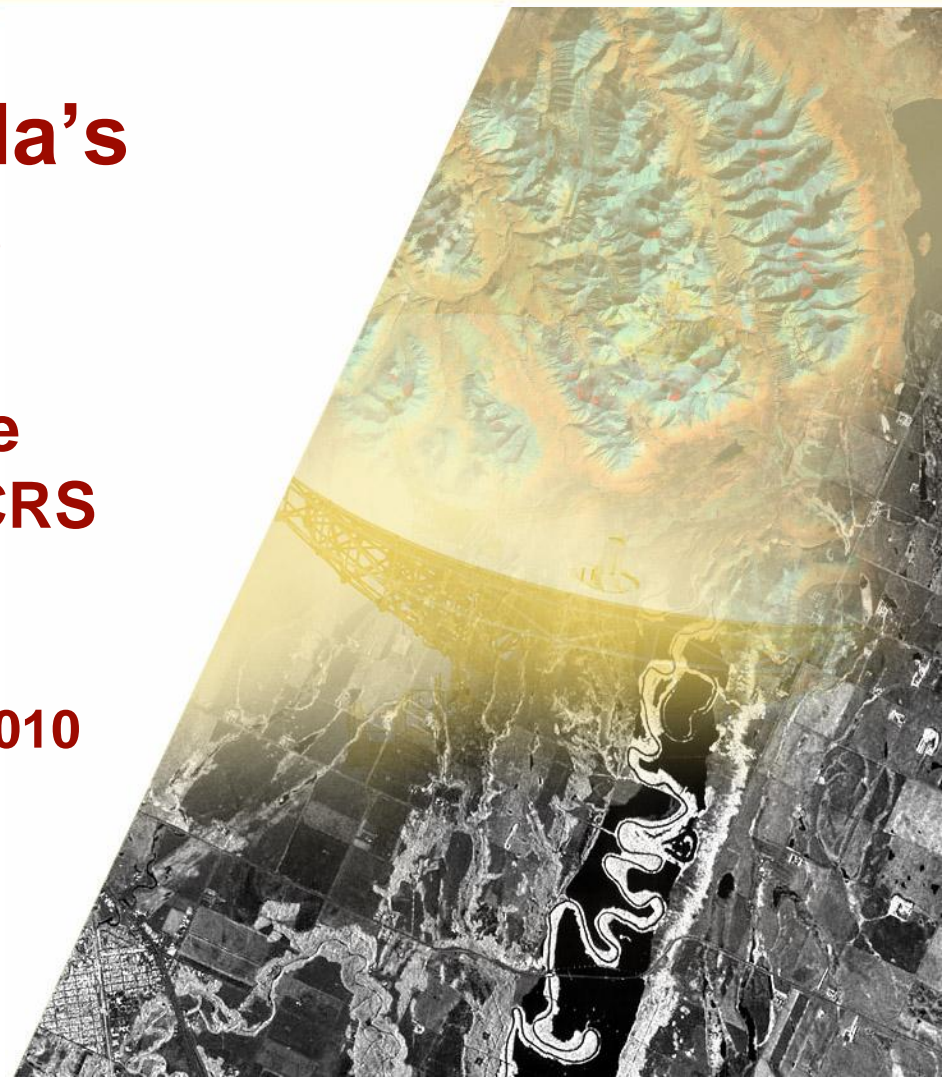




ABCC & Canada's Perspective

E. Paola de Rose
Director EOGD, CCRS

ABCC Meeting
Ottawa - Sept 23/24, 2010



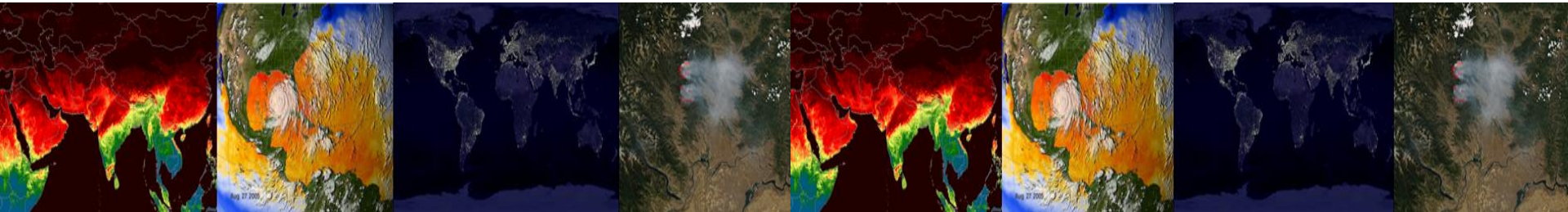


The ABCC Program

To understand and analyze the impact of global change on the environment, 4 nations representing sensitive world regions join forces scientifically.

