

AICC, Summer 09

Polar Icebreaker Update

[Pix: PSTAR bottom in drydock after layup]



POLAR SEA Spring 09

- Spring 09 arctic SOO/shakedown cruise cancelled
- Non-icebreaking training (helo, navigation, engineering) Puget Sound & off Wa. coast
- Reinstall of provisionally approved new type small boat davits expected by fall 09

POLAR SEA Draft 09-10

Overall Schedule

- 5/5-7/29/09 Dockside
- 7/25-8/24 Post-availability, load-banking
- 8/24-12/3 Shakedown, science, training
- 12/4-12/15 Inport, M&R
- 12/15-1/15or21/10 Deep Freeze Standby
- 1/15or21-4/30 Available for science/CG Ops
- 5/5-10/27, 11/15 Drydock, post-availability
- 11/16-12/15 Underway shakedown, training
- 12/16-1/21/11 Deep Freeze Standby

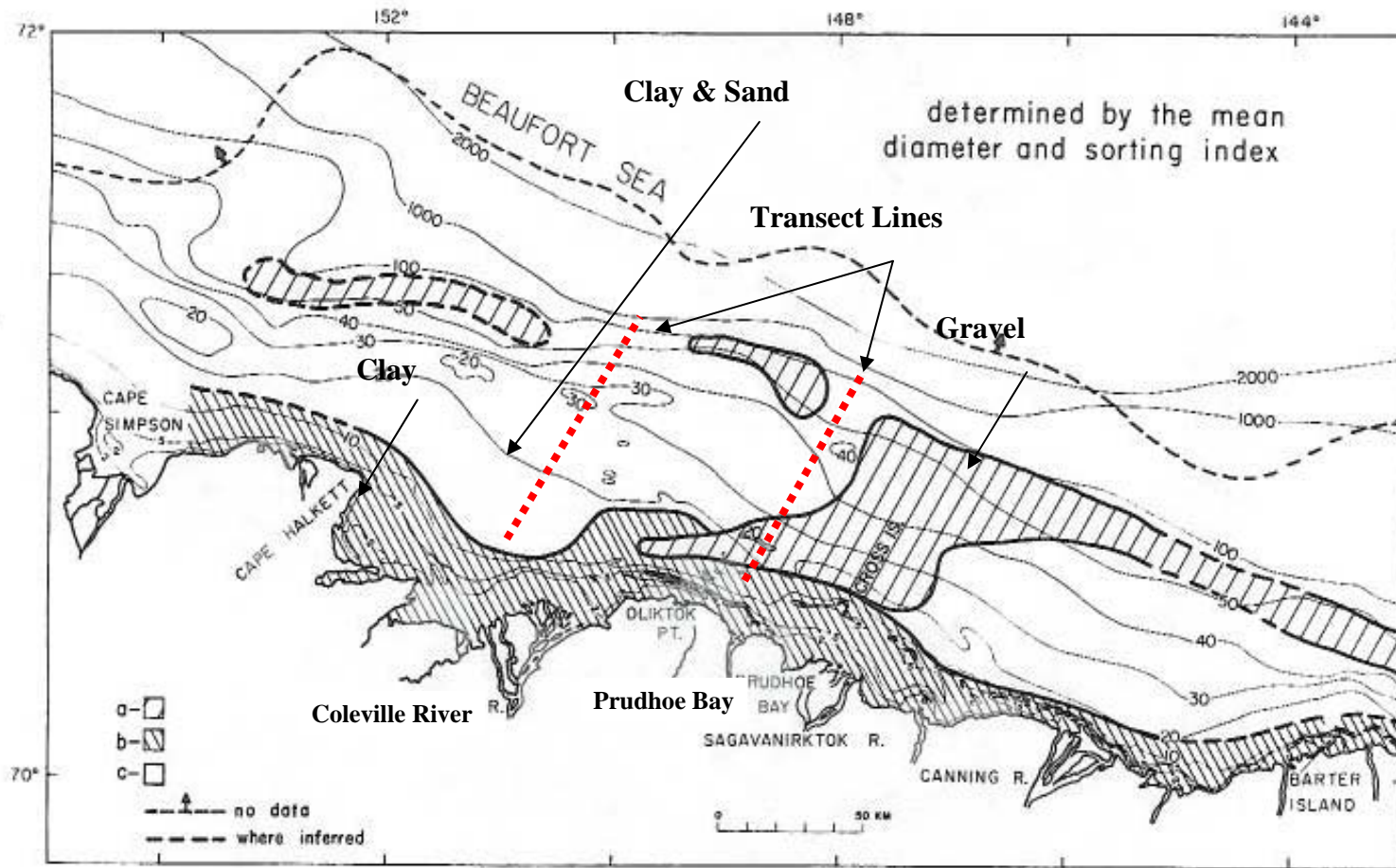
POLAR SEA \$5.5M Dockside,

- Fuel tank cleaning,inspection
- Main diesel propulsion cleaning,inspection
- Gyro installs (2)
- Boiler maintenance
- Anchor gear repair,maintenance,inspect
- 15-ton,3-ton crane inspection,testing
- Oily water separator overhaul
- Electrical matting renewal
- Science winch, J-frame, computer, CTD, Terascan grooms, training

POLAR SEA Summer/Fall 09

- Dockside: May 5-July 24
- Inport/Load-banking: July 25-Aug 24
- Shakedown: Aug 24-28(+)
- Underway:
- Possible Chinese mooring retrieval:
- Coffin methane hydrate cruise:
- Ben-David/Harlow polar bear cruise:
- Seattle return: Dec 4
- Deep Freeze standby: Dec 15

