



Polar Knowledge Canada

Kevin Arnel, Analyst
Polar Knowledge Canada
GIS Day 2019 | November 13, 2019



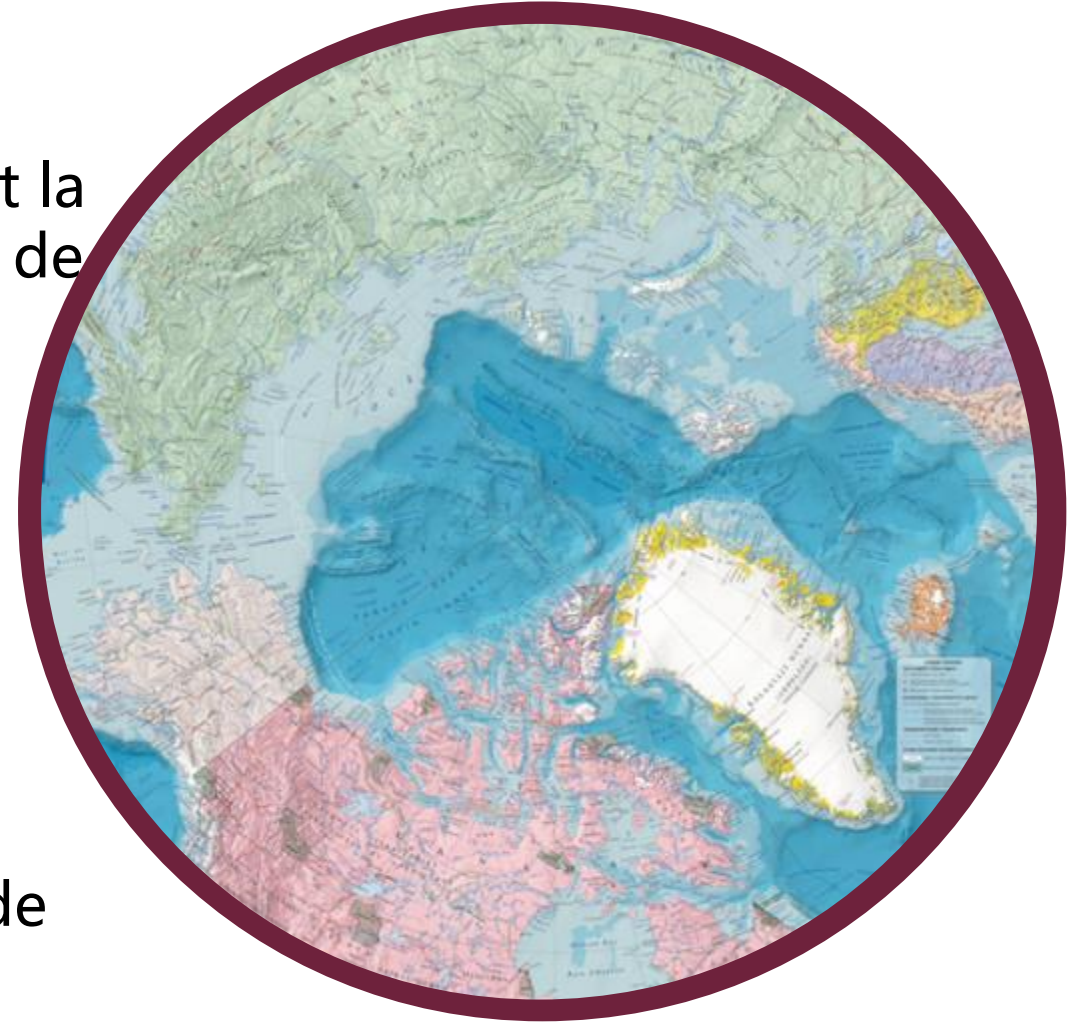
Polar Knowledge
Canada

Savoir Polaire
Canada

Canada

Le mandat de POLAIRE

- d'approfondir les connaissances sur l'Arctique canadien en vue d'améliorer les perspectives économiques, la gestion environnementale et la qualité de vie des personnes qui y résident et de tous les autres Canadiens;
- de promouvoir le développement et la diffusion des connaissances relatives aux autres régions circumpolaires, y compris l'Antarctique;
- de renforcer le leadership du Canada relativement aux enjeux touchant l'Arctique;
- d'établir un centre de recherche scientifique de calibre mondial dans l'Arctique canadien.



