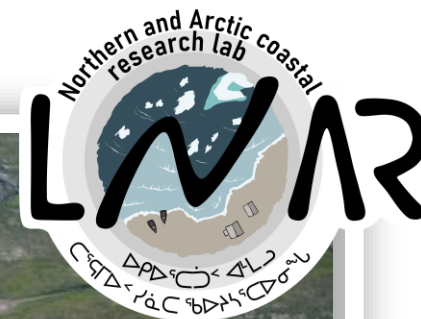
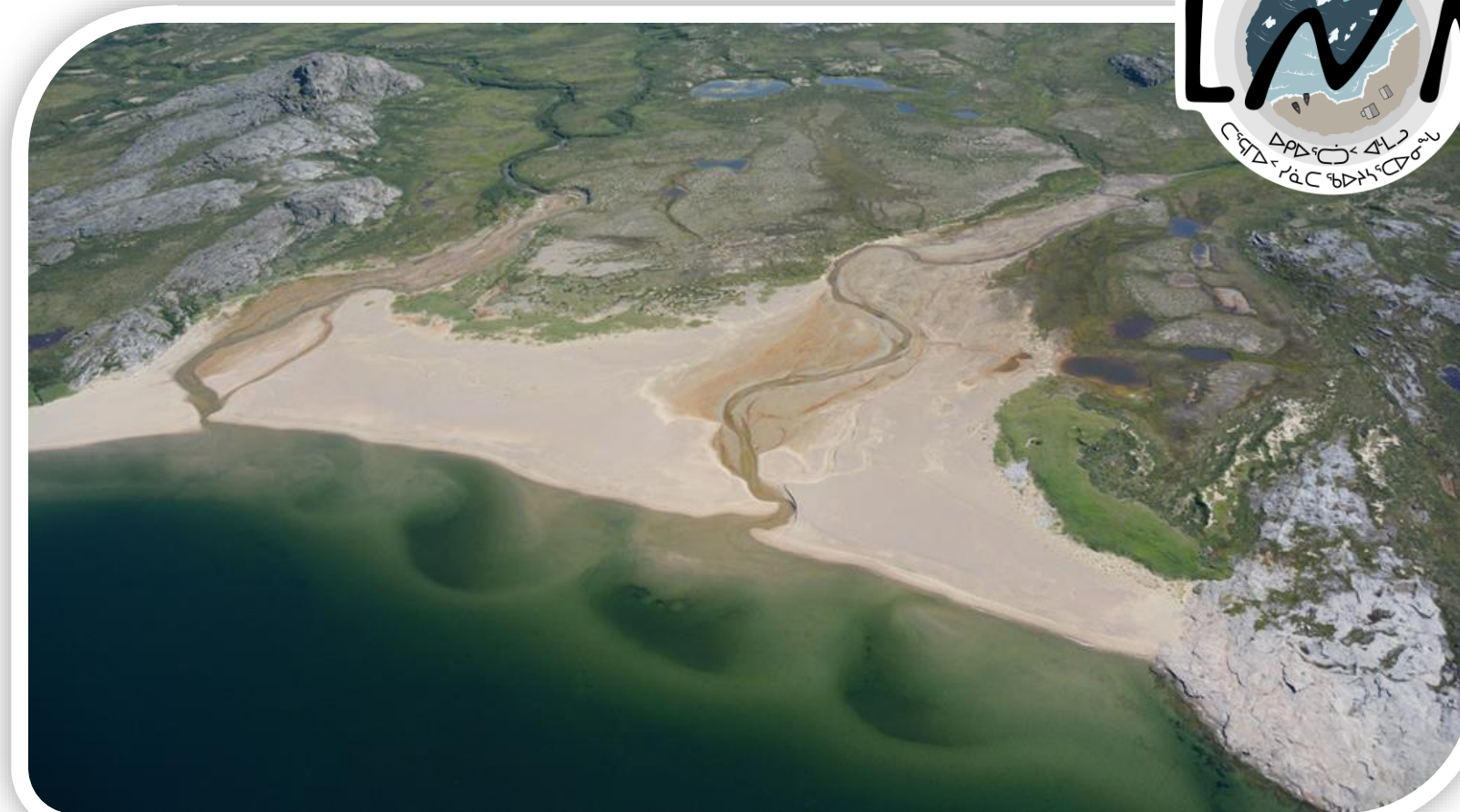


Coastline mapping and semi-automatic classification of coastal landcover in Nunavik

Denys Dubuc
denys_dubuc01
@uqar.ca

Nunavik Marine
Region
Planning Forum

February 3, 2026



Why mapping the coast?