A collaborative research initiative involving Australia, Brazil, Canada and China.....thus:

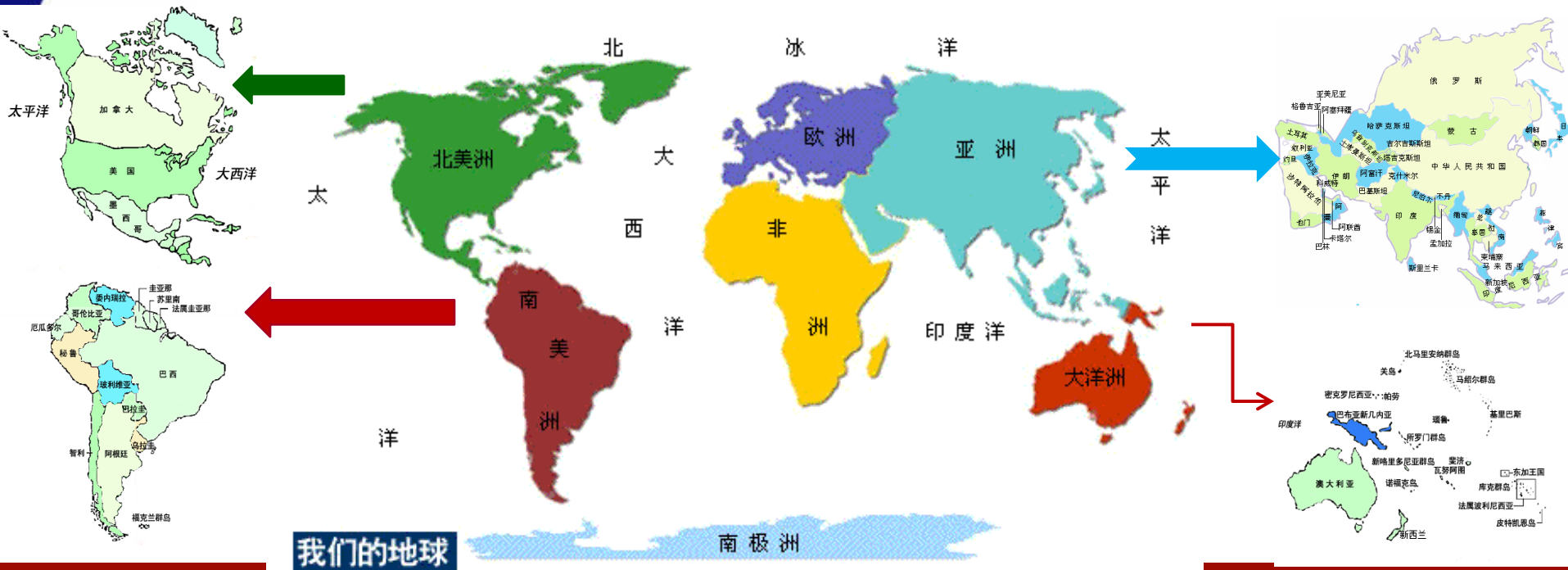
The “ABCC Program”



ABCC's Four Countries



China, Australia, Brazil and Canada, the largest countries in Asia, Oceania, South America and North America, respectively, cover 1/4 of the world's continental landmass.





