ARHC2-02E

Arctic Regional Hydrographic Commission
Arctic Pilot Project

September 2011
Copenhagen

Canadian Hydrographic Service

Savi Narayanan

Arctic Safety

Governments, academic institutions, NGOs and Industry

-- All have important roles to play

-- All have responsibility

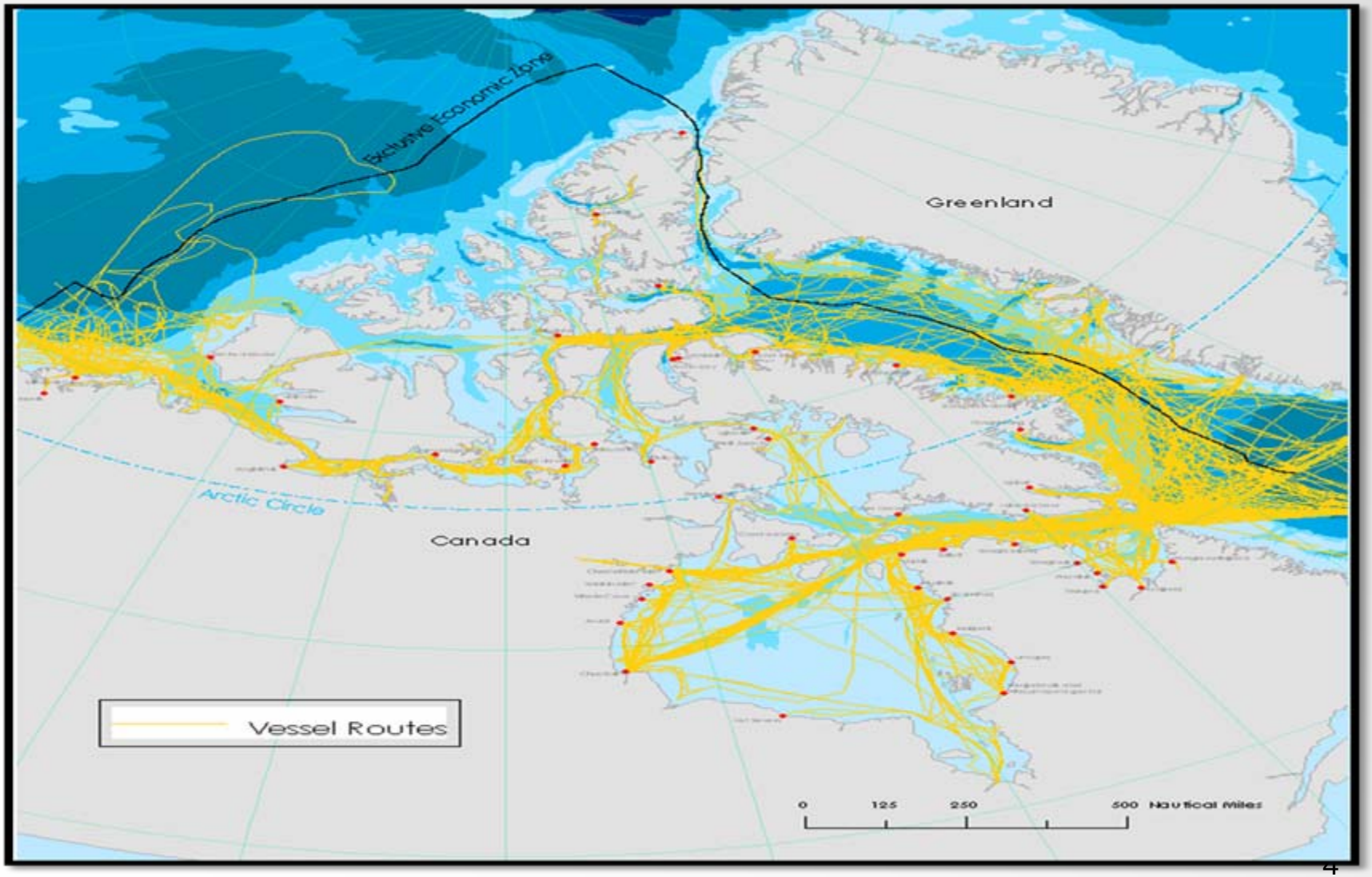
Charting challenge

Improving Safety, Supporting Economic Growth, Strengthening Environmental Protection and Exercising Sovereignty