POLAR's Key Contributions

Science and Technology



Research and monitoring across Canada's North

Hub for Research



Canadian High Arctic Research Station campus

Knowledge Mobilization



Ensuring knowledge and data are publicly available to inform decision making

Partnership and Coordination



Working together to address key knowledge gaps

Capacity Building



Supporting the development of science capacity

- POLAR recognizes that respectfully bridging Indigenous knowledge and science is fundamentally important to the co-creation of new knowledge in Canada's North



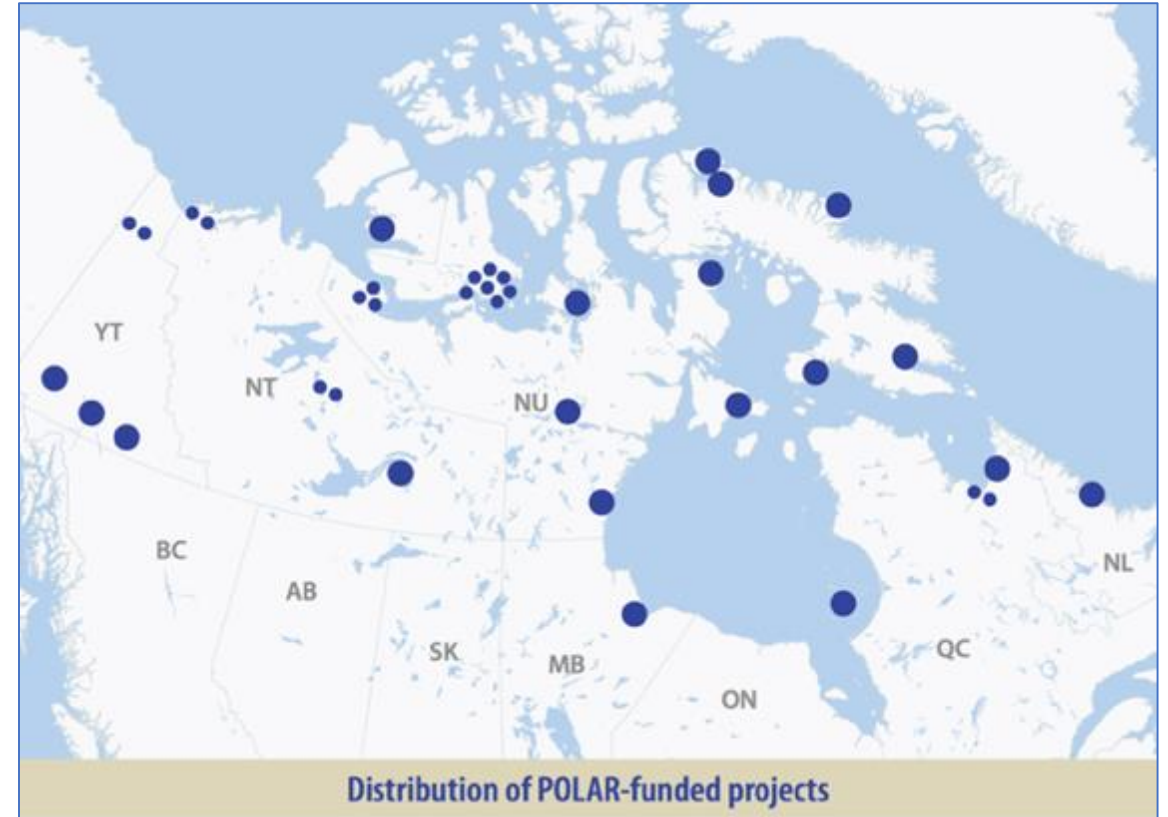
La Station canadienne de recherche dans l'Extrême-Arctique (SCREA)

- POLAIRE exploite cette installation de recherche de calibre mondial à Ikaluktutiak (Cambridge Bay), au Nunavut;
- le campus de la SCREA facilite la collaboration scientifique nationale et internationale, ainsi que l'échange multidisciplinaire de recherche de pointe et de savoir autochtone.