Increase of Ice free period



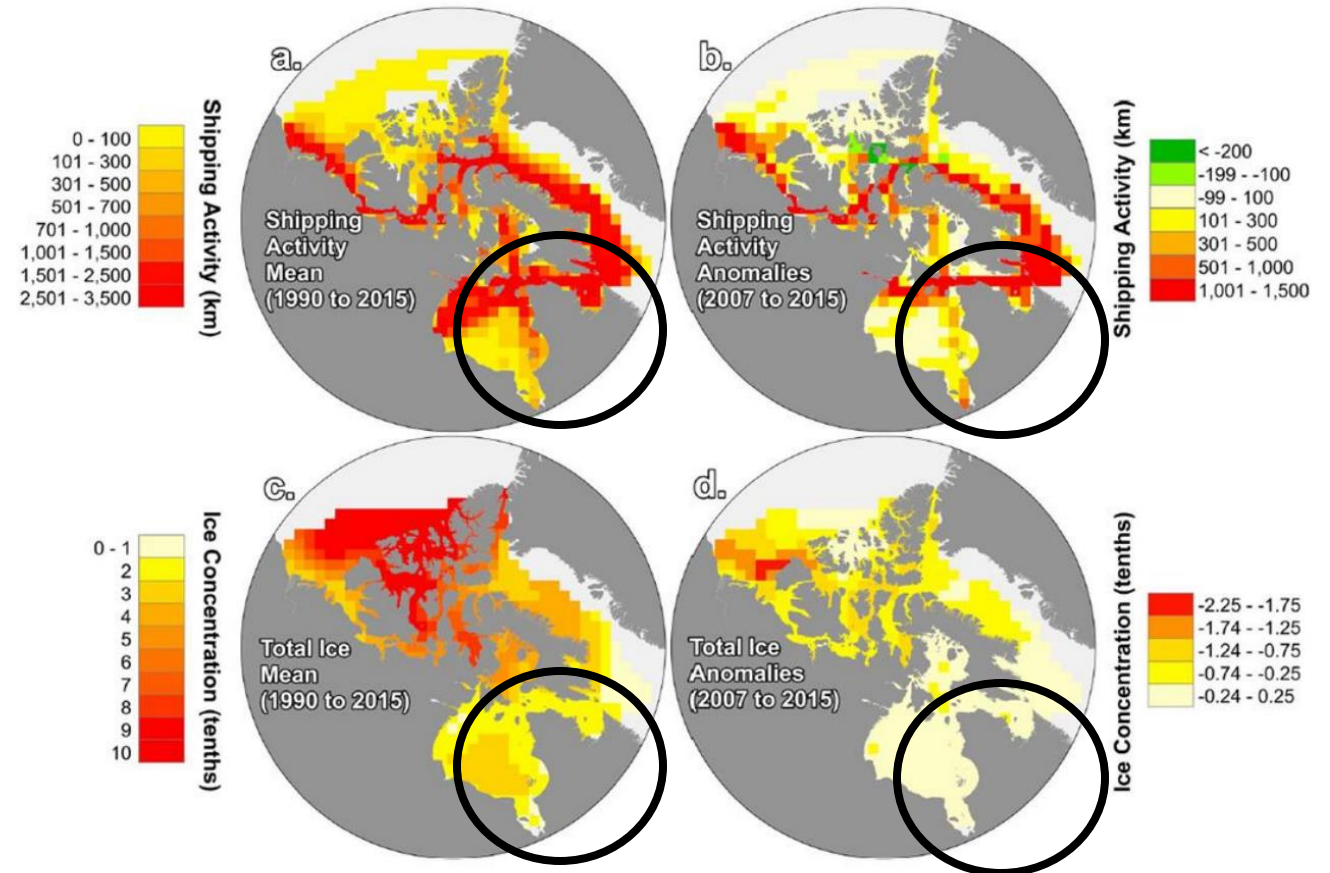
Increase of maritime activity

=

Increase **risk** of oil spill

To be better prepared in the event of oil spill accident

- Knowledge of shoreline type and geographical distribution
- Knowledge of appropriate cleanup techniques
- Prioritize area based on sensitivity and environmental baselines



Pizzolato et al., 2016

Main Project Goals

1. High resolution mapping and characterization of the coast + development of an Morphological Sensitivity Index
2. Semi-automated classification of coastal landcover from freely available satellite data
3. Bonus Sidequest – Demonstrate the faisability of Satellite Derived Bathymetry