Canada & the ABCC Program

An important initiative assisting Canada to

- **Strengthen on-going collaboration with the CAS**
- **Renew collaborations with Brazil and Australia**
- **Leverage value from Canada's national land cover and thematic mapping projects**
- **Strengthen contributions to global change studies**



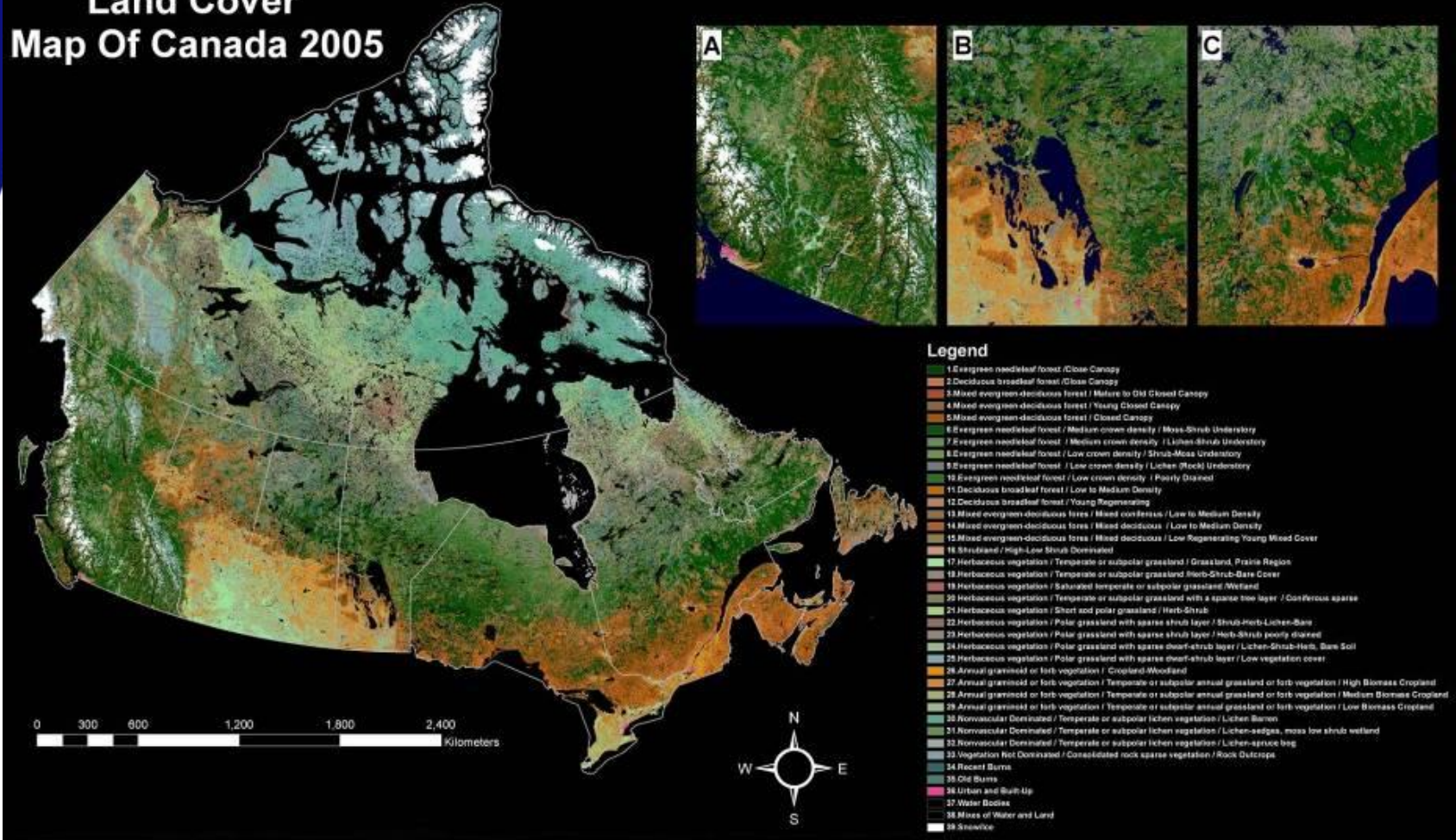
Canadian Projects

- **National Land Cover and land cover change in Canada - *Rasim Latifovic and Darren Pouliot***
