



# Polar Continental Shelf Program - Logistical Support for Arctic Research in Canada

Presented at:

Forum of Arctic Research Operators Meeting  
Arctic Science Summit Week, Norway  
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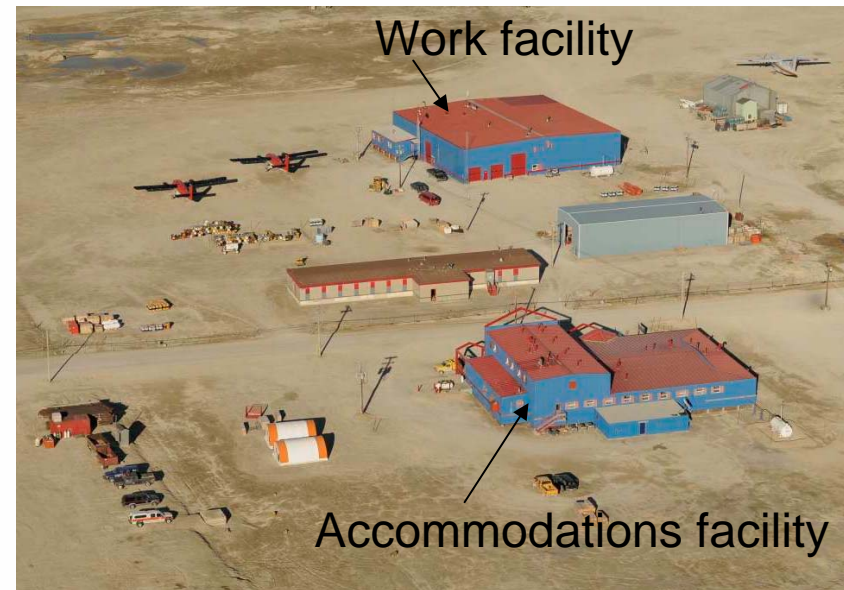
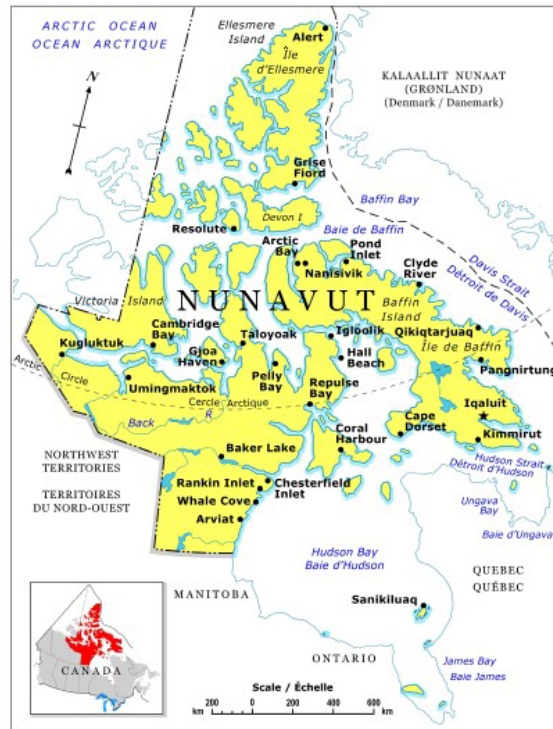
# PCSP, the lifeline of arctic science

- Established in 1958, the Polar Continental Shelf Program (PCSP) delivers about \$10 million worth of logistical services annually to over 1100 arctic scientists, students and field support personnel
- Often the only way to get to remote field study locations is by air
- PCSP's primary form of support is through air transportation to and from remote field camps by airplane or helicopter
- Many researchers also use aircraft to conduct their specific studies (e.g. population surveys)



# PCSP's services in Resolute, NU

- Most operations are based out of PCSP's Resolute facility but aircraft services are also available from Inuvik, Northwest Territories
- Range of services include: Air transportation, land transportation, equipment, researcher residence at Resolute, communications network for all field camps



PCSP base in Resolute



# PCSP's Resolute facility

- In addition to aircraft services, PCSP's Resolute facility provides accommodations, equipment and work space



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# Resolute: a strategic location

