COINAtlantic Business Plan

by the ACZISC Secretariat

Atlantic Coastal Zone
Information Steering Committee

September 2009
COINAtlantic Business Plan

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EXECUTIVE SUMMARY

COINAtlantic – the Coastal and Ocean Information Network for Atlantic Canada is an initiative of the Atlantic Coastal Zone Information Steering Committee (ACZISC) to facilitate access to information for integrated coastal and ocean management (ICOM).

COINAtlantic has developed and implemented a network of data providers and users that are working to support secure access to data, information and applications, for decision-making by coastal and ocean managers and users of coastal and ocean space and resources. Phase 1, 2008-2009, of COINAtlantic has been supported by GeoConnections and many partners with financial resources and in-kind contributions that has facilitated access to a number of key on-line environmental data. This business plan lays out the requirements for a successful long-term network that will continue to support client information needs through additional phases of development and implementation.

COINAtlantic's vision is to provide a single on-line entry point that will allow users to search, find and access all relevant information for Atlantic Canada from available sources.

The **principles for COINAtlantic** that guide the development, implementation and maintenance are:
- client-driven design that requires frequent and on-going interaction and input from client groups; and,
- build and complement the successes of other related work.

COINAtlantic will achieve its vision by establishing the following **components**:
- a sustainable network of shared environmental data and other data necessary for integrated coastal and ocean management maintained by collaborators based on open source software and accepted data standards;
- a small efficient core utility (http://COINAtlantic.ca) that will function as the interface between the user and established metadata Web Catalogue Services (WCS). This would be the link to the available information sources distributed across the region – preferably those sources published as Web Mapping Services and Web Feature Services (WFS); and,
- the necessary commitments and linkages with collaborators, partners and other appropriate agencies, NGO's and private sector companies.

The development, implementation and on-going improvements to the components will be managed by a strong **management structure** comprised of:
- Oversight by the Atlantic Coastal Zone Information Steering Committee (ACZISC) that was established in 1992 to foster cooperation in Atlantic Canada with regards to integrated coastal and ocean management (ICOM), coastal mapping and geomatics. It has membership of about 40 representatives from 10 Federal Departments, the four Atlantic Provinces, the private sector, academia and NGO's representing all four Atlantic Provinces: New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island;
- The ACZISC Secretariat, including a Project Manager – provided by DFO Maritimes Region from January 2, 2008 through to March 31, 2010;
- COINAtlantic Management Committee of 5-8 people with management and technical experience and skills to provide recommendations and technical input to the Project Manager; and,

- COINAtlantic Advisory Committee of 4-5 key individuals who provide linkages with other related work and who can provide high level input on the strategic direction of the project.

Successful implementation of COINAtlantic will have the following **benefits:**
- reduced time and resources required to find and access important and relevant information for ICOM that is already available from other sources;
- enhanced ability to bring together and visual integrate information from many different sources using standard internet web browsers;
- improved exposure, use and demonstration of relevance of participants information by others; and,
- increased saving in time and resources in accessing information that will allow enhanced analysis and decision making for the protection of oceans and coastal resources and improved support for socio-economic objectives.