- **Snow Cover Mapping in Canada - *Richard Fernandez and Brian Brisco***
- **Canada's Glaciers - *Mike Demuth and Alex Chichagov***

National Land Cover



Land Cover
Map Of Canada 2005





North America Land Cover



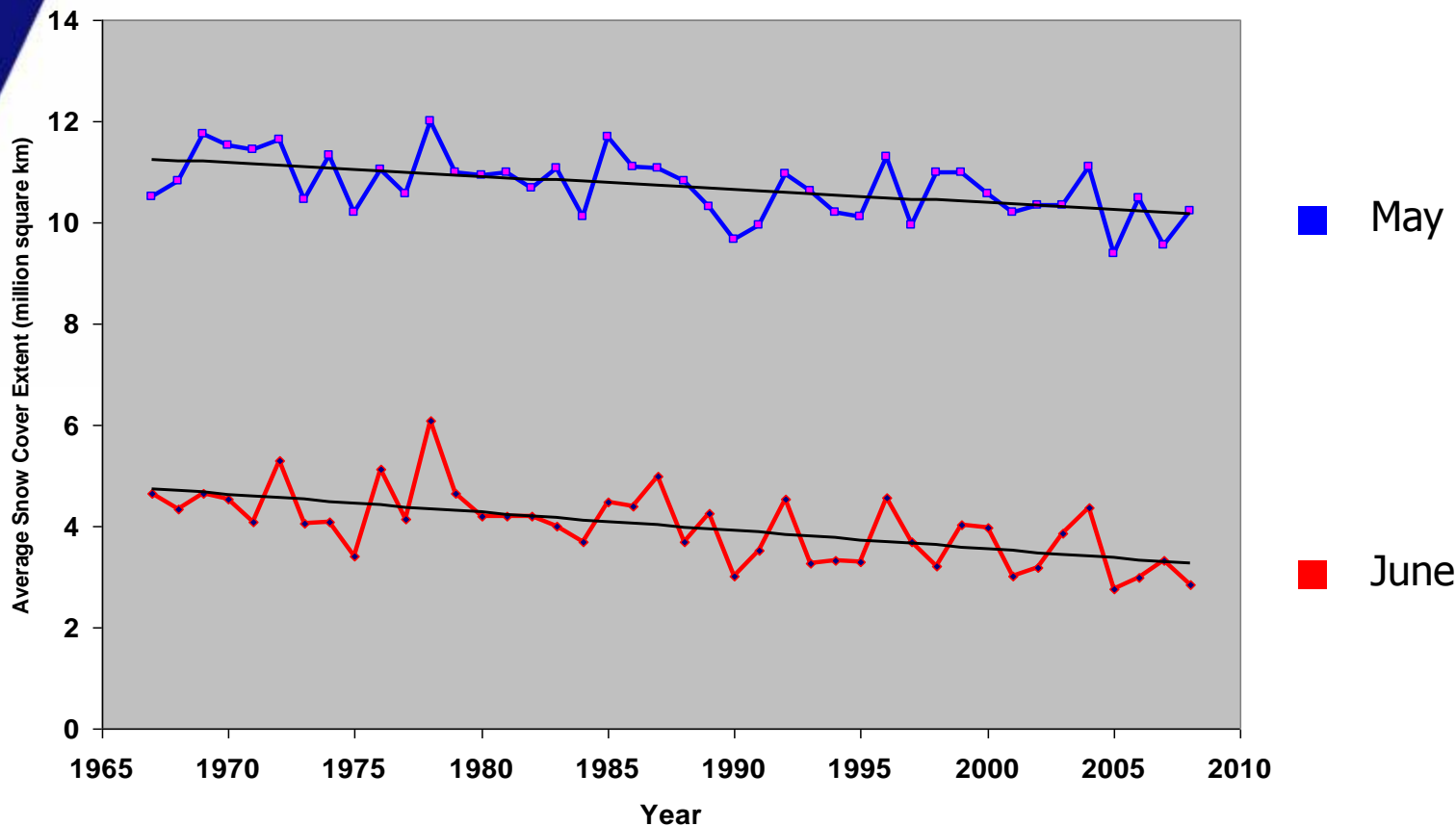
Latifovic, R., Pouliot, D., Homer, C., Giri, C., Takaki, F., and Ressler, R. (2009). North American Land Change Monitoring System Present and Future. The 30th Canadian Symposium on Remote Sensing – Bridging Excellence. June 22-25, Lethbridge, Alberta, Canada.



