

# COASTAL ACTIVITIES IN ATLANTIC CANADA

## Roundtable and Presentation

### ACZISC Meeting #45

Date: Wednesday and Thursday, 18-19 May 2005

Location: Rodd Charlottetown Hotel  
Charlottetown, Prince Edward Island

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#### **PARTICIPANTS** (<sup>1</sup> ACZISC member; <sup>2</sup> Advisory Committee member; <sup>3</sup> Director, ACZISC Association)

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***PLEASE NOTE: "Coastal Activities in Atlantic Canada" is a subset of the Minutes of ACZISC Meeting #45, held on 18-19 May 2005 in Charlottetown, Prince Edward Island.***

**To download the minutes and previous Coastal Activity reports, access the ACZISC website at <http://aczisc.dal.ca/docs.htm>.**

# **COASTAL ACTIVITIES IN ATLANTIC CANADA**

## **ROUNDTABLE REVIEW OF COASTAL ACTIVITIES and UPDATES ON ACZISC RELATED PROGRAMS**

**GOVERNMENT OF NOVA SCOTIA:** Justin Huston, Agriculture and Fisheries, reported the following:

- A celebration of World Oceans Day will be held on 8 June at the wharves behind the Maritime Museum of the Atlantic in Halifax. The event, featuring interactive, educational exhibits and displays, a live touch tank, demonstrations, etc, is being organized by several federal and provincial departments, environmental organizations, and industry. Anyone wanting to set up a booth should contact Justin – [hustonje@gov.ns.ca](mailto:hustonje@gov.ns.ca).
- A lighthouse divestiture policy for NS was submitted to Cabinet for review last week.
- The Coastal Coalition of Nova Scotia (<http://ccns.chebucto.org>) is a new NGO dedicated to the preservation, restoration and sustainable use of the Province's coastal ecosystems. The Coalition organized a Workshop in November in Cornwallis Park to examine coastal planning, legislation pertaining to coastal development, and opportunities to develop a coastal management policy for NS. More workshops will be organized to identify common interests. The Coalition is currently working on a Statement of Provincial Interest and a coastal management strategy. Efforts are being made to engage municipalities.

Dave Cody, Service Nova Scotia and Municipal Affairs, reported the following:

- Several updated web services and new links are available through the GeoNova website (<http://www.geonova.ca>), including version two of the Coordinate Transformation Web Service.
- GeoBase is a web portal that provides access to framework geospatial data at no cost to users. Nova Scotia is involved in GeoBase standards with NRCan's Centre for Topographic Information in Sherbrooke, QC. The NS Geomatics Centre is converting the NS Topographic Database (NSTDB) to the new federal standards for roads and water. Updating of 285 1:10,000 files is well underway for Pictou, Antigonish and Guysborough using softcopy photogrammetry. Photogrammetric updating of the 340 files for Cape Breton Island is scheduled to begin in the fall
- Orthophotos for these areas should be available as a by-product of the softcopy process
- Large-scale orthophoto work will be undertaken for several areas this year (Pictou and Yarmouth).
- Scanning the 1:10,000 colour photography is proceeding well. About 1/3 of the Province (Cumberland, Colchester, Hants, Halifax, Kings and northern Annapolis and Lunenburg) is complete. The remainder should be done by April 2006
- A new Coordinate Referencing Policy for the Province is currently being drafted. It is hoped to have stakeholder approval by April 2006
- The 1:50,000 Nova Scotia Coastal Map series can be purchased online at <http://www.gov.ns.ca/snsmr/maps>.

**GOVERNMENT OF NEWFOUNDLAND AND LABRADOR:** Darren Hicks, Natural Resources, reported the following:

- DNR continues to be engaged in the Grand Banks Integrated Management (GBIM) initiative with DFO Newfoundland Region. The Grand Banks/Placentia Bay is one of 5 Large Ocean Management Areas (LOMAs) identified under the Oceans Action Plan
- Darren attended the 3<sup>rd</sup> ESSIM Forum in February and continues to participate in the ESSIM Working Group.
- The Province and the Federal Government recently signed an MOU to work together to address climate change. The two governments have identified priority areas in which they can build partnerships and ensure a consistent, coordinated approach in their actions and

initiatives on climate change. There will be some action that relates to coastal sensitivities, fisheries, watershed management, etc. For information refer to the press release at <http://www.releases.gov.nl.ca/releases/2005/env/0429n01.htm>.

- Work on the seismic code of practice is in its final stages. This will be a benefit for numerous users of ocean resources.

Darren reported the following on behalf of Ken Dominie, Department of Environment and Conservation (DEC):

- DEC is working closely with DFO Newfoundland Region on Placentia Bay and the Smart Bay concept.
- Tom Osborne, the DEC Minister, made a presentation to the Senate on the review and amendment to Bill C-15. The news release and presentation were distributed; they are available at <http://www.releases.gov.nl.ca/releases/2005/env/0420n09.htm>.

**GOVERNMENT OF PRINCE EDWARD ISLAND:** Gerald MacDougall, Environment, Energy and Forestry, reported that he was acting as the provincial Climate Change Coordinator, replacing Erin Swansburg who is on leave. PEI has completed a 'A Climate Change Strategy for PEI' and is now developing a Climate Change / Sea-Level Rise Project.