Status as of September 30, 2009: A number of activities and support are committed that ensure the continued sustainability beyond the end of the GeoConnections/ACZISC COINAtlantic project that ends on September 30th, 2009:
- DFO Maritimes have continued the secondment of Paul Boudreau as Project Manager through to March 31st, 2010.
- ACISC Secretariat continues to provide in-kind support and resources for the day-to-day operations of the COINAtlantic Project Office.
- ACZISC members have, and continue to provide, operational funds for the continued outreach activities of the Project Managers including:
    o DFO provided travel funds for participation and presentation of COINAtlantic to the Gulf of Maine Council on the Marine Environment Working Group Meetings, October 4-5th, Saint Andrews, New Brunswick
    o DFO provided travel funds for participation and presentation of COINAtlantic to the Regional Association for Research in the Gulf of Maine and Gulf of Maine Council on the Marine Environment Symposium, October 4-6th, Saint Andrews, New Brunswick
    o UNB provided travel funds for participation and presentation of COINAtlantic to the Oceans Management Research Network (OMRN), Ottawa, Oct 23rd.
- ACZISC members committed future support for COINAtlantic participation in the following project areas:
    o ACZISC Integrated Coastal and Ocean Management Working Group (ICOM WG) revitalization of the ACZISC website to incorporate the COINAtlantic Utility.
    o DFO has included COINAtlantic on the Eastern Scotian Shelf Integrated Management Area State of the Environment report task group.
    o Gulf of Maine Council on the Marine Environment has included COINAtlantic on the GoMC State of the Environment report task group.
    o Natural Resources Canada, Survey General's Branch has included COINAtlantic participation on the National Marine Cadastre Task Force.
- ACZISC members have committed to provide an opportunity to present COINAtlantic to the following regional committees:
    o Regional Committee on Ocean Management (RCOM) for Prince Edward Island, New Brunswick and Nova Scotia November 24th, 2009.
    o Regional Oversight Committee on Ocean Management (ROCOM) for Newfoundland and Labrador, to be determined.
    o Environment Canada's Senior Management Committee, November 2009.
    o A proposed National workshop on placed based information being organized by the Public Research Institute (PRI) to be held before the end of 09/10 fiscal.
- Discussions continue between COINAtlantic, the International Ocean Institute, Bay of Fundy Ecosystem Partnership and several Departments of Dalhousie University to prepare funding proposals for continued development and implementation.

INTRODUCTION

COINAtlantic

COINAtlantic – the Coastal and Ocean Information Network for Atlantic Canada (see http://COINAtlantic.ca) is an initiative of the ACZISC. COINAtlantic will develop, implement and sustain a network of data providers and users that will support secure access to data, information and applications, for decision-making by coastal and ocean managers and users of coastal and ocean space and resources. Phase 1 of COINAtlantic is being built with financial support from GeoConnections and in collaboration with many partners. This business plan lays out the requirements for a successful long-term network that will continue to support client information needs through additional phases of development and implementation.

ACZISC

The Atlantic Coastal Zone Information Steering Committee (ACZISC) was established in January 1992 to foster cooperation in Atlantic Canada with regards to integrated coastal and ocean management (ICOM), coastal mapping and geomatics (see http://aczisc.dal.ca).

GeoConnections

GeoConnections, a national program initiative led by Natural Resources Canada, helps decision-makers use online location-based (or "geospatial") information, such as maps and satellite images, to tackle some of Canada's most pressing challenges (see http://www.geoconnections.ca).

User-Centred Design Principles

User-centered design (UCD) is a design philosophy and a process in which the needs, wants, and limitations of the end user of an interface or document are given extensive attention at each stage of the design process. User-centered design can be characterized as a multi-stage problem solving process that not only requires designers to analyze and foresee how users are likely to use an interface, but to test the validity of their assumptions with regards to user behaviour in real world tests with actual users. Such testing is necessary as it is often very difficult for the designers of an interface to understand intuitively what a first-time user of their design experiences, and what each user's learning curve may look like.

The chief difference from other interface design philosophies is that user-centered design tries to optimize the user interface around how people can, want, or need to work, rather than forcing the users to change how they work to accommodate the system or function (see http://en.wikipedia.org/wiki/User-centered_design).

Developers should decide who the users will be and to involve them at the earliest possible opportunity. A number of ways of becoming familiar with users, their tasks and requirements are suggested:

- Talk with users
- Observe users working
- Learn about work organization
- Get users to think aloud while working
- Include expert users on the design team
- Make use of surveys and questionnaires

- Visit customer locations
- Videotape users working
- Try it yourself
- Participative design
- Perform task analysis
- Develop testable goals

(http://www.ts.mah.se/RUP/RationalUnifiedProcess/process/workflow/requirem/co_ucd.htm)

A list of recent user needs studies of relevance to COINAtlantic and integrated coastal and ocean management (ICOM) was compiled by the ACZISC Secretariat in 2005 and is included in Appendix 1.