Circumpolar Arctic Snow Cover Extent (1965-2010)



Trends in Arctic Snow Cover Extent



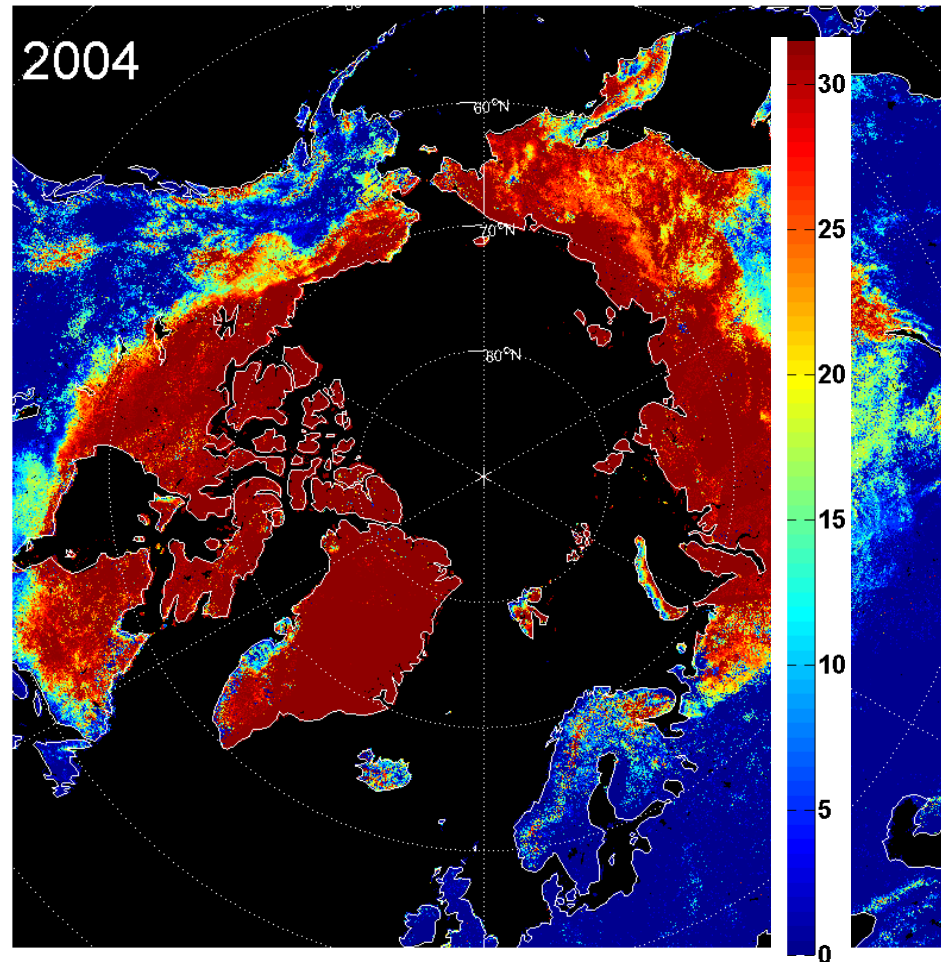
CCRS EO data, along with EC in situ data from 1962, in publ. in progress (2010) : Ross Brown, Climate Research Branch, EC





