



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian activities in the Pacific Arctic Region, 2016.

Bill Williams, IOS/DFO

(presented by Jackie Grebmeier)

Pacific Arctic Group meeting

Qingdao, China

27 October 2016



Canada

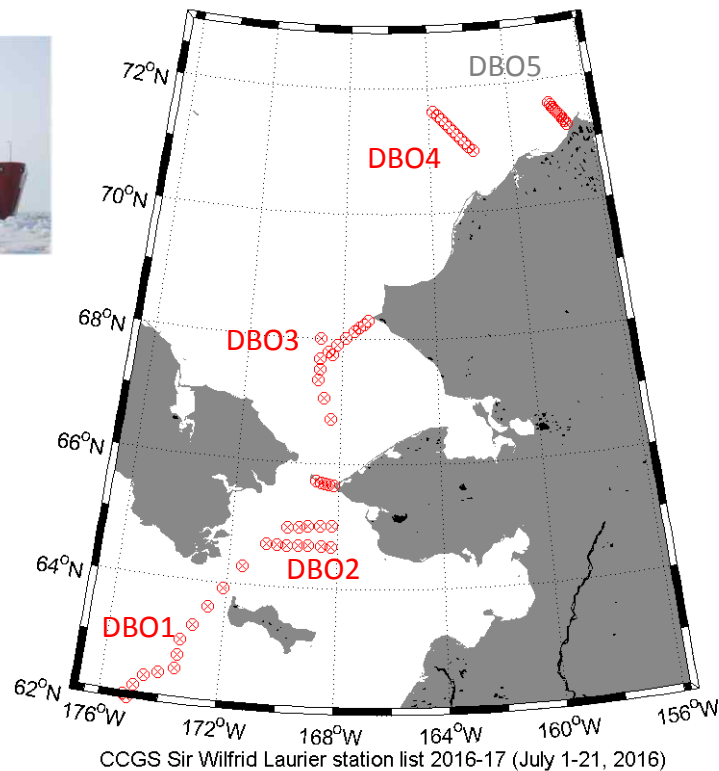
CCGS Sir Wilfrid Laurier





Canada's Three Oceans (C3O) and the Distributed Biological Observatory (DBO): *CCGS Sir Wilfrid Laurier*, July 10-22, 2016

Focus: sampling along latitudinal transect lines developed as a “change detection array” for consistent monitoring of biophysical responses to changing environmental conditions



Estimated Timeline:

- July 14-south St. Lawrence Island (**DBO1**)
- July 15-Chirikov Basin (**DBO2**)-added 7 new stations
- July 17: SE Chukchi Sea (**DBO3**)-closest station 5 nm from coast, estimate time within 12 nm to be 2 hrs
- July 19: NE Chukchi Sea off Wainwright (**DBO4**)-closest station 30 nm offshore
- July 20: off Barrow (**DBO5**)-closest station 5 nm from coast, estimate time within 12 nm to be 2 hrs-too much ice

DBO data collections

- Seawater temperature and salinity; velocity measurements
- Nutrients, chlorophyll, carbon products, CDOM
- Phytoplankton, zooplankton and macrobenthic abundance, biomass, community structure
- Marine mammal and seabird surveys

Contact: Dr. Svein Vagle,
Canadian Chief Scientist
USA: Jackie Grebmeier,
UMCES and PAG,
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www.arctic.noaa.gov/dbo/