**NATURAL RESOURCES CANADA:** Dolores Durant, GeoConnections Secretariat, reported the following:

- The 100<sup>th</sup> anniversary celebration of the Atlas of Canada will take place in 2006. It will feature a number of activities, including a large meeting in Ottawa during the week of 18 June of most of the Canadian geographic associations. Current plans include publishing a set of 1-2 dozen Atlas reference maps in pdf and jpg formats that will show major social and physical themes of Canada, e.g., mother tongue, population, the state of the Confederation in 1867, 1905, 1949, and 1999, and geology. A commemorative stamp may be issued.
- The GeoConnections Discovery Portal will be releasing version 4 in two months. The new version will have a 'cleaner' look and will be faster.
- Phase 1 of the GeoConnections program ended on 31 March; monies have been paid and final reports have been submitted. Some partnerships will continue into Phase 2, e.g., with Nova Scotia/GeoNova, Newfoundland and Labrador, EC and DFO.
- NRCAN will continue to support the Canadian Geospatial Data Infrastructure and its vision - collect the data once, hold it closest to source, make it accessible and use it many times.
- The latest federal budget (February 2005) has identified funding for the 2<sup>nd</sup> phase of the GeoConnections program - \$60 million over 5 years. Phase 2 will continue the work of Phase 1 and support decision-making on a broader range of issues, particularly the environment, sustainable development, health, public safety and issues of importance to Aboriginal people. Negotiations with Treasury Board on the specifics of spending the funds have been completed. It is anticipated that the new program will be launched by late summer/early fall. New funding opportunities will be announced in the GeoConnections website (<http://www.geoconnections.org>) and the monthly electronic newsletter.
- A new Atlas Framework layer at 1:1,000,000 is being developed and will be released as a web map/feature service. An agreement has been reached with the Province of NL to include their data. Anyone who has digital data that they would like included should contact Dolores. The layer will include digital delineations of coastal and undersea physical features. The coastal features are expected to be available by the fall of 2005.

Kathryn Parlee, C-CIARN Coastal Zone Sector, reported the following:

- The monthly C-CIARN Coastal Zone Newsletter outlines current coastal research projects in Canada and provides brief updates on recent coastal or climate change issues, funding announcements, upcoming events, etc. The newsletter is available on the C-CIARN Coastal Zone website at <http://c-ciarn.bio.ns.ca>. To be added to the distribution list, email [kaparlee@nrcan.qc.ca](mailto:kaparlee@nrcan.qc.ca).

- C-CIARN and the Climate Change Impacts and Adaptation Program (CCIAP) recently co-hosted the national conference 'Adapting to Climate Change in Canada 2005: Understanding Risks and Building Capacity' from 4-7 May 2005 in Montréal, Québec. The workshop was attended by over 300 participants. Conference information is available at [http://adaptation2005.ca/home\\_e.html](http://adaptation2005.ca/home_e.html). Presentations and a conference summary will be available shortly.
- C-CIARN Coastal Zone has provided assistance with identifying and developing collaborative research teams, as well as reviewing draft Letters of Intent and Proposals for the CCIAP funding calls 'Coastal Zone and Communities'.

Bob Taylor added that one of the activities of C-CIARN is to organize workshops to disseminate information on topics of relevance to climate impacts and adaptation. Suggestions are welcome.

Gordon Isaacs, Geomatics Canada, reported the following:

- The 4<sup>th</sup> Indian and Northern Affairs Canada (INAC) National Geomatics Workshop is scheduled for 1-2 June in Sydney, NS - [http://www.ainc-inac.gc.ca/at/geo\\_e.html](http://www.ainc-inac.gc.ca/at/geo_e.html).
- The Legal Surveys Division of Geomatics Canada will become the Canada Centre for Cadastral Management.
- The Surveyor General of Canada Lands has prepared a White Paper titled 'Marine Cadastre in Canada's Offshore'. The paper is intended to develop awareness among NRCan's senior managers about the role of cadastral systems in the context of good governance and sustainable development and to promote its relevance. It is also intended to identify an Earth Science Sector strategy for promoting, developing and implementing a marine cadastre concept for Canada.
- The University of New Brunswick has also prepared a paper for the Association of Canada Land Surveyors titled 'Marine Cadastre: The Basis for Understanding the Use and Governance of Oceans Spaces'. The paper outlines the basic needs for a marine cadastre, including:
  - Clarifying jurisdictional complexities in Canada's coastal zones and offshore
  - The need for co-management
  - Implementation of the Oceans Act
  - Regulation of pipelines and submarine cables
  - Preventing and resolving flash point issues.

Bob Taylor, Geological Survey of Canada – Atlantic, reported the following:

- The GSCA continues to participate in the Southeast NB sea level project by monitoring shoreline changes at select sites and the redeployment in 2005 of two wave gauges in the Northumberland Strait. In addition, shore surveys are continuing to assess the impact of the 27 December 2004 storm surge on shoreline stability along the Northumberland Strait and the north shore of PEI.
- Bernard Long of Laval University and Geoide is trying to bring in an airborne Lidar system with the capability to measure topography in both terrestrial and marine areas. His areas of interest are the shores of Gaspé and les Iles de la Madeleine. There may be opportunity for others such as the GSC to join forces and carry out some Lidar surveys in NB.
- Multibeam bathymetric surveys and associated maps have been completed for the Canso Strait (R. Parrott), the Bras d'Or Lakes (J. Shaw), and more surveys are continuing off Southwest NS in an onshore-offshore bedrock mapping exercise (B. Todd). Approximately 25,000 sq km of multibeam data have been collected for habitat mapping across German, Brown and George's banks. Multibeam mapping is planned in 2005 (G. Sonnichsen) offshore of Cape Harrison, Labrador, in collaboration with the CHS.
- New activities under the GSC Geoscience for Ocean Management Program include the investigation of the marine geology of the St. Lawrence Estuary (in collaboration with DFO) and Placentia/Argentia, NL.
- Geochemical investigations under the MITE (Metals in the Environment) program are

continuing in the Sherbrooke area near an old mine tailings site to establish any effects on the marine environment.

- The Canadian Coastal Conference will be held on 6-9 November 2005 at the Harbourview Holiday Inn in Dartmouth, NS. A special workshop focusing on nearshore processes and future directions for research has attracted a large number of international participants. Several of the presentations will deal with the Atlantic region and there will be a special tsunami session. For information, access <http://www.ccc2005-ccl2005.ca>.