Section 3 COINATLANTIC COMMUNITY OF USERS

The success of COINAtlantic will be the establishment of a secure and well supported network that can maintain open access to its data. It will facilitate the active and productive linkage between data providers and data users. The two groups are not exclusive of one another. There will be benefits and responsibilities for each group.

Data Providers:
There are a large number of sources of environmental data that pertains to Atlantic Canada. These include:
- Federal, Provincial and Municipal government agencies;
- Academic organizations including Universities;
- Private sector companies;
- Non-Government organizations; and,
- Individuals.

All data providers wishing to participate in COINAtlantic will be required to:
- Publish their information online; and,
- Register their source in a manner that is searchable through the GDP.

When funding is available through COINAtlantic to support the publishing of information, data providers may receive support to enhance their data products. In such cases, specific agreements will be put in place that will require additional requirements re those data products such as security and timeliness of access.

All data sources registered in the GDP and maintained online will be searchable through the COINAtlantic utility. All data providers can expect increased visibility and usability of their information.

Data providers will be allowed an opportunity to play a more active role in the support and maintenance of the COINAtlantic network, by working with the Network to develop and implement improved metadata, secure access, etc.. Such providers, referred to as collaborators, can expect benefits from direct feedback from COINAtlantic in two ways. The first will be automated reporting on the use of data layers within the Utility. These statistics will enable collaborators to assess the use of their on-line data and take steps to improve their usability. Secondly, within the COINAtlantic Network there will be many opportunities for data providers to work directly with clients. This direct feedback will be critical to evaluating the benefits of data access and will allow appropriate planning and response by agencies hosting the data.

It is important to note that the Treasury Board of Canada put in place on June 1st, 2009 a Standard on Geospatial Data: http://publiservice.tbs-sct.gc.ca/pol/doc-eng.aspx?section=text&id=16553. This Standard requires that by May 31st, 2014 all geospatial data will be:
- Published according to ISO 19128 for the production of Web Mapping Services (WMS) ; and,
- Described according to ISO 19115 for metadata creation.

All information developed according to this standard will be immediately accessible by COINAtlantic users and thus contribute to its long-term sustainability.

Data Users

Similar to data providers, there are a large number of agencies, organizations and individuals who use environmental data for the purposes of living and working in Atlantic Canada. These include:
- Federal, Provincial and Municipal government agencies;
- Academic organizations including Universities;
- Private sector companies;
- Non-Government organizations; and,
- Individuals.

As the COINAtlantic utility is being implemented using standard Internet applications, all individuals with access to the Internet and web browser technology, will be able to use the COINAtlantic utility to carry out searches. However, users may require additional software and expertise to access and download available information and users will definitely need additional resources for carrying out analysis of the data accessed.

By participating in COINAtlantic, data users will be allowed an opportunity to comment and contribute to the development and implementation of on-line information. Input will be used by ACZISC/COINAtlantic to improve data access.

SUSTAINABILITY PLAN

Sustainability of the COINAtlantic Network will depend on providing real and tangible benefits to both data providers and users. Due to the distributed nature of the network and information benefits result primarily through the contribution of the participants in publishing and registering their information sources.

To this end the ACZISC members will continue to play a key role in promoting and facilitating access to on-line information in support of the ICOM community of users.

The ACZISC members provides a focus for COINAtlantic's efforts in supporting a community of users who require user-friendly, intelligent search and access tools that will provide them data to address many diverse ICOM issues. Historically this function has undertaken in a very inefficient ad hoc manner by the individual agencies searching, finding and compiling base information within the budgetary constraints of each separate project. Typically agency staff and/or contractors will invest a large portion of their resources in searching, identifying and accessing the information from outside agencies. Informal input from users indicates that this portion could be as much as 50% of project funding. COINAtlantic will facilitate faster collation of information at a lower cost, thus allowing managers to shift the use of their resources from the data and information gathering function to the data analysis and product development functions. This will ultimately benefit the planning and implementation of ICOM in Atlantic Canada.