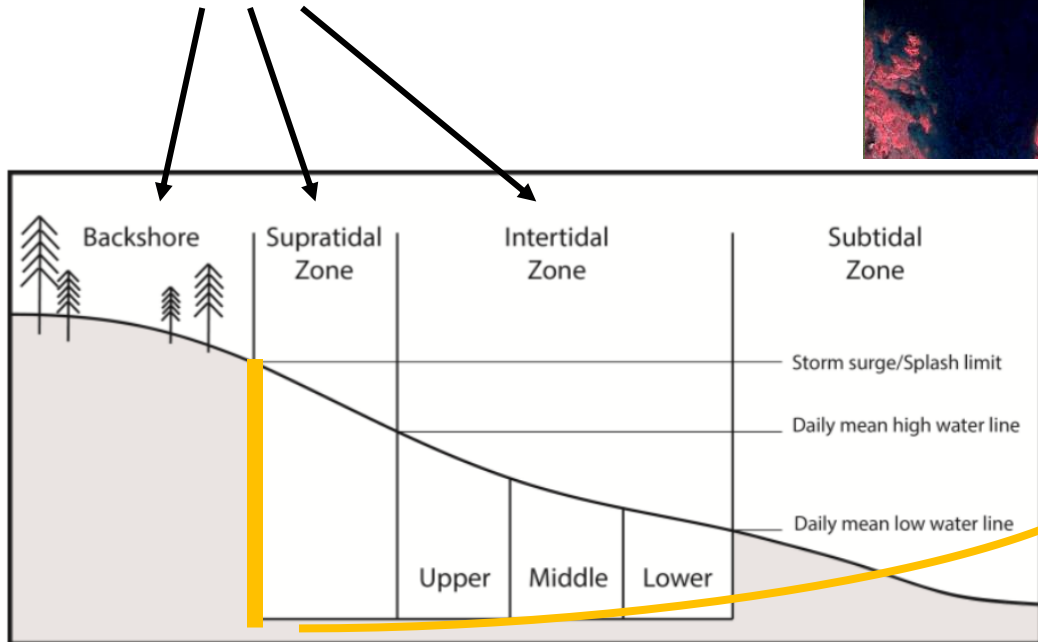
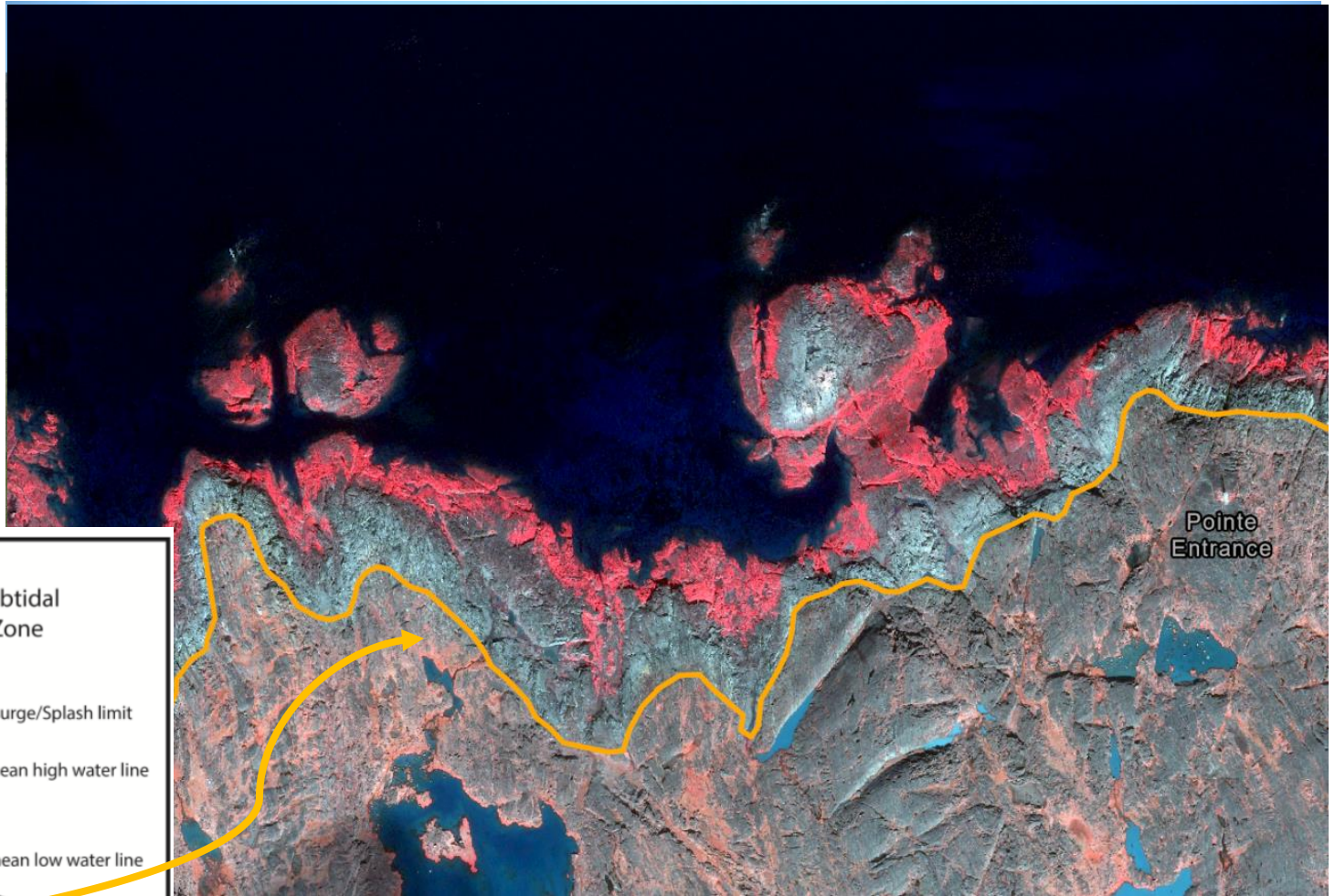