**ENVIRONMENT CANADA:** Larry Hildebrand, Sustainable Communities and Ecosystems Division, reported the following:

- **Federal-Provincial Sustainability Agreement:** Under EC's new Competitiveness and Sustainability Framework (CESF), EC and the four provincial Environment departments in Atlantic Canada will be negotiating an MOU under this theme. Among several areas of cooperation is the intent to coordinate and improve monitoring, data sharing, and information management for environmental issues of provincial, regional, national and international concern. This information will help improve policy development, performance measurement (outcomes!), reporting and accountability. The ACZISC may be well positioned to play a central role in the realization of this goal.
- **Moving Forward on Climate Change:** On 13 April 2005, the Government of Canada released its revised climate change plan, *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*. This is the 1<sup>st</sup> phase of Project Green, the Government's national project to create a healthier environment and a stronger economy and ultimately to build a more sustainable future. Canada's target under the Kyoto Protocol is to reduce its annual GHG (Greenhouse Gas) emissions over the period 2008-2012 to a level 6% below its actual emissions in 1990 - the most challenging GHG emissions-reduction target among the 141 Kyoto signatories.
- **Canadian Assistance in Post-Tsunami Thailand:** In January 2005, two weeks after the Boxing Day earthquake and resultant tsunami in the Indian Ocean, a 3-member Canadian team, including Larry, was sent to the hardest-hit areas in southern Thailand to conduct a coastal needs assessment and to recommend areas for Canadian technical assistance. Recommendations were developed for follow up and CIDA has committed to financial assistance in this regard. CIDA has approached EC to lead the follow-up which will focus on training in ICOM, community re-development, aquaculture development assistance and, potentially, remote sensing and GIS. The overall theme will be the sustainable re-development of the coastal zone of Thailand. Further details on specific project activities and opportunities for federal, provincial, academic and private sector members will be reported through the ACZISC.

Norval Collins enquired if there would be opportunities for private sector involvement in the Canadian tsunami assistance program in Thailand. Larry responded that there would be.

Réal Daigle, Meteorological Service of Canada, reported the following:

- The NB Sea Level Rise Project has entered its final phase with a Final Report due at the end of the fiscal year. A large portion of the remaining activity will concentrate on the preparation of the report. Individual components will be published in the NRCan Open File system.
- Within the context of the MSC restructure, all regional weather and environmental forecasting services are now provided through the new Atlantic Storm Prediction Centre (ASPC) in Dartmouth.
- The ASPC is moving into a new space on the 3<sup>rd</sup> floor of Queen Square, which will be equipped with the latest high-tech tools. Forecasting will be further automated this summer through the implementation of a system that allows weather forecast products to be generated automatically through a meteorologist-enhanced weather element database. This database will subsequently become available to private weather forecasting firms to generate their own client-specific forecasting products, e.g., the Weather Network.

- The MSC is currently staffing a Weather Preparedness Meteorologist (WPM) position in Charlottetown. It is expected that the person will be in place by the end of the summer. The WPM will focus on outreach activities in PEI.

**FISHERIES AND OCEANS CANADA:** Richard Eisner, DFO Maritimes Region, Science, Innovation Office, reported the following:

- National Science Data Management Committee: DFO will focus its functions in six areas: Monitoring, Data Management, Targeted Research, Advice, Products and Management. The review of the data management functions by the Committee will include the state of data archives, the management of non-numerical assets, and data and information accessibility.
- Science Reductions and Refocus: DFO will focus its analytical laboratories in two locations in the Pacific and Québec Regions. The Maritimes Region will be a centre of expertise for oil and gas environmental research that will include laboratories for hydrocarbon research.
- DFO Maritimes has reorganized into four main divisions: Population Ecology, Ecosystem, CHS and Oceans Sciences. The main reason for the reorganization is the new focus on multi-species research rather than on single species research.

Joe Arbour, DFO Maritimes Region, Oceans and Habitat, reported the following:

- DFO released the first draft of an Integrated Management (IM) plan for the ESSIM initiative at the ESSIM Forum Workshop held in February of 2005. This draft represents the first IM Plan under the Oceans Act to be developed in Canada. It is out for public review until October. As part of the preparation for moving the plan forward DFO is in the process of establishing a senior level steering committee to oversee the delivery of initiatives such as ESSIM as part of the Oceans Action Plan. It is hoped to have the committee in place over the summer.
- The Oceans and Coastal Management Division (OCMD) has completed the electronic Ocean Use Atlas for the Scotian Shelf. This Atlas will also be produced as a limited number of hard copies. It includes over 50 layers depicting ocean uses occurring in the Scotian Shelf area.
- Ecosystem Overviews are being completed for the Scotian Shelf and Bras d'Or Lakes. These overviews provide a synopsis of the ecological characteristics of the area and an assessment of the ecosystem dynamics, stressors and responses within the system.
- The Musquash Estuary continues to progress towards Marine Protected Area status. It is hoped that the process will culminate in designation of this important area sometime in the fall of 2005.
- DFO Maritimes region recently received a visit from the EU Fisheries Commissioner. Commissioner Borg spent two days talking with DFO managers at BIO to discuss Canada's approach to Oceans Management, and our experiences in ESSIM and the Gully.

Dale Nicholson, Canadian Hydrographic Service - Atlantic, reported on the following:

- Planned publications in 2005/2006: new charts; new editions of existing charts; chart update patches; and sailing directions diagrams.
- Planned field activities in 2005/2006 (refer to Appendix 1 for details):
  - Oceans Action Plan: 50 survey days in the Gulf of St. Lawrence, in cooperation with NRCan.
  - Law of the Sea Baselines: Investigate rocks, landfalls, etc. on an opportunity basis to improve existing baseline coverage. Tenders for offshore surveys pending.
  - National Initiatives Fund - Search and Rescue Labrador: Tide gauge data for various locations and a multibeam corridor survey.
  - Revisory Surveys: Various locations, primarily in Newfoundland and Labrador
  - Newfoundland and Labrador Cost Recovery Surveys (resources permitting)
  - Notre Dame Bay Charting Advisory Committee: Conduct survey investigations on an opportunity basis