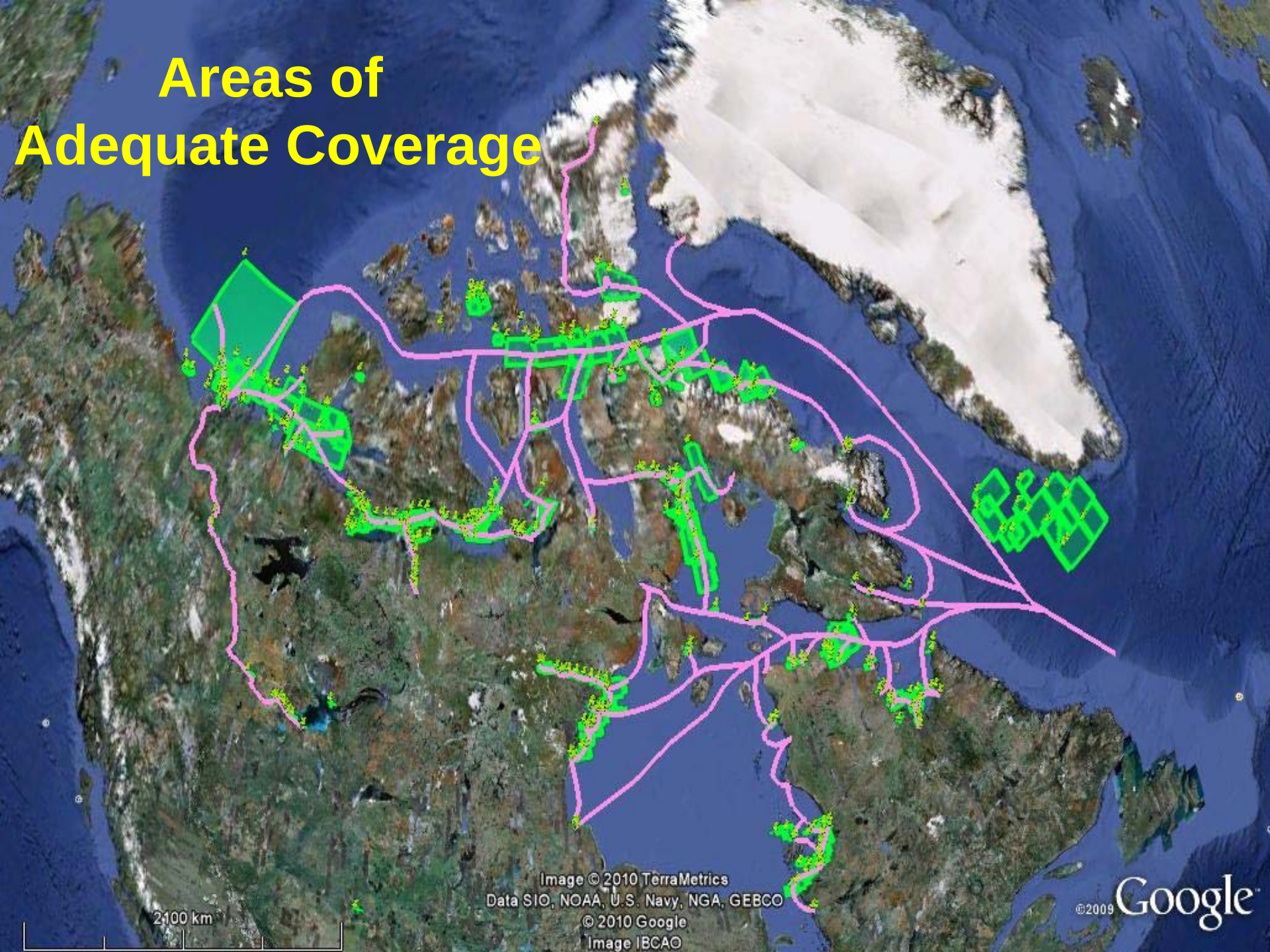
Responsible for charting Canada's:

- **131,650 nautical miles of coastline (longest of any country in the world),**
- **739,266 square nautical miles of shelf and territorial sea,**
- **plus inland lakes and waterways.**

2010 vessel traffic



Areas of Adequate Coverage



Canadian Strategy

- Nat'l approach to prioritization, survey planning, and delivery of data, products and services
- Support the legislative responsibilities
- Increased reliance on partnerships, vessels-of-opportunities,
- Increased focus on DM, products, services.
- Efficiencies through technology - multiplatform approach

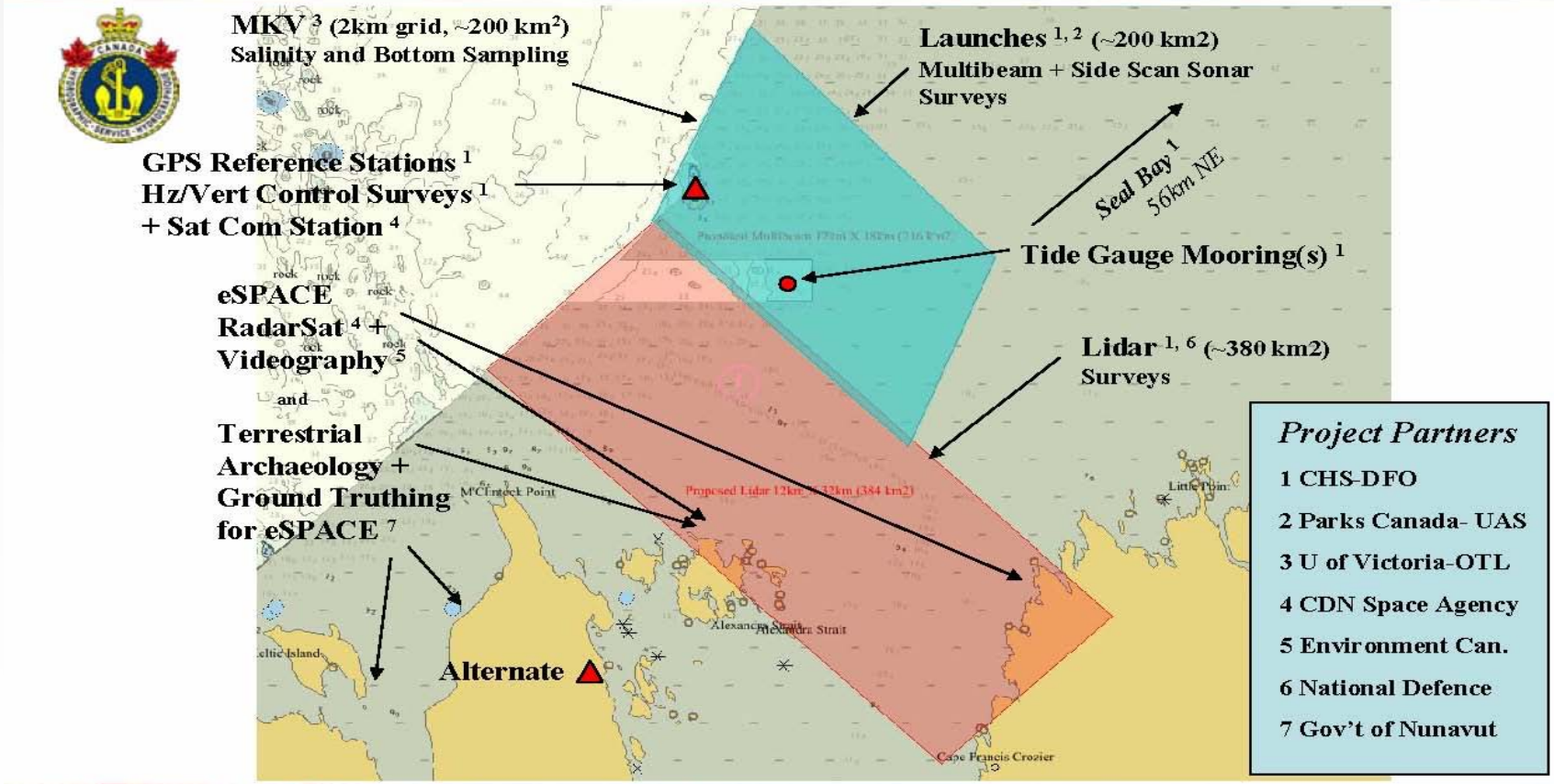
Arctic Pilot Project

- **Partners: Parks Canada, Canadian Ice Service, Canadian Space Agency, UVIC**
- **Platforms: Ice breakers, launches, aircrafts, ROVs, AUVs, Satellites**
- **Technology: Side scan, Single and multibeam, LiDAR, Data assimilation for site selection**