High Resolution Mapping



Two major step

- 1. Delimitation of the coastline (1:1500 scale)
- 2. Characterization



Higher High Water Large Tide (HHWLT)

Mapping Dataset

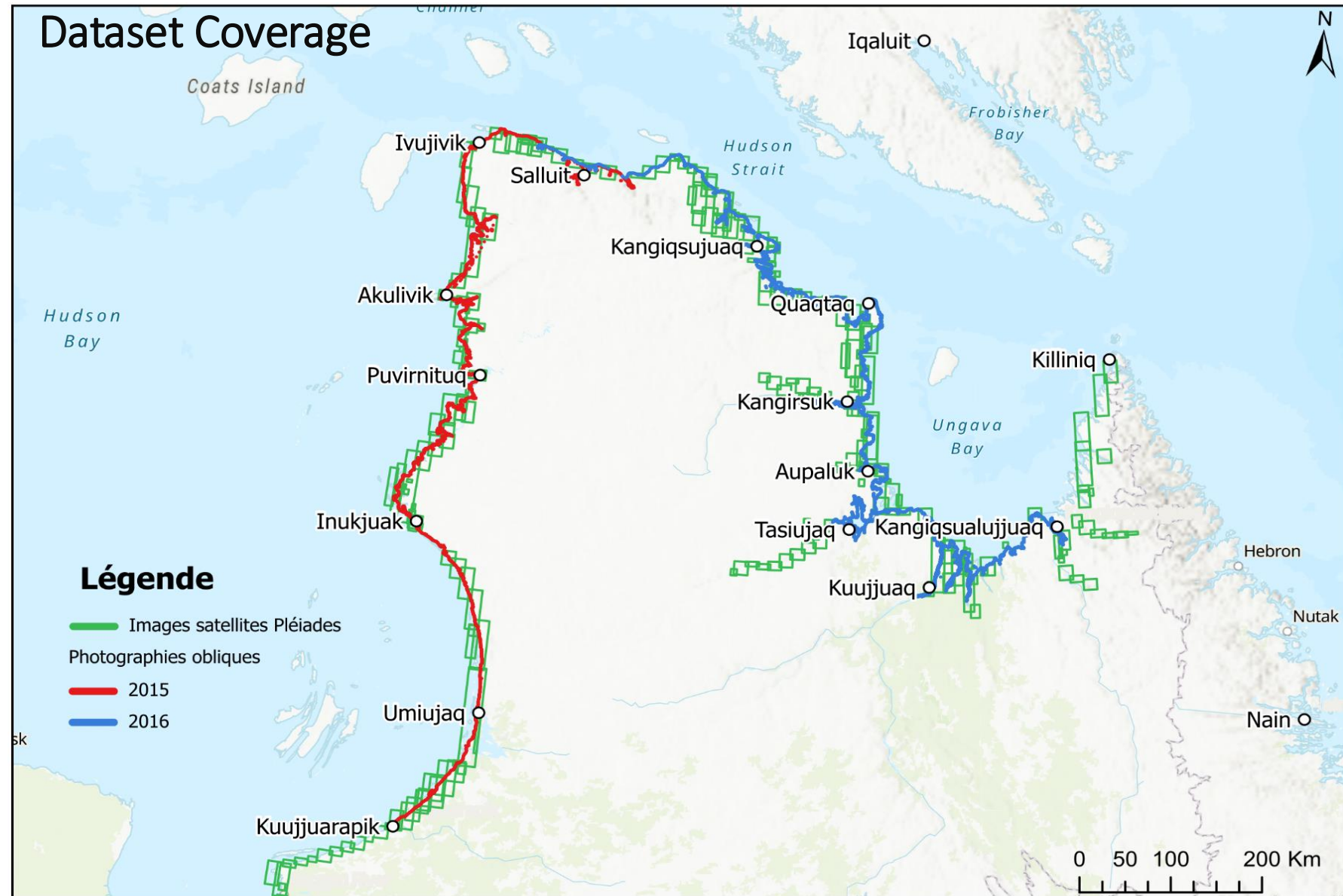
Oblique photography from helicopter

2015 and 2016
+ 30 000 photos

High resolution satellite
imagery (30 cm)

