Where there's a will there's a way: Integrated Community Based Management In Canada's Maritime Provinces

By

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Dedication

First I'd like to dedicate this to my family and friends who were supportive through the summer and very understanding about my research time-management. However, most importantly, I would like to dedicate this work to my incredible wife, who kept me motivated all summer and didn't mind planning a wedding on her own and spending the first few months of our marriage sharing my attention with this research topic.

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Executive Summary

Coastal communities have an important role to play in the sustainable management of all coastal and ocean resources. This project reports on the status of community based ICM initiatives in the Maritime Provinces. Effective management of the coastal zone is fundamental to humanity and community based management is a strategy by which multiple stakeholders form an important part of the management decision making. Meanwhile the goal of integrated coastal management is to enhance both the environment and the lives of coastal populations through integrated management of multiple coastal resources. In order for a coastal zone to be sustainable and resilient, communities that may affect them must be economically and socially healthy. The dynamic nature of the coastal environment and its multiple uses calls for an integrated management approach. Therefore integrated management and community based management support each other reciprocally; one supplying a structure and process and the other a platform for local voices. Community based ICM in the Maritimes has risen in response to threatened ecosystem and community health, and has come from the ground up in some cases, and has had a helping hand from government agencies and NGOs in other cases. Although Maritime communities face a variety of challenges, there are also a variety of paths forward and strategies employed by other practitioners of ICM that can benefit the Maritime experience. By increasing public awareness, government power sharing through existing infrastructure, structuring organization activities around the community, and improved networking between groups, community action at the local level can help usher in a new age of community based integrated management strategies.

List of Abbreviations

ACAP	Atlantic Coastal Action Program
ICM	Integrated Community Management
CEMP	Comprehensive Environmental Management Plan
LOMA	Large Ocean Management Area
RDA	Regional Development Authority
MPA	Marine Protected Area
AOI	Area of Interest
TEK	Traditional Ecological Knowledge
DFO	Department of Fisheries and Oceans
GIS	Geographic Information Systems

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1.0 Introduction

Coastal communities have an important role to play in the sustainable management of all coastal and ocean resources. The importance of community participation to sustainability has been highlighted in Article 21 from the 1992 Earth Summit in Rio de Janerio:

> One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures (UNCED, 1992, chapter 23.2).

Therefore, in order for communities and their resources to be sustainable, community members must have input into decision making that affects the very nature of their community's future. In a sense this right to determination is available in the Maritime Provinces through an individual's right to vote in free and democratic elections. In fact, any individual may have three opportunities or more to vote due to the different levels of government, municipal, provincial, and federal, that may have jurisdiction in their community. However, the Canadian system of parliamentary democracy is not a direct form of democracy. Elected representatives may not have the capacity to adaptively manage day-to-day coastal activities, according to the demands of multiple communities.

Many small communities face coastal and marine management issues that one centralized body may not have the resources to flexibly manage. The federal, provincial, and municipal levels of government cannot micromanage every issue in every community, nor should they. Often, centralized decisions formulate a 'one size fits all' solution, which may not be appropriate to manage community issues in the dynamic coastal environment. This makes input and managing structure based at the community level highly useful in a regionalized confederation such as Canada, or in a multiple coast environment as found in the Maritime Provinces.