Area of Coverage

Fisheries and Oceans Canada | Pêches et Océans Canada

Victoria Strait Pilot Project



Canada

Pêches et Océans Canada | Fisheries and Oceans Canada

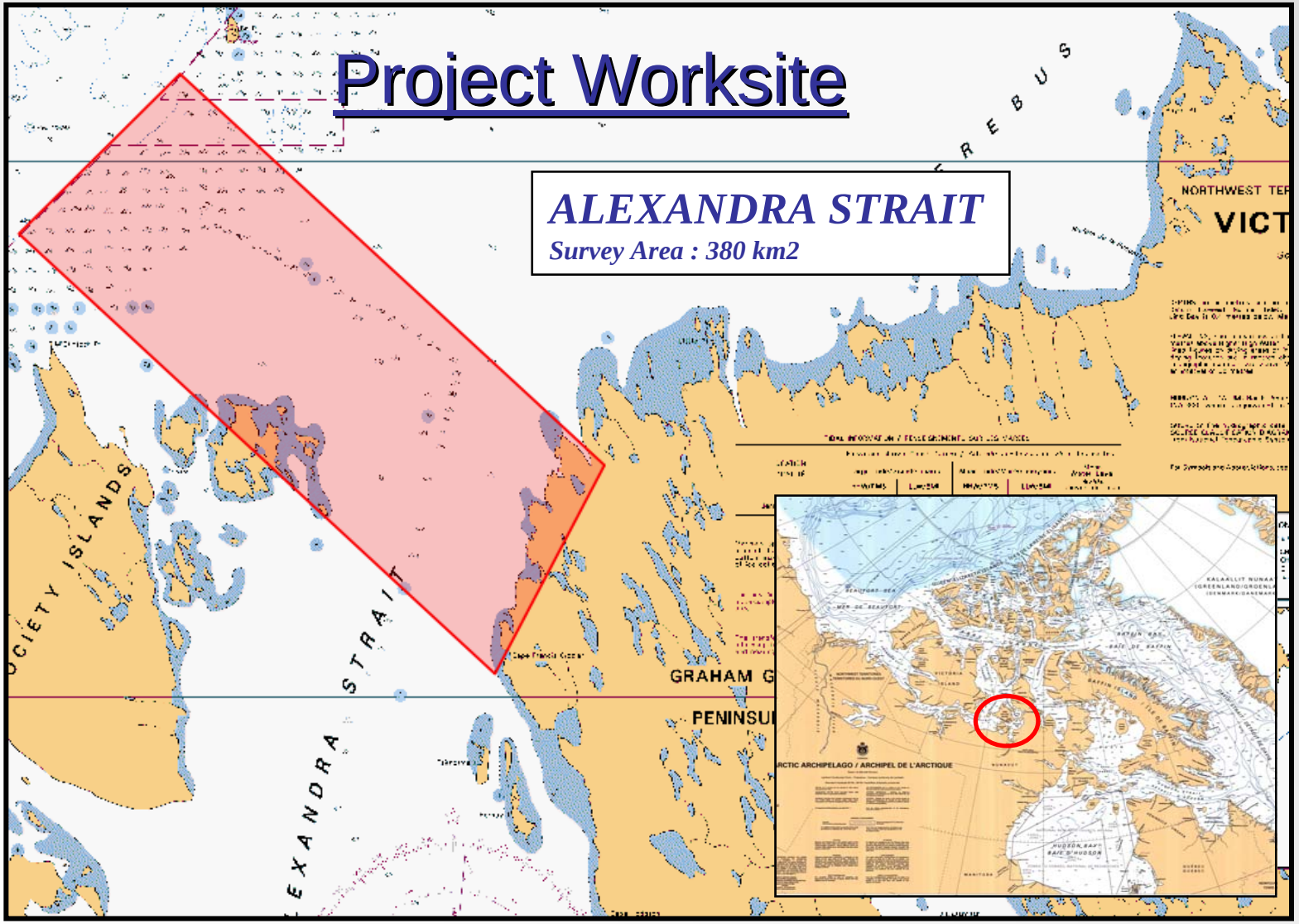
Canada

Vessel-based surveys

- **Single beam on the vessel**
- **MB on the survey launches, "Gannet" and "Kinglett"**
