



FEDNAV

DELIVERING A HIGHER STANDARD





WHO IS FEDNAV?

- Incorporated in 1944
- Privately held, headquartered in Montreal
- Largest Canadian dry-cargo shipping group
- 58 owned vessels maintained at the highest standards
- Leaders in international Handysize/Supramax bulk carrier ownership and operation
- Largest fleet of ice-classed bulk carriers



MAIN LINES OF BUSINESS

Ocean Freight Operations



Shipowning and Technical Management



Marine Terminal Operations and Logistics



Arctic Operations and Projects





ARCTIC OPERATIONS AND PROJECTS

- Participating in all major projects in the Arctic for over 60 years
- Operating three highest ice-class ice-breaking bulk carriers in the world
- Operating unescorted in Arctic waters year round
- Servicing Northern mines of nickel, zinc, lead, copper, and iron ore





ARCTIC VESSELS

THEN...

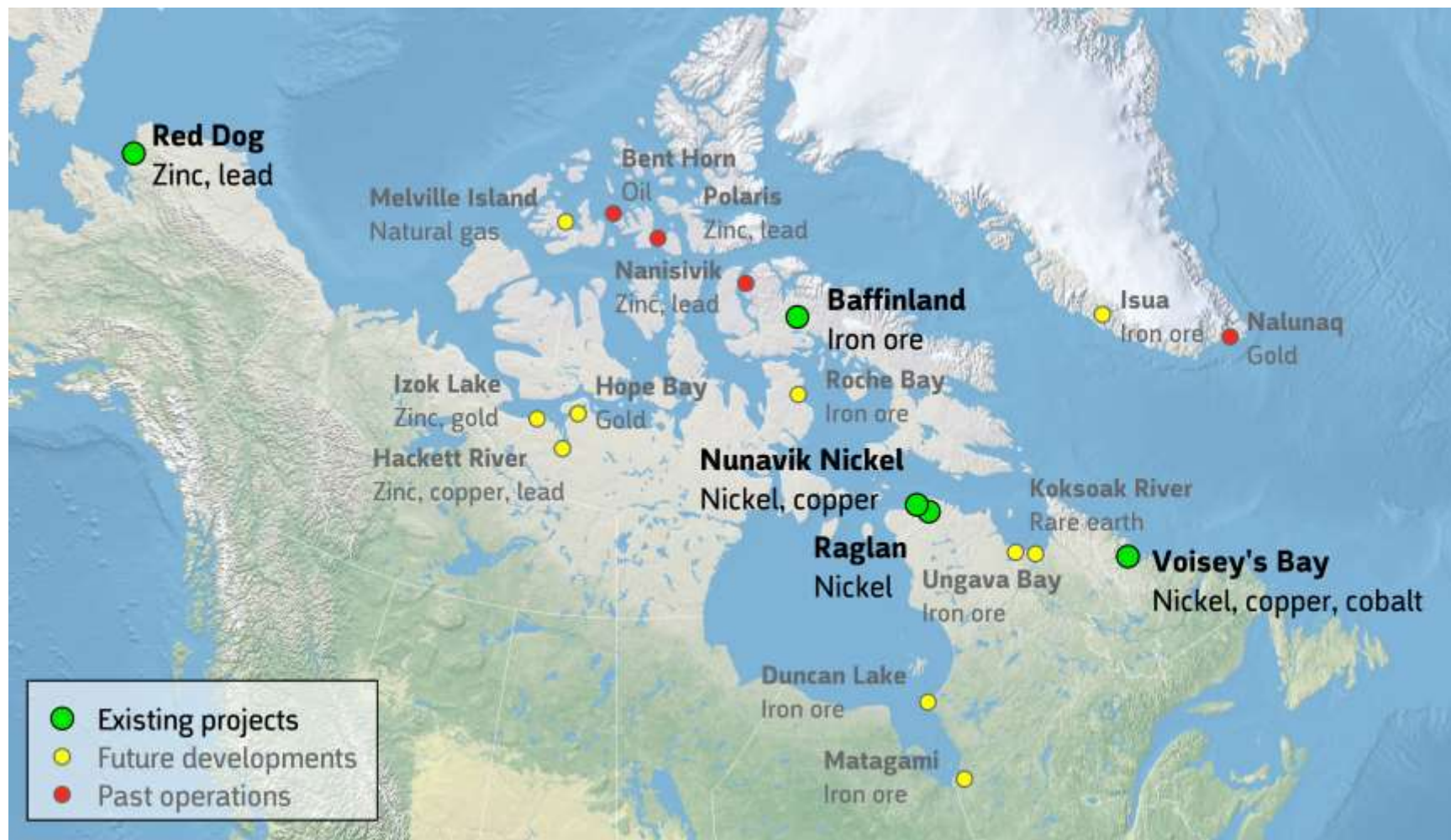


AND NOW





ARCTIC PROJECTS





GLENCORE AND CANADIAN ROYALTIES MINES





VALE'S NICKEL AND COPPER MINE





BAFFINLAND IRON MINE



Red Dog (Alaska) 67.34 N
164.04 W loading
operations during summer
Open Water Vessels –
Category C