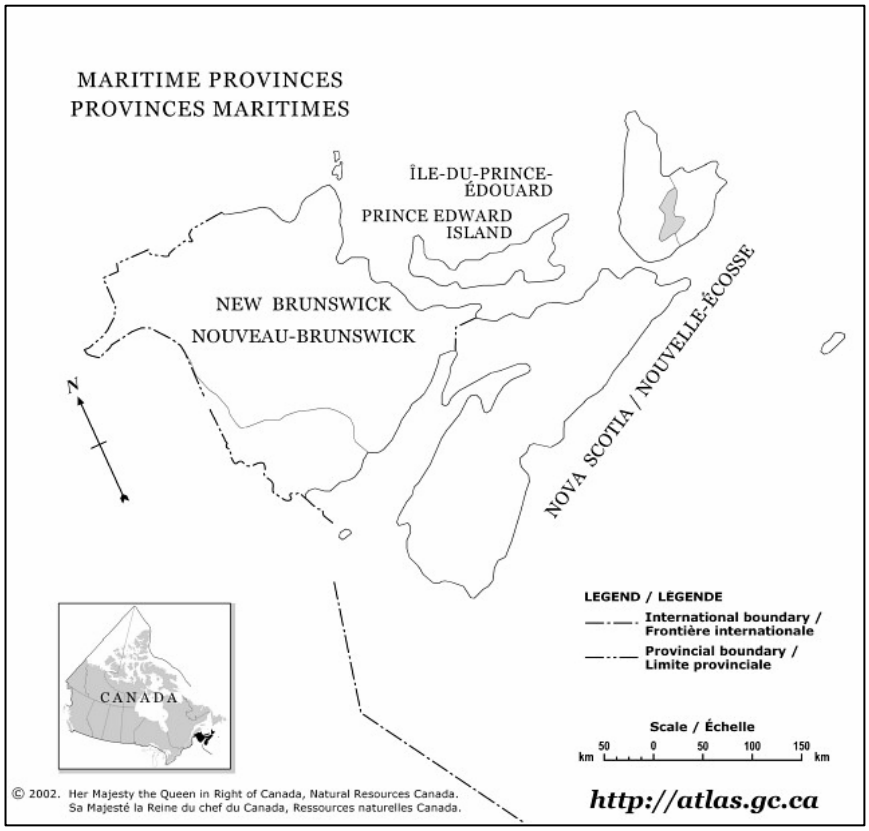
Integrated management is a process by which decisions are made based on multiple resource uses. The opposite of integrated management would be managing a single species of commercial fish among many, or managing a single mined mineral in the middle of entire ecosystem or watershed. Accounting for multiple uses allows a wider range of sustainable practices than could normally be found if a single use was given priority, as the entire ecosystem is considered. As well, managing for multiple uses also means managing for or with multiple users. Integrated management can also refer to bringing diverse users as well as their needs under consideration. Doing so means involving stakeholders in a process known as co-management. Co-management can be quickly defined as multiple groups or people managing something together. When a resource, be it commodity or geography, has multiple users one way to avoid conflict and share control is through a management strategy that is based on cooperation. An important part of co-management is identifying these stakeholders and integrating their interests into one management plan.

Community based integrated coastal management, or community based ICM, aims to integrate users and resources into a single sustainable management strategy that begins at the community level. Starting at the community level allows for strategies that manage for community-specific goals that may not be considered at higher levels of management. Such initiatives have been gaining credibility and popularity in coastal management and development thinking in recent decades. Canada's Maritime Provinces of New Brunswick, Nova Scotia and Prince Edward Island have multiple resources, extensive coastlines, and diverse users, and are located far from Canada's capital. The depth of coastal issues in the Maritimes would seem to call for community based integrated strategies. This paper will review current community based ICM activities throughout the Maritimes in an attempt to determine whether communities in the Maritimes are taking advantages of this popular management strategy.

1.1: Study Region

The study region consists of three Canadian provinces that are collectively referred to as The Maritimes. These three provinces, New Brunswick, Nova Scotia, and Prince Edward Island, are found on the Eastern Coast of Canada (figure 1). Cape Breton refers to a large island, part of the province of Nova Scotia, found to the north of the provincial mainland. These three provinces have a combined saltwater shoreline of approximately 9300km (Natural Resources Canada 2007). This extensive shoreline provides many resources for the hundreds of communities found along the coasts. These communities are dependent on their coastal resources and there has been increased

interest in their sustainable management since the collapse of the Atlantic cod fishery. Resources accessed by coastal communities also include local watersheds that interact heavily with the coastal environment and fishing grounds that extend out into the once abundant North Atlantic. The sustainability of this resource base is threatened by environmental concerns such as: overfishing, land based pollution, habitat destruction, invasive species, over development of coastal regions, and climate change.



Source: Natural Resources Canada: The Atlas of Canada
http://atlas.nrcan.gc.ca/site/english/index.html

Figure 1: Map of the Maritimes and (inset) its position in relation to the rest of Canada.

1.2: Organization of Report

The intention of this project is to report on the status of community based ICM initiatives in the Maritime Provinces. However, before Maritime activities are reported, it is important to provide a framework for community based integrated coastal management and a study rationale and methodology. This paper has been organized into several linear sections; following the introduction, section 2 provides the framework of community based integrated management, which is followed by section 3, containing the rationale and methodology of this report. Providing a framework of community based integrated coastal management will allow for constructs to be defined and their meaning uniformly understood throughout the remainder of the paper. In order to understand the definition of community based integrated coastal management it is important to break it into its component terms and explore each separately. Breaking the larger term down in this way and examining them separately aims to provide some insight as to what they mean together when used to describe a management system. The rationale and methodology section will explain how this study can benefit academic and community based efforts towards effective coastal management.

