COINAtlantic User Needs – Applications Workshop Report

14 May 2008, St. John's, NL

Submitted to GeoConnections

by the ACZISC Secretariat

Atlantic Coastal Zone
Information Steering Committee

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INTRODUCTION

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).

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.

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.

PROCEEDINGS

A **COINAtlantic User Needs – Applications Workshop,** organized by the ACZISC Secretariat, was held at the Battery Hotel, St. John's, Newfoundland and Labrador on Wednesday, 14 May 2008 – see Appendix 2. This document summarizes the proceedings of the second workshop to determine user needs under the COINAtlantic/GeoConnections development and implementation plan. Data providers, application developers and users were brought together to review the Implementation Plan. Additional interaction is planned at subsequent meetings to ensure the continued application of user-centred design in the development and implementation of COINAtlantic – see http://COINAtlantic.ca.

The Workshop commenced with an introduction to COINAtlantic. Michael Butler, Director, ACZISC Secretariat, welcomed participants; this was followed by a roundtable introduction of the participants – see Section 4. He continued with a brief overview of the ACZISC, the 20-year history of ICOIN/COIN and the purpose of COINAtlantic.

Paul Boudreau, COINAtlantic Project Manager, introduced the COINAtlantic conceptual model and reviewed the collaborators, contributors and the challenges facing coastal and ocean managers in accessing and using the numerous available geospatial databases. He also outlined the deliverables for the COINAtlantic project:

- The results of the User Needs - Applications Workshop in Halifax, Nova Scotia, March 28, 2008
- The results of the User Needs Workshops in St. John's, Newfoundland and Labrador, May 14, 2008
- Online data/web applications by September 1, 2008
- User Needs Workshop in Fredericton, New Brunswick, September 24, 2008
- Next Steps Workshop, February 2009.

In the subsequent discussion, the Workshop participants identified the following points to be considered in the design/implementation of COINAtlantic:

1. It will be a challenge to design and implement a useful search function that will find and deliver the appropriate datasets with the aid of metadata. To this end, it is important to anticipate the kinds of decisions that will be made by the end users.
2. Depending on the user, and its intended use, data may need to be accessed at different levels of resolution.

3. Users must be informed of the limitations of the datasets. This will help to prevent the merging/overlaying of inappropriate data. It would also be useful to have a warning mechanism that is triggered when this occurs, *e.g.*, mismatched data time series.
4. Metadata will allow users to determine what data is available and the data's attributes.

The remaining portion of the Workshop focused on the introduction and initial review of the COINAtlantic Framework and identification and development of usage cases. Paul Boudreau introduced the Framework (Appendix 3), which identifies three general classes of descriptors (issues, applications and users) for each sector of human activity. The user issues were identified from several sources, including earlier user needs reviews (see Appendix 1). The Framework also includes the specific set of datasets that have been identified for the COINAtlantic/ GeoConnections project (Appendix 4).

Participants supported the conclusions of the previous workshop in Halifax and identified access to data, in support of decision making, as a key challenge and priority for COINAtlantic. The participants recommended that the usage case selected for COINAtlantic should have broad appeal*, i.e.* to communities and across all levels of government. This will help to build long-term support for COINAtlantic.

The Workshop concluded with an invitation to participants to review the COINAtlantic Framework table and submit suggestions for other relevant data or tools to the COINAtlantic Project Office – COINAtlantic@dal.ca.

Further information on the COINAtlantic initiative and follow-up materials from the Workshop are posted on the COINAtlantic website at http://COINAtlantic.ca. To stay in touch with COINAtlantic developments, the Workshop participants were invited to subscribe to the COINAtlantic Listserve by sending an email to 'LISTSERV@LISTSERV.DAL.CA' with the following text in the body of the email: Subscribe TalkCOINAtlantic.

Acknowledgements

OUTCOMES

Participants of the COINAtlantic User Needs – Applications Workshop recommended the following activities/steps in the development and implementation of the COINAtlantic/GeoConnections project:

- Develop a user-friendly application that will allow COINAtlantic users to find and access all of the identified datasets (Appendix 4) and to input the information into the applications that they will develop.

- Develop a suitable usage case, *e.g.*, a state of the coast report (either regionally or by province) or climate change impacts.

- Continue to work with and build on the experience of agencies and groups in Newfoundland and Labrador.