20 plus seasons, over
25,000,000 tonnes, nearly 500
voyages



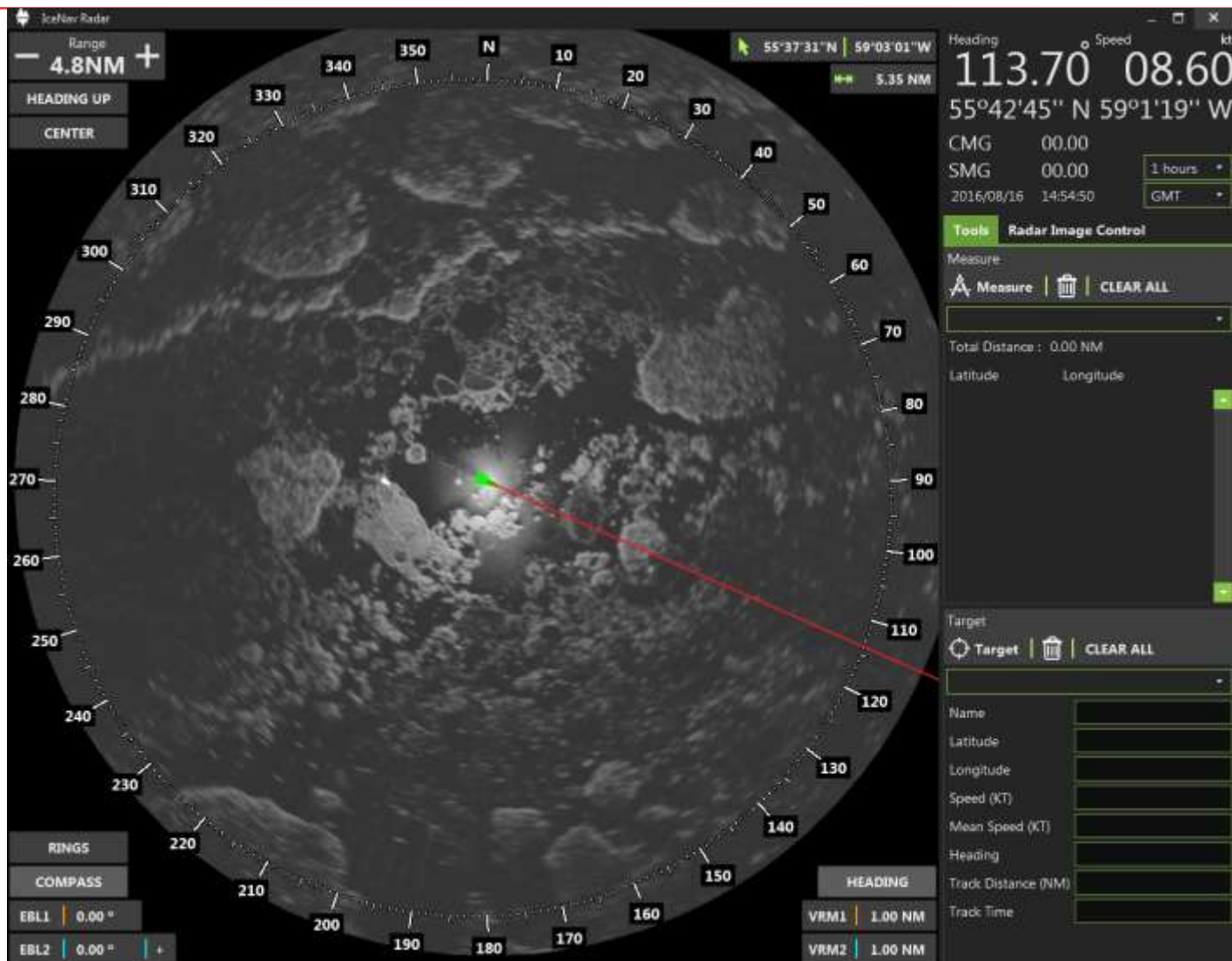
ENFOTEC TECHNICAL SERVICES INC.