Examples of potential ICOM activities that would benefit from COINAtlantic functions include:
- DFO Fish Habitat Management assessment and processing of Fisheries Act Section 35 authorizations,
- DFO Oceans and Coastal Management planning and implementation of coastal and marine protected areas,
- Province of Nova Scotia development and implementation of a Sustainable Coastal Development Strategy by 2010,
- Multi-agency/International review of the Georges Bank petroleum exploration moratorium before 2012,
- DFO planning for Species at Risk activities in regards to inner Bay of Fundy Salmon and American eels in Atlantic Canada,
- Provincial planning and review of aquaculture siting in all three Provinces.
- Provincial planning and review of tidal energy projects in the Bay of Fundy.

There are a number of ways that such agencies can support the two primary requirements for a successful COINAtlantic: development and on-going maintenance.

As seen in COINAtlantic Phase 1, funding from programs and projects that develop and implement geomatics infrastructure can play an important role in catalyzing and leveraging in-kind support for the development, design and implementation of major improvements to COINAtlantic. Programs such as GeoConnections have provided funding for the developmental stages. This has been successfully matched by ACZISC members. In Phase 1, GeoConnections provided 1/3 of the resources, DFO Maritimes, 1/3 of the resources and the remainder coming from 11 other groups and agencies. COINAtlantic must continue to access such infrastructure funds from GeoConnections, ACOA, Industry Canada, etc. to fund major improvements. Contributions from collaborators will continue to be needed both by their contribution of resources as well as the commitment of staff to provide in-kind work.

It is clearly recognized the COINAtlantic will not be selling information and/or data. The core of the business plan is to provide and/or facilitate **access** to the data held, maintained and provided by the various data providers in the region. As a result, any solicitation for resources in support of COINAtlantic must be tied to the benefits of this access, not the data itself. Any cost for data will be the responsibility of the specific data providers.

For the on-going support of the core COINAtlantic functions, methods must be found for long term and reliable resources through time. In general, it is expected that the members of the ACZISC will play a key role in achieving sustainable funding levels. There are a number of models that should be considered:

- through members' annual dues paid to the ACZISC in support of, and in recognition of the tangible benefits from, COINAtlantic;
- dedicated contributions and/or subscriptions to COINAtlantic. There may be an option to provide differing levels of service depending on the subscription level. For instance, fully paid subscriptions would result increased detail and resolution and/or access to specialized functions within COINAtlantic.
- Through direct support from one or more of the ACZISC members, a member could host COINAtlantic on the agency server and provide staff to maintain and develop the service for the benefit of all members.
- Through direct high level government support for the infrastructure.
- A direct commercial model based on pay for service. This is not consistent with the goals and principles of the participating government agencies or the ACZISC.
- An indirect commercial model based on advertisement where advertisers would be charged a fee for each use.
- Other models.

In any and all cases, engagement of an active and interested client group will be essential to ensure continued funding. Regular use by government, NGO, private sector, etc., will help build a strong case for the needs and benefits of COINAtlantic.

COINAtlantic sustainability can be tied to three specific timelines as described below:

- 6-months from October 1st, 2009 to March 30th, 2010;
- 18-months through to March 30, 2011; and,
- 5-year Timeline through to 2014.

Sustainability Considerations for 6-Month Timeline:

The present GeoConnections/COINAtlantic project has ended on September 30th, 2009. The ACZISC Secretariat does not have sufficient funds to support COINAtlantic once the GeoConnections/ COINAtlantic project ends.

With DFO Maritimes Region funding, resources have to be found support the Project Manager position through to the end of March 2010.

The on-line COINAtlantic search utility (CSU – http://COINAtlantic.ca) has been operationalised to a secure location on a Dalhousie server through the help of the Centre for Marine Biodiversity (CMB). It is critical that in the 6-month period, the GeoConnections Discovery Portal (GDP) continue to function as an effective national metadata catalogue which can be searched by the CSU.

At the same time, it is noted that the work under the GeoConnections/COINAtlantic project has not resulted in a fully functional intelligent search utility. Improvements have been identified and requested that will require additional funds and time to implement. Some of these improvements will be addressed during this time period as resources allow.

For example, improvements that are outside of the scope of the GeoConnections/COINAtlantic project would include:

- development and implementation of relevance measures to assist users in selecting appropriate layers
- developing peer-to-peer search functions that will work independently of centralized metadata catalogues.

