food products” category, an appreciable share of them being value-added products: wines, liquors, beers, dairy products, carbonated spring water or mineral water, sweets, fruits and vegetables, and others. ■

Great Lakes

In 1995 total shipments from the Great Lakes (14.7 Mt), including both the United States and Ontario, accounted for 30% of the cargo unloaded at Québec ports (Fig. 1.14). In 2005 (Fig. 1.15) the volume (9 Mt) and relative share (16%) of these shipments had decreased, mainly because of the 55% drop in tonnage from the American portion of the Great Lakes (from 7.4 Mt in 1995 to 3.3 Mt in 2005).

The drop in marine traffic originating in the Great Lakes can be explained mainly by the decline in grain transport. Compared to 1995, tonnage (10.3 Mt) in the “Agriculture and food products” category in 2005 was almost half (5.3 Mt). American ports in particular reduced their deliveries, from 5 Mt in 1995 to 1.6 Mt in 2005. Compared to the 5.3 Mt recorded in 1995, Ontario reduced its “Agriculture and food products” category shipments by a third in 2005 (3.7 Mt).

In 2005 the lakers that navigated the Seaway toward St. Lawrence ports carried 690 kt of “Fuel and basic chemicals” from ports on the American (240 kt) and Ontarian (450 kt) shores. In 1995 essentially the same quantity of “Fuel and basic chemicals” (705 kt) was shipped to Québec from the Great Lakes.

In 2005 over 2 Mt of “Minerals,” including 1.3 Mt originating in Ontario, was transported by lakers to Québec ports—400 kt less than in 1995. Fi-

nally, 235 kt of “Manufactured and miscellaneous goods” were sent to Québec ports in 2005, while this type of trade did not occur at all in 1995. ■

Latin America

Between 1995 and 2005, the increase in imports from Latin America was remarkable. The difference of 3.7 Mt represents growth of over 80%. This increase is clearly visible when Figures 1.7 and 1.8 are compared, along with Figures 1.14 and 1.15.

Total shipments from Latin America to Québec ports totaled 8.2 Mt in 2005, almost three-quarters (6 Mt) of which was “Minerals.” In 1995 “Minerals” accounted for 3.6 Mt of the 4.5 Mt shipped from Latin America. Hence greater “Minerals” shipments explain the strong increase in tonnages originating in Latin America.

In 2005 about 4.1 Mt of aluminum ore (bauxite and alumina) were imported in great quantity to supply the Québec aluminum plants, including 2.4 Mt from Brazil and 1.3 Mt from Jamaica. Note that 2.6 Mt were transported by ships that docked at Saguenay ports.

In 2005 ships originating in Latin America carried 880 kt of “Fuel and basic chemicals,” including almost 400 kt of aviation fuel destined for the ports of Québec City (300 kt) and Montréal (100 kt), in addition to 240 kt of acyclic alcohols.

In 2005 Québec also unloaded 720 kt of cargo in the “Agriculture and food products” category, including 640 kt of raw sugar (365 kt destined for the Port of Montréal). The “Agriculture and food products” sector therefore increased, since shipments destined for Québec more than tripled (205 kt in 1995). ■

Africa

The natural resources present in

certain North African regions explain the volume and growth of Québec imports from this continent. Cargo from Africa unloaded at Québec ports grew 130% between 1995 (3.5 Mt) (Fig. 1.14) and 2005 (8.1 Mt) (Fig. 1.15). Imports of “Fuel and basic chemicals” totaled 6.4 Mt in 2005, an increase of 4 Mt compared to 1995. For the most part, this cargo was carried by oil tankers leaving the North African coast-line for the St. Lawrence, as petroleum and its derivatives make up most of the tonnage for this category. Petroleum products came mainly from Algeria (5.8 Mt).

In 2005 two West African nations, Ghana and Guinea, shipped 1.2 Mt of aluminum ore, twice the volume shipped in 1995. ■

East Coast (United States)

Traffic leaving the ports of the United States’ East Coast for Québec doubled from 1995 (990 kt) (Fig. 1.14) to 2005 (2 Mt) (Fig. 1.15), mainly due to increased demand for petroleum products, which represented 1.2 Mt of the 1.5 Mt of “Fuel and basic chemicals” unloaded in 2005. This trade mainly involved the ports of New York and Montréal. ■

Gulf of Mexico (United States)

Freight handled at Québec ports originating from American ports in the Gulf of Mexico decreased slightly between 1995 (2 Mt) (Fig. 1.14) and 2005 (1.8 Mt) (Fig. 1.15). In 2005 over 825 kt of “Fuel and basic chemicals,” in this case consisting mainly of petroleum products, originated mainly from Texas (590 kt) and Louisiana (220 kt).