- Resolute has long been recognized as a strategic location for Arctic logistics support and military activities
  - Has a central location in the High Arctic
  - Borders the Northwest Passage
  - Has regular commercial aircraft service
  - Can accommodate large aircraft (e.g., Hercules aircraft, jets)



**Resolute, Nunavut**

- Second northernmost community in Canada
- DND Arctic Winter Warfare Centre at PCSP Resolute facility



# Arctic Field Support Services

- Arctic Field Support Services has been integrated with PCSP and offers researchers access to a \$6.9 million inventory of field equipment (e.g., tents, clothing, communication equipment, ATVs, boats, GPS units, generators and firearms)
- Equipment located primarily in Ottawa, Ontario and Resolute, NU.
- Provides support to the science community with plans to expand access of arctic field equipment to other science partner organizations across Canada's north





# Arctic Field Support Services

- Arctic Field Support Services is responsible for all phases the field equipment's life cycle:
  - Determining what equipment is needed
  - Purchasing and cataloguing the equipment
  - Filling orders for equipment and shipping it
  - Repairing and maintaining items after their use
  - Disposing of equipment that is no longer usable
- Researchers who request equipment are charged on a “fee for service” basis
- The group obtained ISO certification to the 9001-1994 Standard in 2001 and recertified to the 2000 Standard in 2002
  - This certification indicates that we meet international standards for high-quality service management



# Science supported by PCSP is broad

- PCSP supports a full range of natural and social sciences research projects in camps of all sizes throughout the Arctic
- Backbone for key government and academic research programs (e.g., UNCLOS, IPY, GEM)
- Projects are often multidisciplinary and integrated, some of which are science-driven, others technology-driven



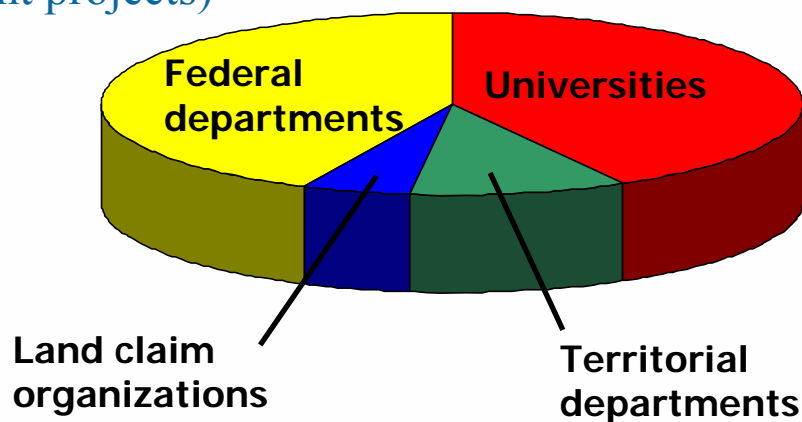


# PCSP services many clients and partners



- Support to PCSP's clients is generally distributed annually as follows:
  - 42% Universities\*
    - Over 20 Canadian universities supported
  - 10% Territorial departments\*
  - 5% Land claim organizations
  - 43% Federal government departments\* (NRCan, DFO, EC, INAC, CSA, Parks Canada, Museum of Civilization, Museum of Nature)

\* Academics from foreign universities and arctic research organizations (primarily joint projects)



# PCSP application process and committees

- Researchers planning to conduct research in the Canadian Arctic can apply annually to PCSP for logistical support
- The PCSP Science Screening Committee evaluates all applications for support from university and foreign scientists
- The PCSP Advisory Board provides guidance and advice to PCSP on scientific and related activities in the Arctic
- PCSP facilitates a Traditional Knowledge Program and a Canadian Arctic-Antarctic Exchange Program