Sustainability Considerations for 18-MonthTimeline:

Beyond the end of the 09-10 fiscal year, additional resources need to be identified to ensure the continued operation of the COINAtlantic project within the ACZISC Secretariat.

To date a number of ACZISC members have committed future support for COINAtlantic participation directly in a number of departmental areas including:

- ACZISC Integrated Coastal and Ocean Management Working Group (ICOM WG) revitalization of the ACZISC website to incorporate the COINAtlantic Utility.
- DFO has included COINAtlantic on the Eastern Scotian Shelf Integrated Management Area State of the Environment report task group.
- Gulf of Maine Council on the Marine Environment has included COINAtlantic on the GoMC State of the Environment report task group.
- Natural Resources Canada, Survey General's Branch has requested COINAtlantic participation on the National Marine Cadastre Working group

The remaining
months of fiscal year 09/10 will be used by COINAtlantic to carry out outreach and engagement activities that will encourage Federal, Provincial and other agencies to contribute resources to the continued operation and development of COINAtlantic. ACZISC members have committed to provide an opportunity to present COINAtlantic to the following regional committees:

- Regional Committee on Ocean Management (RCOM) for Prince Edward Island, New Brunswick and Nova Scotia
- Regional Oversight Committee on Ocean Management (ROCOM) for Newfoundland and Labrador
- Environment Canada's Senior Management Committee
- A proposed National workshop on placed based information being organized by the Public Research Institute (PRI) to be held before the end of 09/10 fiscal.

Sustainability Considerations for 5-Year Timeline:

COINAtlantic is being developed within the context of the Canadian Geospatial Data Infrastructure (CGDI). It builds on the results of the marine CGDI study published in 2001 (web link included in Appendix 1). To be successful in the long term, COINAtlantic will have to rely on the continued development of a national CGDI which will embrace the various ocean observatories, provide a federated search function using the various metadata catalogues and the many on-line data sources supported by the many data providers. COINAtlantic will work to develop a community of users for integrated coastal and ocean management as a component of the CGDI.

As federal departments and agencies move to meet the 2014 deadline for implementation of the recent Treasury Board of Canada Standards, COINAtlantic will have access to increased numbers of on-line information sources that can be provided to users.

In addition it will be necessary to securing the continued support for the CGDI. The ACZISC, through its members can play a key role in promoting a coordinated and collaborative approach to the CGDI for ICOM.

The Ocean Management Research Network (OMRN - http://www.omrn-rrgo.ca/) is an organization useful for developing long term support for a CGDI and COINAtlantic. The aim of the OMRN is to create and share knowledge for the application of critical thinking and best practices to oceans management in Canada. The OMRN is interdisciplinary providing a forum for researchers, managers, and policymakers to evaluate timely and innovative linkages, integrate lessons learned, transfer and share knowledge, and help create an expert core of ocean researchers. The OMRN facilitates value-added research, provides seed funding, and seeks to establish a long-term research agenda.

The OMRN Ocean Technology and Geomatics Working Group (http://www.omrn-rrgo.ca/index.php?action=workgroups.index&workgroupId=5a) takes an integrated approach which associates science and technology (S&T), socio-economics, the environment, and policy. The WG seeks to examine the human dimension of S&T, and the extent to which it assists in linking sustainable development to integrated ocean management, in enhancing knowledge of the natural processes of the ocean, and in supporting decision-making for the rational utilization of marine resources. The WG works to overcome the divide between the physical and human sciences with respect to ocean management issues, by recognizing the human dimensions of ocean S&T and how they can contribute to effective and appropriate ocean management.

Together, the ACZISC, OMRN and others, COINAtlantic is in a strong position to find support for an effective CGDI within which it could function.