PARTICIPANTS

Yves Belzile, Natural Resources Canada

Paul Boudreau, COINAtlantic, ACZISC Secretariat

Tony Bowdring, Fisheries and Oceans Canada, NL Region

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Tom Rowsell, Fisheries and Oceans Canada, Canadian Hydrographic Service

Patrick Shea, NL Department of Fisheries and Aquaculture

Bobbi Smith, NL Department of Fisheries and Aquaculture

Fred Warnock, DM Solutions

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

Agenda for the User Needs – Applications Workshop
14 May 2008, 1300 to 1700 hrs
Battery Hotel, St. John's, Newfoundland and Labrador

Objective:

➢ To get input from potential clients on their needs and uses of COINAtlantic data sources.

➢ To draft a priorities list of potential applications based on available data and tools that will be considered for implementation under the GeoConnections/COINAtlantic project

Agenda:

1300   Welcome: Mike Butler, ACZISC Secretariat

13:05   COINAtlantic Concept, Update and Report on Activities:
         Paul Boudreau, COINAtlantic Project Manager

13:45   Client/user needs for COINAtlantic

15:00   Health Break

15:20   Client/user needs for COINAtlantic (cont'd)

16:45   Conclusions, Wrap up and Next Steps

Framework for Identifying and Developing Usage Cases for Integrated Coastal and Ocean Management

Version 2.0

Background Paper for a Workshop on COINAtlantic User Needs – Applications

Held on 14 May 2008 in St. John's, NL
and organized by the ACZISC Secretariat

Atlantic Coastal Zone
Information Steering Committee

Introduction:

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. The **Coastal and Ocean Information Network for Atlantic Canada (COINAtlantic)** is an initiative of the ACZISC to 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.

This document summarizes the results of several previous ICOM-related user needs studies, workshops and reports (see Appendix 1), which are presented in the form of a framework that describes the linkages between a number of components of ICOM. See Appendix 2 for a glossary of terms.

A *use case* or *usage case* can be defined as "a description of a system's behaviour as it responds to a request that originates from outside of that system" (http://en.wikipedia. org/wiki/Use_case). Two or three use cases will be developed for the COINAtlantic/ GeoConnections project to design, implement and test a full sequence of interactions and actions that will functionally link the user(s) with data/information/applications to address a specific issue – as defined below. The use cases to be developed will be selected based on a number of factors including their potential environmental impact, the data available to COINAtlantic as well as the interest and desire of COINAtlantic collaborators to actively participate in the work.

Using the framework presented here to identify the use cases will facilitate the linkage between the information network and ongoing ICOM priorities in Atlantic Canada. The framework will provide a way to communicate and distinguish the various components of ICOM in a result-based manner to managers, and other non-geomatic users. It will provide a structure to organize input from users and to assist in both prioritizing tasks and identifying synergies that will be essential to the success of the COINAtlantic concept.

Ultimately this document will serve to guide all aspects of the development, implementation and sustainability of COINAtlantic.

Framework Overview:

Based on the many results from previous studies (Appendix 1), the framework identifies various sectors of human activity that can be distinguished by their objectives, their potential impacts and by the participants, including those that are involved in the management of the sectors and other groups that have shown a general interest.

It is important to note that the sectors identified are scale dependent. For the broad goals of COINAtlantic, this document is intended to be comprehensive for all four Atlantic Canadian provinces so that appropriate selections can be made from the total suite of sectors, activities etc. For other purposes, all of these general sectors can and should be subdivided and additional detail added to address the specific requirements of the various user client groups for geographic areas within the region. But this is not the purpose of this document.

Within each sector of human activity, examples are given to build a general overview of the sector within the context of ICOM and, in particular, the underlying information management requirements. No attempt is made to cross reference specific activities with specific impacts and potential applications as this will be done at a higher resolution for particular geographic areas and/or issues.

Framework Details:

In this Framework, we identify three general classes of descriptors for each sector of human activities, along with a number of sub-components:

➢ Issues
  o Activity
  o Environmental impact
  o Socio-economic impact

➢ Applications
  o Data
  o Analytical tool

➢ Users
  o Participants
  o Managers
  o Others

Thus, there are a number of characteristic activities related to a particular sector. For each activity there will be socio-economic impacts, potentially positive and negative. Each activity may also result in environmental impacts. These too may

be positive such as in habitat protection, or negative in the more usual sense of environmental degradation. COINAtlantic will need to consider the particular issue to be addressed and its potential impacts in identifying and prioritizing the use cases to be developed.

