Atlantic Coastal Zone Information Steering Committee
Meeting #67
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Fredericton, NB

Canadian Coastal Climate Change Sensitivity, Risk and Adaptation Assessment

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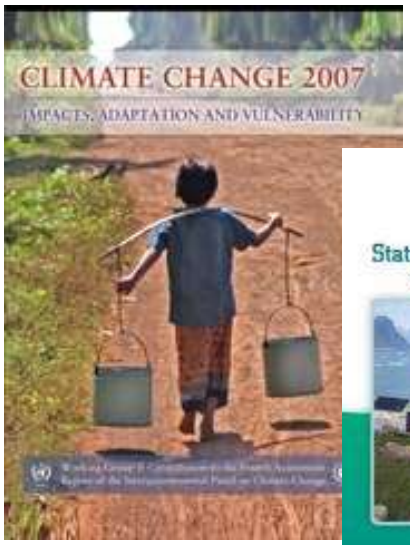
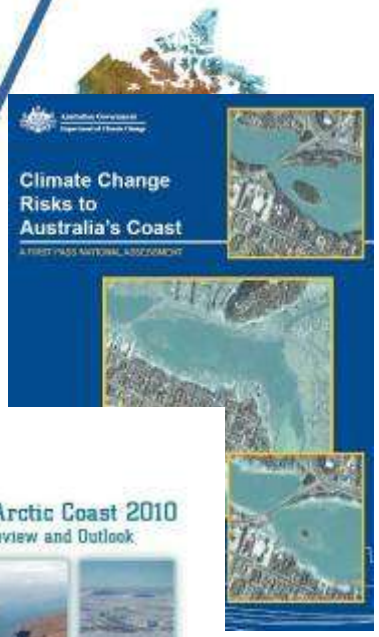
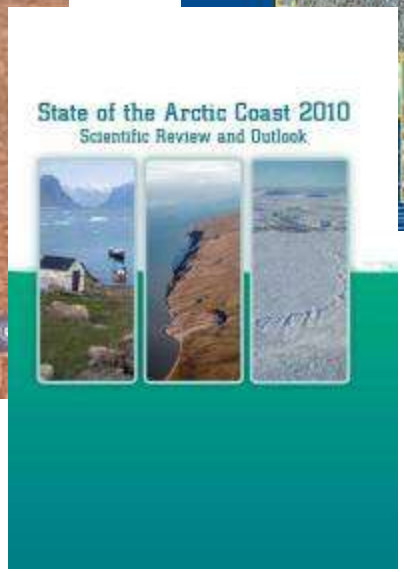
Outline

1. Science assessment - background
2. A marine coastal assessment – why and what
3. Some initial ideas – objectives and approach
4. Initial feedback from scoping workshop
5. Your input is needed

Science Assessments







Definition:

Collective, deliberative processes by which experts review, analyze, and synthesize scientific knowledge in response to users' information needs relevant to key questions, uncertainties, or decisions (NRCNA, 2007).

Science Assessments are:

Scientific reports
Critical analyses of knowledge
Focused on issues of concern
Intended to inform decision-making

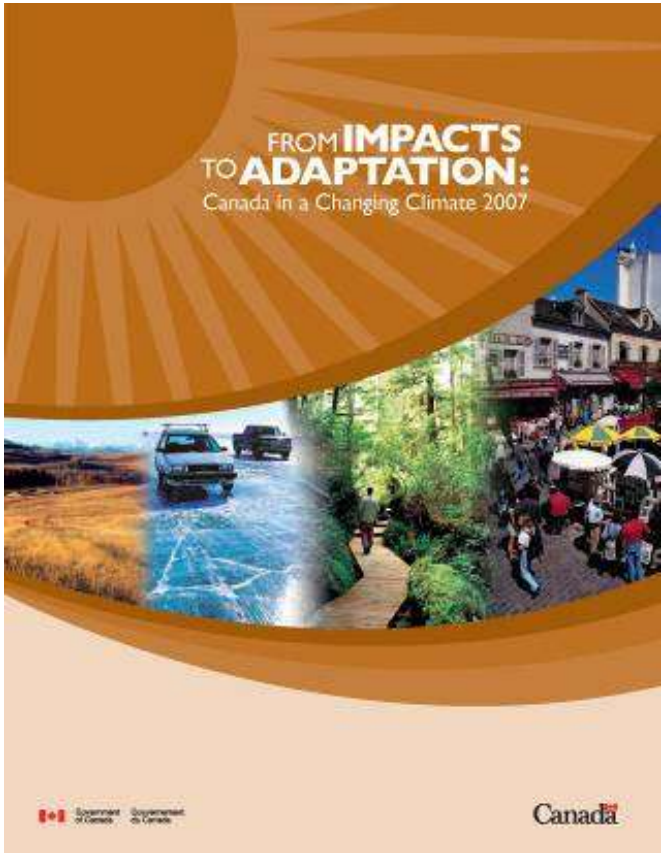
Science Assessment are not:

Policy, guidance or best practice documents
Literature reviews
Fully comprehensive reports
Intended to direct decision making

NRCan Science Assessments

2008 Assessment of Climate Change Impacts and Adaptation

- three year process
- regional analysis of existing knowledge
- 145 contributing authors
- over 3100 references cited
- reviewed by 110 experts from the scientific community and governments



Lessons learned:

- approach and structure depend on goals of the assessment
- stakeholders provide critical advice and serve as champions
- process can be as important as product

Starting point:

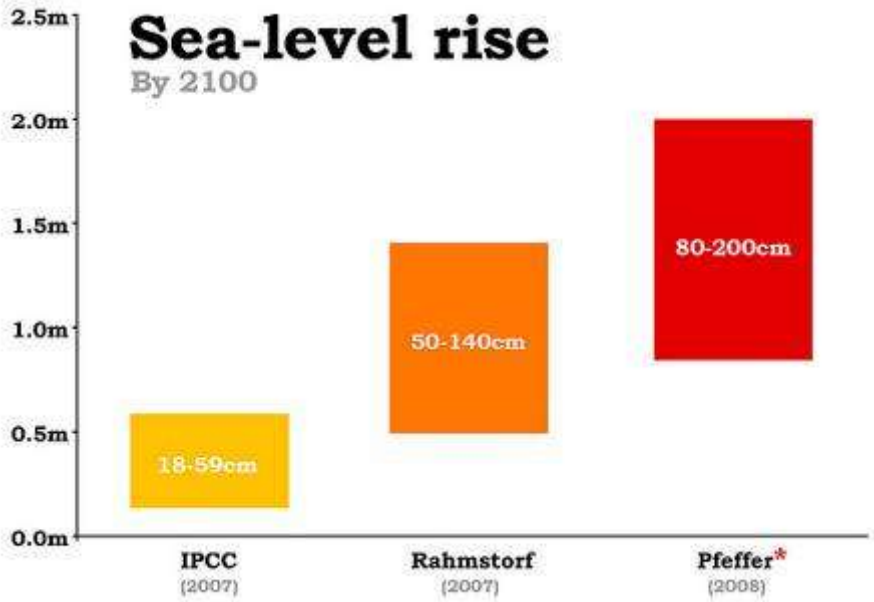
For any science assessment to be successful, it must be:

- Relevant
- Credible
- Integrative (provide added value)

Why an assessment of marine coasts?

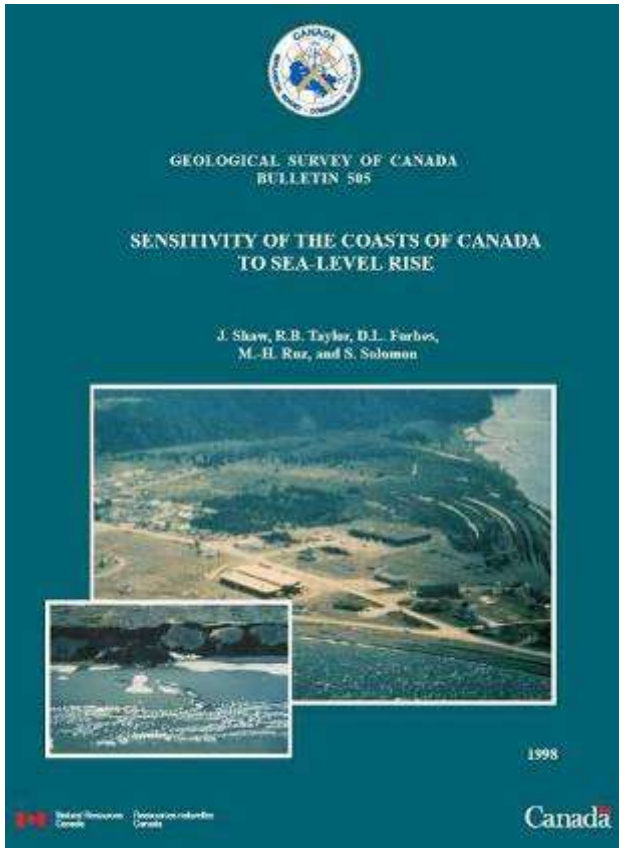
Many reasons, including:

1. Relevant to issues of economic, social and environmental importance at regional, national and global scales
2. Direction of many climate-related changes, especially sea level rise, well understood
3. Challenging – multiple impacts to consider / multidisciplinary analysis required
4. New estimates of global sea level rise in IPCC AR5 will draw attention to coastal issues



Many Sources of Information

- Extensive peer-reviewed literature related to climate change
- Even more related to relevant concepts such as resilience, disaster risk reduction, and emergency preparedness
- Growing body of grey literature –e.g., practical adaptation action
- Practitioner and local knowledge - needs to be presented with proper context
- Traditional knowledge increasingly captured in all of above sources



Emerging new analysis

New projections of sea level rise for Canada (consistent with global projections of IPCC AR5).

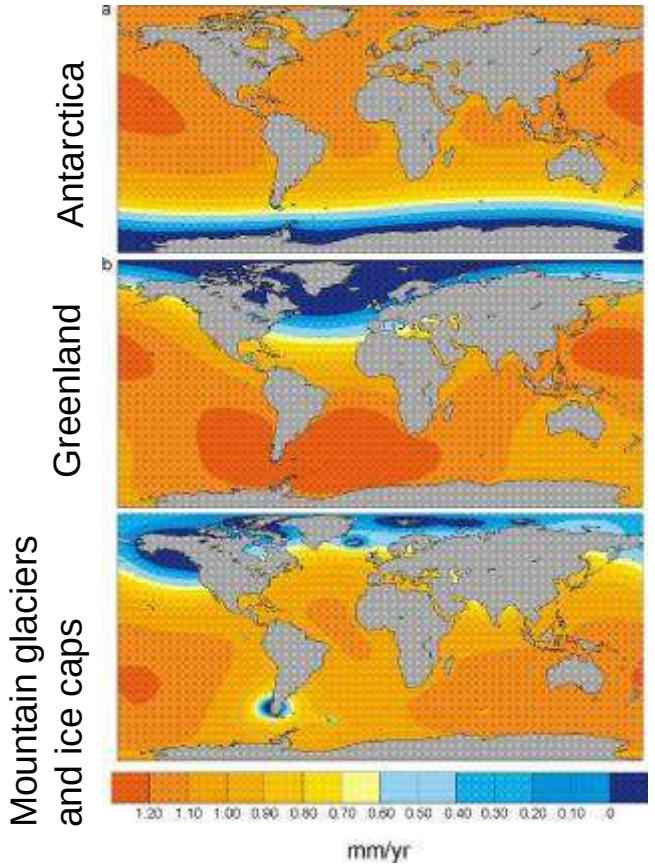
New projections will be improved by:

- better measurements of vertical crustal motion
- better understanding of glacial dynamic contributions

Goals:

- Projections for all of Canada
- Projections through time, not just 2100.
- Attempt to determine “most probable” amount of sea-level change.

Sea-level fingerprinting

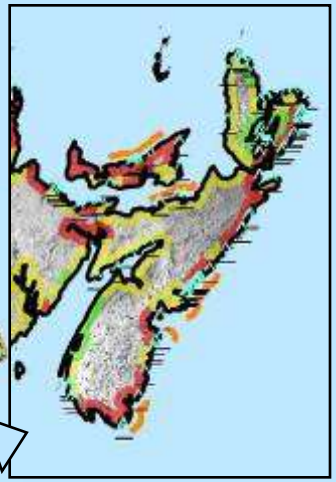


Opportunity to consolidate data as foundation for current and future analysis

GSC Coastal Survey Site
Research Focus Areas
Aerial Oblique Coastal Imagery
Arctic Coastal Dynamics Database
GSC Coastal Information System