CCGS Sir Wilfrid Laurier

Ocean moorings, Marine geohazards

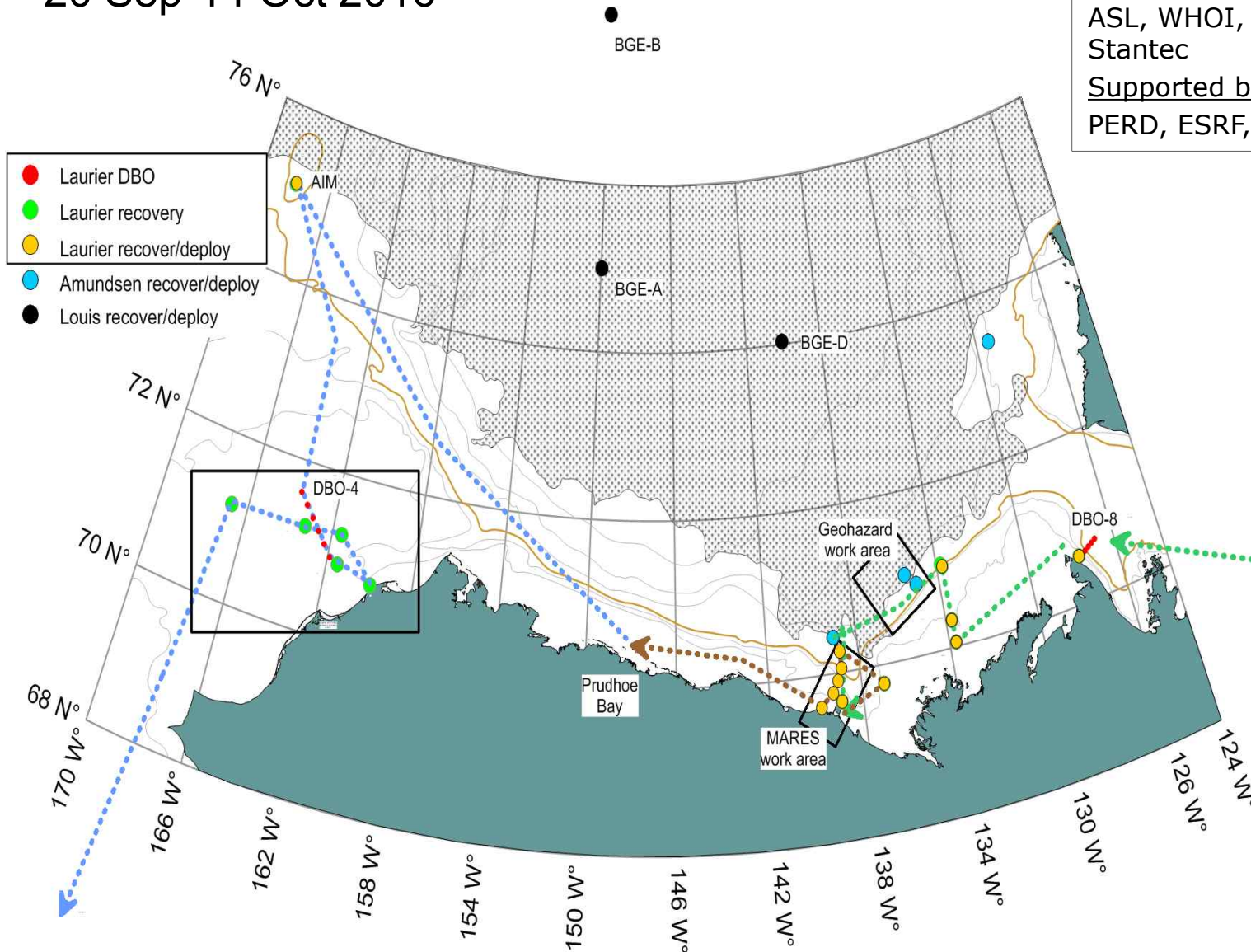
20 Sep-14 Oct 2016

Collaborators

ArcticNet, NOAA, GSC, MBARI, ASL, WHOI, ODU, UAF, VIMS, Stantec

Supported by

PERD, ESRF, IOL, BOEM, ASL



Data document marine climate: Norms, natural variation, extremes, progressive change

Sea ice

Thickness, drift speed & direction, hazardous features

Sea surface

Storm waves, storm surge

Ocean current – surface to seabed

Seawater pathways (e.g. nutrient delivery, pollutant dispersal), dangerous currents

Ocean water masses – temperature, salinity

Identify properties, origins of seawater

Biological enhancers

Upwelling of nutrient rich water, zooplankton variation

Ambient sound

Mammal's vocalization, species presence, natural sound, seismic surveys, ship noise