Pléiades Neo

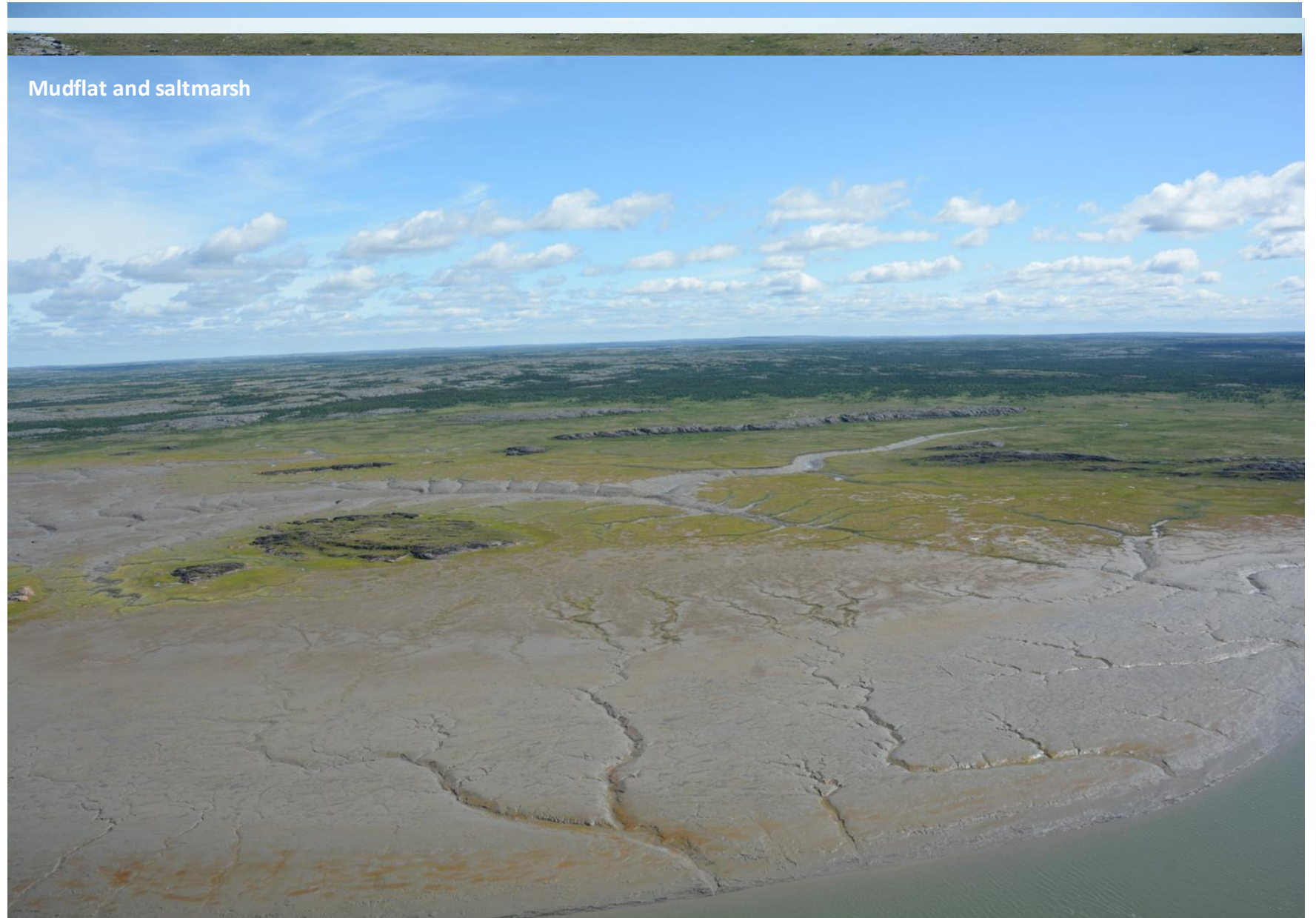
2022-2025 at low tide!



