Managing Canada's Oceans & Coasts:

A Framework & an Emerging Plan

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A Framework

&

an Emerging Plan

But, shouldn't the title of this talk be:

"UNDERSTANDING CANADA'S OCEANS & COASTS

and managing the *people* and *activities*

that have an impact on

ocean space and the coastal zone" ?

O U T L I N E

I. ***Context: Oceans & Coasts Under Stress***

II. ***A Framework***

- The Importance of Scale
- The Commons

III. ***The Canadian Situation***

- Recent Events
  - The Canadian Framework
  - Moving to Action
  - The Arctic: A Particular Challenge

CONTEXT: Oceans & Coasts Under Stress

CONTEXT
Oceans & Coasts Under Stress

- Oceans activities are increasing in number, extent and impact
- Traditional activities such as the fishery and marine transportation have evolved significantly in scope over the last two decades
- Newer activities such as hydrocarbon production, marine recreation (including cruise ships), marine communications, and aquaculture have grown apace;

- Terrestrial activities and the burden they place on marine ecosystems (through urbanization, run–off, waste disposal, etc.) have a direct impact, particularly in the coastal zone

- The result of all these activities is **significant and growing conflict between ocean and coastal uses.**

- For example:
  - Hydrocarbon extraction structures (oil rigs) and pipelines can impact on navigation and marine species
  - Seismic activity can seriously affect marine mammals;

- Aquaculture introduces significant new element into the marine environment
- Cruise ships require a great deal of infrastructure and facilities, etc.;
- Land sources of pollution from extensive watersheds concentrate in the coastal zone
- Urban development blocks out the coastline;

- These conflicts often express themselves in the quality of the marine environment but they have significant and important economic, social and cultural implications

- In short, ocean space and the coastal zone are becoming crowded, and their sustainability is in doubt.

A Framework

- The Importance of Scale
- The Commons

THE IMPORTANCE OF SCALE
Large Ocean Management Areas

- Oceans issues vary greatly in scale
- Some are at the international / world levels and require significant international cooperation
  (e.g. UNCLOS / UNFA)
- Others are more “regional” in nature.

Where Lands Meet Water
The Coastal Zone/Estuaries

- The coastal zone and estuaries are the most intensively used and most prolific (until now) part of the ocean
- Over 60% of the world's population lives in the coastal zone (which is 18% of the globe's surface);

- The coastal ecosystems / physiography are in constant change through:
  - Waves, currents and erosion
  - Morphological process of land and sea
  - Wetland evolution
  - Impact of physical structures
  - Natural hazards (floods, tidal waves, storms)
  - Rising sea levels (global warming);

- The coastal zone is endangered because of:
  - Urbanization
  - Pollution
  - Eutrophication
  - Land reclamation
  - Over-fishing
  - Mining (sand and aggregates)
  - Dense-use tourism
  - Invasive species

- This makes the coastal zone and estuaries the most complex and dynamic part of the globe.

Communities
The Local Scale

- While many communities derive their economic base and social values directly or indirectly from the sea (fishery, transportation, communications, defence), the issues each face are shifting significantly

- As with oceans in general, new uses are competing and conflicting with traditional uses, e.g.:
  - The waterfront is being transformed by recreational activities (e.g. marinas vs. fishing ports) and tourism;

- Ill-conceived engineering structures (e.g. shoreline protection) compete with wetland preservation
- Access to the water is altered (reduced) by the gentrification of the shoreline
- Public rights compete with private allocations (e.g. aquaculture)
- The “local scale” is emerging as a key component of ocean management in addition to more macro challenges such as the Continental Shelf, large Ocean Management Areas (LOMAs), UNCLOS, etc.

- In some ways, the “local scale” is the most complex:
  - More activities
  - Many different views
  - Private vs. public rights
  - Multiplicity of jurisdictions
  - Multiplicity of interest groups (including First Nations);

- Ocean industries, particularly the high-tech knowledge-based segments, are typically SMEs who suffer a disconnect with the broader oceans universe

- The economic development / diversification potential for communities based on SMEs, is potentially high

- The challenge is to capitalize on, and promote sustainable aspects of new uses as a means of diversifying local area economics by shifting into knowledge-based activities.

Convergence Zones

- In certain critical geographical areas (Convergence Zones), all of the marine / ocean issues come together in a unique way
  - Placentia Bay
  - St.Lawrence (river, seaway, estuary)
  - Strait of Georgia, etc.
  - Gulf of Maine, etc.

- The Convergence Zones require particular attention.

The Commons

- Nature of common property
  - In-built negative incentives: the “tragedy of the commons”
  - Simple / complex issue
    - The commons are mobile (fish)
    - The commons are fluid (water / air)

- The pressure for ENCLOSURE / stabilisation
  - Jurisdictional containment
  - Rules of allocation;

- Simple/complex issue
  - Creates winners and losers
  - Can cause massive social dislocation
  - Rarely contains the whole of the problem.