Section 4 focuses on current community based management plans in the Maritimes. This section includes four tables, three of which list community ICM activities by province, and one that lists support institutions. Section 5 goes on to further comment on results reported from community organizations.

2.0 Framework for Community Based Integrated Coastal Management

Effective management of the coastal zone is fundamental to humanity. Not only is the coast becoming increasingly populated (McCleave, Xiongzhi and Huasheng 2006), the coastal zone is also an important part of global food security, "manifold" industrial, pharmaceutical, biotechnological, tourism, and recreation uses. However, one of the most important reasons to effectively manage the coastal zone is because of the exhaustive list of free ecological services it provides, such as storm surge protection, water filtration, commercial nurseries, waste discharge, and basic ecology (Tobey and Volk 2002).

When it comes to integrated coastal management a great deal of attention is focused on LOMAs (large ocean management areas) and government driven projects. However, integrated management is also essential at the community level. Community can play a role in LOMAs and other projects, yet these projects are designed to meet the needs of a large area, population or an overarching management problem, and at the end of the day individual community's specific needs may not be addressed. Much of the day to day management of coastal resources and space is left to small communities throughout the Maritimes. These communities are often left without financial support or appropriate information for effective management. For instance, when community members, stakeholders and coastal users are brought together, often the first thing realized is the need to learn more about the issues they are attempting to manage (McCleave, Xiongzhi and Huasheng 2006). As well, large scale integrated management plans should not have to micromanage small communities, otherwise they risk

implementing ‘one size fits all’ solutions, typical of centralized decision making that community based management aims to divest itself from.

Each community may have unique needs, much like the unique needs of individuals. Although as a society it makes sense for democratically directed decision makers with immense resources to handle some issues, these leaders cannot possibly tend to every need in every community in all three Maritime Provinces. Where LOMAs and government attention leave a gap in management or a void in decision making power, organized and driven community groups may find space to operate.

2.1: Community Based Management

Community based management, also known as community based co-management, is a strategy by which multiple stakeholders form an important part of the management decision making. Although ‘community’ can be defined in many ways, the context appropriate for discussing community management lends itself well to the “traditional notion of community as webs of social interaction tied to place, history and identity, indicated by the term ‘local community’” (Berkes, et al. 2001).

Community based management regimes have also been called participatory governance and are “the effort to achieve change through actions that are more effective and equitable than normally possible through representative government and bureaucratic administration by inviting citizens to a deep and sustained participation in decision making” (Kearney, et al. 2007). Frequently with community co-management “responsibility for management functions is decentralized, and delegated to user

organizations at national, regional, and/or local levels" and a process of collaboration between representatives of NGOs, government departments and research institutions is created (Jentoft, McCay and Wilson 1998). However, when discussing co-management it is important to note the term has several definitions based on the relationship of the groups involved. According to Berkes et al (2001) there are two categories of co-management: 1) community-centred co-management; and 2) stakeholder-centred co-management. The first is community and partnership oriented towards empowering and organizing participants. The second brings together major stakeholders, who may or may not be part of the community, to decide on an integrated plan. It is important to note that this second type of co-management is not specifically concerned with community development or empowerment (Berkes, et al. 2001). Additionally, definitions of co-management also refer to a power sharing relationship between government, regulatory bodies, and stakeholders (Pomeroy, McConney and Mahon 2004).

Community co-management may be a better strategy financially, as fewer resources need to be tasked on administration and enforcement. This happens because community members take on many of the administrative roles and enforcement becomes easier because rules made by the community are often viewed with greater legitimacy. (Berkes, et al. 2001) Community involvement in this way also enhances efficiency through adaptive management. For instance, in regard to fisheries management Berkes et al (2001), note that "community members understand their problems, needs and opportunities better than outsiders do, so fishing communities are able to devise and administer regulatory instruments that are more appropriate to local conditions than are externally imposed regulations."