Oblique Photography



SOME BEAUTIFUL
EXEMPLE



Satellite Imagery

SOME (MORE)
BEAUTIFUL EXAMPLE



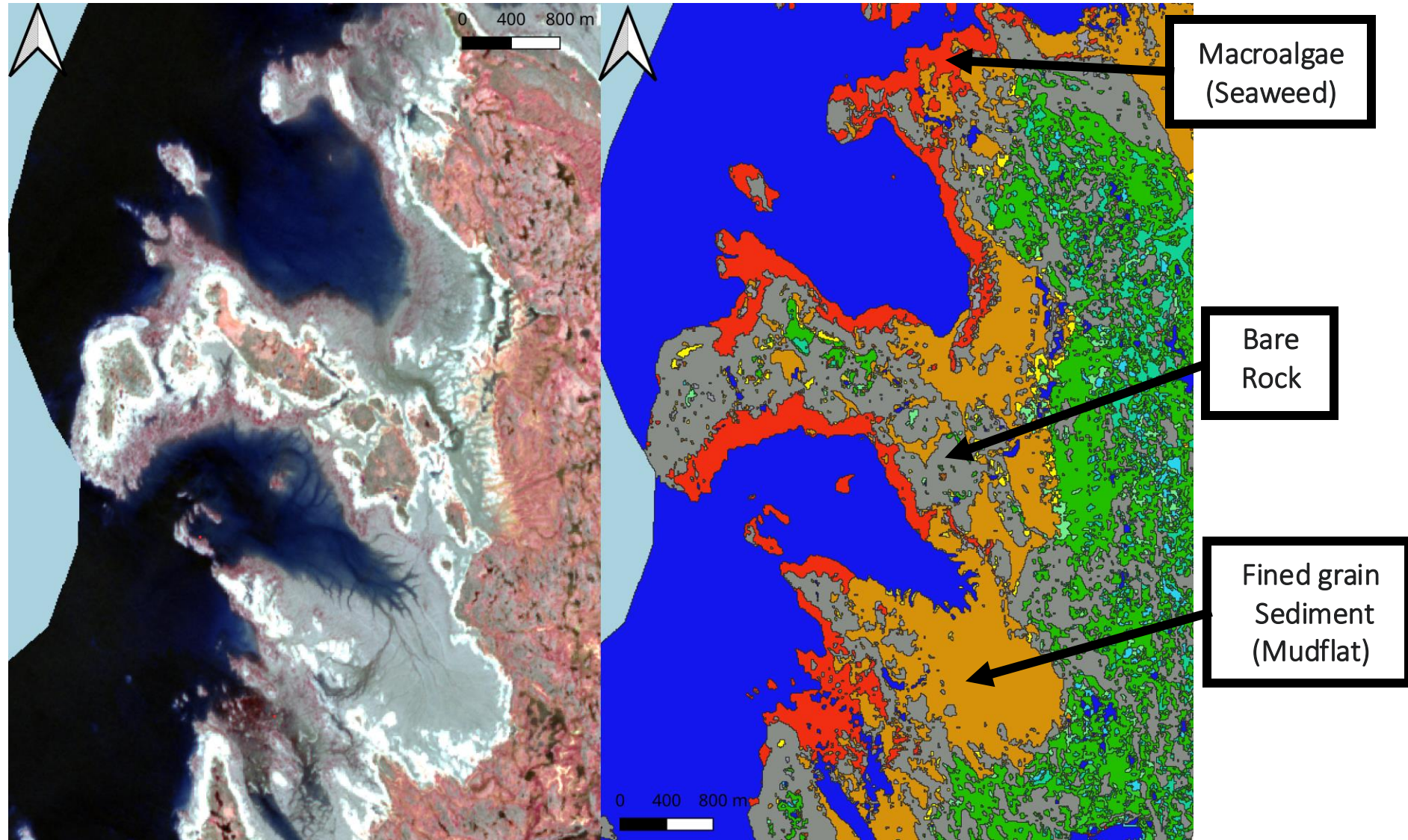
Landcover Classification

Development of a
landcover
classification
algorithm

For Sentinel-2 Imagery

11 classes

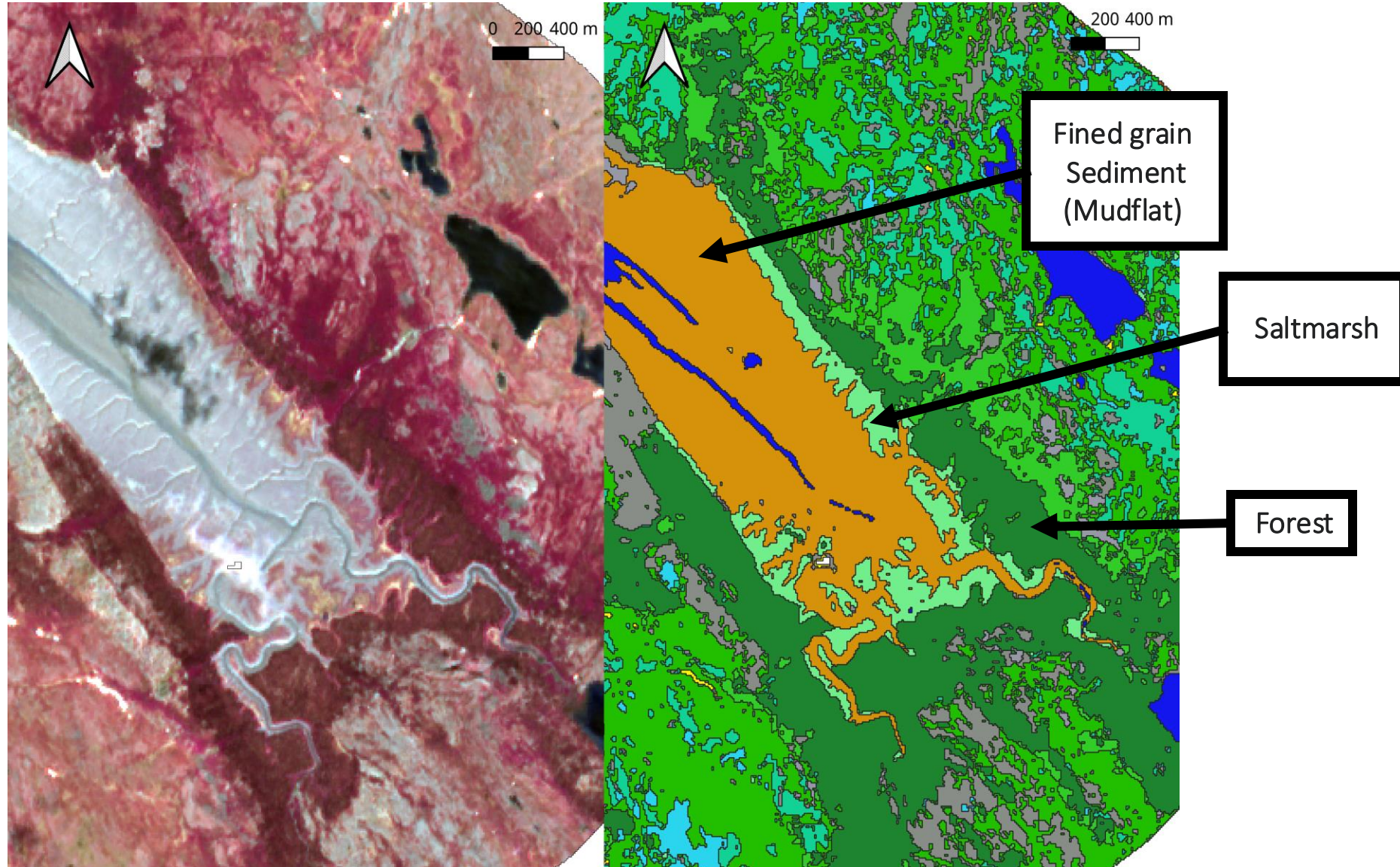
