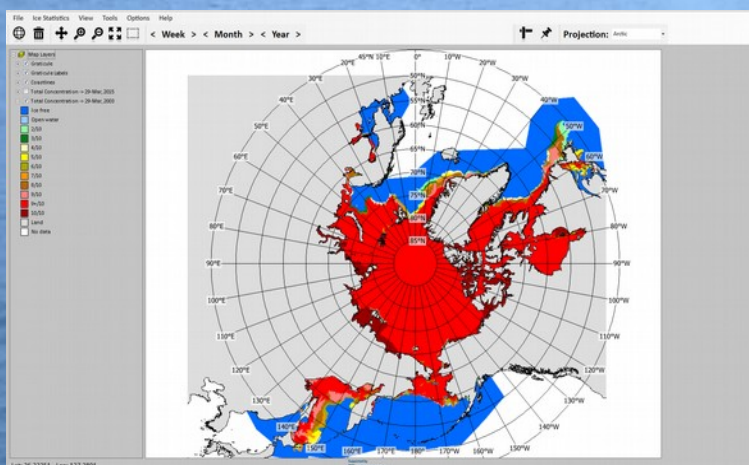
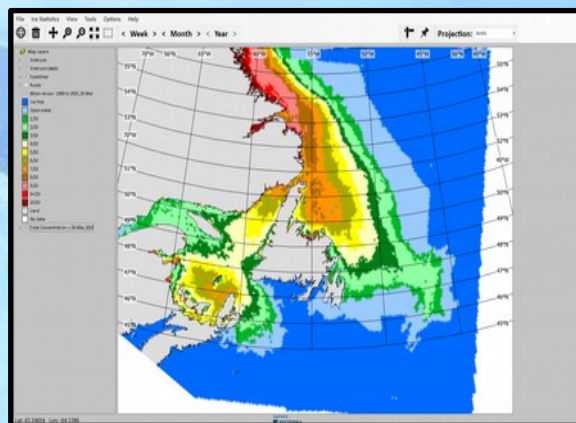


Accessing over 40 years of worldwide ice chart data, Canatec's ICE Program is a powerful tool that allows the user to generate statistical output of sea-ice conditions at specified points and over user-defined regions.



On-screen layout of Canatec's ICE Program

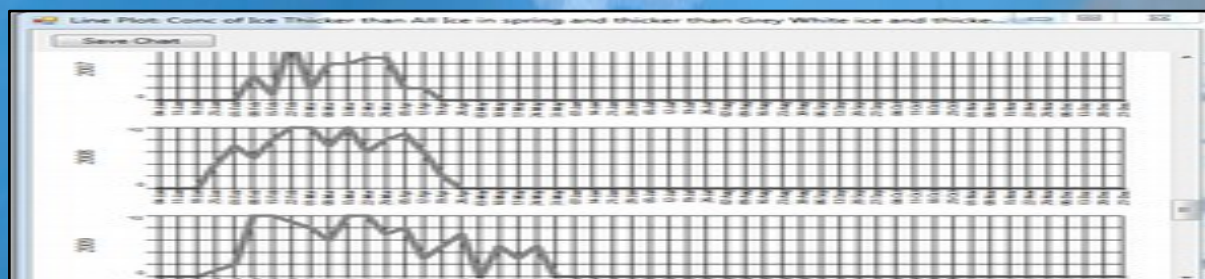
- Within minutes, generate analyses of ice conditions in any northern hemisphere ice location— computations that would otherwise take days of manual compilation.
- Allows for exploratory planning to be carried out in-house, with complete confidentiality.
- Expert judgments in minutes without specialist training; quickly runs "What-if" analyses.
- Define requirements for more detailed analyses or new field measurements for final mission development.
- Complements other environmental databases and planning tools (sea states, meteorology, sea depth)



Median ice concentrations on 29 March, based on all data from 1991 through 2015.