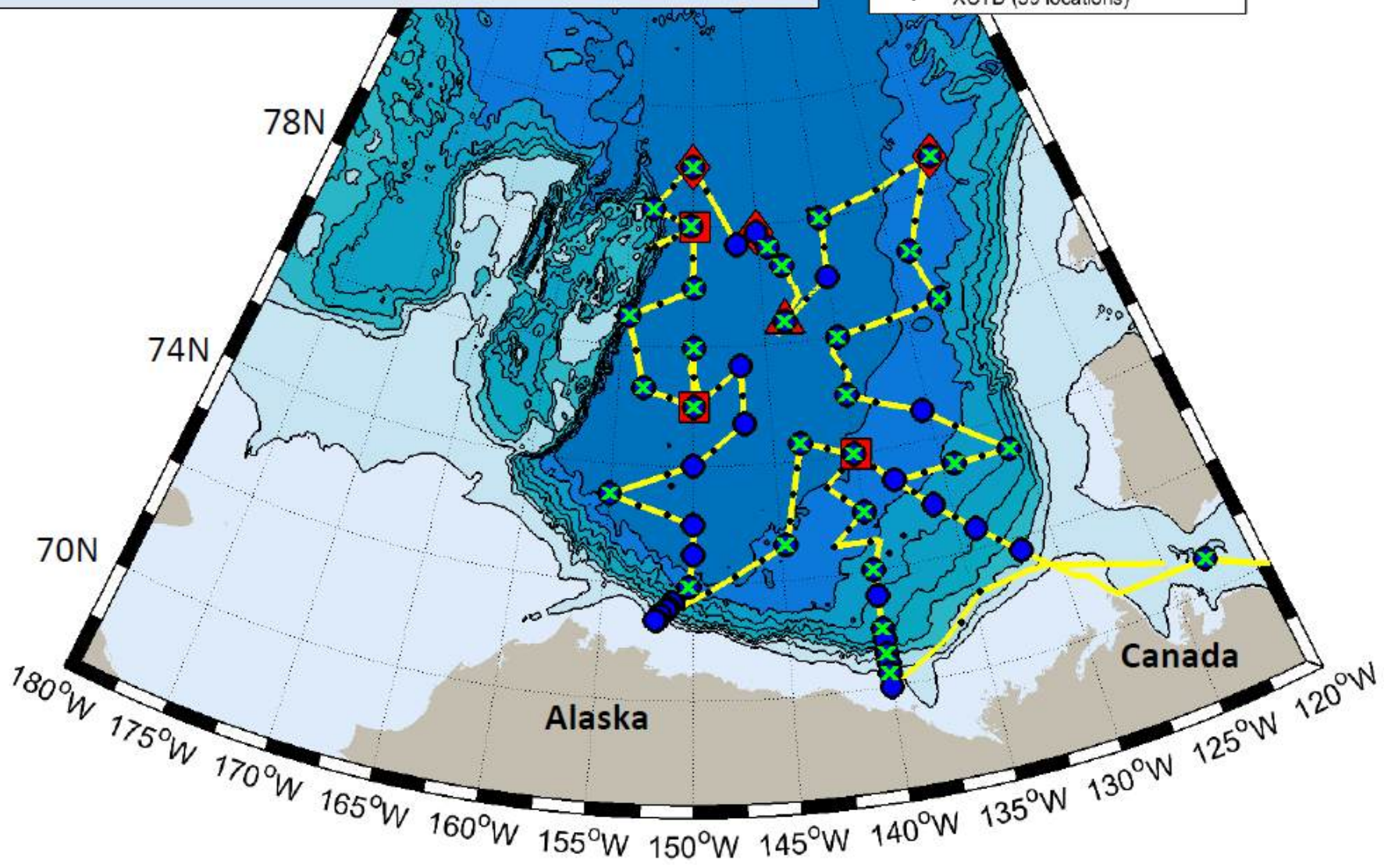


CCGS Louis S. St-Laurent



Joint Ocean Ice Study
September 22nd to October 18th, 2016
Aboard the CCGS Louis S. St-Laurent