- Hydrographic Information Network: This project involves the management of bathymetric data in the CHS Source Database, all other data of hydrographic significance (points, lines and areas) in the CARIS Hydrographic Production Database, and all metadata in the CHS meta-database, named CHSDIR. The first product, an Electronic Navigational Chart for Bedford Basin, will be published from this system in the summer of 2005.
- Tides and Water Levels Activities: The tsunami of December 2004 has highlighted the need for improved warning and tidal information throughout the world. CHS currently maintains a Pacific Region tsunami warning station. Proposals, and resulting resources, are being directed towards improving Canada's tides and water levels information systems.
- Canada/NDI Agreement: On 4 January 2005, the Department of Fisheries and Oceans (DFO) sent a letter to NDI, terminating the Canada/NDI Agreement, effective 4 February 2005. On 2 February 2005, NDI filed a notice of intention to file a bankruptcy proposal in the Supreme Court of Newfoundland and Labrador (Trial Division) (in Bankruptcy and Insolvency). On 3 February 2005, NDI filed a statement of claim in the Federal Court against DFO for damages in the amount of \$109 million, plus \$5 million in punitive damages with regard to the termination of the Canada/NDI Agreement. For further information on this issue, access <http://www.cartes.gc.ca/chs/en/help/chsndi.asp>.
- Canadian Hydrographic Conference 2006: CHS Atlantic will host the next International Hydrographic Conference to be held in Halifax in June 2006.

John Legault, DFO Gulf Region, Oceans and Habitat, reported the following:

- Vessel Monitoring Systems: 'Little black boxes' have been installed on crab fishing boats in the Gulf Region for the first time. Uses include protection and research. The VMS will be tested on the crab fleet initially and, if successful, the program will be expanded to the other fishing fleets.
- Integrated Management: The GOSLIM (Gulf of St. Lawrence Integrated Management) initiative soon may be announced publicly, with funding made available through the Oceans Action Plan. The initial focus will be on engaging stakeholders both internally within the Department and externally, and the publication of a background document, system overview reports and environmental assessments.
- Bay by Bay initiative: A shellfish planning project has been *underway* for over a year in collaboration with the NB Department of Agriculture, Fisheries and Aquaculture. The objective is to develop a proactive plan for aquaculture siting and capacity and conflict avoidance for commercial production of shellfish on the east coast of NB. Two pilot areas have been selected: Richibucto and Tabusintac.
- MPAs: The Basin Head Area of Interest continues to progress towards Marine Protected Area status, as with the Musquash Estuary site. It is hoped that MPA designation for Basin Head will be announced by the fall of 2005.

Dale Nicholson asked if the VMS is voluntary or a legal requirement. John stated that he didn't know and that he would check. (**Note**: Chris Morry has subsequently reported that DFO Conservation and Protection indicates that VMS is now a legal requirement. Vessel captains can be charged if they leave port without it operating. Overflights continue and if a vessel spotted visually doesn't appear on the screen where the locators are tracked they are charged.

Chris Morry, DFO Gulf Region, Oceans and Habitat, reported the following:

- One new project of note is the proposed 'Ecosystem Overview and Assessment of the Northumberland Strait'. This was initially brought about by fishermen's concerns that environmental perturbations, particularly relating to the construction of the Confederation Bridge, may be at least partially the cause of steep declines in landings in several fisheries. The project scope has been broadened to include the entire Northumberland Strait. The intention is to involve all government agencies concerned and all stakeholders in a process to gather new data where historical information is not available. The project could lead to a form of Integrated Management for this geographic region, possibly defined as a 'Coastal Management Area' in the terminology of the Oceans Action Plan.

- For the purpose of adding content to the latest iteration of coastal and oceans educational material, circulated on CDs to schools throughout the Gulf Region, contact Jim Weldon at tel 506-851-321.

**INDUSTRY CANADA:** Mike Sheen, Sustainable Technologies and Services Industries, reported the following:

- While preparing an internal report on Geomatics and Sustainable Development for the Sustainable Technologies and Service Industries Branch, a number of questions arose with respect to growing the Canadian geomatics industry.
- In collaboration with NRCan and the Geomatics Industry Association of Canada (GIAC), IC is participating in a series of geomatics workshops being held nationwide. Mike and a colleague from western Canada make a short presentation and then ask participants to share their views with respect to the following:
  - Canada is recognized internationally for its geomatics capabilities, so why is it not winning a larger share of geomatics projects in foreign markets?
  - Canadian governments assist the development of technical expertise in this sector. Should they be doing more to foster competitiveness and industry development? Do you think industry development strategies that bring partners together at the regional level would be a good idea?
- An overview document distributed at the workshops is attached (refer to Appendix 2).

**PUBLIC WORKS AND GOVERNMENT SERVICES CANADA:** Barry Wagner reported the following:

- From a national perspective, PWGSC is going through a transformation process called 'The Way Forward'. This is a wide-ranging initiative to modernize government by improving management, ethics and accountability and saving money to reallocate to higher priorities, including a new deal for communities and the environment.
- PWGSC are helping to lead the Government's sustainable development agenda, by buying environmentally sound products and services and improving the energy efficiency of government buildings.
- In the Atlantic Region, the Business Geographics and Geographic Information Systems section (GIS) of Real Property Geomatics is continuing to provide GIS technology in support of internal and other government departments programs. Projects include business and real estate support, harbour management and environmental assessment and remediation.
- Business Geographic projects based on MapInfo are being used for real property decision making, in support of site selection studies, divestiture strategies, land claim negotiations, addition to Reserves, ministerial inquiries, homelessness initiatives and the management of real property inventory. Projects range from adhoc requests to national initiatives.
- A CARIS-based GIS utilized for Harbour Management has been providing support for over 14 years to the Canadian Coast Guard, Waterways Section. It is a tool to manage hydrographic surveys, buoys, notices to shipping and mariners, construction contracts and spatial mapping information.
- Web-base mapping products have been developed to meet the specific requirements of project management. DFO's Small Craft Harbours Directorate and PWGSC share a website providing aerial mapping of their sites in the Maritime Region. The Sydney Tar Ponds environmental remediation project has a dedicated website running on Autocad MapGuide that is available to all stakeholders. It provides the capability to analyze and query, utilizing its extensive mapping, aerial photography and environmental sampling data. The Argentia environmental remediation project has an ARC MIS based GIS application to assist in the management of site clean up and the subsequent disposal of the property.
- Digital Contingency Plans are being maintained for the Confederation Bridge, Harbours and Ports sites and Transport Canada Airports.