## Output

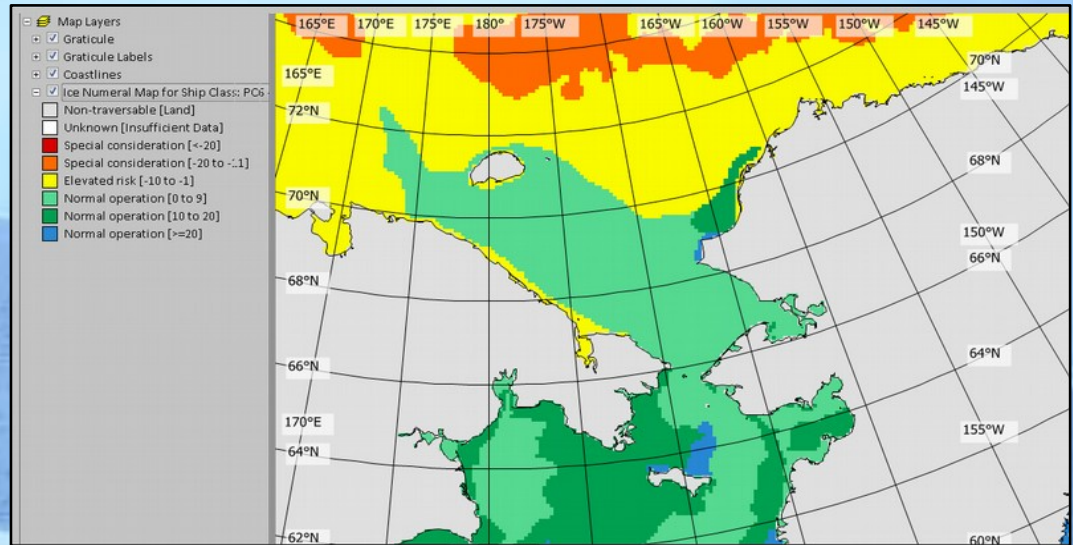
- Statistical graphs of ice conditions at *any* marine poleward of 35°N latitude
- Actual and statistical weekly maps for user-defined areas. Statistical plots of ice conditions for a single point.
- Statistical tables, plots, and maps showing operating season based on user-defined sea-ice limit criteria .
- Calculations of ice season duration probabilities from user-defined criteria for season start and end.
- Ice conditions, distances, and lowest ice class vessel along user-defined routes.
- Data output can be exported for analysis by other types of programs.



Season-by-Season line plot of ice concentration through the year at a user-selected location.



Generate maps of ship access ("go/no go") zones for Polar Class vessels, 1A Super, 1A, 1B, 1C, Canadian Arctic Class (CAC), and five Canadian ice type vessels



Ice Numerals

Save to csv Ice Numerals for Ship Class: NO ICE CLASS Lat.54° 45'N Lon.144° 15' E Ship Type: NO ICE CLASS

Vessel Ice Multipliers: MY -8, SY -7, TFY -6, MFY -5, FY -3, FY -2, GW -1, G 0, NI 1, OW 3

Decay:  Rough:

Number of Years	Dates	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Week 1	04-Jan	30	30	-11	16	-29	30	-2	0	10	30	-9
Week 2	11-Jan	10	-16	2	-20	-21	30	-19	30	30	8	6
Week 3	18-Jan	30	10	-21	-4	-33	30	-21	-7	-17	4	-23
Week 4	25-Jan	30	-16	-21	-10	-35	20	-10	-2	-19	-11	-27
Week 5	01-Feb	30	-19	-15	-25	-18	-2	-8	-7	-22	-15	-28
Week 6	08-Feb	30	-19	-18	-33	-18	30	-19	-12	-16	-19	-33
Week 7	15-Feb	22	-24	-35	-33	-30	-20	-23	-19	-28	-29	-35
Week 8	22-Feb	10	-24	-17	-17	-31	-20	-29	-21	-33	-33	-35
Week 9	01-Mar	10	-30	-42	-17	-29	-27	-31	-28	-27	-32	-37
Week 10	08-Mar	-50	-25	-42	-2	-33	-35	-28	-28	-32	-35	-42
Week 11	15-Mar	-50	-25	-25	30	-33	-37	-30	-22	-35	-35	-42
Week 12	22-Mar	-50	-27	-25	30	-33	-39	-39	-28	-35	-35	-42
Week 13	29-Mar	-50	-42	-26	10	-34	-39	-22	-8	-37	-37	-42
Week 14	05-Apr	-50	-31	-26	8	-37	-39	-34	-24	-37	-37	-42
Week 15	12-Apr	-34	-26	-26	30	-34	-30	-24	-34	-37	-37	-42
Week 16	19-Apr	30	-10	-31	30	-34	-30	30	-20	-37	-37	-42
Week 17	26-Apr	30	30	-31	30	-34	-30	30	-20	-28	-14	-42
Week 18	03-May	30	30	30	30	-31	30	30	30	-30	-22	-42
Week 19	10-May	-34	30	30	30	30	no data	30	30	30	30	-42

Above, interactive Ice Numeral output table for user-defined point. User can vary the vessel type and ice roughness/decay assumptions to generate historical sets of Ice Numerals as used by Polaris and Transport Canada ice regime analyses for ship access.

## Acquiring Canatec's ICE Program

Single-user licence purchase—USD 5,900; includes US National Ice Center data 1972-present, Canadian Ice Service data 1968-present.

Supplementary user licences—USD 1,000 per additional licence.

Annual Maintenance Package—USD 1,200 per Basic licence, USD 350 per supplementary licence; includes program patches, upgrades, and full year addition of NIC and Canadian data sets..

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