Pan-Northern Science and Technology Program

- Current Science and Technology (S&T) Priorities, 2015-2020:
 - Alternative and renewable energy for the North;
 - Baseline information to prepare for northern sustainability;
 - Predicting the impacts of changing ice, permafrost, and snow on shipping, infrastructure and communities;
 - Catalyzing improved design, construction, and maintenance of northern built infrastructure.

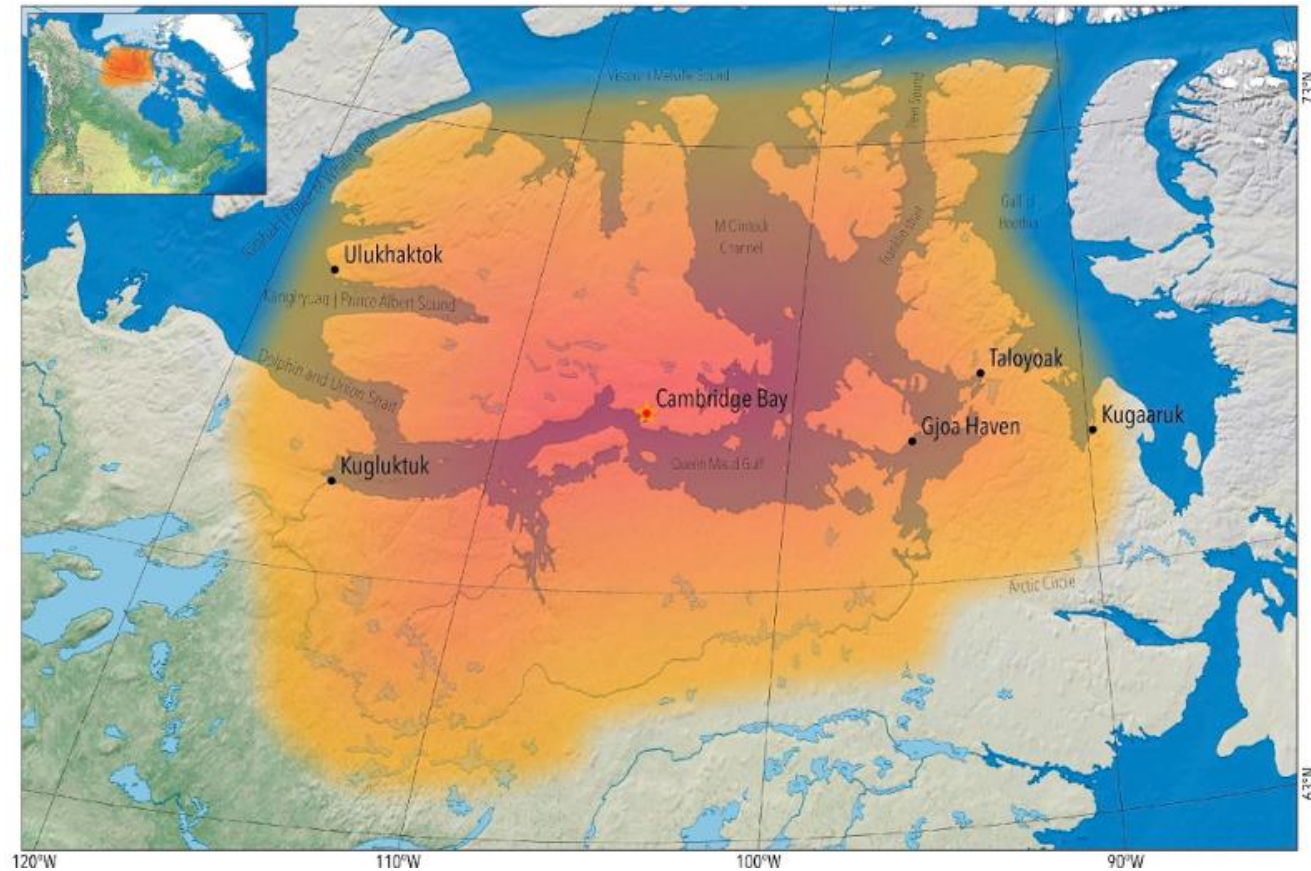


Between 2017-2019, POLAR supported 43 projects for a total of \$8.6M

Zone de surveillance à long terme POLAIRE: échelle spatiale

Increasing
detail

- la zone expérimentale et de référence (ZER)
- le bassin hydrographique Greiner ;
- zone de surveillance intensive (ZSI) de la SCREA.