- Subsidiary of Fednav Limited
- Specialists in ice analysis and ice-related navigation information
- Designers and distributors of IceNav™, a shipboard ice navigation system that allows users to:
 - Retrieve and use satellite images
 - Access up to date ice and weather charts and forecasts



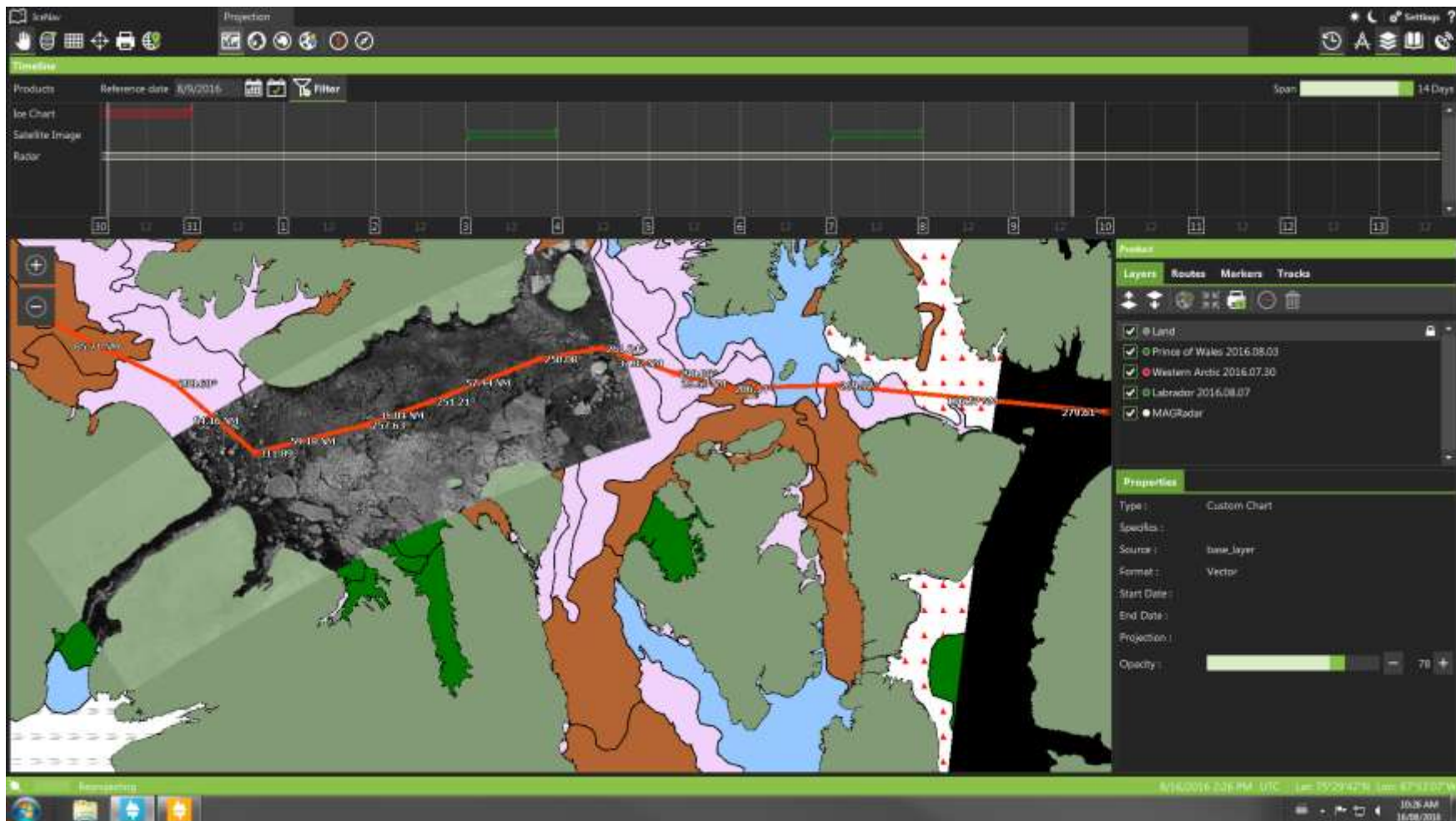


RADAR INTERFACE