Vegetation and
substrate



Landcover Classification



Another exemple

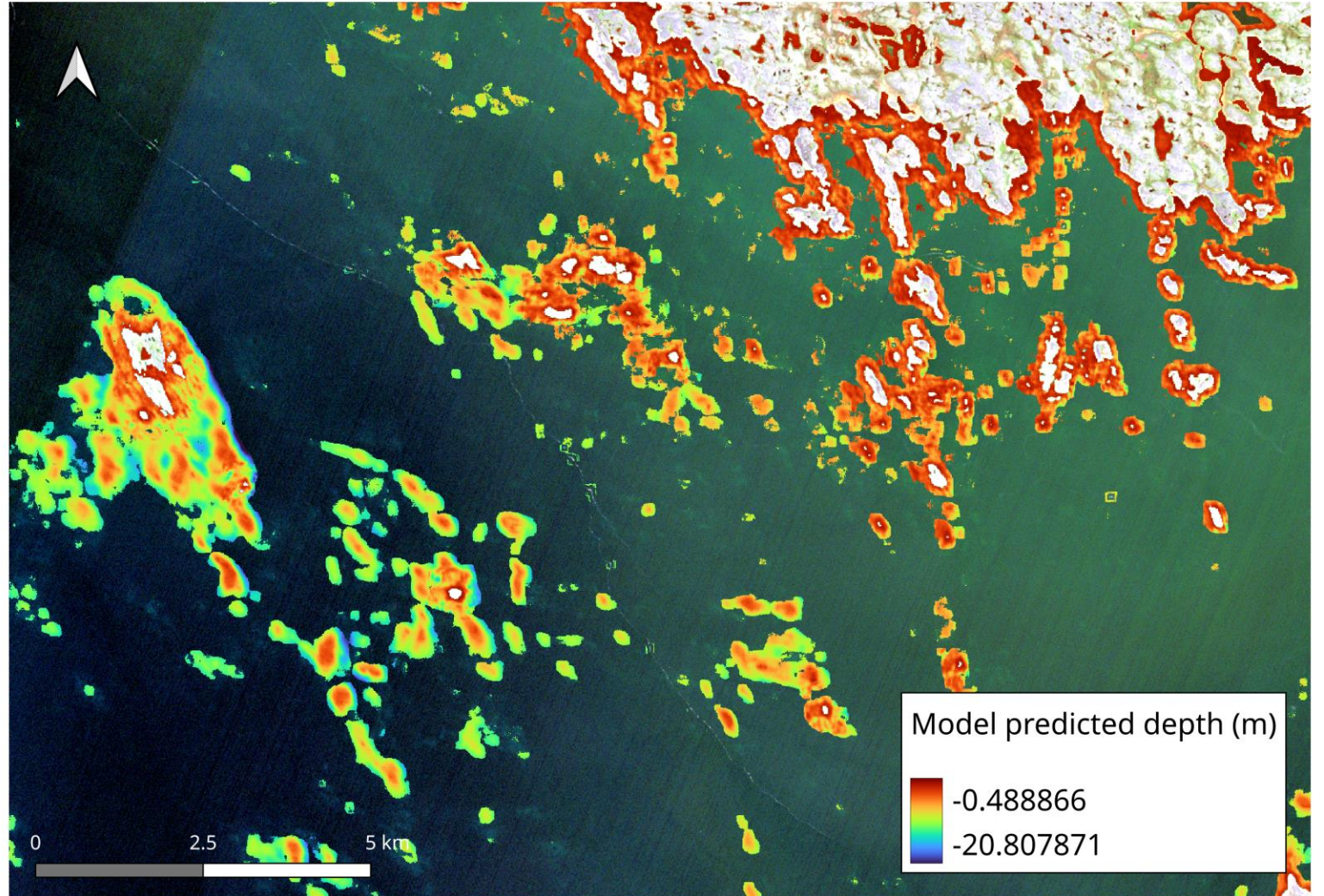


Satellite Derived Bathymetry

Satellite Derived Bathymetry
(SDB)

From Sentinel-2 Imagery

Exemple in Puvirnitug Bay



Where we at?