Circumpolar Snow Cover

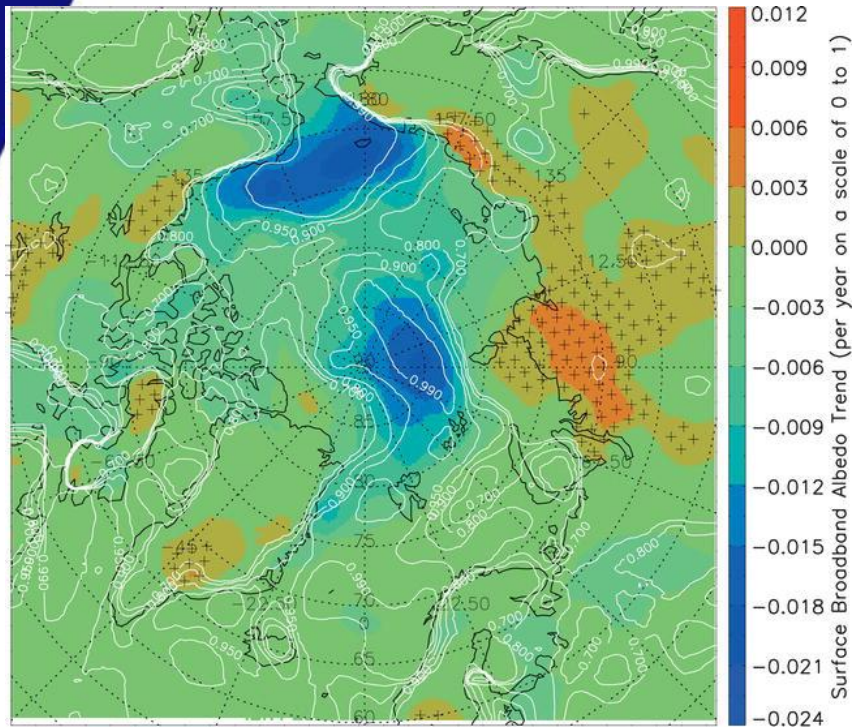
Number of Days
with Snow Cover
during May