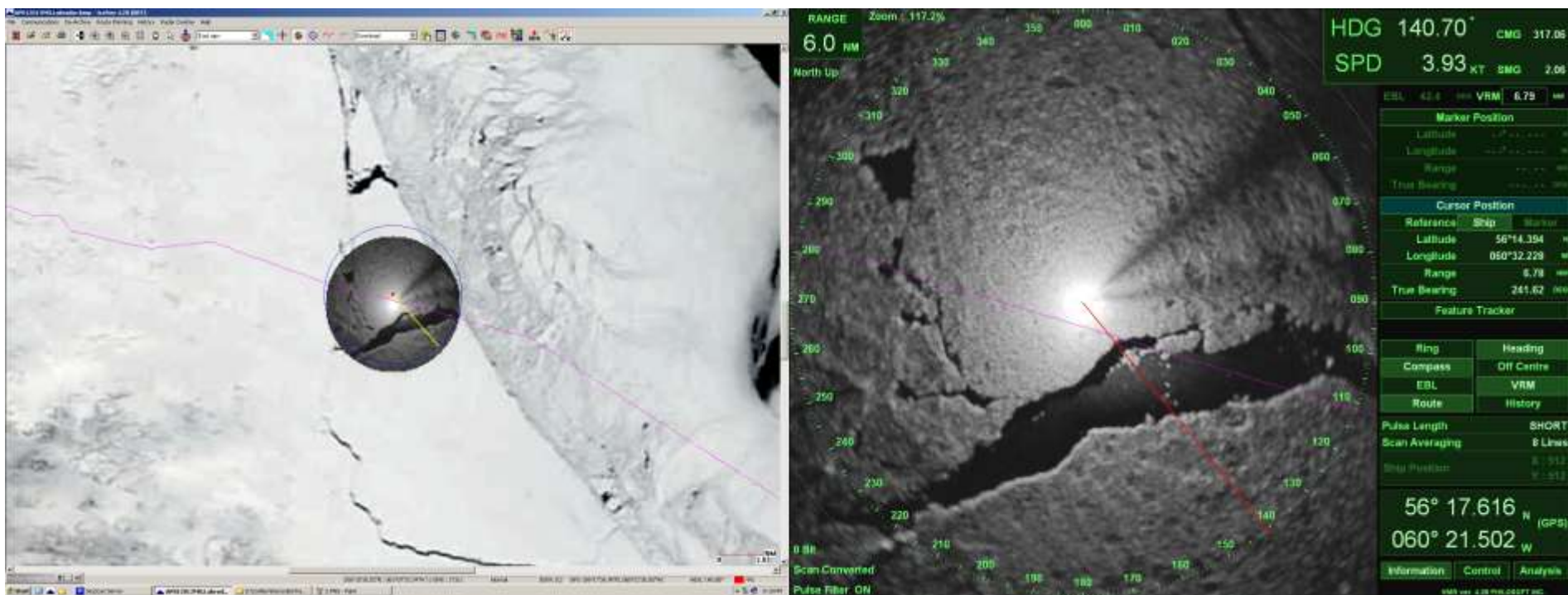


SATELLITE IMAGE OVERLAY



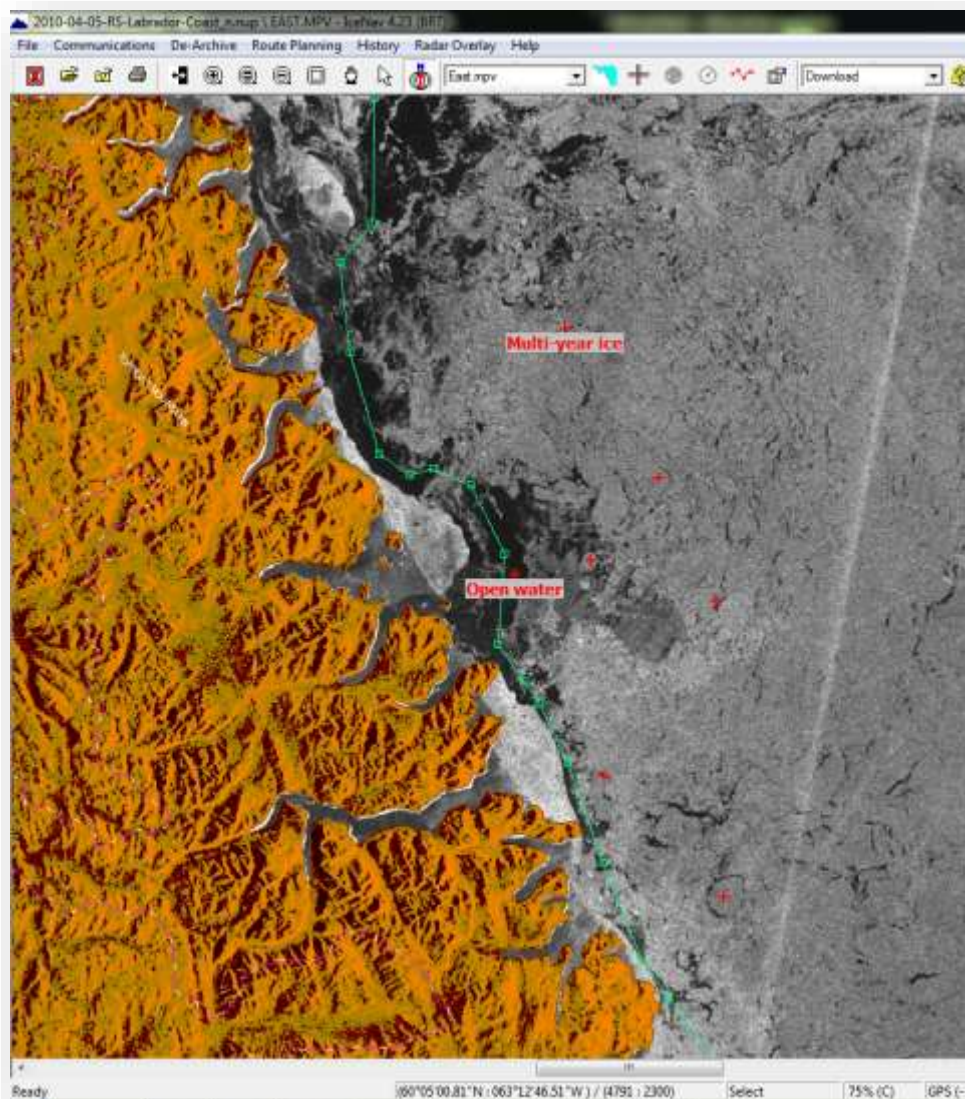


RADAR OVERLAY

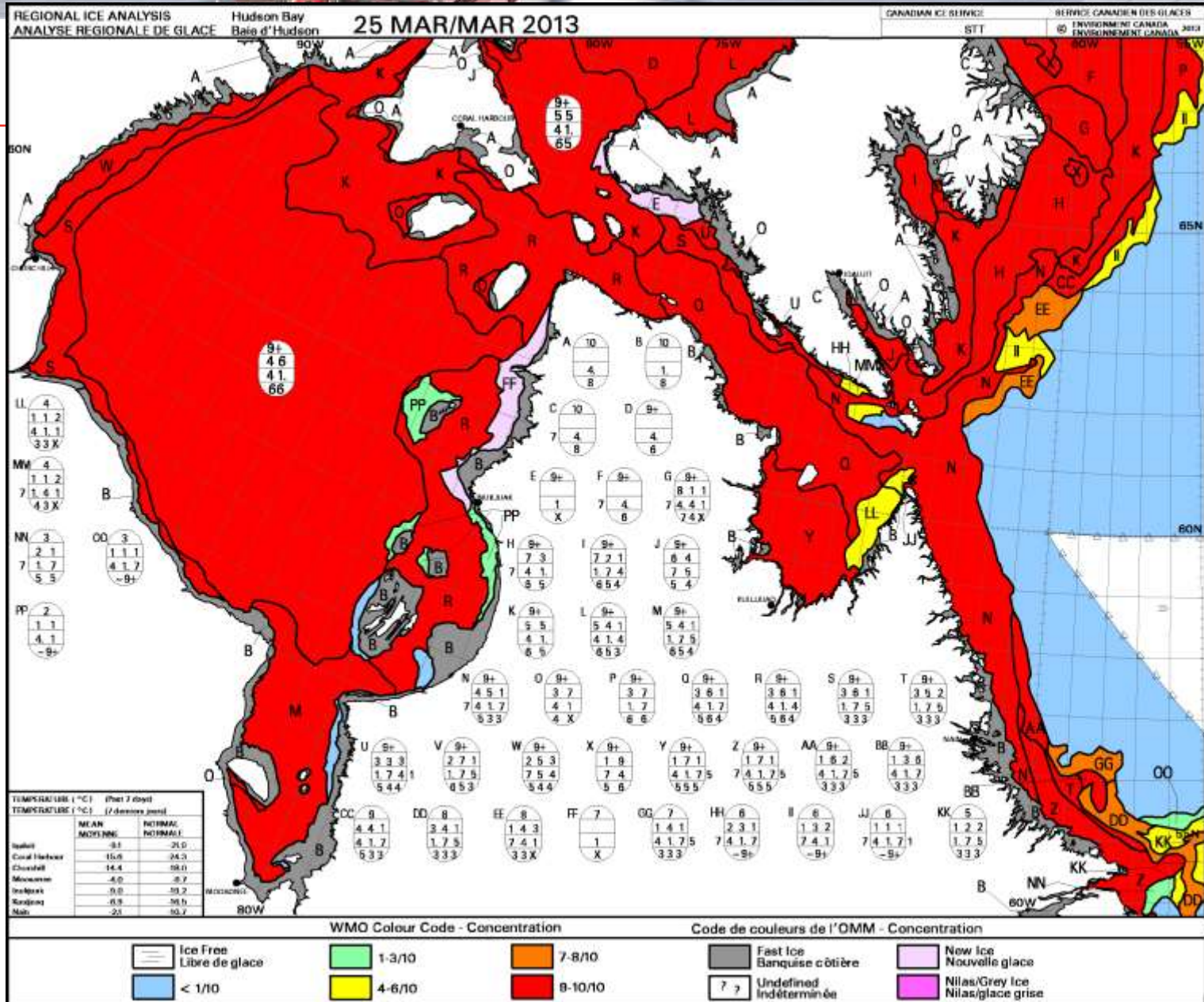