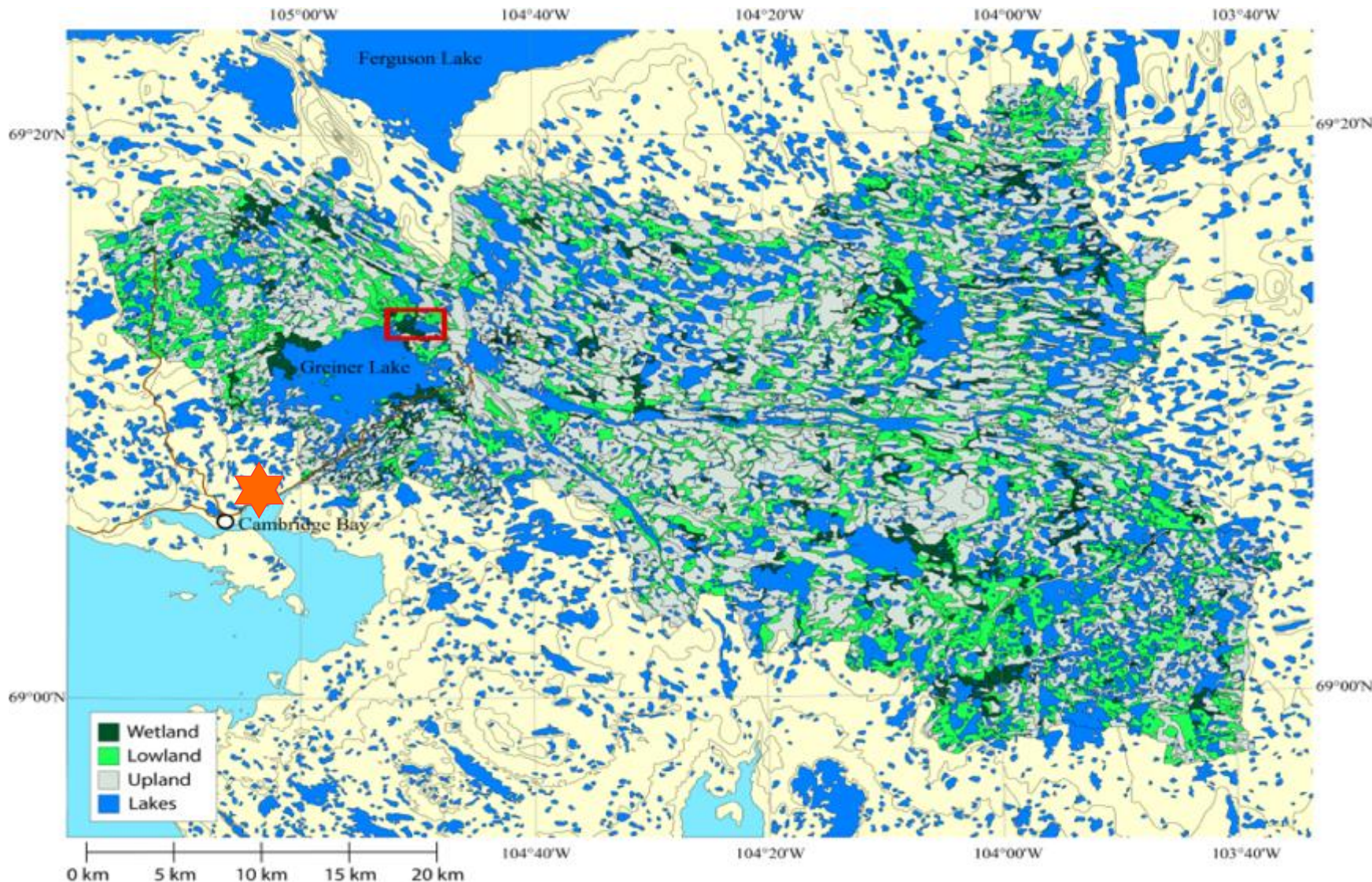
CHARS Regional Experimental Research Area (ERA)