- **Survey plans considered output from satellite data assimilation**
- **High speed data transfer via satellite**

Add-on surveys using vessels-of-opportunity

Project Worksite

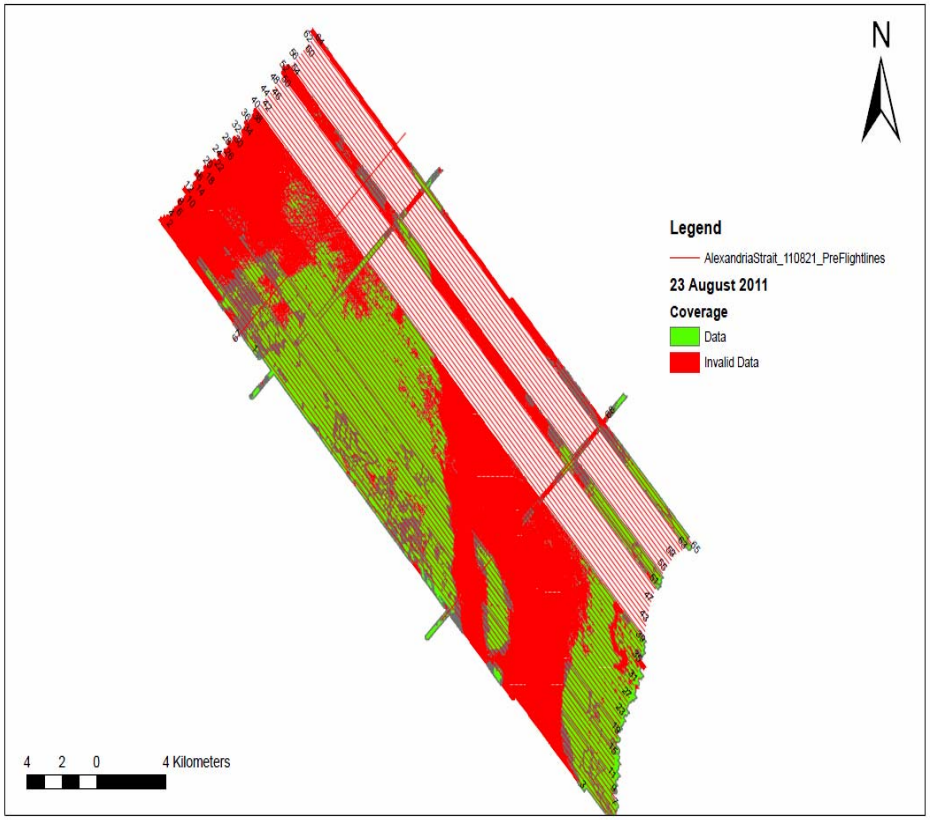


System Specifics

LIDAR SYSTEM

- Optech SHOALS-1000T
- Beechcraft King Air A90

Data Collection



STATISTICS:

Flown Coverage : 274 km2 /380km2

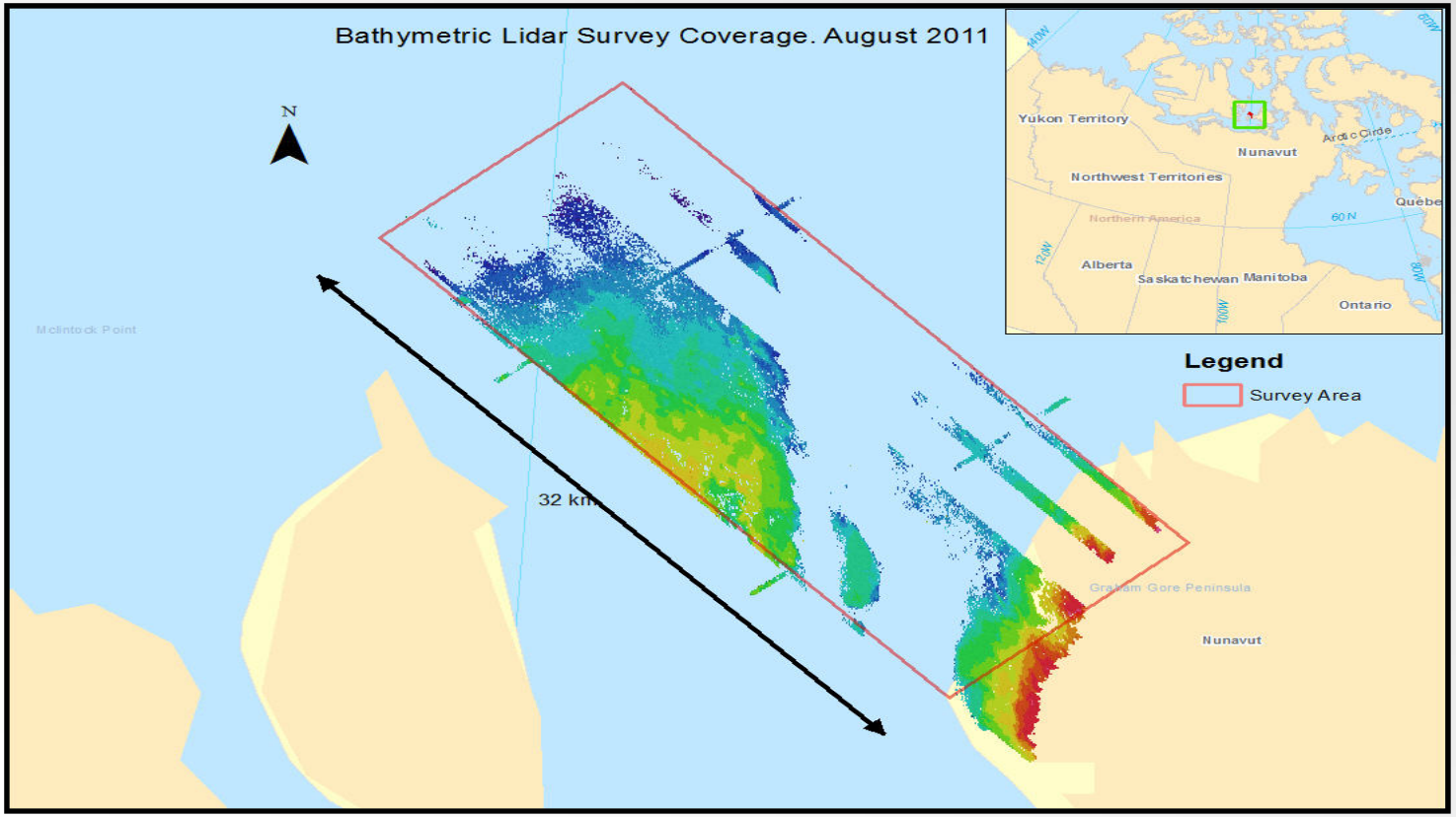
Usable Data Coverage : 138.2 km2

Valid Coverage: up to 15m depth

Invalid Coverage – Laser Extinction (water too deep for the clarity available)

Data Collection

COVERAGE



Conclusion

- Partnership worked well.
- Satellite data assimilation provided valuable results
- For this experiment, vessel-based survey was most cost-effective due to limited LiDAR penetration and weather issues

Thank You!