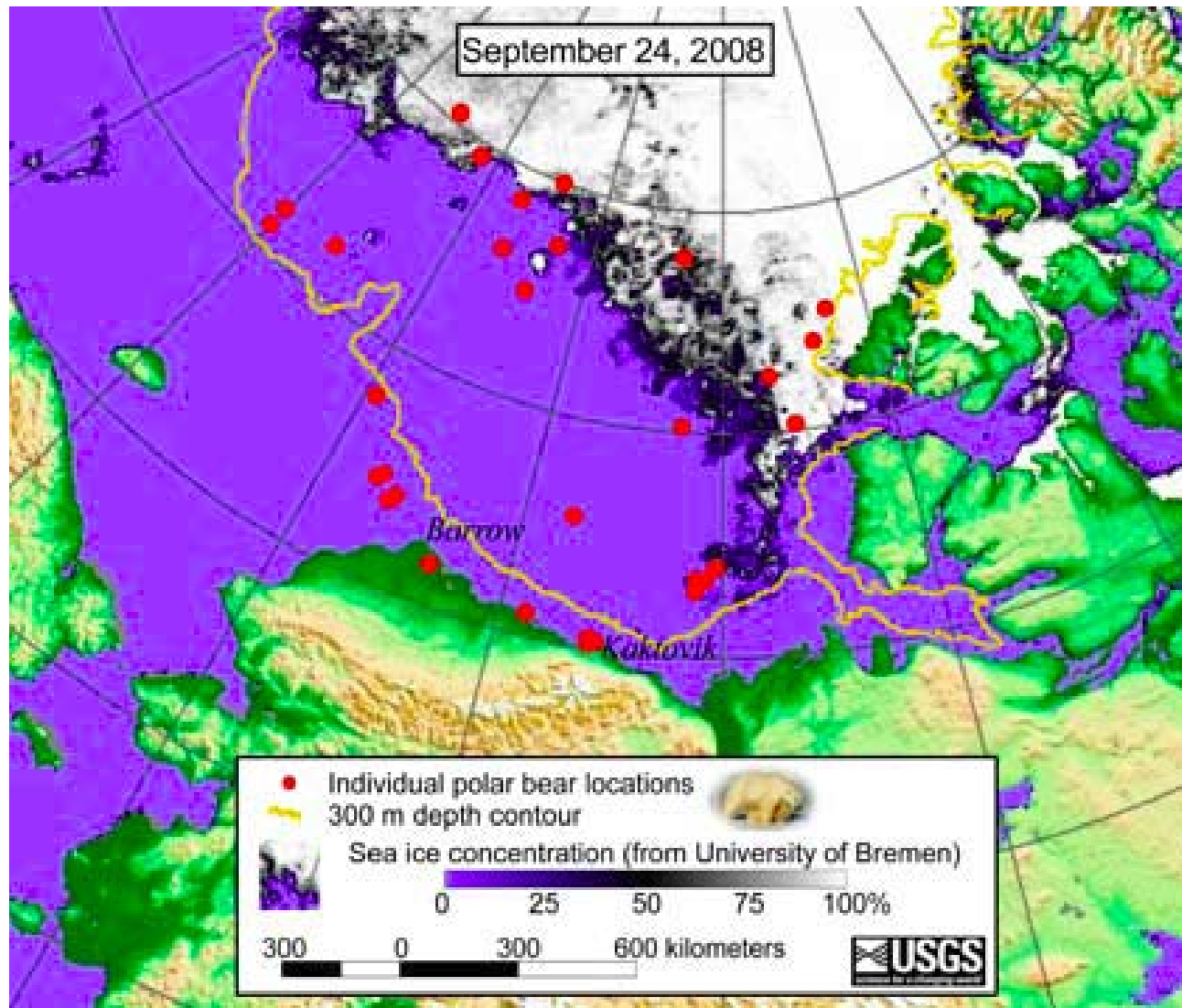
Coffin cruise track



Coffin Methane Hydrate Cruise

- Cruise area: Colville River delta, two transects of shelf
- ONR last week funded (\$75K) workup of existing seismic data to assist in site selection
- AEWG briefed in January; meeting w Nuixsut, Barrow whalers week of 6/15
- Nuixsut whalers already got quota for year
- No discussion of need for CAA
- Area moved further to east where deeper
- Letters to all whalers met with will be sent
- Further briefing/discussion @July AEWG mtg

Ben-David/Harlow 2008 fall polar bear locations



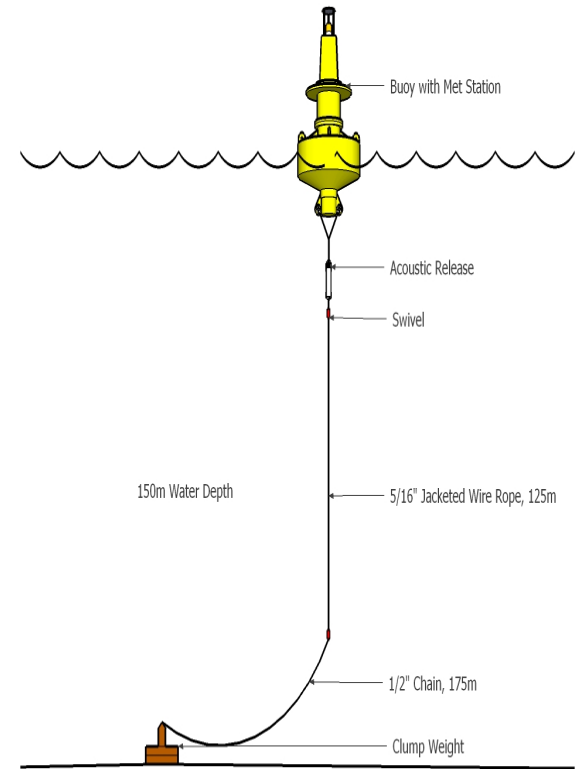
Ben-David/Harlow Polar Bear Cruise

- Op areas defined by polar bear locations; begin at ice edge in north, then head south
- Request pending for Canadian water ops
- No option to meet w Canadian CG RVs
- Diver forms for ancillary ice science submitted (Katrin Iken, UAF); small boat ops involved, but only proximal to ship
- K.Kultez (FWS) Seabird/mammal observers
- National Geographic Society TV Special
- Google Oceans Expedition ice cam upload

Ancillary PSEA Science Options

- Chinese mooring retrieval option: 180nmi NW Barrow, Chinese have offered to pay.