- Conflict development
  - Within a “common property”
  - Between traditional and new uses

- Containment should allow rules-based allocation
  - Conflict avoidance
  - Conflict adjudication

- But how to deal with “free-riders”?
  - Enclosure is area-based and rarely coterminous with the resource (cf. “Nose and Tail” / straddling stocks)

Setting the Rules

- Need for a competent authority
- Knowledge base/understanding is critical
  - The resources
  - The interdependencies / linkages
  - The incentives;

- Science-based decision making should be increasingly pluri-disciplinary
  - Physical / natural sciences
  - Social sciences
  - Health sciences
  - Policy analysis
  - “Horizontality”
- This is the foundation of integrated management
  - IM without integrated knowledge is a vapid concept
- IM begins with dialogue based on knowledge

The Coastal Zone & The Commons
Where Land Meets Water

- Juxtaposition of different allocation systems
  - Land
  - Water
- And a hybrid
  - Water lots / seabed uses
- However, can land-based management techniques really be effective in the aquatic commons?

Scale & the Commons

Global

Oceanic

Regional / Mediterranean / Enclosed seas

LOMAs

OMAs

Local Areas & Inland Waters

The Coastal Zone

- Variation in Stakeholders / Jurisdictions
- Differing Complexity of Institutional Arrangements

Different scales require different management approaches & involve different players, <u>but</u> all scales are inter-related because of the commons

The Canadian Situation

- Canada's Recent Events
- The Canadian Framework
- Moving to Action
- The Arctic: A Particular Challenge

ARCTIC OCEAN
Canada
ATLANTIC OCEAN
PACIFIC OCEAN

Canada: Recent Events

- Canada's Oceans Act (1997)
- Canada's Oceans Strategy (2002)
- Canada's ratification of UNCLOS (Nov 2003)
- EU ratification of UNFA (straddling stocks) (Dec 2003)
- Speech from the Throne – Oceans Action Plan
- Budget 2004 – funding to develop UNCLOS evidence

- Budget 2005 – funding for the first phase of the *Oceans Action Plan*

- University Programs/Centres
  - OMRN; ARCTICNET, etc.
- Regional organizations.

The Canadian Framework
The Oceans Act

- *Canada's Oceans Act* (1997) incorporated the elements of Agenda 21 (UN "Earth Summit", Rio, 1992)
- *The Oceans Act* reflects provisions of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), including jurisdictional definitions (EEZ, contiguous zone, etc.)
- Principles:
  - Sustainable development
  - Integrated management
  - Precautionary approach.

- Objectives:
  - Understanding and protecting the marine environment;
  - Supporting sustainable economic opportunities / international leadership

- Instruments:
  - Science & research / oceanography / hydrography

  Safe navigation / pollution response (Canadian Coast Guard)
  marine protected areas
  - Marine environmental quality guidelines
  - Co-management regimes.

Canada's Oceans Strategy *(COS)*

- *The Oceans Strategy* (2003) is the government of Canada's policy statement for the management of estuary and marine ecosystems, to meet the objective of the *Oceans Act*
- Integrated Management and Planning based on sound science requires government coordination and stakeholder / community involvement

- Governance is a key issue, especially in a federal system where national provincial and municipal and aboriginal government and organizations have responsibilities.

Operationalization

- Many of the elements of a sensitive approach to sustainable coastal zones are in place
- The key question is how to operationalize them
- Hence the urgency of developing and implementing an *Action Plan.*

Moving to Action

Canada's Emerging Action Plan for Oceans & Coasts

I

The International Global Challenge

II

Health of the Oceans

III

Integrated Management (IM)

IV

Science Technology, Innovation & Commercialization

The International Global Challenge

- Canada's ratification of UNCLOS is a key driver; we can now be *at the table* in key institutions and for significant deliberations (e.g. Art. 76 & 82)

- It is now time to do the work required of us

- Important bilateral issues remain on all coasts
  - Canada-US
  - Canada-Denmark (Greenland)
  - Canada-Russia (Arctic / UNCLOS)
  - World and domestic security is a key driver;

- But what of the rest?
  - The high seas and the global commons
  - Global environmental phenomena (pollution / climate change)
  - Impact of the global economy (e.g. downstream and market aspects of the fishery)
  - Can Canada now regain its world leadership role in oceans affairs?

Health of the Oceans

What would the application of a "health care" model mean?

- Diagnosis → Science
- Treatment options → Integrated plan/ options
- Medication / surgery → Use of mngt instruments/ tools/regulations
- Convalescence → Allowing time to heal/ recovery
- Ongoing monitoring → Observation & monitoring

Maybe even "quarantine" for epidemics

- Each “patient” and each “health issue” requires a different “treatment” – but how can consistency be maintained?

- Is this in fact what the “ecosystems approach” is all about?

- Do we have the appropriate array of instruments & tools?

Integrated Management (IM)

- This is a fine idea – but what does it mean in practice?

- IM requires:
  - An integrated multi/trans-disciplinary knowledge base
  - A well-forged link between science and policy / decisions;

- Inter-institutional cooperation and leadership
- Clear rules and objectives
- Detailed ongoing monitoring
- The technology to do all of the above

- It is urgent that some early examples of IM be developed through focused demonstration projects (e.g. Placentia Bay / Showcase St.Lawrence).