Snow Cover Observations

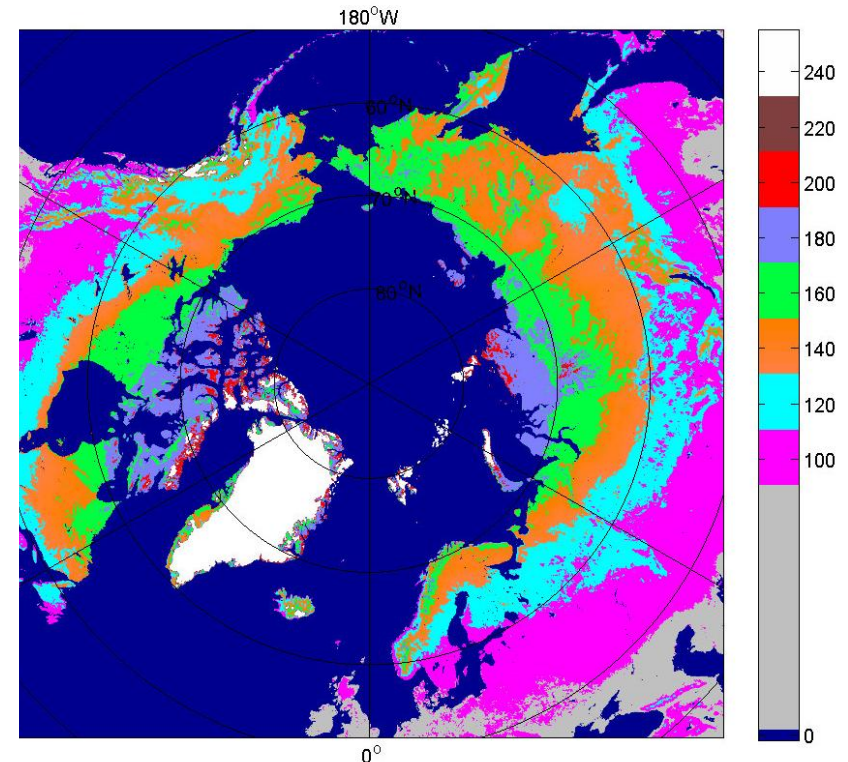


APP-X Surface Albedo



Trends in surface albedo.

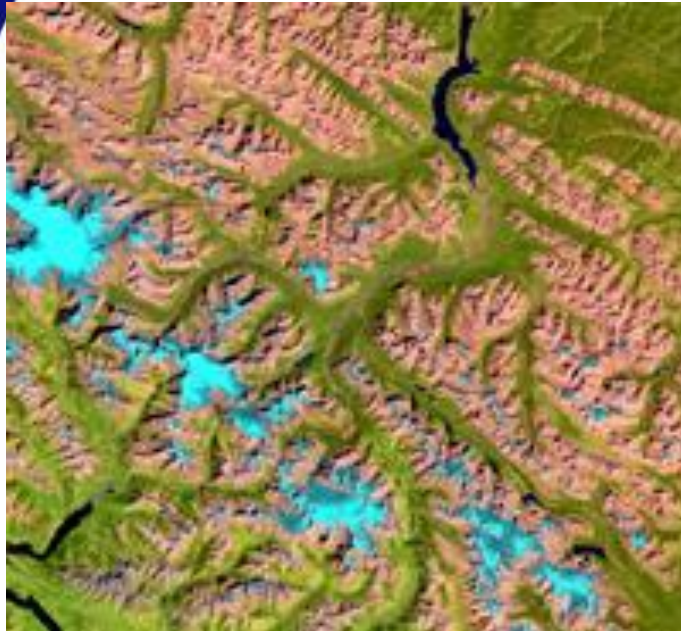
CCRS APP Snow Cover



Mean snow free day of year over 1981 to 2004.

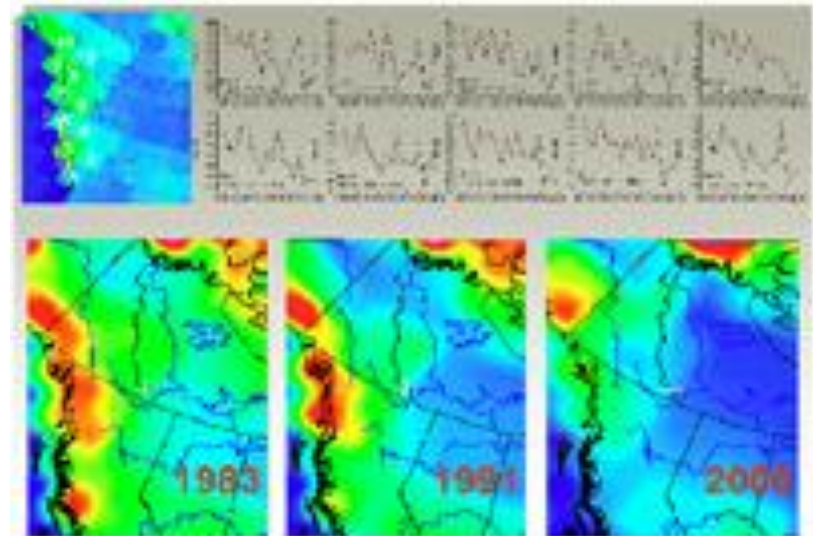


Monitoring Canada's Glaciers



Glacier ice reservoirs in the Rocky Mountains.