Requires 12h steam (@15knots) to/fro, 3-4 days max time. Best before Coffin science for minimal time/berthing aboard for 2 Chinese mooring techs
- MMS small met mooring retrieval after HEALY deployment (Pickart leg) 80mi off Barrow, 50m depth, required in advance of science due to ice. PIs: Jing Zhang (UAF), R.Pickart (WHOI)
- WaveGlider ASV (Navy, Google) for whale tracking in Chukchi (Hildebrand); just throw over side en route north, hydrophone install underway now
- 700MHz wireless from NSF (Beck) received, ready for install on icebreakers

MMS Met Mooring info



FY2010 PSEA Options

- NOAA pCO₂ install on SeaKeeper system (NOAA AOML, Rik Wanninkhof)
- Picarro Atmospheric pCO₂ demo install
- NASA RFP for ship ops for biogeochemistry
- MMS RFP forthcoming for fisheries research in Chukchi & Beaufort Sea
- Options for NSF Ship Time Requests
- Option for seatruth for Navy SCICEX sub ops
- Option for Conoco-Phillips joint ops

POLAR STAR

- Drydock:
- \$32.5M proposed, Sen. Murkowski, Sen. Begich to DHS committee, for refit of PSTAR
- Engineering Needs Assessment report based on Scoping Contract out soon, hopefully needs not in excess of funds requested!