- The future direction and role that Real Property Geomatics will be playing in PWGSC is being reviewed within the framework of 'The Way Forward'. A more clear direction will be provided in 2, 5 and 10-year time frames, in coordination with the implementation of new initiatives within the Department.

**ATLANTIC CANADA OPPORTUNITIES AGENCY:** Don Hogan, ACOA NL, reported the following:

- Ocean Technology Thematic Workshops: Federal regional agencies, the National Research Council and Industry Canada have agreed to undertake a series of Thematic Workshops focused on ocean technologies. ACOA has approached the Canadian Centre for Fisheries Innovation (CCFI) located at the Marine Institute (MUN) about hosting its Thematic Workshop on Technologies in Support of Biomass Measurement and Monitoring. This workshop will be one of 3 or 4 such workshops aimed at identifying priority ocean technologies that the Government of Canada, universities and industry should be focusing development efforts on as Canada moves towards improved oceans management. Western Diversification (WD) will be hosting a 'Port Security' workshop, while the National Research Council (NRC) is planning an 'Arctic Environment' workshop. Canada Economic Development Québec (CED-Q) is considering a workshop on 'Marine Navigation'. The ACOA and WD workshops are provisionally scheduled for the fall of 2005. Details will be provided to the ACZISC upon determination of exact times/locations.
- OceansAdvance: The NL ocean technology association was established 3 years ago by the NRC Institute of Ocean Technology in St. John's. It is in the process of building a case for a Northwestern Atlantic Ocean Observatory focusing on Marine Life. Planning is underway to host a Living Resource Forum with guests from Conservation International, the Census of Marine Life, plus other international ocean research organizations.
- Oceans Action Plan: The OAP Treasury Board submission should be signed off by Ministers in June or early July. Due to limited funding, the proposed Ocean Technology Solutions Fund was dropped and the Networks of Networks initiative is only receiving \$200,000 over two years - much less than the \$2M requested. The Placentia Bay Technology Demonstration Project will receive \$2M from the OAP, which will flow through ACOA NL. The Canadian Centre for Marine Communications (CCMC) will serve as project coordinator for this 2-year project aimed at demonstrating Canadian ocean technologies in support of integrated oceans management.

**COMMUNITY ORGANIZATIONS:** David Boyce, Southeast Environmental Association, reported the following:

- Biomonitoring: Many community groups across the region are involved in biomonitoring programs. These include DFO's Community Aquatic Monitoring Program (CAMP) which involves beach seining in estuaries; the Canadian Aquatic Biomonitoring Network (CABIN) which looks at benthic macro-invertebrates in freshwater; and a new program to expand CABIN monitoring in estuaries.
- Atlantic Coastal Action Program: The ACAP groups met on 21 April with the DM for Environment Canada who spoke about the Department's new direction and the 'new' industrial revolution. This involves making companies more sustainable to improve Canada's efforts internationally. ACAP is developing a results-based management accountability framework (RMAF) for its program. Each ACAP group will also develop an RMAF based on its priorities. Many of the ACAP groups have been involved in international work to support the development of coastal community groups in Thailand and Uruguay.
- ResEau: All of the ACAP groups will be putting their water quality and water quantity information in this water network, a web-based GIS application. The information will be registered in the CGDI and will be shared with other data providers, including the Province of PEI.
- On-site Sewage: In April, ACAP and the Southern Gulf of St. Lawrence Coalition on Sustainability sponsored a workshop on on-site sewage in Montague. The workshop

committee will continue to maintain momentum going on this topic. The workshop website has been transformed into an information source re on-site sewage treatment – <http://www.seapei.ca/onsite>.

- **Artificial Reefs:** SEA is working with the Bedeque Bay Environmental Management Association (BBEMA), its sister ACAP group on PEI, to study placing artificial reefs along the Northumberland Strait to create more habitat for lobsters and other fish. This could also involve groups from NB and NS. Community meetings on the topic may be held in the fall.
- **Oil Spill Committee:** The Maritime Regional Advisory Committee on Oil Spills is chaired by Transport Canada. To date the Committee's mandate has been focused on responding to regulatory concerns but the Committee wants to expand its mandate to address issues on a more proactive basis, e.g., abandoned vessels. The Committee is seeking ways to communicate with the public and get feedback regarding the derelict ship in Cape Tormentine which has broken free of its moorings.

**SOUTHERN GULF OF ST. LAWRENCE COALITION ON SUSTAINABILITY:** Nadine Gauvin reported the following:

- The Coalition AGM was held in Montague, PEI on April 23 in conjunction with the 'On-Site Sewage Treatment' workshop. The 2006 AGM will be held at a location in northern NB; the associated workshop will be on the topic of 'Sustainable Energy'.
- Following this year's AGM, the Management Committee members of both the Bay of Fundy Ecosystem Partnership (BoFEP) and the Coalition met to discuss how they could work more closely together. It was suggested that a joint workshop be organized in the coming year on an issue of common interest.
- The Coalition, in partnership with the First Nation of Gespeg (near Gaspé, QC), hosted a one-day 'Linking Science and Traditional Ecological Knowledge' workshop in Gaspé on 7 May. The event was sponsored by Indian and Northern Affairs Canada (INAC).
- A proposal has been submitted to the NB Environmental Trust Fund for a pilot project to develop a 'GIS Service Node' that would assist community groups with building their GIS capacity.
- A Coastal Erosion Monitoring and Education program, sponsored by Shell Canada, will provide a 'snapshot' on the erosion rates in the Southern Gulf. Five ENGO groups throughout the Southern Gulf are collecting erosion data for their respective coastlines.
- A proposal entitled 'Tools for Community Planners' is being submitted to the Climate Change Impacts and Adaptation Program; its goal is to fill the gap re existing knowledge and accessible information. The proposal was initiated by the Coalition's Coastal Erosion Working Group.
- The Coalition Management Committee is developing a plan to increase the Coalition's profile in the entire Southern Gulf.
- In an effort to recruit new members and enhance the Coalition profile, the Coordinator would be pleased to provide a presentation on the Coalition at community group meetings, etc. For more info, contact the Coalition office at tel 506-858-4495. (For information on the SGSLCS, access <http://www.coalition-sgsl.ca>.)