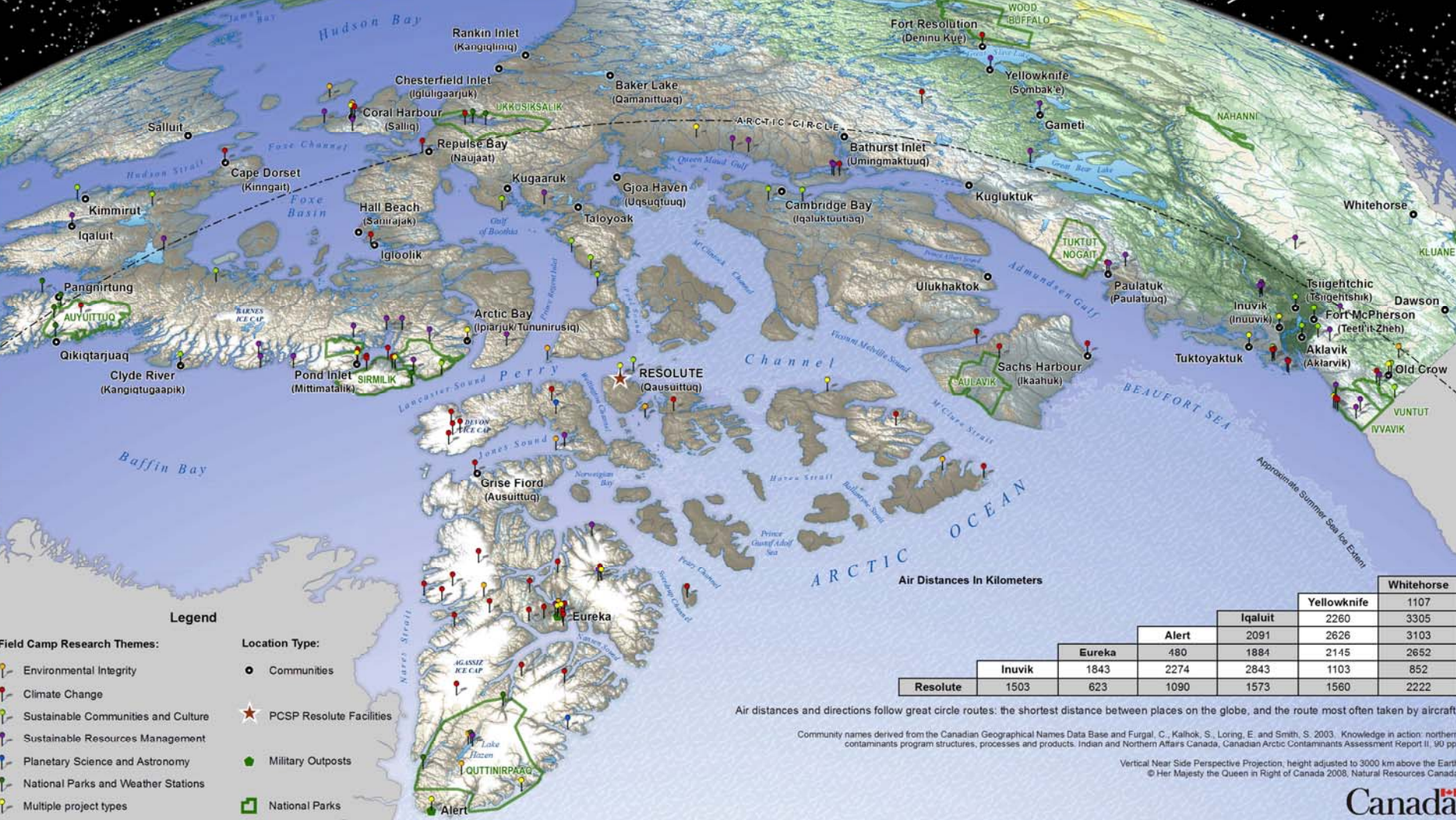
# 2007 and 2008 field seasons

- 158 applications were received for the 2008 field season
- 22% increase in flying demands from 2007 to 2008
  - 2007 field season requested flying hours = 7762
    - 5509 total hours flown
      - 1726 hours - *Twin Otter*
      - 3783 hours - *helicopter*
    - 2008 field season requested flying hours = 9465
      - 6563 hours flown
        - 2277 hours - *Twin Otter*
        - 4286 hours – *helicopter*
  - Resolute facility operations increased by 30 days in 2008 (mid February to late September)





# PCSP-supported field camps in the Canadian Arctic (2007)



Air distances and directions follow great circle routes: the shortest distance between places on the globe, and the route most often taken by aircraft.