Other Icebreaker/Polar Issues

- Sen Murkowski \$40M design of new icebreaker
- CG has id'd personnel for new design issues
- Requested coordination w Canada on ship design re ship noise reduction; will work w LAURENT replacement Sci. Advisory Committee
- Canada has proposed 2-ship/sub/sonobuoy ECS seismic work (EOS), could use PSEA
- CG convened arctic sensor/comms need workshop for 2013-2015 funds, could include support MMS/UAF HF radar network, e.g. concurrent mapping/animation of currents & ice, see:
- ftp://philo.exploratorium.edu/Users/Shared/ftp/uploads/Phil/CODAR_Ice&Currents/Ice_CurrentsAK.wmv

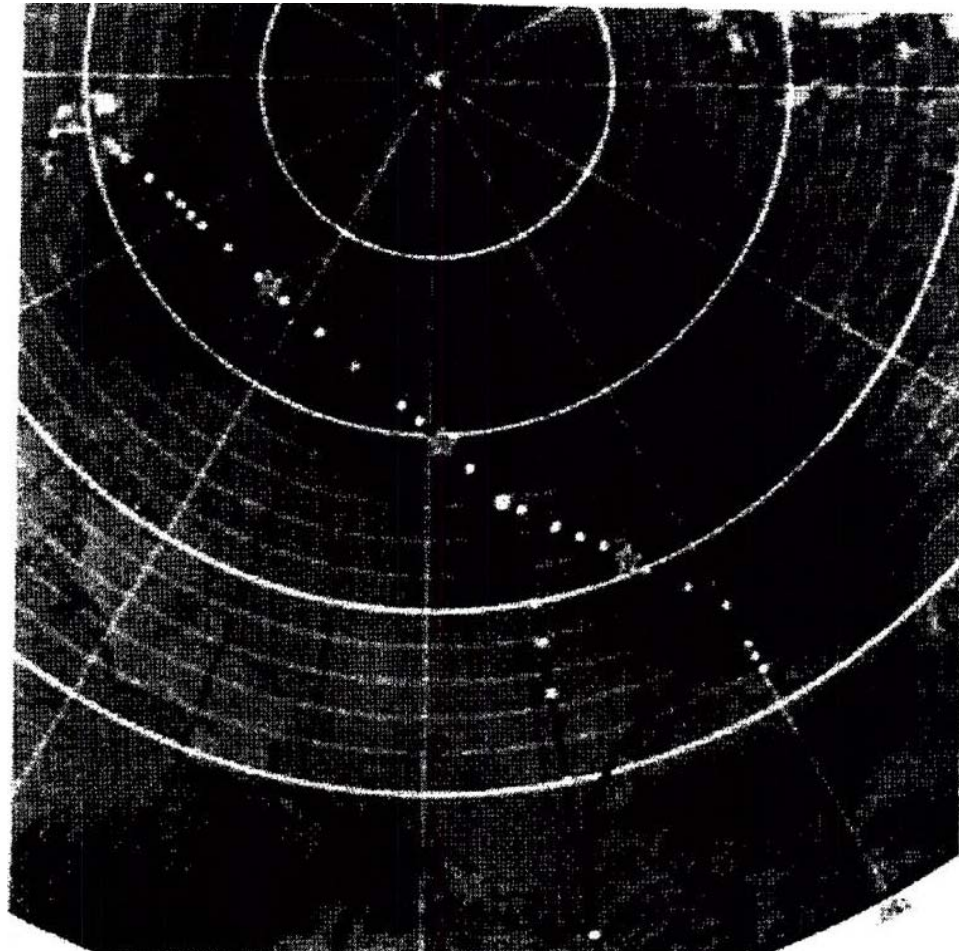
Arctic AAV/UAS Update

- May 12,13 Oil Industry Arctic UAS Conf., McMinneville, Ore.: marine mammal, ice, pipeline monitoring
- CG-NOAA May Aerovironment UAS ops Santa Barbara, transferred real-time video, directed to targets by CG
- NOAA DYSON ScanEagle ice seal survey, 40mi range restricted at last minute to 5mi by FAA, successful, but coverage incomplete
- DOE extension Pt Oliktok UAS range to 12mi by 8/09
- NOAA Global Hawk flight to Alaska summer 09
- NOAA UAS Antarctica, incl. 4 rotor for animal census
- New FAA Dir in June
- Sen Young: FY10 \$4M to Biopar: AAV walrus surveys
- Sen Begich on FAA oversight committee; will review UAS regs over arctic oceans
- Canada AAV program no arctic overflights 2009