Key Features:

- 6 northern communities
- High biodiversity
- Steep climate gradient
- Increasing industrial development

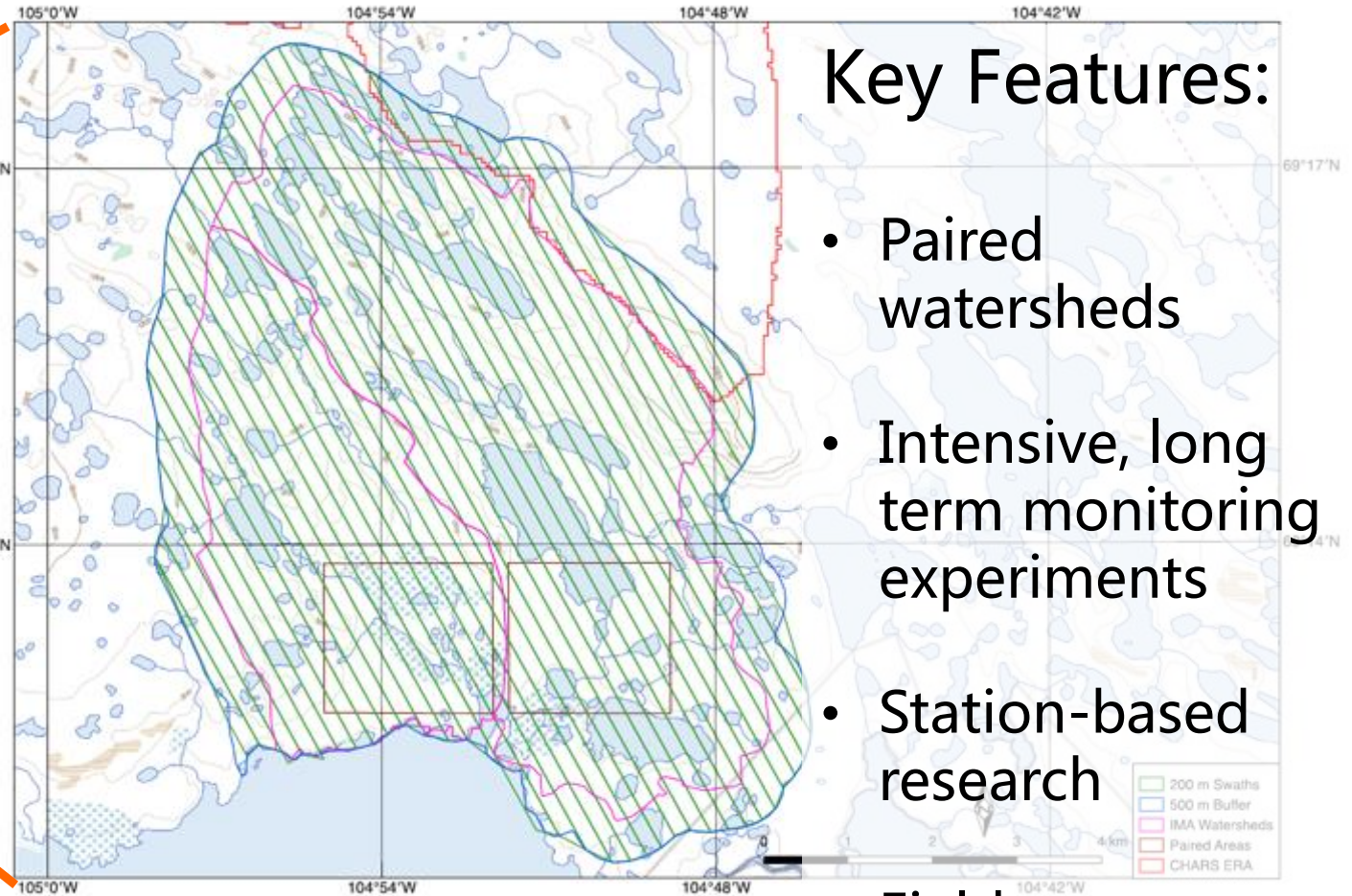
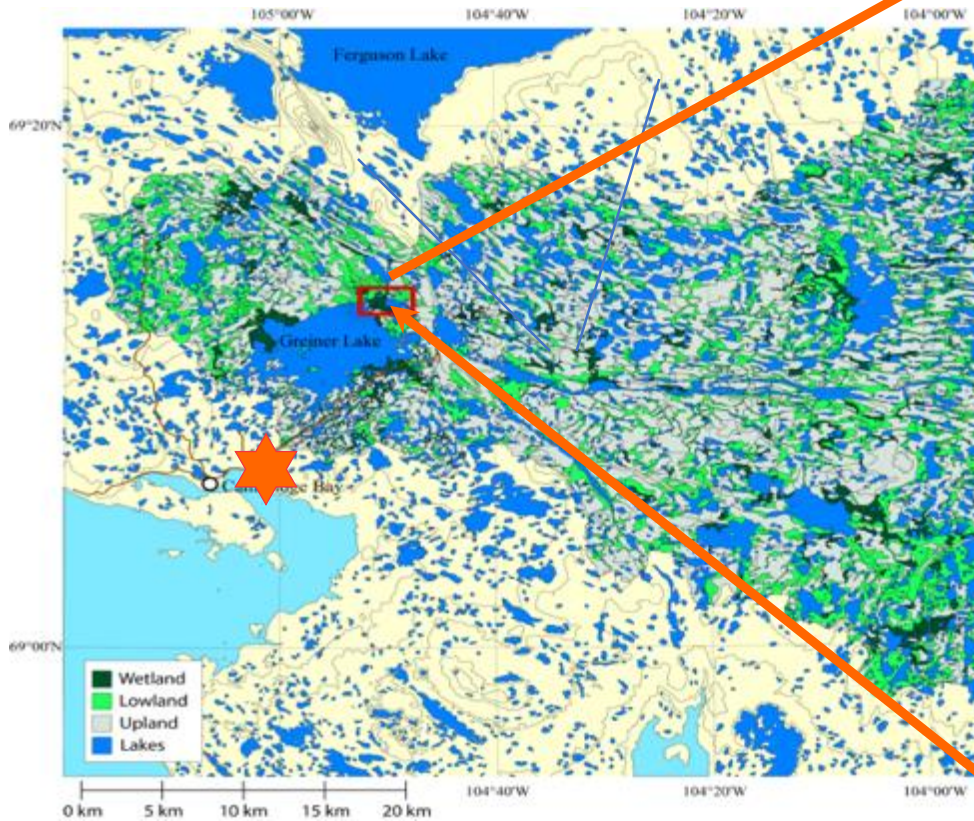
Le bassin hydrographique Greiner