**BAY OF FUNDY MARINE RESOURCE CENTRE:** Martin Kaye reported the following:

- In the past, the BFMRC was involved primarily in community-based management and, in particular, habitat protection. Integrated management is now central to the activities of the community groups. BFMRC's focus for the next few years will be on climate change.
- One of BFMRC's projects is the Upper Bay of Fundy Fisheries Management Plan.
- The BFMRC is supporting the development of 7 new Resource Centres around the Bay of Fundy.
- Funding support for the MRCs is provided in part via the Saltwater Network – see <http://www.saltwaternetwork.org>.

**ATLANTIC PROVINCES COUNCIL ON THE SCIENCES / MEMORIAL UNIVERSITY:** Grant Gardner reported the following:

- The goal of APICS is to strengthen research and technology in the region by providing a link between scientists in the universities and the government, and by fostering communication and cooperation among science students.
- Membership in APICS includes every Faculty of Science in Atlantic Canada, plus government institutions (DFO, NRC), and some community colleges. More Information on APICS is available at <http://www.apics.dal.ca>.
- Opportunities exist for engaging academics in ACZISC activities and projects. For example, COINAtlantic and the ICM Communities of Practice are likely to be of interest to the wider academic community.
- The ACZISC should consider discussing with Lois Whitehead, the APICS Executive Director, the possibility of a presentation on the ACZISC and its activities to the APICS Council. The Council includes all Deans of Science and the Chairs of all the APICS Committees.
- Memorial University and its Marine Institute have major strengths in ocean studies. Expertise at the MI includes the CCMC and a program in CZM. On the main campus, in addition to several faculty working in coastal research, there are Canada Research Chairs in Offshore and Underwater Vehicle Design (contact: Neil Bose - [nbose@engr.mun.ca](mailto:nbose@engr.mun.ca)), Marine Bioscience (contact: Bill Driedzic - [wdriedzic@mun.ca](mailto:wdriedzic@mun.ca)), and Boreal and Cold Ocean Systems (contact: Paul Snelgrove - [psnelgro@mun.ca](mailto:psnelgro@mun.ca)). Two new chairs are currently being sought – one in Seabed Imaging and Seabed Processes, and another in Marine Biotechnology.
- MUN has also developed considerable expertise via the Coasts Under Stress project, which integrates science and socio-economic studies of coastal communities.

**ATLANTIC PROVINCES COUNCIL ON THE SCIENCES / ATLANTIC VETERINARY COLLEGE:** John Burka reported the following:

- The APICS Aquaculture and Undergraduate Biology Conference held in March at St. FX in Antigonish featured excellent student presentations. One of the keynote speakers was Thierry Chopin, UNBSJ, who presented on polyculture - salmonid, mussel and seaweed aquaculture carried out together to optimize resources and minimize environment impacts.
- The Aquaculture Committee is interacting with AquaNet (Network of Centres of Excellence in Aquaculture). Coastal zone management is recognized as being integral to sustainable aquaculture.
- The 'new' APICS Environmental Studies Committee held its 1<sup>st</sup> student conference last fall.
- The Atlantic Veterinary College at UPEI is supported by and responsible to all four Atlantic Provinces. It is developing a National Centre for Aquatic Animal Health (contact: Larry Hammell - [lhammell@upe.ca](mailto:lhammell@upe.ca)). The Centre will do research and provide services for finfish and shellfish and will have nodes across Canada. The College also has the Lobster Sciences Centre (contact: Rick Cawthorn - [cawthorn@upe.ca](mailto:cawthorn@upe.ca)) and the Canada Research Chair in shellfish health (contact: Franck Berthe - [fberthe@upe.ca](mailto:fberthe@upe.ca)). The units operate through partnerships with government (DFO, NRC), veterinarians, industry (aquaculture, pharmaceutical, feed, etc.) and NGOs (Atlantic Salmon Federation, etc.).

**DALHOUSIE UNIVERSITY PHD PROGRAM:** Colleen Mercer Clarke reported the following:

- She is working with Dr. Shannon Bard (Marine Biology, Dalhousie University) and Dr. John Roff (Director, Atlantic Centre for Global Change and Ecosystem Research, Acadia University) as she embarks on an Interdisciplinary Doctoral Program. Her PhD will focus on the development of a predictive planning tool for improving understanding of the contribution of differing land uses to the nutrification of surface waters in 12-16 watersheds in Nova Scotia, and the potential impact of nutrification on the biodiversity of the receiving coastal waters.
- The research program will rely on a GIS platform to organize and present data from a range of sources, and will include both existing information and new data gathered by a

team of collaborating researchers working in watershed modelling, marine biochemistry and toxicology, and biodiversity.

- It is intended that the coarse screening tool developed could also be used by planners, resource managers, and municipal engineers to gain an appreciation of current conditions in their area of influence, and to predict the effects of proposed land use changes.

**CEF CONSULTANTS:** Norval Collins reported the following:

- The Champlain Institute has been dissolved and the charter has been surrendered. Champlain's remaining funds (approximately \$4,500) were given to the Council of Maritime Premiers and are being held in trust to be used as seed money to help create a similar initiative.
- ClimAdapt, a network of private sector companies in Nova Scotia, continues to stay on the leading edge of adaptation to climate change. The ClimAdapt project, Climate-SMART, led by Dillon Consulting, is attracting attention nationally. The project, with HRM as a partner, will be looking at building adaptation into the financial planning process for the municipality, with specific toolkits developed for the various departments within the city. The project also incorporates education and outreach.
- CEF is undertaking two Strategic Environmental Impact Assessments (SEA). One is being done in conjunction with CBCL Ltd and incorporates climate change elements in a review of options in response to coastal erosion issues at North Rustico. The other SEA involves a review of the Misaine Bank area as a potential new area for exploration for oil and gas.

