

# Superior Ice Forecasting & Real-Time Arctic Intelligence

## Who We Are

PolArctic Canada delivers **next-generation Arctic ice forecasting & intelligence** for pan-Arctic waters. PolArctic Canada is led by Co-Founder & CEO Leslie Canavera, an Inuit entrepreneur and AI innovator with 20 years of experience in technology, defence (NATO-affiliated certification), and risk management.

PolArctic's **superior ice forecasting and modeling outperforms standard benchmarks** and alternatives available on the market today. **Ready-to-use dynamic maps** and a **real-time navigation app** empower safer and more predictable transits.

## Why Choose PolArctic



### Market-leading accuracy

PolArctic's 10-day forecast surpasses NOAA's 5-day forecast



### Live data advantage

Ready-to-use dynamic maps and a real-time data pipeline keep navigation current and complete



### Superior resolution

PolArctic technology provides high spatial resolution for effective, location-specific analysis

## Our Partners



## Services & Offerings

### 1) Real-time navigation app

- **Ready-To-Use Ice Charts**

Suitable for deployment on vessels for forecasts and beyond-the-horizon mapping

### 2) Pan-Arctic planning interface

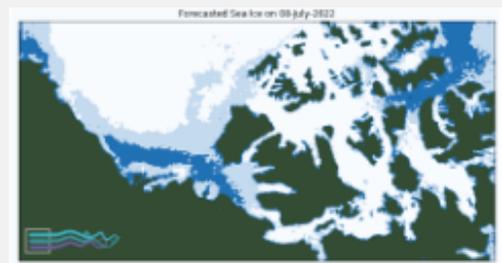
- **Real-Time Ice Surveillance**

Route planning and vessel capability mapping (e.g., for optimization and logistical planning)

### 3) Expert consulting services

- **Bespoke Insights for Arctic Operators**

Season length forecasts informed by ice chokepoints and in-year conditions



Sample Pan-Arctic forecast based on proprietary modelling

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PolArctic Canada

# NAVIGATION & PLANNING TOOLS FOR ARCTIC OPERATORS

Investment in PolArctic can enable:

- **Savings in time** as a result of better route planning
- **Direct cost reduction** with efficiency improvements and downtime reduction (e.g., savings in demurrage, fuel, insurance)
- **Improved utilization** of seasonal window, allowing more shipments when ice is open

## CASE STUDY

PolArctic provided a

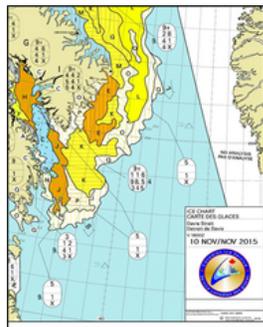
# 43x ROI

...in direct cost savings for an Arctic marine operation in a single year

- PolArctic architected, built and ran state-of-the-art forecasting tools providing the company the information they needed to plan their routes in the Arctic
- Well-informed planning saved the shipping company over 600 hours (\$1.3 million) in demurrage fees, and increased crew safety
- With daily updates, they were able to make operational decisions, visualize and analyze risks associated with future trips to the Arctic

## BASELINE SOLUTION

Hand-drawn **ice charts are not published frequently; data 4-11 days old** when ice chart used



**FIGURE 2018-01**  
Ice forecasts for the Gulf of St. Lawrence issued by Environment Canada at 10:00 A.M. EST Thursday 29 January 2020 for today tonight and Friday.  
The next scheduled forecasts will be issued at 10:00 A.M. Friday.  
First ice edge estimated from New Brunswick near 4520 045W to 4550 045W to 4330 045W to Nova Scotia near 4320 037W. Sea ice east of the ice edge.  
Second ice edge estimated from Nova Scotia near 4430 047W to 4420 037W to 4370 047W to 4360 040W to 4420 037W to 4340 040W to 4370 047W to 4420 040W to Newfoundland near 4510 040W. Sea ice northwest then east of the ice edge.  
Pointe-de-Monts to Anticosti - northern half.  
3 tenths grey ice except 3 tenths grey ice including 3 tenths grey white ice in the southeastern section. Consolidated first-year ice along parts of the coast near Sept-Îles.  
Pointe-de-Monts to Anticosti - southern half.  
3 tenths grey ice including 4 tenths grey white ice. Consolidated grey white ice along parts of the coast.  
Pointe à Michel to Pointe-de-Monts.  
3 tenths grey ice except 3 tenths grey ice including 2 tenths grey white ice in the southern section. Consolidated grey-white ice along parts of the coast.  
Tadoussac to Pointe à Michel.  
3 tenths new ice including 3 tenths grey-white ice except 3 tenths grey white ice along parts of the southern coast and in the extreme southeastern section. Consolidated first-year ice along parts of the coast.  
Fundy.  
Open water except 2 tenths grey ice along parts of the coast in the eastern section.  
Gros Cap.  
Open water except 3 tenths new ice in a few sheltered bays.  
L'Anse-au-Loup.  
Open water except 2 tenths new ice in a few sheltered bays.