Foreign R/Vs in Arctic

- Japan: New SHIRASE shakedown off Japan, Antarctica; CG icebreaker engineers to tour en route back from The Ice, Sept.-Oct..; MIRAI putting in moorings in Barrow Canyon
- Russia: RUSALCA (NOAA); new icebreaker funded (next slide)
- Korea: ARAON in water in June; Rick Spinrad (NOAA), Peter McRoy (UAF) attended; shakedown, etc. still TBD
- Canada: - AUVs to map bathym in high arctic 2009
- ST LAURENT replacement funded = \$720M, LAURENT decommissioning 2017; Sci.Advisory Committee in place;
- AMUNDSEN (multibeam), Barrow July 11
- LAURIER (hydrography only) heading north, July-Oct.
- Germany: no updates EU plans, still proceeding w AURORA BOREALIS
- Norway: New Ctr.Clim.&Envl.Res. Tromso, to be home of new research icebreaker, funding announced March 09. (NFI)

MIRAI Cruise Track Sept 7-Oct. 15
(Dutch-Dutch), square is Barrow
Canyon mooring, deployed Oct.8



“New generation” Russian Nuclear
Icebreaker designed by 2010, done by 2015
Cost: 17B Rubles @=US\$520+M

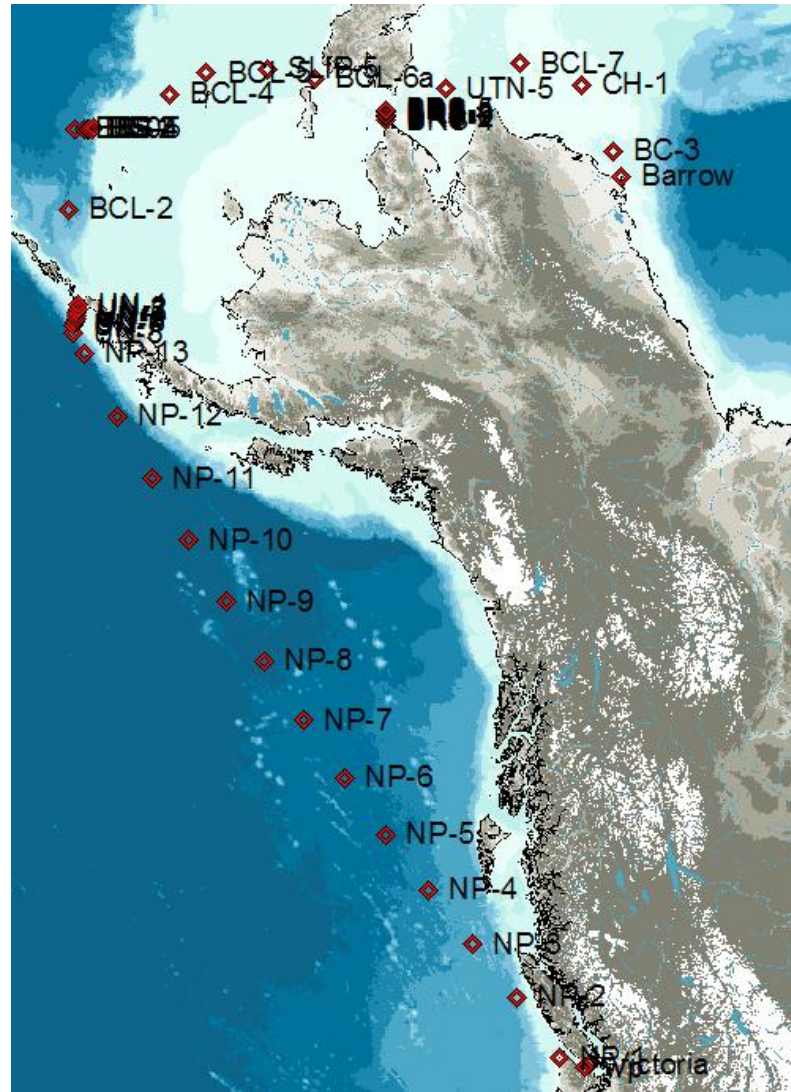
Ocean & river, like Arktika Class “Sovietski Soyuz” (shown)



