

Evidence essay · Sea ice and ocean

What an ice chart cannot promise

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Fictional author and institute · Editorial demonstration, not peer reviewed

ABSTRACT

Regional ice charts are read as time-referenced analyses, not guarantees of connectivity, strength, or safe travel. The essay uses Canadian Ice Service documentation to distinguish observation, publication, and valid times, and to explain concentration, stage-of-development, and floe-form information in the egg code. An invented mixture demonstrates why partial concentrations describe an area rather than a sequence along a route. Drift, deformation, unresolved fractures, and separate iceberg information expose the limits of promoting one chart into a complete hazard map. Climate anomalies are also distinguished from operational permissions. No route or thickness recommendation is offered. The useful outcome is a complete product retained with its legend, source, time, and coverage, alongside recognition of the local competence, authority, and current information a journey would additionally require.

Keywords: ice charts · egg code · valid time · ice concentration · operational limits

Adapted from the Still North field journal. Original article. A source-based editorial text, not a report of original Still North research. Examples and imagery are illustrative.

An ice chart can show an area as eight-tenths ice-covered without identifying a continuous route through the remaining two-tenths of water. It can describe a dominant ice type without measuring the strength of every patch. These are not failures of charting. They are boundaries between a regional analysis and the local conditions a traveller would need to know.

This article explains those boundaries. It is not a route recommendation, an ice-thickness rule, or a substitute for current official information, qualified local guidance, and the requirements applying to a particular journey. A chart should make the questions more precise, not provide a shortcut around them.

Read the time before the colour

The Canadian Ice Service's product guide describes daily charts as the best estimate of conditions at their valid time, assembled from sources such as satellite imagery and visual observations. Regional charts combine information over a larger area, including imagery gathered over several days. A chart is an analysis with a time reference, not a live window.

That distinction matters even when the file was downloaded moments ago. Publication time, observation times, and valid time need not be identical. An image stored in a message or screenshot can also lose its legend and date. An undated crop may retain a persuasive colour while removing the information needed to judge whether it is relevant at all.

The egg code is a structured description

The official explanation of the egg code sets out concentration, stage of development, and form or floe size. Total concentration describes how much of the reported area contains ice. Partial concentrations distinguish major ice types. Their associated development and form codes add information that a single colour cannot carry.

For an invented example, imagine a reported area with eight-tenths total concentration, composed of five-tenths first-year ice and three-tenths young ice. The fractions describe the area, not a guaranteed sequence along a journey. They do not mean that a traveller first encounters one type for five kilometres, another for three, and then two kilometres of open water. Spatial arrangement remains a separate question.

The coding system can also represent traces, strips, and patches. A smaller contribution of older or thicker ice may matter greatly to an operation even when it does not dominate the total. Reading only the largest number or broad colour discards exactly the detail that the specialist notation was designed to retain.

Concentration is not connectivity or strength

Two areas with the same concentration can have different arrangements: scattered floes in one, compact strips separated by water in another. Ice can move, converge, or open after the observations used in the analysis. Wind and currents can change the local situation without waiting for the next issue. Our sea-ice overview explains why motion and deformation belong in any interpretation.

Stage-of-development categories are not a load-bearing certificate. A category may relate to a thickness range, but it does not provide a measurement at every point, or resolve every fracture, snow-covered opening, weakened surface, and local current effect. A regional marine chart cannot establish whether a particular over-ice crossing is safe. Open water is not automatically safe for a small boat either.

The distinction between sea ice and ice of land origin matters too. A sea-ice concentration summary is not an inventory of every iceberg, growler, or other hazard. The Canadian service produces separate iceberg information, with its own coverage and estimation limits. One layer

should not be silently promoted into a complete hazard map.

A departure from normal is not a permission

An anomaly map answers a comparison question: more or less ice than the chosen normal for that place and time. It does not label a route as safe or unsafe. A large negative anomaly may still leave difficult ice conditions; an apparently ordinary area may still contain serious local hazards. The baseline belongs to the climate comparison, not to a traveller's acceptable risk.

The useful response is to retain the whole product, its legend, valid time, coverage, and source, then recognise which operational questions it cannot settle. Local knowledge also has context, authority, and limits on sharing; it is not a generic layer to extract from people on arrival. Our [communities and livelihoods](#) page explains that relationship. A good chart can support an informed decision. It cannot make the decision, supply competence, or promise what the ice will do next.

References

1. Canadian Ice Service's product guide ([canada.ca](#))
2. official explanation of the egg code ([canada.ca](#))