**GEONET TECHNOLOGIES:** Carl Brydon reported the following:

- GeoNet Technologies is involved in a five-year research and development initiative that will culminate in the marketing, nationally and internationally, of an integrated solution for risk assessment and mitigation, related to coastal processes such as sea level rise and storminess. The project is led by the College of Geographic Sciences (COGS); CARIS is also a partner.
- The Coastal Decision Support System (DSS) will include modules such as water and weather modelling, significant storm identification, DEM modeling, geographic database building, flood extent and depth modeling, flood impact assessment, erosion hazard modeling, erosion impact assessment, dynamic storm modeling, and adaptation strategies.
- This initiative is two years from completion. A commercialization phase will follow.
- For information on GeoNet Technologies and the Coastal DSS, access <http://www.geonet-tech.com>.

## **UPDATES ON ACZISC RELATED PROGRAMS**

**COASTAL ZONE CANADA ASSOCIATION AND CONFERENCES:** Larry Hildebrand reported that he was invited to Beijing in April 2005, in his role as Vice President-Liaison of the CZCA, as a guest of the Chinese Research Academy of Environmental Sciences (CRAES), the research arm of the State Environmental Protection Agency, to negotiate an Agreement between CZCA and CRAES for enhanced cooperation in integrated coastal and ocean management (ICOM). Discussions were initiated at the Coastal Zone Canada 2004 conference in St. John's. The result of the discussions in Beijing is a draft LOA that will focus initially on CZCA assistance in the design and delivery of the 1<sup>st</sup> Coastal Zone China conference in 2007. Further areas of cooperation, potentially in areas of interest to ACZISC members, can be accommodated within the LOA.

Mike Butler reported that Bob Thwaites had suggested that the ACZISC organize an interactive panel for CZC 2006, similar to the panel that was organized for CZC 2004 in St. John's. CZC 2006 will be held in July 2006 in Tuktoyaktuk, NWT. Members agreed with this suggestion.

On behalf of the ACZISC, Mike thanked Grant Gardner, chair of the CZC 2004 Organizing Committee, and the other Conference organizers for sponsoring the ACZISC Meeting held in St. John's in conjunction with the Conference. He added that this was greatly appreciated in light of the ACZISC's financial difficulties.

**GULF OF MAINE COUNCIL ON THE ENVIRONMENT / GLOBAL PROGRAMME OF ACTION COALITION FOR THE GULF OF MAINE:** Larry Hildebrand reported that the GoM Working Group would be meeting on 13-14 June 2005 in Exeter, NH. A Forum on Climate Change will follow the meeting on 16 June.

**OCEAN MANAGEMENT RESEARCH NETWORK:** Mike Butler reported that the 2005 National Conference of the Ocean Management Research Network is scheduled for 29 September - 1 October 2005 in Ottawa - see [http://www.omrn.ca/eng\\_conferences.html](http://www.omrn.ca/eng_conferences.html). 20 June is the deadline for submitting abstracts.

<b>Canadian Hydrographic Service - Atlantic Region</b>	
<b>Planned Publications 2005/2006</b>	<p><b>New Charts:</b></p> <p>4866 Botwood 1:30000 with 1:10000 inset  5024 Nanaksaluik Islands to Fenstone Tickle Island 1:200000  5056 Khikkertarsoak (North Island) to Morhardt Point 1:100000</p> <p><b>New Editions of Existing Charts:</b></p> <p>4114 Campobello Island 1:20000  4115 Passamaquoddy Bay and St. Croix River 1:50000  4116 Approaches to Saint John 1:60000  4201 Halifax Harbour to Bedford Basin 1:10000  4202 Halifax Harbour Point Pleasant to Bedford Basin 1:10000  4306 Strait of Canso and Southern Approaches 1: 25000  4320 Egg Island to West Ironbound 1:145000  4437 Pictou Harbour 1:12000  4460 Charlottetown Harbour 1:12000  4587 Mortier Bay 1:12000  4617 Red Island to Pinchgut Point 1:37500 (to 1:40000)  4841 St. Mary's Bay to Argentia 1:60000  4848 Holyrood and Long Pond 1:25000  4912 Miramichi 1:25000  5051 Nanasuk Island to Calf, Cow and Bull Islands 1:60000  5052 Seniarlit Islands to Nain 1:60000  5070 Satasoak Isl ?? to Akuliakatak Peninsula 1:25000</p> <p><b>Chart Update Patches:</b></p> <p>4459 Summerside  4583 St Julien Island to Hooping Harbour  4616 Burin Inlet</p> <p><b>Sailing Directions Diagrams:</b>  Black Tickle, Corner Brook Public Wharf, Makkovik, Petty Harbour, Port Saunders</p>
<b>Planned Field Activities 2005/2006</b>	<p><b>Oceans Action Plan:</b>  50 survey days planned in Gulf of St. Lawrence. In cooperation with NRCan.</p> <p><b>Law of the Sea Baselines:</b>  Investigate rocks, landfalls, etc. on an opportunity basis to improve existing baseline coverage. Tenders for offshore surveys pending.</p> <p><b>National Initiatives Fund – Search and Rescue Labrador:</b>  Install, monitor and collect additional tide gauge data for Cape Kakkiviak, Cape Chidley, Hebron and Kangalsiorvik Fiord.   Multibeam Labrador corridor survey from Okak Bay/Cape Mugford area north to Cape Chidley.</p> <p><b>Revisory Surveys:</b> Various locations, primarily in Newfoundland and Labrador</p> <p><b>Newfoundland and Labrador Cost Recovery Surveys</b> (resources permitting):  4841 Placentia Bay, Argentia Project Request. CCG, NWP  4831 Fortune Bay, Pools Cove Project Request. Aquaculture sites Science-Oceans  4857 Cape Freels, Project Request. Science-NWAF/Memorial University</p> <p><b>Notre Dame Bay Charting Advisory Committee:</b>  Conduct survey investigations on an opportunity basis</p>

# Growing the Canadian Geomatics Industry

## 1. Background

### **Geomatics Contributes to Canada's economy....**

Statistically, Canadian geomatics revenues have grown from \$1.3 billion and with employment of 12,000 in 1993 to \$2.2 billion, and employment of 27,000 in 2002. Exports were estimated at \$700 million in 2002. The annual growth rate of the sector has been around 6%, which is about 50% more than the growth in Canada's GDP. Close to 75% of the firms have less than 10 employees, and 98% have less than 100 employees. Services constitute 90% of geomatics revenue with the sale of software and equipment constituting the other 10%. The world growth rate for the geomatics sector is variously estimated between 10% and 20% and the world market for geomatics products and services is considered to be in the order of \$12 billion.