Science, Technology, Innovation & Commercialization

- Science is a key to all of the pillars

- Emerging technology enables progress on each, and is driven by them:
  - Knowledge base / science
  - Observation and monitoring (from space / in situ)
  - Habitat analysis (e.g. multi-beam swath bathymetry)
  - Human impacts (environment/urbanization)
  - Monitoring
  - Remediation;

- Which technologies are the most promising / the most needed?

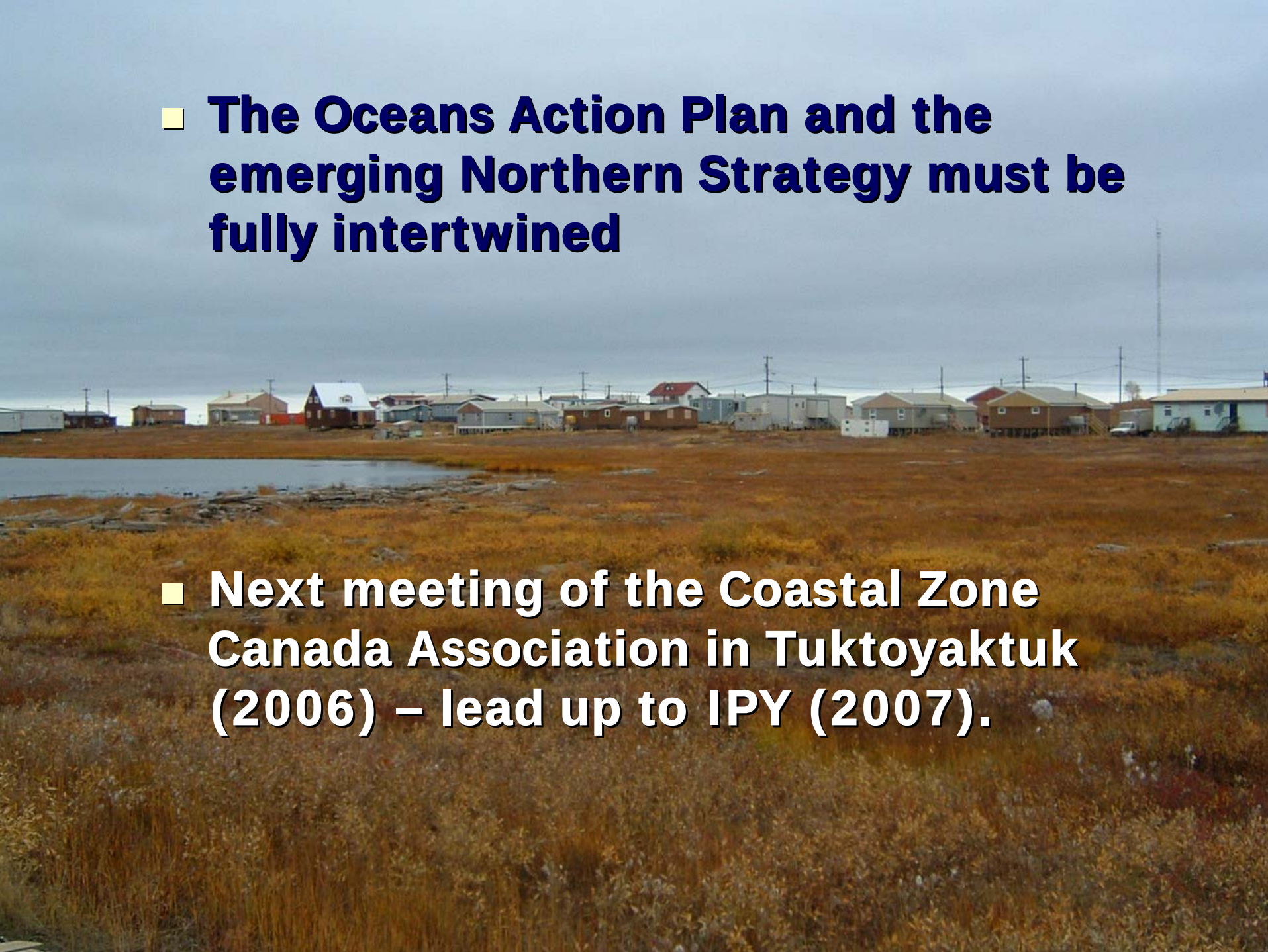
- How can innovation lead to commercialization?
  - SME development
  - New markets
  - Economic development opportunities in coastal communities.

THE ARCTIC
A Particular Challenge for Canada

- **All of the issues described today apply in varying ways to all of our three coasts**

- The Arctic Ocean and coastal zone is under particular stress
  - Climate change impact on ice conditions, permafrost, flora & fauna and the way of life
  - Coastal erosion and changing marine habitat
  - Increasing potential access and use
  - Resource development / transportation
  - Geopolitical interests
  - “Claims” to an enclosed sea (UNCLOS);

- While there has been an increase in the amount of attention (Arcticnet, etc), is this enough?



- **The Oceans Action Plan and the emerging Northern Strategy must be fully intertwined**

- **Next meeting of the Coastal Zone Canada Association in Tuktoyaktuk (2006) – lead up to IPY (2007).**

Canada