NGO CAPACITY BUILDING

It is essential for COINAtlantic to develop and support an active and engaged user group. One of the prime clients will be managers of integrated coastal and ocean management such as the federal and provincial departments and agencies. They often have a mandate for managing coastal and ocean resources. They will be key users of COINAtlantic. They are usually well funded to participate in initiatives such as COINAtlantic. In comparison the non-government organizations (NGOs), although having close connections with the issues and geography being managed, are often working with limited resources. Many are supported by volunteers with short term project funding. As a result of their interest in access available information and their limits on funding, they have been identified as a group that are worth some special attention within COINAtlantic.

COINAtlantic will work actively to support their capacity to access and use the information accessible through the network. Access will be supported in both directions. The COINAtlantic on-line search utilities will assist NGO's to access information from other agencies. COINAtlantic will also work to facilitate the best management of data and information under the responsibility of NGO groups in the region.

A report has been prepared recently under contract to COINAtlantic that summarises the capacity of NGO's in Atlantic Canada and provides a number of key recommendations on how to build, enhance and maintain NGO engagement in COINAtlantic:

[Report on the Strategic Review of NGO Capacity in Atlantic Canada.pdf](#)

Five overall recommendations on a strategy for building NGO capacity for participation in an information network has been developed based two surveys:
- a technical capacity survey of over 50 member organizations in 2006 organizations; and,
- a dedicated COINAtlantic interview with representatives from 12 groups in 2007.

Recommendation #1 – COINAtlantic needs to be packaged and sold to the NGO sector as a value-added tool that will enhance and strengthen their ability to realize their respective goals.

Recommendation #2 – COINAtlantic needs to be developed and promoted as a common tool that anyone can use, like Outlook Express or Internet Explorer.

Recommendation #3 – COINAtlantic needs to be easy to access, easy to use and include up-to-date and relevant information to the NGO sector. It must also be either free to the user or accessible at a minimal cost.

Recommendation #4 – COINAtlantic needs to continuously engage the NGO sector either by establishing a Working Group, providing regular updates (through an email listserv) or incorporating a feedback loop on the COINAtlantic website that enables users to provide comment, i.e. an on-line poll that's update regularly.

Recommendation #5 – Providing specifically-tailored training to the NGO sector is integral to their participation. Hands-on training either through a regional workshop or site visits would be extremely beneficial to securing long-term commitment and usage of COINAtlantic by the NGO sector.

The report and these recommendations have been used to develop capacity building tools for use within the COINAtlantic initiative. They are available from the Project Office for deliver to a wide variety of groups.

A key component of COINAtlantic NGO support is the identification of a system, tools and server capacity for the publication of their geospatial information. Although COINAtlantic is not a data warehouse and thus cannot provide such service, it can and will continue to work with Government and Academia to facilitate the establishment of such support.

Once established, COINAtlantic is in a position to promote the broader access to any published information.

COMMUNICATION AND PROMOTION

COINAtlantic will thrive only if it is actively used. One of the aspects of the business plan is to communicate and promote its benefits to groups such as government managers, NGO's and the general public.

A corporate identity has been developed to provide a consistent and appealing view of the project. The Brand Standards document lays out the significant pieces of the COINAtlantic corporate identity and how they are to be used – and how they should not be used. The corporate brand will be used in all communication and promotion activities including all reports, documents and electronic media. Standard hard copy products such as business cards and brochures will be used by the ACZISC Secretariat. Generic materials will also be printed and supplied to ACZISC members for their use in communicating the goals, objectives and successes of the initiative in the course of their regular interactions with their respective agencies and clients.

There are a number of tools that will be used to maintain active communication and effective promotion:

- E-Mails
- Website
- Listserver
- Facebook
- Conference calls
- Webinars
- Meetings
- Site Visits

A list of e-mail addresses will be maintained to facilitate the regular communications with people interested in the initiative. It is anticipated that brief monthly electronic will be distributed to all individuals on the list. These news items will also be placed on the website as an archive of distributed information.

As much as possible, opportunities for communication and promotion will be taken in association with other meetings. The central role that the Atlantic Coastal Zone Information Steering Committee (ACZISC) plays in the COINAtlantic initiative requires specific attention. ACZISC members should be kept up to date and aware of the progress and challenges of COINAtlantic. The diverse membership provides an excellent linkage with many government and non-government agencies in all four Provinces. Updates at the regularly scheduled ACZISC meeting will be a key communication goal. ACZISC members have a responsibility to promote COINAtlantic and to disseminate relevant COINAtlantic information.