Canadian Coastal Sensitivity to Sea Level Rise (Shaw et al. 1998)

Low Sensitivity
Medium Sensitivity
High Sensitivity



RADARSAT mosaic developed by Canada Centre for Remote Sensing and Canadian Space Agency ©

A starting point for discussion

Draft Goals of the Coastal Zone Assessment

- To illustrate, in a clear and understandable manner, the implications of climate-related changes, including sea level rise, on Canada's coastal communities, infrastructure, and ecosystems.
- To consolidate, and provide access to, biophysical and socioeconomic information relevant to adaptation decision-making in coastal areas.
- To highlight examples of successful, proactive adaptation actions.

Anticipated completion fall 2014

Draft Outline

Introductory

Executive Summary / Synthesis

1. Introduction – the national importance of coasts

2. Overview of Canada's marine coasts – including multiple drivers of change

3. Climate and climate-related impacts

Human Dimension

4 - 6. Regional chapters – Pacific, Atlantic, Arctic

- Characterization (biophysical and social / economic)
- Projected impacts (sea level rise, sea ice cover, storminess, etc.)
- Adaptation measures / practical experience
- Case studies

Concluding

7. Synthesis

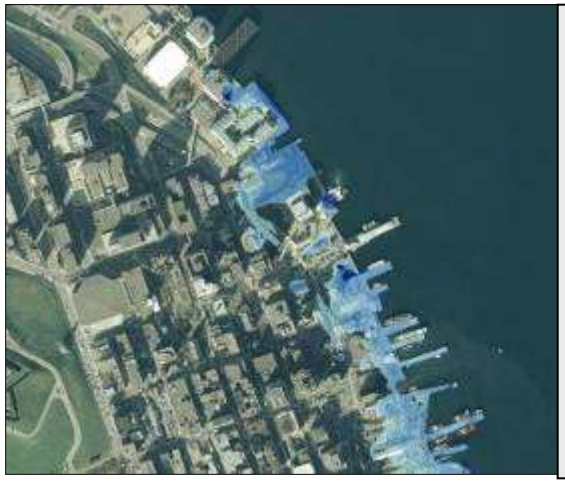
8. Conclusions

Some initial ideas

Case Studies

Opportunity to provide detail on “hotspots” and/or highlight examples of adaptation actions for:

- critical infrastructure
- communities
- ecological or cultural significance



Planning for Sea-level Rise in Halifax Harbour

• Interim measure: land use by-law prescribes that ground floor elevation in new development must be 2.5 m above the ordinary high-water mark
• Planners presently developing a comprehensive adaptation strategy

Relative sea-level rise 2000-2100	=	0.73 m above 2000 level (still water)
Add 1 in 50 year storm water level	=	1.74 m (tide plus storm surge)
Storm water level in 2100 relative to geodetic datum	=	2.67 ± 0.17 m
Add wave run-up	=	+1 to +2 m

(Forbes et al., 2009)

Players and roles

Natural Resources Canada - lead

Contributors from:

Other federal departments: Environment, Fisheries and Oceans, Transport, Parks, AANDC

Provincial and territorial governments, Academia, NGOs, and others

Roles include:

- advisory committee
- lead and contributing authors
- peer and government reviewers

March 2012 scoping workshop

Initial input sought from provinces and territories to better define policy drivers.

Discussion addressed:

- Approach
- Scope
- Sources of Information
- Participation
- Content
- Products

Workshop report available soon at nrcan.gc.ca/adaptation

Some conclusions of scoping workshop

Content

Assessment should take multi-disciplinary approach, and address drivers of biophysical change (e.g., SLR, storms, sea ice cover…), biophysical impacts (e.g., flooding, coastal change, species changes…) and socioeconomic impacts (e.g., critical infrastructure, health/quality of life etc.).

Adaptation should be addressed throughout report.

Products

- All assessment products need to be available on-line, with on-line versions to providing linkages to data and source studies.
- Secondary products, such as fact sheets and videos, will increase outreach and overall impact of the assessment.

Your input is needed!

- General questions
- Seeking specific input on:
  - 1 – Approach
  - 2 – Sources of Information
  - 3 – Products

Further information:

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