



Update on Activities of the Canadian Group on Earth Observations (CGEO)

**Fourth Drought Research Initiative Workshop
Regina, Saskatchewan**

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Canadian GEO Secretariat
26 January 2009**





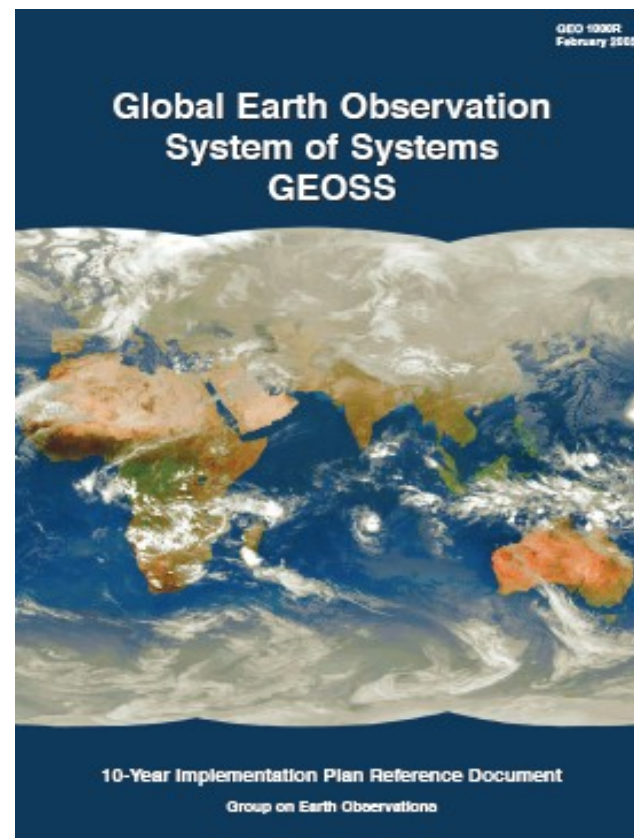
Outline

- Links to GEO, GEOSS & CGEO website information
- Key recent and upcoming activities and events
 - Federal Earth Observation Strategy
 - Soil Moisture Way Forward
 - U.S. – Canada Bilateral Workshop on Ice and Water
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 - International GEO Workshop on Synthetic Aperture Radar (SAR) to Support Agricultural Monitoring
- Possible roles for DRI and related initiatives
- Summary



www.earthobservations.org

- **GEO** – the intergovernmental **Group on Earth Observations** has 77 Member Countries and the European Commission and 51 Participating Organizations
- **GEOSS** – the objective of GEO is to implement a **Global Earth Observation System of Systems** over 10 years to provide coordinated, comprehensive, and sustained Earth observations





Canadian Group on Earth Observations (CGEO)

- Established to coordinate Canada's response & engagement in international GEO & to meet Canadian EO challenges
 - EC led (GEO Principal for Canada)
 - AAFC, CSA, DFO, DFAIT, DND, HC, NRCan, StatCan
- Governance
 - ADM Steering Committee
 - Interdepartmental Coordination Committee (DG level)
- Interdepartmental Secretariat established 2005
 1. Manage Canada's involvement in International GEO
 2. Advance the coordination of EO within Canada
 - develop a 'Federal Earth Observation Strategy'
 - identify and facilitate collaborative EO projects



www.cgeo.gc.ca



Government of Canada
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Canadian Group on Earth Observations
www.cgeo-gcot.gc.ca

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Canadian Group on Earth Observations

Canada's vast oceans, inland waters, land surfaces, and atmosphere require a wide array of measurements and surveillance in order to monitor and understand their current condition, and to predict their future states. There 'Earth observations' contribute every day to the health and safety of Canadians, the protection of Canada's natural environment, security and sovereignty of our country, and to Canada's economic prosperity. Reliable and sustained Earth observations (EO) are fundamental to hazard warning, weather prediction, the understanding of climate cycles, health protection, optimizing agricultural and forestry practices, resource assessments, infrastructure planning, and environmental protection.

The Canadian Group on Earth Observations (CGEO) was established to advance coordinated Earth observations in Canada and to coordinate Canada's position and engagement in the international Group on Earth Observations (GEO) initiatives and the development of the *Global Earth Observation System of Systems (GEOS)*.