Section 7

APPENDICES

Appendix 1 - SELECTED REFERENCES RE USER NEEDS STUDIES OF RELEVANCE TO ICOM

Prepared in 2005

2005 ACAP Data Sharing Survey – prepared by Southeast Environmental Association (to obtain a copy, email Sarah-Jane Bell - sea@pei.aibn.com)

2005 CGDI Vision – Better Knowledge for Better Decisions
http://www.geoconnections.org/publications/tvip/Vision_E/CGDI_Vision_final_E.html

2005 COINAtlantic – From Concept to Implementation (includes summaries of the COINAtlantic User Needs sessions held in September 2004, Fredericton, NB and in January 2005, Halifax, NS) http://aczisc.dal.ca/COINAtlantic.doc

2004 SmartBay / Placentia Bay -
http://www.smartbay.ca/download/downloadFrame.html

2004 Gulf of Maine Mapping Initiative (GOMMI) User Needs Study
http://www.gulfofmaine.org/gommi/docs/gommiusersurvey.pdf

2004 A Geospatial Framework for the Coastal Zone: US National Needs for Coastal Mapping and Charting http://books.nap.edu/catalog.php?record_id=10947 **Executive Summary** - http://books.nap.edu/execsumm_pdf/10947.pdf

2003 COINPacific Benefit Analysis – to obtain a copy, email Bill Anderson - bill.k.anderson@gov.bc.ca and **How Sharing Information Can Preserve Our Oceans** http://www.geoconnections.org/CGDI.cfm/fuseaction/articles.see/id/812/gcs.cfm

2002 GeoNOVA User Evaluation Report
http://gov.ns.ca/GeoNova/about/five_year_strategy/user_evaluation_report.asp

2001 Marine Geospatial Data Infrastructure (MGDI) – Marine User Requirements for Spatial Data
http://www.geoconnections.org/programsCommittees/proCom_marine/keyDocs/Marine_User_Requirements_E.pdf

1996 Parameters Required for Coastal Maps/Databases - ACZISC Workshop on Coastal Mapping - http://aczisc.dal.ca/MapWkspRpt1996.pdf

1994 ECNASAP: Towards International Collaboration in Strategic Environmental Assessment. In Coastal Zone Canada 94 conference proceedings – to obtain a copy, email Michael Butler – michael.butler@dal.ca

1989 "Ocean Information Centre: Results of a Survey on User Needs" by E. Wedler in Proceedings of a Forum on the Inland waters, Coastal and Ocean Information Network – to obtain a copy, email Michael Butler – michael.butler@dal.ca

Appendix 2 - COINATLANTIC AVAILABLE DATA / TOOLS circa 2008

These data will form the core of the development and implementation of applications for COINAtlantic within the 15-month GeoConnections/COINAtlantic project. Collaborators have committed to provide access to a limited number of specific datasets as Web Mapping Services (WMS) and/or Web Feature Services (WFS).

Agency	Data Name	Example data/layers
Department of Fisheries and Oceans	Maritimes Region Human Activities/Ocean Use Atlas	Fishing locations, pipelines
Ocean Biogeographic Information System (OBISCanada) Regional Node	Biodiversity Data Sets	Marine mammal sightings, marine Invertebrates
Department of Fisheries and Oceans	Research Trawl Survey Results	Groundfish species, catch locations
NRCan Earth Sciences Services	Geosciences for Ocean Management, Coastal Data	Shoreline characteristics, marine surficial geology
Province of Nova Scotia	Coastal Series	Roads, topography, infrastructure
Department of Fisheries and Oceans	Salmon Presence Assessment Atlas (SPAtlas)	Blockages to fish passage, critical habitat
Department of Fisheries and Oceans	Oceanographic Modelling	Sea surface temperature, currents, tides
Department of Fisheries and Oceans	Bathymetric Grid	Water depth
University of New Brunswick	Marine Cadastre/Boundary	Areas of responsibility, boundary lines