The same year, over 550 kt of alumina from Texas supplied the aluminum plants of Sept-Îles (380 kt) and Baie-Comeau (170 kt). Less “Minerals” was shipped in 2005 (585 kt) than in 1995 (870 kt).

Finally, in 2005, 400 kt of “Coal” was sent to the ports of Baie-Comeau, Bécancour, Saguenay, Sept-Îles, and Trois-Rivières to serve industries that use this material in manufacturing their products. ■

Atlantic Provinces

Between 1995 (Fig. 1.14) and 2005 (Fig. 1.15), exports from the Atlantic Provinces to Québec transported by marine mode doubled (from 950 kt in 1995 to 2 Mt in 2005). In this instance, “Minerals” largely explains this growth (1.4 Mt in 2005 compared to 510 kt in 1995).

Note that almost 500 kt of “Fuel and basic chemicals” were shipped to Québec ports in both 1995 and 2005—essentially petroleum products from Saint John, New Brunswick to be distributed in Québec.

Finally, 200 kt of “Manufactured and miscellaneous goods” were sent to Québec in 2005, essentially from the Port of Belledune, New Brunswick to the Port of Montréal, while only a small volume (30 kt) was shipped in 1995. ■

Oceania

In both 1995 (Fig. 1.14) and 2005 (Fig. 1.15), around 1.5 Mt of freight originating in Oceania headed to Québec ports. In 2005 over 1.3 Mt of alumina was shipped, mainly to the ports of Trois-Rivières (480 kt) and Sept-Îles (460 kt) as well as, to a lesser degree, Bécancour (150 kt) and Baie-Comeau (130 kt). The same year, roughly 105 kt of nickel was sent to the Port of Québec and 170 kt of raw sugar was shipped mainly to the Port of Montréal. ■

Asia

Asian shipments sent directly to Québec ports (without transshipment) generally represented roughly 2% of tonnage received in Québec ports. In this niche, essentially solid bulk, Asia is more of an export than an import market. For instance, shipments from Québec to Asia totaled almost 7 Mt (Fig. 1.13) in 2005 while shipments in the other direction were 980 kt (Fig. 1.15). There was some growth compared to 1995 (Fig. 1.14), when direct marine traffic from Asia to Québec ports was a mere 555 kt. The shipment of “Coal” (380 kt in 2005), which was almost non-existent in 1995, explains the increase. In 2005 Asia also sent 370 kt of “Minerals” to the ports of Saguenay, Bécancour, Québec City, and Trois-Rivières.

It is certainly true that massive marine transportation of general cargo occurs between Asia and Québec. This largely consists of consumer goods transported in containers that arrive on our markets after transiting through the ports of Vancouver (still dominant, with final transport by rail) and Halifax (final transport by truck or by rail). ■

Middle East

While exports to the Middle East decreased between 1995 (Fig. 1.12) and 2005 (Fig. 1.13), imports more than tripled during the same period, from 120 kt to 375 kt. This increase is due mainly to the 215 kt of “Fuel and basic chemicals” shipped in 2005, including 180 kt of petroleum products, from Middle East ports. Cargo from the Middle East represents only a small fraction of the total tonnage of freight unloaded at Québec ports (generally less than 1%). ■

Pacific Coast (United States)

In 2005 almost 100 kt of “Coking coal” (petroleum coke) was shipped from the Pacific Coast of the United States to Québec. This is by far the main cargo type in maritime trade between these two regions. This traffic however dropped by 60% between 1995 (280 kt) (Fig. 1.14) and 2005 (110 kt) (Fig. 1.15). ■

Arctic

Of the 145 kt of cargo loaded in Arctic ports and shipped to Québec ports in 2005, 95% (135 kt) consisted of nickel concentrates (“Minerals”) extracted from the mine in Deception Bay (Nunavik) (Fig. 1.15). In 1995 (Fig. 1.14) Arctic shores loaded only 870 tons for delivery to Québec ports. ■