Once issues can be adequately identified within the COINAtlantic network, the next step is to identify and ensure access to the appropriate applications to address the issue. An application is the result of bringing together the data with the analytical tool to address the management question, *i.e.* the issue.

The term 'applications', as used in COINAtlantic, is the combination of the data available and the specific analytical tool that would form the functional link between the data inputs and the information outputs.

We provide the following description of the terms used in the framework table below.

- **Activity**

Within this column we identify a variety of activities for each sector. These activities and/or structures have been identified as most likely to result in environmental impacts.

Activities *per se* are not necessarily issues as they may not have any impacts that require a management decision or action.

- **Socio-Economic Impacts**

For context, with regard to the identification of issues, we include some indication of the socio-economic impacts of the sector/activity. Within ICOM, the socio-economic impacts, such as the displacement of existing activities, may be more relevant to the development of COINAtlantic applications than the environmental impacts.

- **Environmental Impacts**

Many human activities have no significant environmental impacts and will be a low priority within ICOM. For those activities that do have impacts of concern, it is important to clearly identify the impact, what management actions are possible and thus what outputs might be generated from an application that would support management decisions and actions.

- **Available Data/Tools circa 2008**

Although the COINAtlantic initiative is being developed for long term sustainability, it is critical that priority data sets and tools are identified for development and implementation within the 15-month COINAtlantic/GeoConnections project. Under this project, a number of collaborators have committed to provide access to a limited number of specific

data sets as Web Mapping Services (WMS) and/or Web Feature Services (WFS). They are shown in the following table.

Agency	Data Name	Example Data / Layers
Fisheries and Oceans Canada	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
Fisheries and Oceans Canada	Research Trawl Survey Results	Groundfish species catch locations
Natural Resources Canada, Earth Sciences Sector	Geoscience for Oceans Management, Coastal Data	Shoreline characteristics, marine surficial geology
Province of Nova Scotia	Coastal Series	Roads, topography, infrastructure
Fisheries and Oceans Canada	Salmon Presence Assessment Atlas (SPAtlas)	Blockages to fish passage, critical habitat
Fisheries and Oceans Canada	Oceanographic Modelling	Sea surface temperature, currents, tides
Fisheries and Oceans Canada	Bathymetric Grid	Water depth
University of New Brunswick	Marine Cadastre/Boundary	Areas of responsibility, boundary lines

These data will form the core of the development and implementation of applications for COINAtlantic in 2008.

- **Potential Applications**

This column in the framework contains applications that can be implemented using available data to address identified issues, within the 15-month COINAtlantic/ GeoConnections project.

- **Potential Applications / Data / Tools**

It is recognized that COINAtlantic circa 2008 will need to be focused on a small number of high priority applications. It is understood that there exist a large number of other relevant data and appropriate tools that could be accessed through COINAtlantic when resources allow. The Potential Applications/Data/Tools column will function as a "parking lot" for other applications and activities that could be considered for COINAtlantic as opportunities present themselves.

- **Users**

This column captures the users who are envisaged as needing the applications, *i.e.* people who are directly involved in the sector and who are carrying out activities. Managers include personnel from the federal, provincial and municipal agencies responsible for influencing the activities. This column is also intended to include groups that have an interest in the prosecution of the activity, the resultant impacts and benefits, and those who may be able to contribute to, or benefit from, the COINAtlantic application. Where possible, COINAtlantic will attempt to identify individuals with a particular interest and commitment to participate in the development of use cases. In some cases, this may be a determining factor that will override other considerations.