Glaciers in this region have been significantly reduced in area (since the mid-1950s)



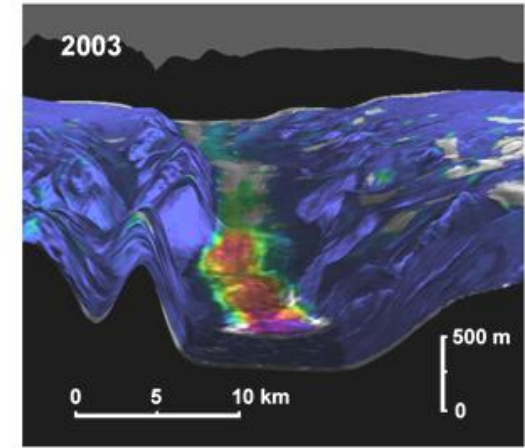
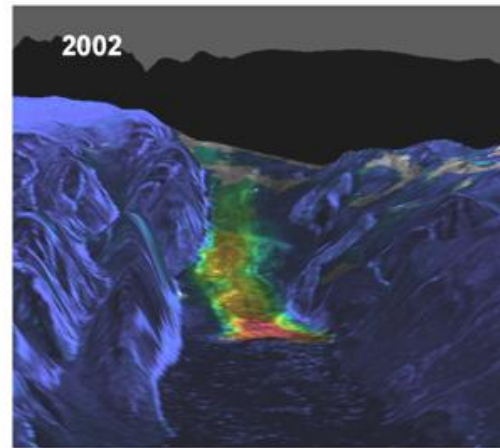
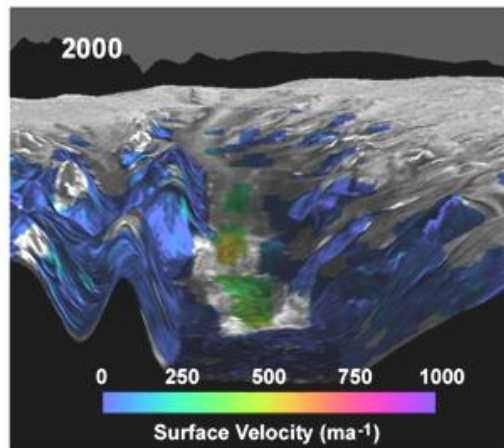
Reduction in shortwave radiation albedo over mountains due to recent changes in the extent of perennial snow and ice.

InSAR for Glacier Movement



~ RadarSAT-1 over Ellesmere Island ~

Otto Glacier



- Glacier flow rates are faster & more variable than previously thought
- Comparisons with balance velocities indicate that many glaciers are losing mass

- Many glaciers are known to demonstrate surge behaviour
- A need to separate out “normal” cyclical surging from the climate response

Short, N. and A.L. Gray, 2005. Glacier dynamics in the Canadian High Arctic from RADARSAT-1 Speckle Tracking, *Canadian Journal of Remote Sensing*, 31(3):225-239.



Concluding Remarks

- **ABCC leverages our ongoing national-level work in a context relevant to global change**
- **Canada looks forward to fruitful scientific exchanges under the ABCC umbrella**
- **Canada's ABCC project contributions will be outlined in technical presentations by scientists later in this meeting**
- **How/when should ABCC's four-way links be formalized, to compliment the bilateral arrangements with China?**



Thanks.....Questions?

E. Paola de Rose

Director

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