Figure 1.14 Origin of tonnages unloaded at Québec ports, 1995

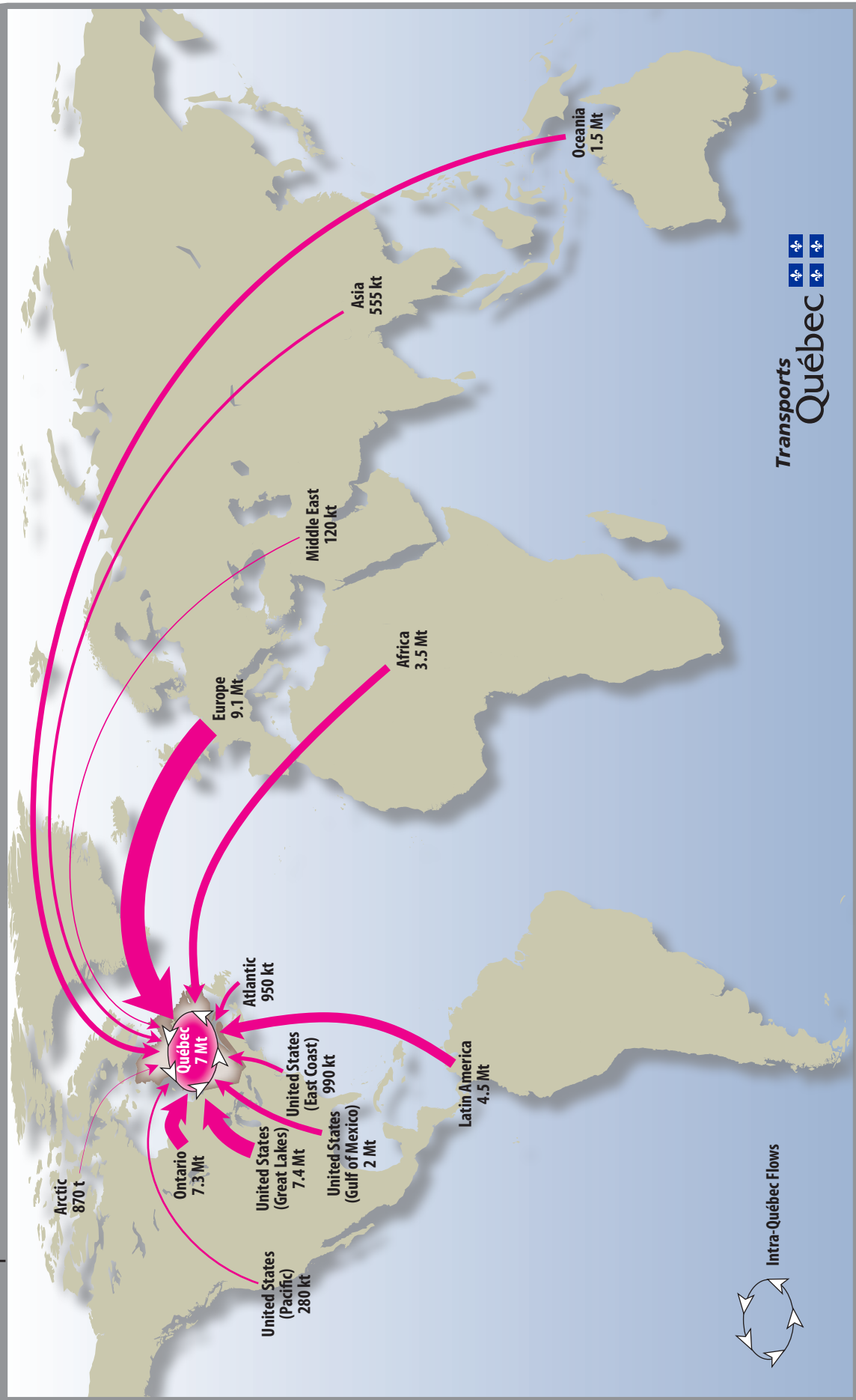
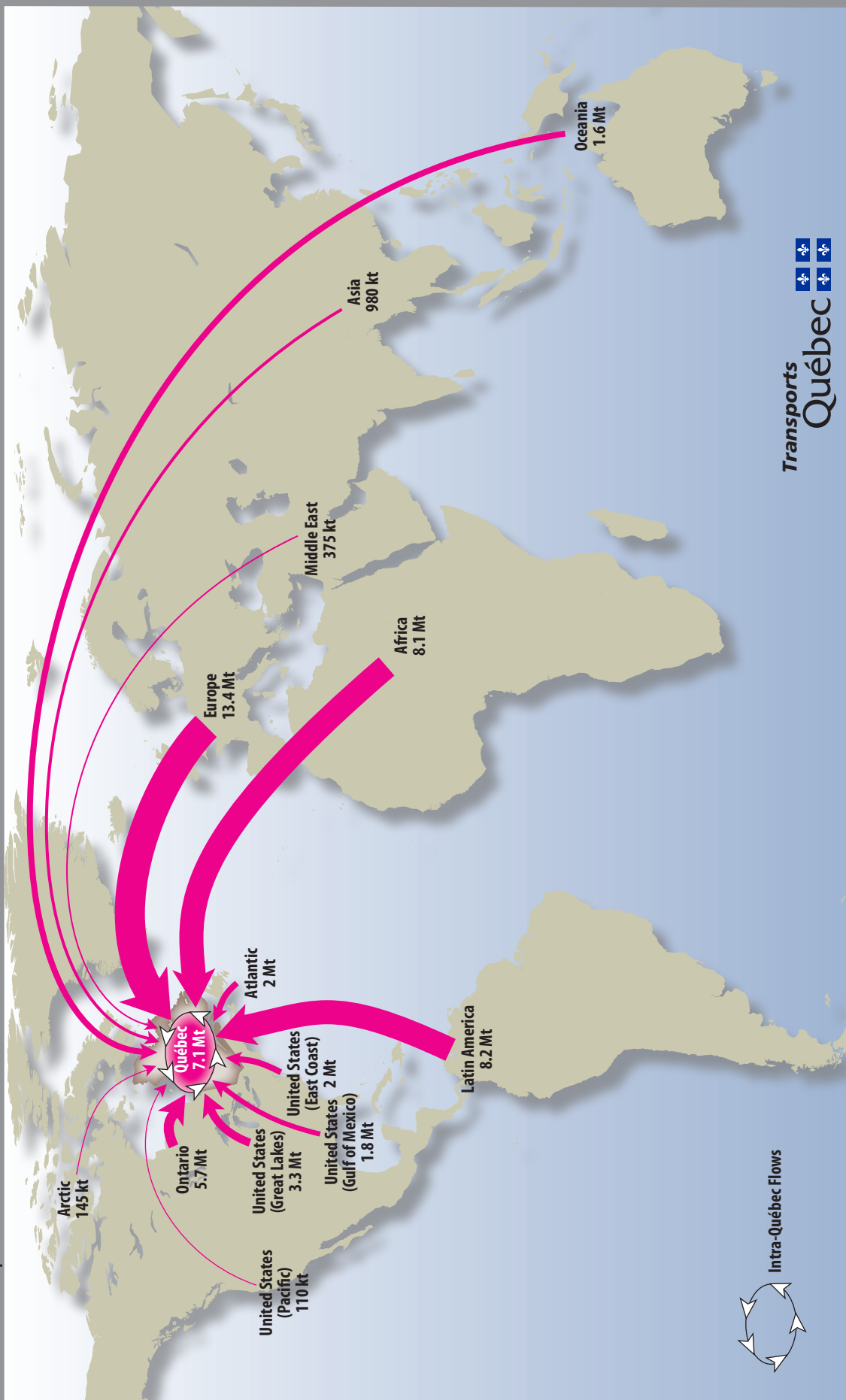