COINAtlantic Framework

Sector	Activity	Potential Environmental Impact	Potential Socio-Economic Impact	Available Data Tools *circa 2008**	Additional Data/Tools	Potential Applications*	Users*
Habitat Management	➢ Protection ➢ Conservation ➢ Restoration	➢ Increase productivity ➢ Displacement of other species	➢ Displacement or restriction of human activities ➢ Support recreational and commercial fishing and harvesting activities	➢ Hydrology from 1:10, 000 NS data ➢ Bathymetric grid ➢ Surficial geology ➢ SPAtlas	➢	➢ Identify areas with habitat to support Species at Risk ➢ Identify areas for improving Commercial and recreational fishing activities	➢ Fisheries and Oceans Canada ➢ Provincial ➢ NGOs ➢ Fishers ➢ Municipalities
Renewable Resources	➢ Extraction ➢ Maintenance	➢ Negative impacts on existing non-targeted resources	➢ Supports jobs	➢	➢	➢ Identify areas for sustainable activities	➢ Federal ➢ Provincial ➢ Private sector
Biodiversity	➢ Protection	➢ Increase in ecosystem productivity and resilience	➢ Displacement or restriction of human activities	➢ OBISCanada	➢	➢ Identify areas of high priority	➢ Federal ➢ Provincial ➢ NGOs
Aquaculture	➢ Production of food	➢ Negative impacts on ecosystem ➢ Parasite impacts ➢ Habitat impacts	➢ Supports jobs ➢ Displaces other activities	➢ Marine cadastre ➢ Bathymetric grid	➢	➢ Identify areas with minimal impacts and maximum benefits	➢ Federal ➢ Provincial ➢ Private sector ➢ NGOs/Communities

Sector	Activity	Potential Environmental Impact	Potential Socio-Economic Impact	Available Data Tools *circa 2008**	Additional Data/Tools	Potential Applications*	Users*
Freshwater Resource Management	➢ Use of lands ➢ Extraction of water ➢ Discharge of materials ➢ Dams	➢ Negative impacts on environment ➢ Displacement of natural ecosystems	➢ Supports jobs ➢ Displacement of activities	➢ NS provincial data ➢ NL provincial data ➢ SPAtlas	➢	➢ Identify best use of environmental resources such as hydrology, soils, vegetation cover ➢ Identify most appropriate support for human activities	➢ Federal ➢ Provincial ➢ Private sector

Non-Renewable Resources	➢ Extraction
	  ○ Oil and gas
	  ○ Coal
	  ○ Natural gas
	➢ Maintenance of infrastructure
		➢ Negative impacts on existing non-targeted resources	➢ Supports jobs	➢	➢	➢ Identify areas for sustainable activities	➢ Federal
							➢ Provincial
							➢ Private sector

Marine Transportation	➢ Dredging ➢ Ocean dumping ➢ Movement of goods ➢ Use of anti-fouling agents	➢ Chronic spills ➢ Accidental spills ➢ Chronic discharge ○ Sewage ➢ Negative impacts on large mammals ➢ Introduction of Invasive species	➢ Supports jobs ➢ Increases access by tourists ➢ Decrease value of recreation sites	➢ Human Use Atlas	➢	➢ Improve ship routing ➢ Identify areas "sensitive" to Invasive species ➢ Identify best location for infrastructure	➢ Transport Canada ➢ Fisheries and Oceans Canada ➢ Provincial ➢ Private sector

Sector	Activity	Potential Environmental Impact	Potential Socio-Economic Impact	Available Data Tools *circa 2008**	Additional Data/Tools	Potential Applications*	Users*
Commercial and Recreational Fishing	➢ Removal of target and non-target species ➢ Development of non-traditional fisheries ➢ See also marine transportation above	➢ Mortality of target and non-target species ➢ Habitat destruction	➢ Supports jobs	➢ Marine cadastre ➢ DFO trawl data	➢	➢ Identify most appropriate locations for freshwater and marine harvesting ➢ Identify opportunities for improvements such as opening clam beds	➢ Federal ➢ Provincial ➢ Private sector ➢ NGOs/Communities
Sovereignty and Defence	➢ Training ➢ Operations	➢ Negative impacts on environment	➢ Loss of life or livelihood	➢ Marine cadastre	➢	➢ Minimize impacts of activities	➢ Federal
Marine and Coastal Engineering Works and Services	➢ Build ➢ Maintain ➢ Maximize benefits	➢ Negative impacts on environment	➢ Supports jobs	➢ Oceanographic model	➢	➢ Identify best/appropriate locations	➢ Federal ➢ Provincial ➢ Private sector
Research	➢ Surveys	➢ Negative impacts on environment	➢ Increase knowledge ➢ Support job creation	➢ DFO trawl data	➢	➢ Identify knowledge gaps ➢ Provide knowledge for ICOM	➢ Federal ➢ Provincial ➢ Universities ➢ NGOs

* REQUIRED FOR IDENTIFICATION AND PRIORITIZATION OF COINATLANTIC USE CASES – NEED TO BE AS SPECIFIC AND AS DETAILED AS POSSIBLE.