Caractéristiques principales :

- 1800 km² de zone d'expérimentation/surveillance à long terme adjacente à la SCREA;
- vaste savoir autochtone relatif à cette zone;
- lacs et toundra typiques du centre de l'Arctique canadien;
- potentiel de recherche 12 mois par an.

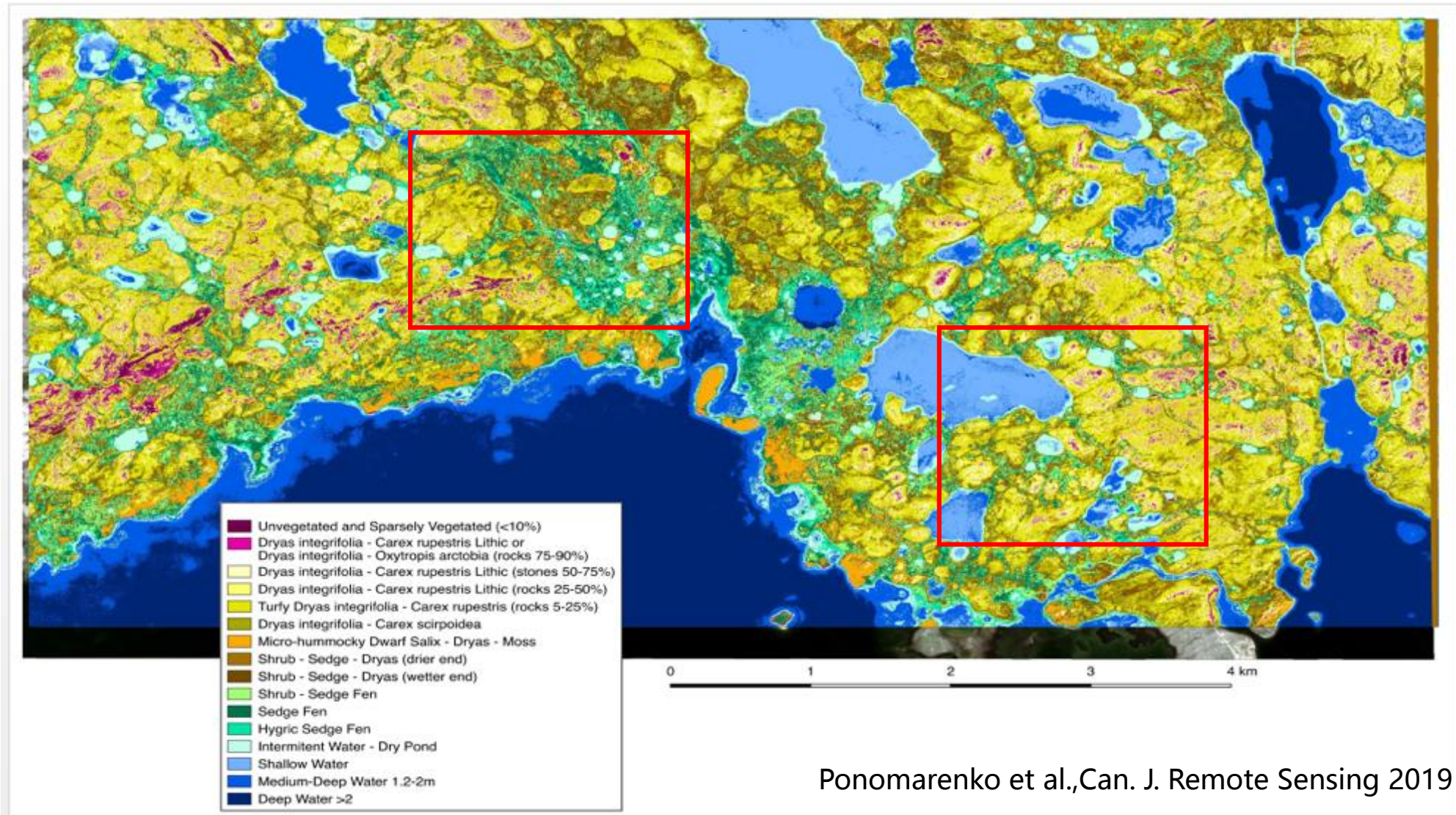
CHARS Intensive Monitoring Area (CHARS IMA)



Key Features:

- Paired watersheds
- Intensive, long term monitoring experiments
- Station-based research
- Field camp