Figure 1.15

Origin of tonnages unloaded at Québec ports, 2005



Appendix 1: Composition of the Nine Commodity Categories

Commodity Category	Products
Agriculture and food products	Live animals
	Other beverages and vinegars
	Other edible fruits
	Other edible vegetables
	Other vegetable products (plants, seeds, sugar, beets, hay, fodder)
	Beer made from malt
	Wheat
	Coffee, tea, maté and spices
	Edible fruits, fresh or chilled
	Linseed (including solin), whether or not broken
	Rape or colza seeds, whether or not broken
	Animal or vegetable fats and oils; prepared edible fats; animal or vegetable waxes
	Edible vegetables, fresh or chilled
	Liqueurs and other spirituous beverages
	Maize (corn)
	Barley
	Fish and crustaceans
	Preparations of cereals or flour, pastrycooks' products
	Misc. edible preparations (sauces, soups, ice cream and other edible ice, milk substitutes)
	Preparations of vegetables, fruit, nuts or other parts of plants (including juices)
	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid
	Preparations of meat, of fish or of crustaceans
	Products of milling industry; malt; starches
	Dairy produce; birds' eggs; natural honey
	Residues and waste from the food industries; prepared animal fodder
	Rice and other cereals
	Rye and oats
	Sugars and sugar confectionery; cocoa and cocoa preparations
	Tobacco and manufactured tobacco substitutes
	Meat and edible meat offal
	Wines and other fermented beverages
Manufactured and misc. goods	Video recording or reproducing apparatus, whether or not incorporating a video tuner
	Others (cargo/mail/articles for the personal or official use/gifts)
	Other machinery and electrical equipment
	Electrical components
	Textile fiber, yarn and fabric (including cordage and lace)
	Measuring, checking and precision instruments and apparatus; clocks and watches; musical instruments
	Other commodity/products (including furniture, lighting, sports requisites)
	Plastics and rubber articles thereof
	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware
	Raw hides and skins, leather, furskins and articles thereof; articles of animal gut (other than silk-worm gut)