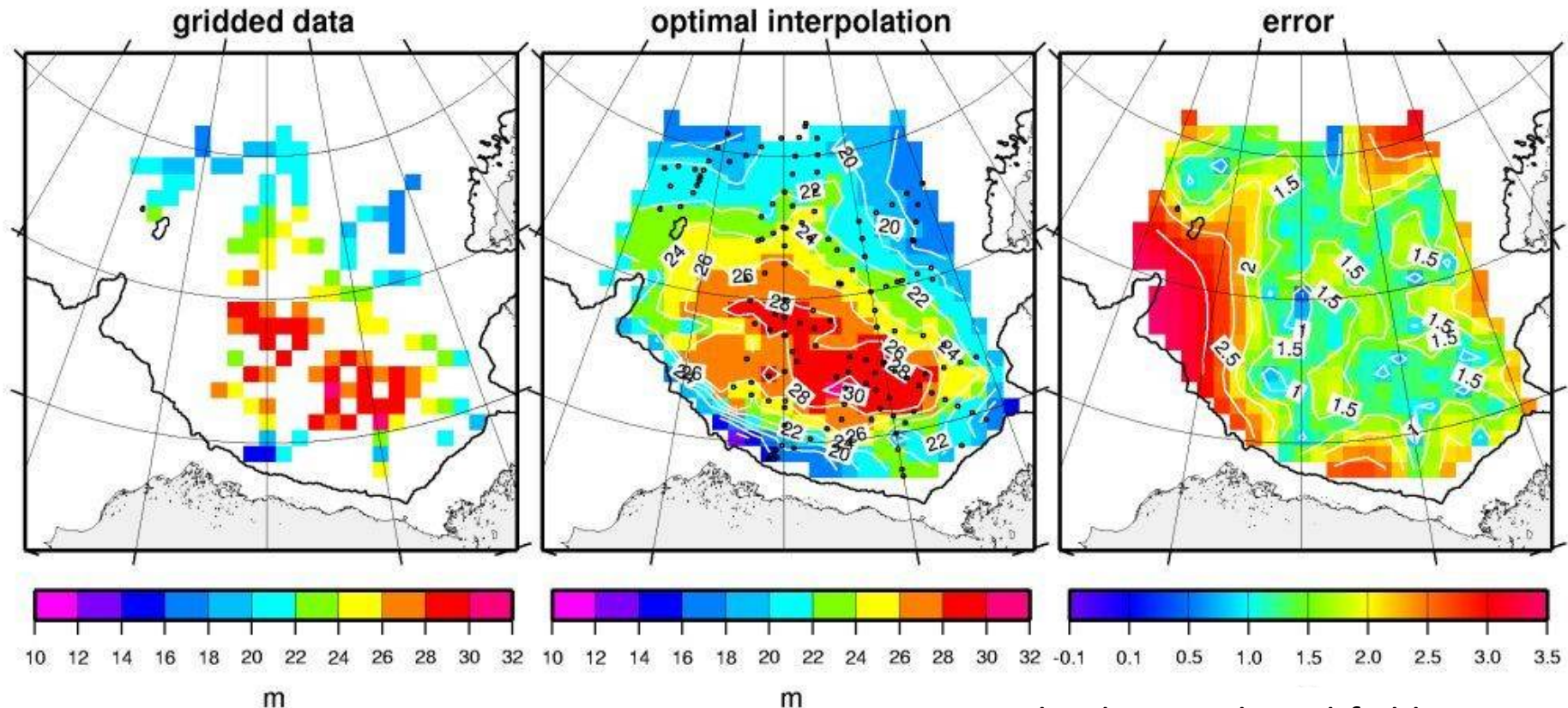
- CTD/Rosette (65 at 53 locations)
- Buoy (ITP)- Deploy (3)
- Buoy (ITP) - Recover (1)
- Mooring (3)
- Net Tow (31 locations)
- XCTD (59 locations)



JOIS/AON-BGOS 2016:

- New maximum Beaufort Gyre Freshwater content = 23,600 km³
- Center of the Beaufort Gyre has shifted towards the east.
- Request contribution of data in the west and southwest (where our error is high) to improve this year's estimate.

Beaufort Gyre FWC OI 2016



...thanks to Rick Krishfield, WHOI

UNCLOS: 7 Aug - 18 Sept 2016, Tromso, Norway to Kugluktuk, NU

Jane Eert, DFO

Collaborations: JAMSTEC, Trent U, Vancouver Aquarium, U Laval