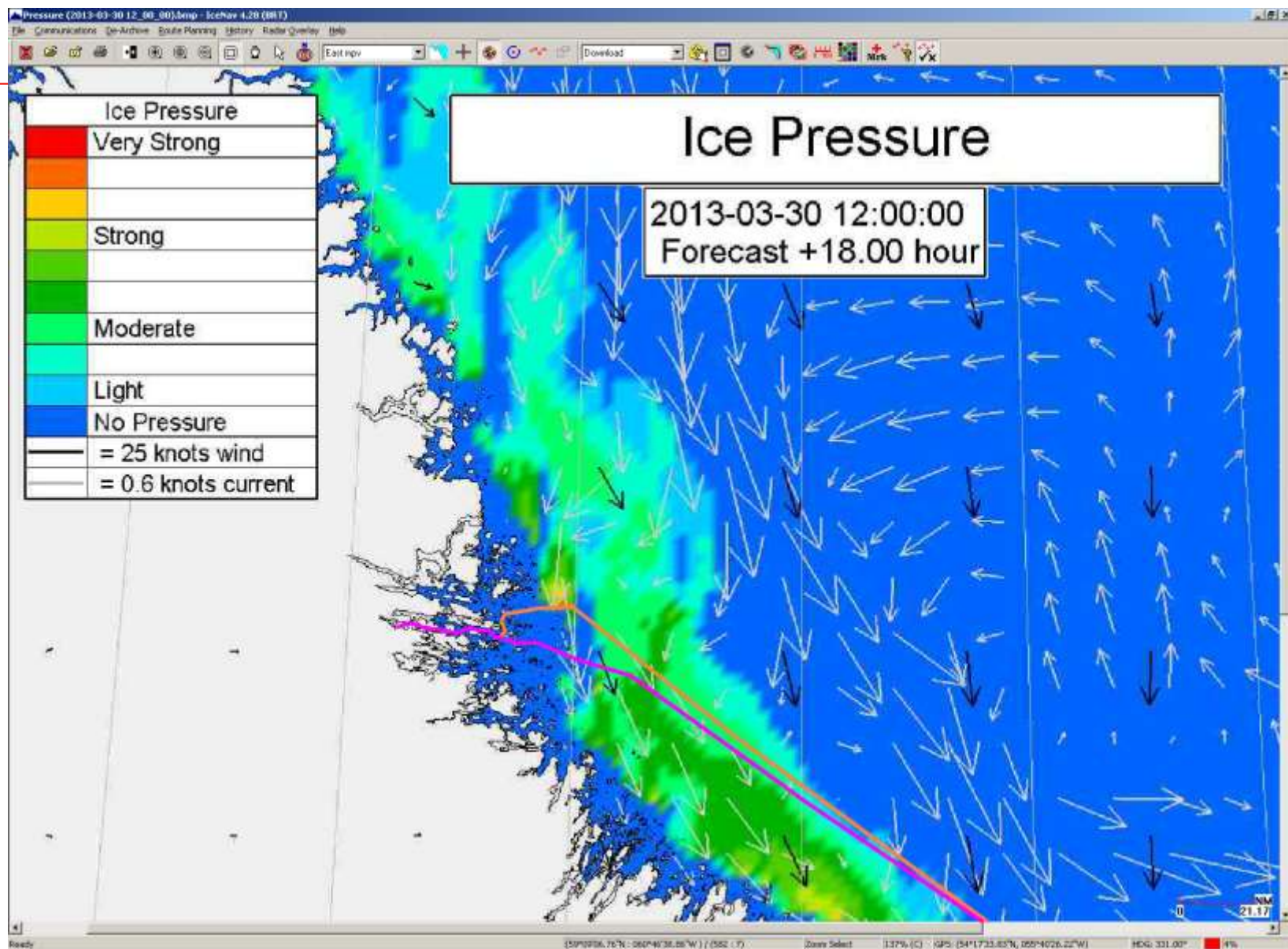


PLANNING ROUTES



With the help of the latest ice information, IceNav can be used to plan routes based on the ice conditions.