### **Canada has world-class technical capabilities....**

There are many institutions both academic and public which support the private sector geomatics community in Canada. Many of the universities have a Chair, a program or a Centre for Geomatics, either alone or in partnership with government and/or the private sector. GEOIDE is a federally funded Network of Centres of Excellence headquartered at Université Laval. In addition, Natural Resources Canada (NRCan) supports the geomatics sector with the Canada Centre for Remote Sensing, Geomatics Canada, the Innovation Acceleration Centre, and the GeoConnections program which has just received renewed funding of \$60 million over the next five years. The Canadian Space Agency supports Radarsat1 and Radarsat2, the latter in partnership with MacDonald Dettwiler, Canada's largest geomatics company. Industry Canada's Minister Emmerson, recently announced support (2005 Federal Budget) for three earth observation satellites.

### **Excellent educational support....**

The HAL Corporation's human resources study for the geomatics sector indicated that there were 78 universities, colleges and technical schools providing geomatics training and education in Canada in 2001. These schools combine to graduate, on average, 950 students per year. While there are a number of well-recognized schools, three in particular, the University of New Brunswick, Université Laval and the University of Calgary, enjoy an international reputation for the high quality of their research and of their graduates.

## 2. Opportunities and Challenges

### **Evidence of regional and virtual geomatics clusters....**

1. In Western Canada, growth is primarily attributable to oil and gas industry developments. In Atlantic Canada and British Columbia, the foundation exists for marine geomatics clusters. The oceans represent a new frontier and a significant new market for the geomatics sector as

Canada is globally recognized for its expertise in ocean mapping. In 2001, 80 ocean mapping firms generated revenues of \$273 million of which 65% was from exports.

2. Strong growth is forecast in the areas of land administration, (55-65% of the world lack base maps) sustainable resource management and business decision making (especially location-based decision making). GIS and remote sensing hold the promise of substantial growth. Municipalities are increasingly using geomatics in their urban planning and capital project developments. Geomatics is playing a crucial and growing role in disaster forecasting, mitigation and recovery efforts, global warming and environmental monitoring.
3. The ongoing development of the Canadian GeoSpatial Data Infrastructure (CGDI) and its accessibility to data, will allow Canadian companies to accelerate the development of new geomatics applications. Canada leads the world in the development of a national geospatial infrastructure and the CGDI itself, will yield significant export opportunities for Canadian geomatics organizations.
4. There are education and training opportunities for Canadian firms and academic institutions in marketing their programs outside of Canada, especially to developing and emerging economies.
5. Geomatics can play a major role in improving local and regional decision-making affecting governance issues plaguing developing and emerging economies worldwide.

### **But, Canada has been losing market share and experiencing a brain drain to foreign competitors....**

6. Although Canadian geomatics expertise is internationally recognized, **Canadian firms are not capturing their share of business in international markets.** As Canada's leadership in various geomatics technologies grows, our neighbours continue to capitalize on the technology skills and trained human resources our firms and institutions have developed.
7. **Firm size is a challenge:** Given that 75% of Canadian geomatics firms have less than 10 employees and 98% have less than 100 employees, many experience challenges typical of their size such as access to financing, lack of business and marketing skills and little capacity to hire new people. This is further exacerbated by a **"brain drain"** where estimates are that, on average, 50% of geomatics graduates each year find employment abroad. U.S. firms can, and will, pay more for a graduate or established worker.
8. A bold new experiment, the **Canadian GeoProject Centre (CGPC)** has been established to help level the competitive playing field by providing much needed structure to leverage the available export support programs more effectively, and package the excellent products and services that exist in these SMEs into total geomatics business solutions.

## **3. Going Forward**

### **What policies or activities would contribute most to the development of this sector....**

9. Canada's investment in new technological developments within this knowledge-based sector is strong; should we be doing more to strengthen industry efforts to exploit our international

business potential? Some Canadian companies attempting to exploit opportunities in foreign markets claim that their foreign competitors have the support of their governments all the way to deal closure. A large Canadian company advises that Europeans are subsidizing research up to 50%. This same company presently exports 93% of its production but fears it will lose market given this level of subsidization to its European competitors. Another Canadian consortium claims that "Foreign governments are aggressively establishing their nationals through well-funded pilot studies, feasibility studies and technical assistance programs while Canada has been virtually absent in the land administration and geomatics competition."

### **How does Canada's export assistance compare with other countries....**

10. Most industrialized countries provide a range of mechanisms to assist their firms with the transaction costs required to realize commercial opportunities in developing countries. How is Canada doing by way of providing financial and non-financial assistance to SMEs to exploit international opportunities? How can we gain a competitive edge?

### **Need for a business development strategy....**

11. The lack of a national growth strategy needs to be discussed further with industry. While it appears that a strategy exists to further build Canada's technical capabilities, there is, at present, no viable geomatics industrial development strategy with a national focus.
12. The views of industry must be solicited (through workshops slated for April - June, 2005 in collaboration with GIAC and NRCan) to determine how Canada can improve its performance in international markets. These workshops will also be used to gauge industry interest in cluster development around specific geomatics application areas such as disaster management, border security, defence and sovereignty, visualization, cities etc. and should help IC determine its future involvement with the sector.