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Sector	Activity	Potential Environmental Impact	Potential Socio-Economic Impact	Available Data Tools *circa 2008**	Additional Data/Tools	Potential Applications*	Users*
Recreation and Tourism	➢ Protection of culture and heritage ➢ Sustainable use of natural areas	➢ Negative impacts on environment	➢ Supports jobs ➢ Increases awareness of nature	➢	➢	➢ Identify appropriate Infrastructure development and maintenance ➢ Identify of economic opportunities	➢ Federal ➢ Provincial ➢ Municipal

Agriculture	➢ Production of food	➢ Runoff
		  o Silt
		  o pesticides
		➢ Soil erosion
		➢ Loss of wetlands
			➢ Supports jobs
			➢ Displaces other activities
				➢ Provincial databases	➢	➢ Identify areas with minimal impacts and maximum benefits	➢ Federal
							➢ Provincial
							➢ Private sector
							➢ NGOs/Communities

Industrial	➢ Production of products
	  o Pulp and paper
	  o Smelting
	  o Thermal electrical generation
	  o Chlor-alkali plants
	  o Fish processing plants
	  o Food
	➢ Processing plants
		➢ Discharges
		  o Solids
		  o Chemicals
		  o Air
		➢
			➢ Supports jobs
			➢ Displaces other activities
				➢ Provincial databases	➢	➢ Identify areas with minimal impacts and maximum benefits	➢ Federal
							➢ Provincial
							➢ Private sector
							➢ NGOs/Communities

* REQUIRED FOR IDENTIFICATION AND PRIORITIZATION OF COINATLANTIC USE CASES – NEED TO BE AS SPECIFIC AND AS DETAILED AS POSSIBLE.

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Sector	Activity	Potential Environmental Impact	Potential Socio-Economic Impact	Available Data Tools *circa 2008**	Additional Data/Tools	Potential Applications*	Users*
Urbanization and Development	➢ Support for human activities	➢ Negative impacts on environment ➢ Displacement of ecology ➢ Increased nutrient levels ➢ Reduced oxygen levels ➢ Increased sediment discharge	➢ Supports jobs and people ➢ Displaces other human activities	➢ Provincial Database	➢ Municipal Databases	➢ Identify areas with minimal impacts and maximum benefits	➢ Municipalities ➢ Provincial ➢ Private sector ➢ NGOs/Communities ➢ Federal
Disaster Management/ Emergency Response	➢ Appropriate response ➢ Training	➢ Slow recovery of environment	➢ Loss of life or livelihood	➢ NS provincial data	➢	➢ Distinguishing areas by priority ➢ Locating response equipment	➢ Federal ➢ Provincial ➢ Municipal
	➢	➢	➢	➢	➢	➢	➢
	➢	➢	➢	➢	➢	➢	➢
	➢	➢	➢	➢	➢	➢	➢

Appendix 1

References and Bibliography

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Appendix 2

Glossary of Terms

ACZISC   Atlantic Coastal Zone Information Steering Committee

Application   A program that performs a specific function directly for a user.
              (http://cgdi.gc.ca/en/resourcetool/glossary)

COINAtlantic Coastal and Ocean Information Network for Atlantic Canada

ICOM   Integrated Coastal and Ocean Management

Use case or   A description of a system's behaviour as it responds to a request that
Usage case   originates from outside of that system (http://en.wikipedia.org/wiki/Use_case)

              A use case expresses the behavioural portion of a contract between stakeholders
              of a system. It describes the system's behaviour and interactions under various
              conditions as it responds to a request on behalf of one of the stakeholders - the
              primary actor, showing how the primary actors goal gets delivered or fails. The
              use case gathers the scenarios related to the primary actor's goal
              (http://dublincore.org/educationwiki/Use_20Cases)

WFS   Web Feature Service - A specification that defines data manipulation operations
              on geographic features, allowing for querying, retrieval and transactional (*i.e.* add,
              update or delete) operations. (http://cgdi.gc.ca/en/resourcetool/glossary)

WMS   Web Map Service - An Internet-based service that allows clients to display
              maps and/or images with a geographic component and whose raw spatial
              data files reside on one or more remote WMS servers. The WMS conforms to
              the OpenGIS Web Map Server Interface specification.
              (http://cgdi.gc.ca/en/resourcetool/glossary)

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