AMUNDSEN Cruise track, Alaska in July 09



WILFRID LAURIER overall track

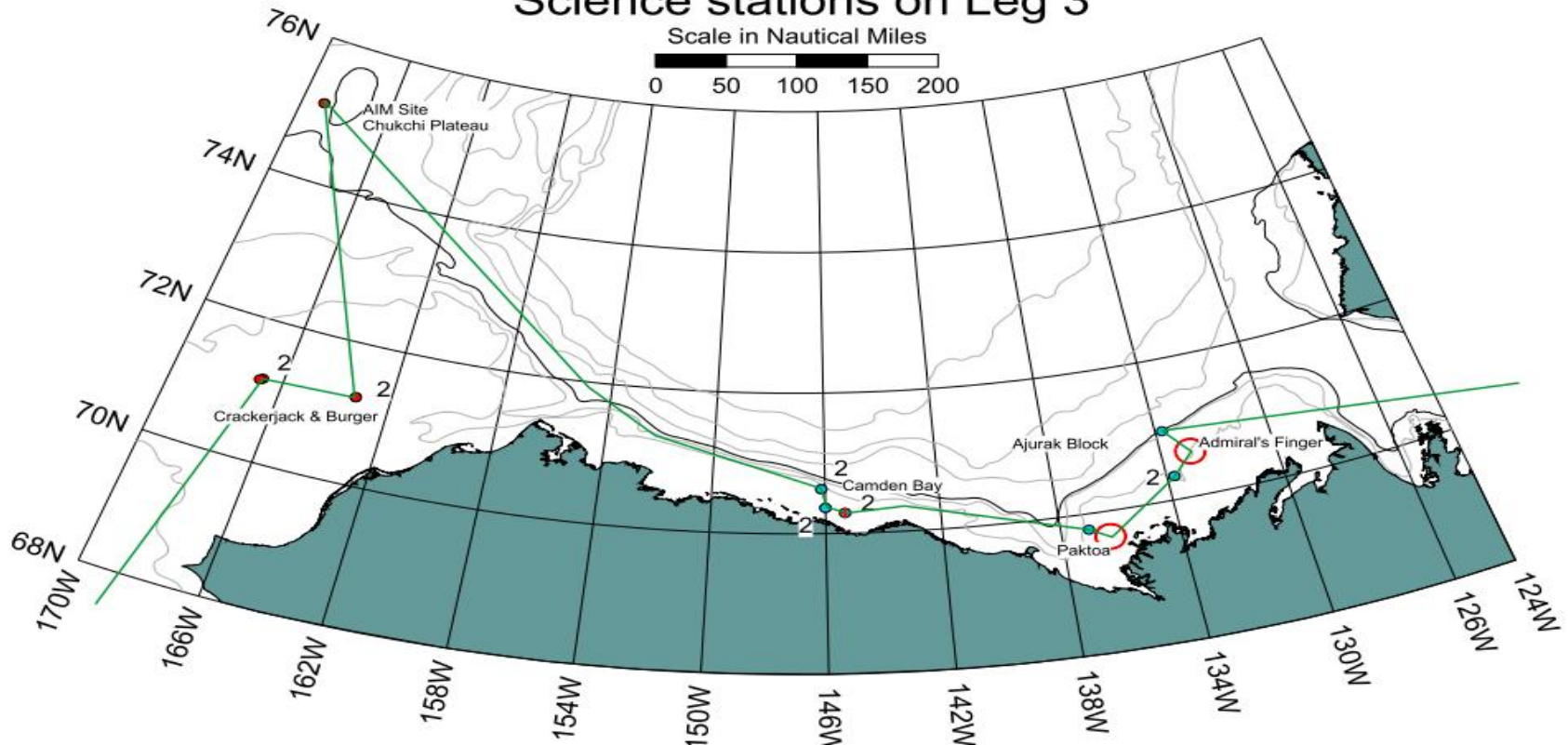


WILFRID LAURIER Arctic track, Oct. 1-12

Stn #	Station	Latitude	Longitude	Depth (m)	Task
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Locations of CTD profiles same as those of moorings
See section 4 & map below

CCGS Sir Wilfrid Laurier, 2009 Arctic Patrol Science stations on Leg 3



Questions?

(New knuckleboom for PSEA)