Commodity Category	Products
Manufactured and misc. goods (continued)	Textile flooring panels, articles of apparel and clothing accessories
Fuels and basic chemicals	Other fertilizers Other inorganic chemicals; organic or inorganic compounds of precious metals, of rare earth metals, of radioactive elements or of isotopes Other chemicals products (including pharmaceutical products, paints, soaps) Jet fuel (Types A and B) Potassium chloride Motor gasoline (including aviation spirit) Diesel fuel for internal combustion engines Petroleum oils and oils obtained from bituminous minerals, crude Sodium hydroxide (caustic soda) Heavy fuel oils Fuel oils Nos. 2 and 3 Organic chemicals
Coal	Coal Petroleum coke Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon Coal, whether or not pulverised, but not agglomerated
Machinery and transportation equipment	Other machines and mechanical classified by functions Other machines and mechanical, and parts Other land vehicles Bodies, for the motor vehicles, parts and accessories Machineries for production/transfer/storage, electricity Machines and equipment classified for industrial use Machines and transport equipment Internal combustion engines and parts Aircraft, spacecraft, and parts thereof Ships, boats and floating structures Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof Motor vehicles for the transport of persons (excluding buses) Railway locomotives, tracks and parts thereof; mechanical traffic signalling equipment
Minerals	Alumina Other ores, slag and ash Other minerals (including coal, briquettes from coal, greases, asphalt)

Commodity Category	Products
Minerals (continued)	Limestone flux; limestone and other calcareous stone, of a kind used for the manufacture of lime or cement Hydraulic cements (including prepared cements) Gravel Gypsum Aluminum ores and concentrates Copper ores and concentrates Iron ores and concentrates, including roasted iron pyrites Lead and Zinc ores and concentrates Natural aluminium calcium phosphates Natural sands of all kinds (other than metal-bearing sands) Salt and pure sodium chloride Sulphur of all kinds, other than sublimed sulphur, precipitated sulphur and colloidal sulphur
Forest and wood products	Logs and other woods Logs for pulping (pulpwood) Wood sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness exceeding 6 mm Shaving and Pulp Articles of wood or materials and plaiting (plywood, barrels, basketwork)
Primary and fabricated metal products	Aluminum and articles thereof Other iron and steel (pig iron, ferro-alloys, remelting scrap, stainless steel) Other base metal and metal products (including implements and cutlery) Other metal products, iron and steel (including frameworks, tanks, chains) Flat-rolled products of iron or non-alloy steel Railway or tramway track construction material of iron or steel Bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel Sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel Stranded wire, ropes, cables, plaited bands, slings and the like, of iron or steel, not electrically insulated Tube or pipe fittings (for example, couplings, elbows, sleeves), of iron or steel
Pulp and paper products	Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans Newsprint, in rolls or sheets Pulps of fibres derived from recovered (waste and scrap) paper or paperboard

Appendix 2: Composition of Canadian and U.S. Regions

<i>Canadian Region</i>	<i>Province</i>
Atlantic	Prince Edward Island
	New Brunswick
	Nova Scotia
	Newfoundland and Labrador
Arctic	Manitoba
	Nunavut
	Québec/Arctic
	Northwest Territories
Pacific	British Columbia
<i>United States Region</i>	<i>State</i>
United States (East Coast)	North Carolina
	South Carolina
	Connecticut
	Delaware
	Florida
	Georgia
	Maine
	Maryland
	Massachusetts
	New Hampshire
	New Jersey
	New York
	Pennsylvania
	Rhode Island
	Virginia
United States (Gulf of Mexico)	Alabama
	Louisiana
	Mississippi
	Texas
United States (Great Lakes)	Illinois
	Indiana
	Michigan
	Minnesota
	New York (Lakes)
	Ohio
	Pennsylvania (Lakes)
	Wisconsin

United States Region

State

United States (Pacific)

- Alaska
- California
- Oregon
- Washington