NUNAVIK IN ICE HEADING INTO PRINCE OF WALES STRAIT





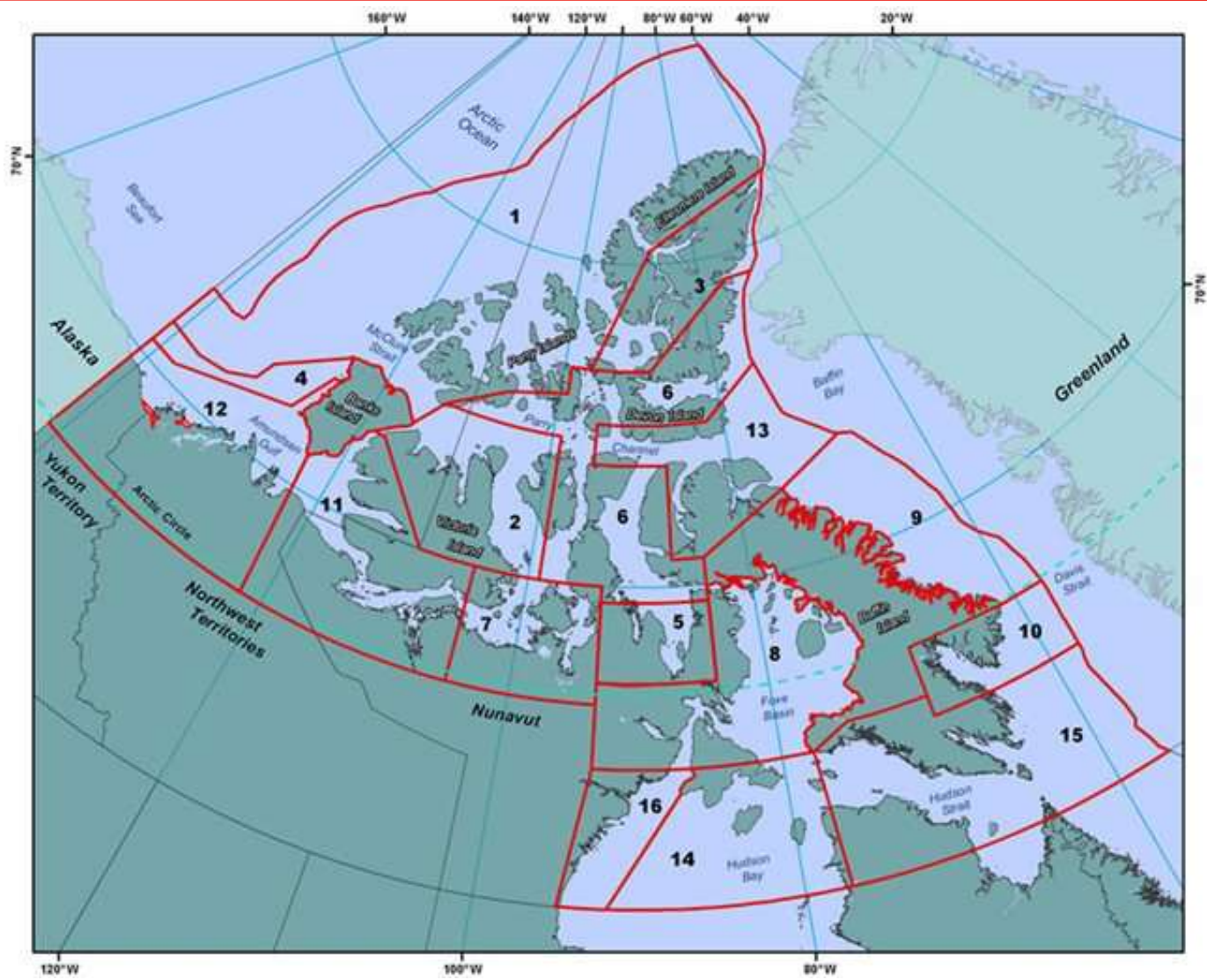
SEASONAL FORECASTING OUTLOOKS

- Current and recent conditions (trends and anomalies):
 - Ice
 - Air Temperature
 - Water Temperatures
- Forecast of Ice conditions
 - Seasonal ice outlook
 - 30-day ice outlook
- Forecast of air temperatures:
 - 1-month probabilistic outlook
 - 3-month probabilistic outlook
 - Seasonal outlook