What's new

- ▶ [GEO-V Plenary to be held in Bucharest, Romania 19-20 November](#)



- Member Departments**
- ▶ Agriculture and Agri-Food Canada
 - ▶ Canadian Space Agency
 - ▶ Environment Canada
 - ▶ Fisheries and Oceans Canada
 - ▶ Foreign Affairs and International Trade
 - ▶ Health Canada
 - ▶ National Defence
 - ▶ Natural Resources Canada
 - ▶ Parks Canada
 - ▶ Statistics Canada



Federal Earth Observation Strategy (FEOS)

Canadian Group on Earth Observations / Groupe canadien des observations de la terre
www.cgco.gc.ca / www.gcot.gc.ca

Canada's Federal Earth Observation Strategy

Prosperity, health and safety
through coordinated, comprehensive and sustained Earth observations

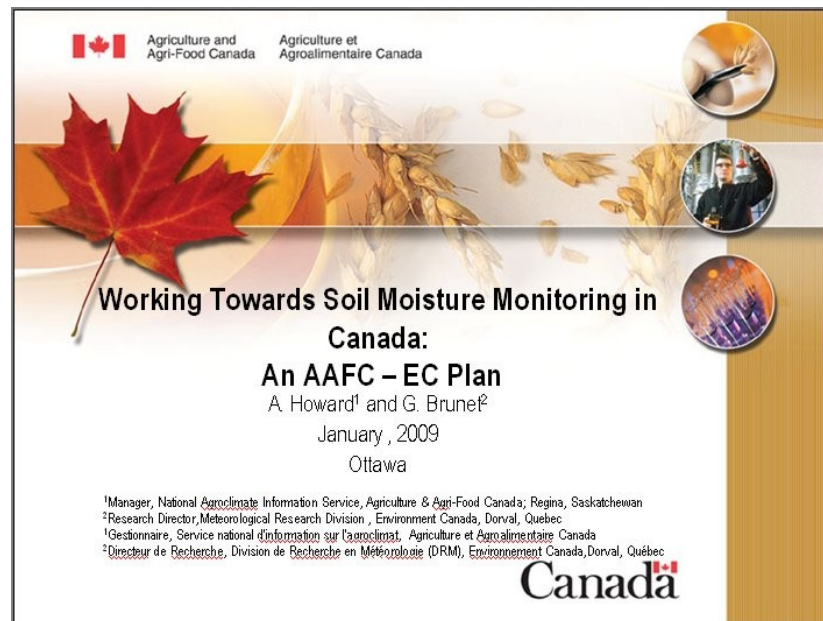
November 28, 2008
Canadian Group on Earth Observations (CGEO)
DRAFT - Version 4.0 - DRAFT

- draft version 4 provided for CGEO review in late Nov 2008
- comments and input received & next version is under preparation
- goal: next version for mid Feb 2009
- process is to have 80% complete version for review by CGEO ADM-level Steering Committee before end of March 2009



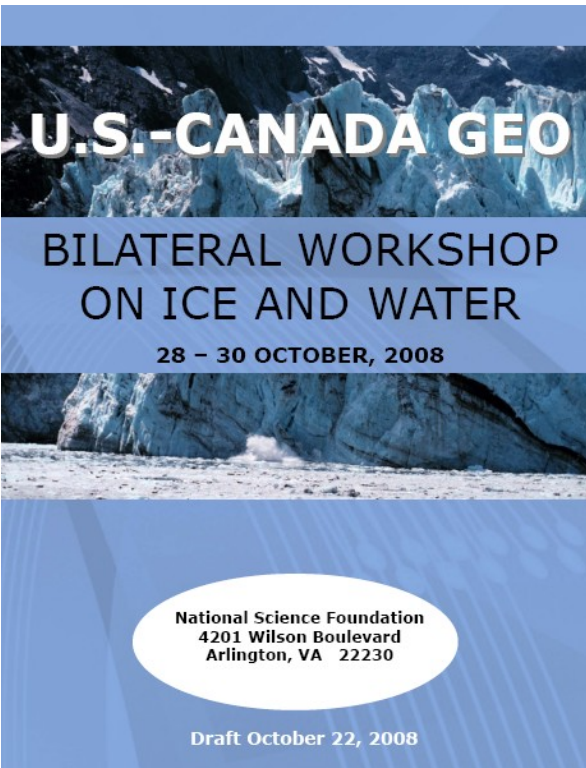
Soil Moisture Way Forward

- the CGEO soil moisture initiative continues to move forward – active Soil Moisture Working Group
- key presentation planned to AAFC & EC ADMs in Feb 2009
- resources & activities to be identified & assigned
- workshop (?) in 2009/2010 to bring together soil moisture experts from 3 areas:
 - *in situ* practitioners
 - modellers
 - remote sensing community