Téledétection – Cartographie des écosystèmes de toundra



Ponomarenko et al., Can. J. Remote Sensing 2019

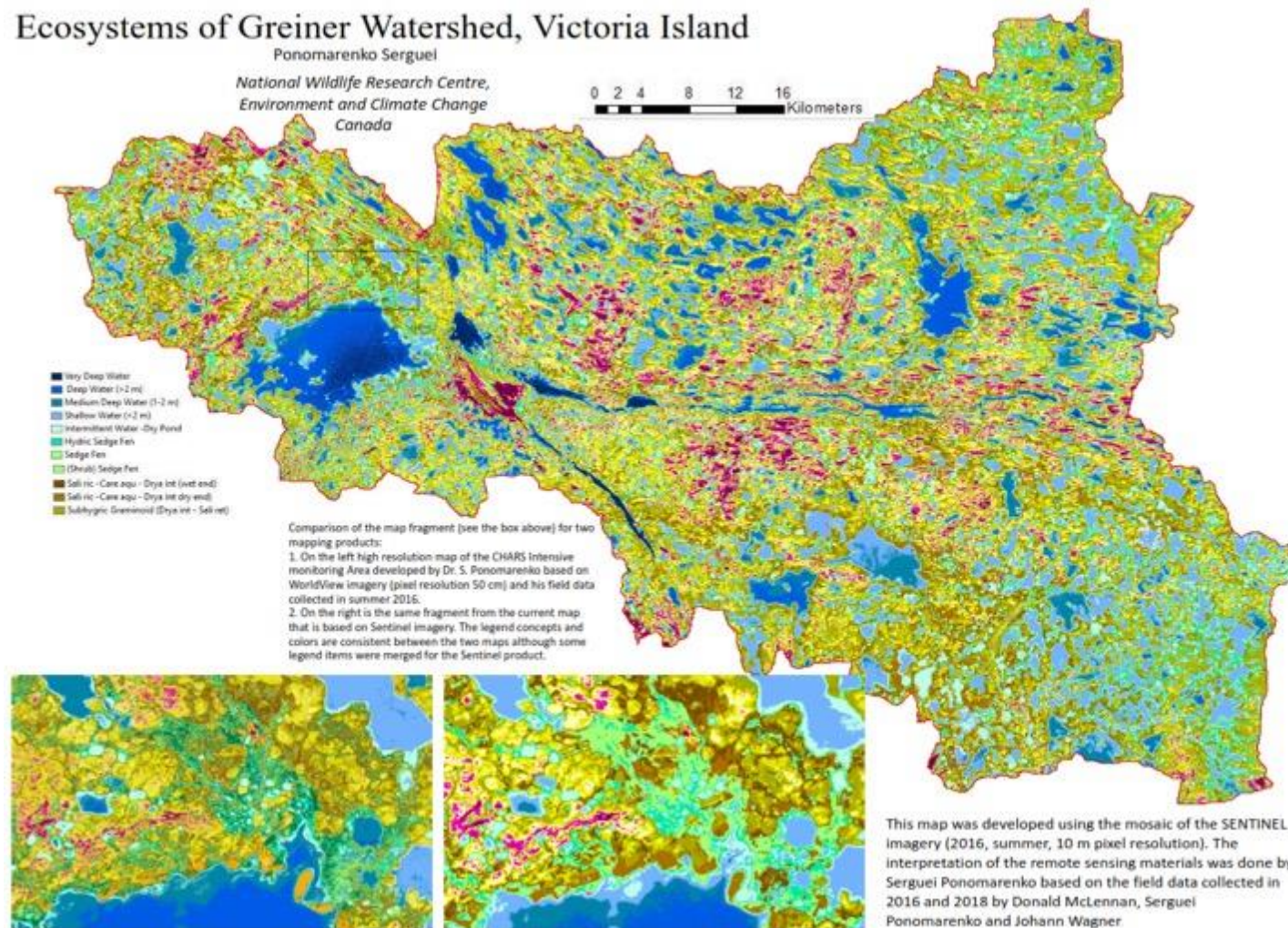
Partnerships

Ecosystems of Greiner Watershed, Victoria Island

Ponomarenko Serguei

National Wildlife Research Centre,
Environment and Climate Change
Canada

0 2 4 8 12 16
Kilometers



Canadian Space Agency, Environment and Climate Change Canada & POLAR partnership

Greiner watershed:

- Access to ABoVE Cloud
- Remote Sensing and GIS support – ECCC Carleton University
- Arctic DEM + (BAS LiDAR)
- Greiner watershed sub-drainages
- Hi-res (50 cm WV2) eco-mapping – IMA
- Med res (10m Sentinel 2) eco mapping – Greiner
- Snow studies –U Sherbrooke
- Land to lake linkages –UQAC
- Land to ocean linkages –U Calgary, Woods Hole/DFO

ABoVE-POLAR partnerships

- AVIRIS-ng flights 2017, 2019
- U. Wisc Team 2019
- UNA Team 2020

Restez connecté avec nous



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