Community names derived from the Canadian Geographical Names Data Base and Furgal, C., Kalhok, S., Loring, E. and Smith, S. 2003. Knowledge in action: northern contaminants program structures, processes and products. Indian and Northern Affairs Canada, Canadian Arctic Contaminants Assessment Report II, 90 pp.

Vertical Near Side Perspective Projection, height adjusted to 3000 km above the Earth  
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# Support for International Polar Year projects

- PCSP provided logistical support for 25 IPY projects in 2007 and 42 IPY projects in 2008
  - Studies focused on Traditional Knowledge, wildlife habitat and behaviour, tundra ecosystems, archaeology, hydrology, sea ice, glaciology and climate change processes



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# Events from 2008

- 2008 marks the 50<sup>th</sup> anniversary of PCSP and second year of International Polar Year
  - Anniversary celebrations were launched on May 14<sup>th</sup> at the Canadian Museum of Civilization in Gatineau, QC
  - Commemorative 15-month calendar created and distributed
  - First Resolute Open House held on July 12
  - First annual PCSP Science Report to be released in early 2009





# A new program direction for PCSP



- Strong demand for Arctic Science expected to keep increasing:
  - Major research questions from the global science community to address one of the fastest changing environments on Earth
  - High price of natural resources stimulates interest in them and increases pressure on them
  - Important social and health challenges for communities
  - Increased knowledge needed for federal and territorial governments, northern organizations and industry for decision-making
- PCSP is well positioned for Canada's Northern Strategy:
  - 50<sup>th</sup> Anniversary of PCSP – new vision for the next 50 years
  - International Polar Year – post-IPY contribution
  - Capitalize on the international interest geared towards polar regions

# The new vision for Polar Shelf

- Improve the PCSP Resolute facilities to provide greater benefit for national and international research organizations
- Develop the base of operations to be a state-of-the-art, fully integrated science logistics center
  - Will provide an increase in the quantity and scope of arctic science support and training
- Proposed renovations include building:
  - More accommodation space
  - A laboratory
  - A multipurpose room
- A longer period of operations each year is also proposed



# Resolute facilities expansion

Facilities	Now	Future
Living quarters	44 beds	80 beds
Laboratory	0	300 m <sup>2</sup>
Multipurpose room	0	150 m <sup>2</sup>
Mobile laboratories	0	3
Satellite offices	0	3
Months of operations	5	9





# An opportunity for partnerships

- Build on key partnerships to develop stronger relationships with national organizations to allow arctic research to realize its full potential
  - Granting councils/agencies (NSERC, SSHRC, CIHR, CFI, NCE) who provide funding to university researchers
  - University organizations (e.g., ACUNS)
- Strengthen linkages with arctic research institutes and organizations
  - Nunavut Research Institute, Aurora Research Institute, Association of Canadian Universities for Northern Studies, international polar organizations
- Involve federal government departments to determine improved ways of delivering logistical support
  - Environment Canada, Department of Fisheries and Oceans/Canadian Coast Guard



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# Improved partnerships

- Strengthen partnerships with northern communities and governments
  - Involve communities and schools to further develop outreach programs
- Continue discussions with the Department of National Defence regarding using PCSP's Resolute base in winter/spring for training
- Investigate ways to strengthen partnership with ArcticNet for improved coordination of logistics and research activities
- Broaden governance of PCSP to include key stakeholders



# Benefits of PCSP rejuvenation

- Directs research towards priority areas of government and societal interest
  - Targets logistical support towards climate change science, sustainable communities and environmentally sound economic development
- Strengthens arctic coordination of logistics and cooperation
  - Increases physical presence in the Arctic over an extended period each year and in more locations
  - Improves monitoring and search and rescue capabilities





# Benefits of PCSP rejuvenation

- Acts as the backbone for other important federal priorities:
  - Geo-mapping for Energy and Minerals (GEM, program runs to 2013)
  - United Nations Convention on the Law Of the Sea (UNCLOS) data collection (program runs to 2011)
  - Enhanced northern research programs initiated by federal granting councils in the natural, social and health sciences
  - Contributes to the objectives of the Canadian Arctic Research Initiative led by Northern Affairs Program of department of Indian and Northern Affairs



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# QUESTIONS?



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