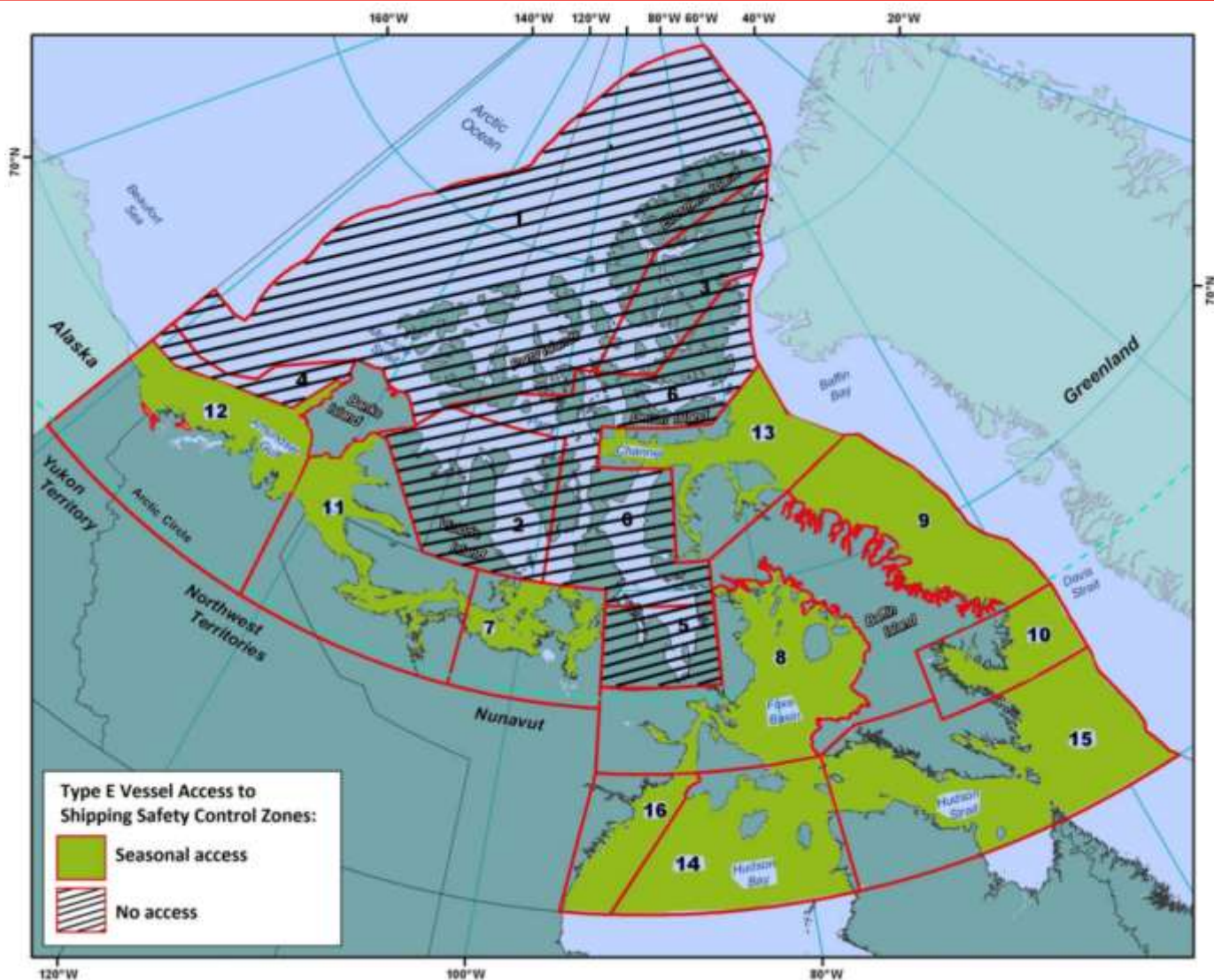


ZONE/DATE SYSTEM





ZDS OPEN WATER VESSEL ACCESS





AIRSS (ARCTIC ICE REGIME SHIPPING SYSTEM)

Ship Category		Open Water	Grey Ice	Grey White Ice	Thin First Year 1st Stage	Thin First Year 2nd Stage	Medium First Year	Thick First Year	Second Year	Multi Year
	Ice Type Symbol ²	OW	G	GW	FY	FY	MFY	TFY	SY	MY
	Egg Code	1 or 2	4	3 or 5	8	7 or 9	1●	6 or 4●	8●	7● or 9●
CAC 3		2	2	2	2	2	2	2	1	-1
CAC 4		2	2	2	2	2	2	1	-2	-3
Type A		2	2	2	2	2	1	-1	-3	-4
Type B		2	2	1	1	1	-1	-2	-4	-4
Type C		2	2	1	1	-1	-2	-3	-4	-4
Type D		2	2	1	-1	-1	-2	-3	-4	-4
Type E		2	1	-1	-1	-1	-2	-3	-4	-4





Thank you!