U.S. – Canada GEO Bilateral Workshop on Ice and Water



- held 28-30 Oct 2008 near Washington, DC
- technical sessions organized by Rick Lawford (water) & Jeff Key (ice)
- Themes:
 - Drought
 - Marine and Freshwater Ice
 - Closing the Water Budget
 - Data Assimilation
- ~ 90 participants

- long list of highlights & recommendations produced
- follow-up: CGEO & USGEO discussed process to identify priorities & how to turn into action
- highest priorities for short-term results:
 - develop international testbeds (Great Lakes, Rocky Mountain area, ...)
 - bilateral studies for a monitoring system on **Natural Hazards** (initial focus on drought and extremes)
- need to build on related initiatives (DRI, Monitoring & Prediction of Western Water & Weather workshop, etc.)
- undertake scoping meetings to initiate actions
- develop a Framework for Action to provide guiding principles for future decisions



GEO Plenary-VI

- U.S. will host in Washington, DC
- likely week of 16 Nov 2009
- a number of GEO-related events to be held around the Plenary
- opportunities to advance CGEO priorities (water, soil moisture, GEOSS in the Americas initiative, data policies, etc.)



GROUP ON
EARTH OBSERVATIONS



International GEO Workshop on Synthetic Aperture Radar (SAR) to Support Agricultural Monitoring

- Canada to host in fall of 2009 (tentative week Oct 19-23)
- requested by the international GEO Community of Practice on Agricultural Monitoring
- key initial support from Agriculture and Agri-Food Canada (AAFC) & Canadian Space Agency (CSA)
- other CGEO member departments supporting & participating include: Environment Canada (EC), Foreign Affairs & International Trade (DFAIT), Health Canada (HC), Natural Resources Canada (NRCan), Statistics Canada (StatCan)
- hope to also engage CIDA, IDRC & other funding agencies to assist with funding practitioners from developing countries

continued: SAR to Support Agricultural Monitoring Workshop

- first official announcement to be issued soon
- goal is to also announce at an international workshop in Beijing in Feb 2009



- explore how information from SAR and SAR/optical sensors can be used to map agricultural land cover/land use and monitor changes, identify crops and estimate crop area, qualitatively and quantitatively assess crop condition and estimate soil properties such as soil moisture



continued: SAR to Support Agricultural Monitoring Workshop

- integration of SAR data with data from optical sensors
- identify and communicate the information and operational needs of the agricultural user community to facilitate coordinated access to Earth observation data
- specific objectives:
 - Increase understanding of the capabilities of SAR for agricultural monitoring
 - Share best practices with respect to processing, analysis and modeling of SAR data for agricultural mapping and monitoring
 - Increase awareness of software tools, applications and processes for the effective use of SAR for agricultural monitoring
 - Build capacity within the agricultural user community to exploit SAR data, especially in developing countries
 - Initiate a dialogue to identify the needs of the agriculture monitoring community with SAR satellite operators and SAR application software developers

continued: SAR to Support Agricultural Monitoring Workshop

- likely location in Calgary region (Banff Centre?)
- 3 day workshop
- 1-2 day training session for practitioners from developing countries
- possibility of a demo area for SAR application developers
- Organizing Committee well into planning & logistics
- Technical Committee initiated (Canadian lead & co-chair is Heather McNairn from AAFC)
- funding working group is looking for additional support & funds



The Banff Centre, Signature Shot
Photo: Scott Rowed



Possible Roles for GEO + DRI + related initiatives

- **Contribute to the development of GEOSS by:**
 - providing data, models, tools, components, etc.
 - participate in an expert capacity in GEO tasks, activities, committees, Communities of Practice, etc.
- **GEOSS can provide:**
 - a framework for implementation of activities
 - data standards and data interoperability capability
 - data and information access & sharing through the GEO Portal and Clearinghouse
 - access to world-wide research, models, tools, best practices, etc.
- **Consider establishing a Canadian or regional Community of Practice**
- **Identify future interest and contribute to the development of a Canadian 'National' Earth Observation Strategy**



Summary

- GEO/GEOSS provides an important context and stimulus to advance coordinated EO within Canada
- Initiatives, such as DRI and the Western Water & Weather initiative, can **contribute** to the development of GEOSS
- These initiatives can **benefit from** GEOSS (architecture and standards, access to other sources of data and information, partnerships, etc.)
- Development of a Federal Earth Observation Strategy is an important enabling step to develop a common vision and focus efforts for a future National Earth Observation Strategy
- We need **you** to be engaged and help implement Canadian and international GEO and develop GEOSS



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CGEO

Thank you

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Canada 