**Text-based ice forecasts from Environment Canada have few useful details for navigators**

## POLARCTIC SOLUTION

**Updated daily, or even more frequently** (governed by data releases)

**Digital ice forecasts** accessible through mobile app and digital dashboard



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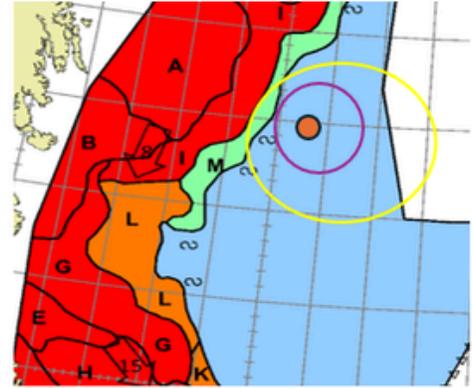
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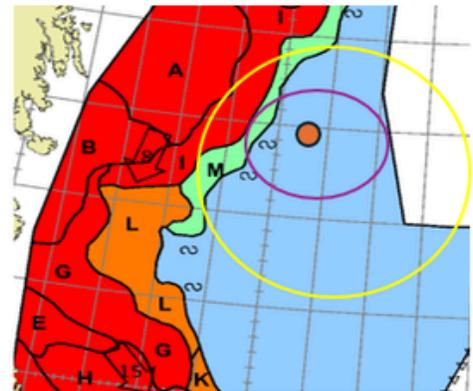


● Current location of vessel    
 ○ 1-day sailing radius    
 ○ 2-day sailing radius

**Vessel A** *Capability based on nearby ice conditions*



**Vessel B** *Capability based on nearby ice conditions*



# DOMAIN AWARENESS FOR DND

Investment in PolArctic enables:

- Greater effectiveness for sovereignty-affirming operations in Canada's Arctic
- Rapid response capability to evolving conditions
- Reduced reliance on analog / paper tools
- Planning capability for deployments, procurements, future scenarios

## HOW DOES THIS TECH WORK?

- **Ice capabilities of vessels / fleets are identifiable** from public information, based on Polar Class, hull type, and other inputs
- **Ice conditions can be forecasted** for specific dates using PolArctic's proprietary AI-driven algorithm, making use of historical data, traditional Indigenous knowledge, and self improvement
- **Information is layered** into map front-end, with option for text engagement (e.g., can ask questions using plain language: "how quickly can X vessel reach Y location?")

## HOW THIS CAN BE USED?

- 
**"War gaming":** Map and measure capabilities of Canada's icebreaking fleet, in real conditions on specific dates, relative to adversaries (e.g., accessible region, response time to reach a given area)
- 
**Operational planning:** No more guesswork when making itineraries. Evidence-based ice forecasts can map coverable distance and travel time
- 
**Procurement:** Canada can improve knowledge of geographic capability unlocked by specific assets

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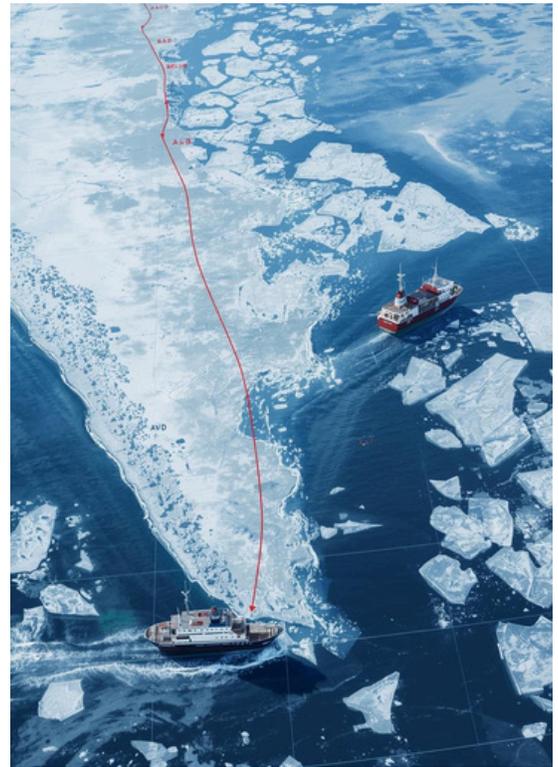
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