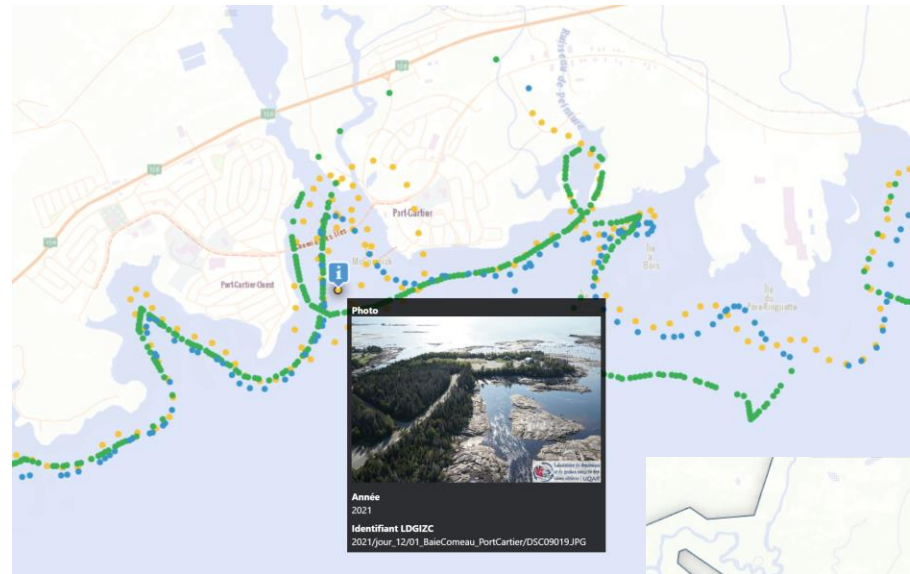
Coastline mapping

About **40%** of the coast complete

Landcover mapping

100% complete

We want to put the data on an Online web viewer to be available for everyone



<https://ldgizc.uqar.ca/Web/sigecweb>



உதிர்ப்

Nakurmiik!



Questions?