2.2: Integrated Coastal Management

The goal of integrated coastal management is to enhance the environment and the lives of coastal populations through integrated management of coastal resources. Managing multiple uses and stakeholder values in this way can be both efficient and sustainable. ICM is a strategy that is currently spreading throughout the world, due partly to endorsements from Agenda 21 and several other international agreements (Chua, Bonga and Bermas-Atrigenio 2006). However the integrated approach is also popular because it recognizes the connection between human system health and ecosystem health. A healthy ecosystem, or sustainable resource, cannot exist next to an unhealthy and unsecure human population. For this reason, integrated resource approaches have been popular aspects of development efforts around the world (Chua, Bonga and Bermas-Atrigenio 2006). With this management strategy, resources are managed as part of a greater picture that includes community health and sustainability needs instead of solely managing for economic maximization of resources.

2.3: Why is Community Based Management Important?

Managers should note that in order for a coastal zone to be sustainable and resilient, communities that may affect them must be economically and socially healthy (Berkes, Colding and Folke 2003). This link between human communities and ecosystem health demands the development of a holistic perspective that depends on a strategy that is inclusionary in nature. Standard top down, "ad-hoc approach" to coastal management has often resulted in conflict, confusion, and a weak picture of resources

capacities for all involved parties but, especially amongst stakeholders (Hegarty 1997). The people living in communities dependent on their coastal resources often know what is important in their areas. When community members meet on a management issue, multiple eventualities are discussed, and a well-rounded perspective emerges (Stojanovic, Ballinger and Lalwani 2004).

Management at the community level can often take advantage of local and traditional knowledge that may exist, allowing community based management to maximize the collective potential of information that has inhabited certain areas and regions through generations. The inclusion of local and traditional knowledge sets can empower communities and build their capacities by helping local stakeholders appreciate the value and role of their own knowledge (Kearney 2003). Working with community stakeholders to develop what they know into a plan, and then building their capacity within an integrated structure has been proposed as a possible way to avoid centralized management mistakes of the past (Hegarty 1997).

Furthermore, community participation enhances sustainability by helping resource users gain a sense of ownership over coastal resources. In this way, community co-management can help communities envision their resources and environment from a long-term perspective, with benefits guaranteed from future returns if the resources are properly managed (Berkes, et al. 2001).

2.4: Why is Integrated Management Important?

The dynamic nature of the coastal environment and its multiple uses calls for an integrated management approach. According to Tobey and Volk, (2002) "the distinguishing feature of coastal management is multiple use management and interorganizational activities where success depends on coordination of effort and effective linkages among the actors involved." As well, they also posit that: "overcoming the policy and functional fragmentation and overlap that occur in the governance of coastal areas is a central goal of ICM" (Tobey and Volk 2002). Coastal management success depends on a streamlined process that considers diverse uses and interests in order to mitigate negative effects and promote the overall quality of the coasts. ICM is a framework that brings actors and strategies together and has developed to the point where ICM is an accepted and increasingly recognizable process (Sorenson 2000)

Additionally, the Government of Canada has taken steps towards validating integrated strategies. The Department of Fisheries and Oceans recognizes the importance of integrated management in the Oceans Action Plan. According to the Plan, integrated management is supported by four pillars: 1. International Leadership, Sovereignty and Security; 2. Integrated Oceans Management for Sustainable Development; 3. Health of the Oceans; 4. Oceans Science and Technology (Fisheries and Oceans Canada 2005a). This government recognition of a set of building blocks for integrated management suggests that such strategies will form an important part of future coastal initiatives.

2.5: Integrated Community Based Co-management

Community based management and integrated management support each other reciprocally. Community based interests help focus integrated strategies and the integrated process helps communities form strong, effective organizations. In order for integrated strategies to be sustainable and long lasting, part of the strategy must involve capacity development of stakeholders involved (Pederson, et al. 2005). The complexity of integrating management of multiple uses for multiple goals often requires greater input from the day-to-day users whose livelihood is dependent on coastal and ocean resources (Kearney, et al. 2007). A positive way to do this is to make community capacity building a priority. When stakeholders or community members are involved in ICM, improving administrative structures and adaptive learning, they can help support the initiative's management goals and continued existence. Building the capacity of day-to-day resource users and other stakeholders within a community is a positive way to benefit from ICM through increased efficiency and flexible learning (Pederson, et al. 2005) . This view of community involvement is echoed in the Canadian government's Oceans Strategy, which states that "participants take an active part in designing, implementing and monitoring the effectiveness of coastal and ocean management plans, and partners enter into agreements on ocean management plans with specific responsibilities, powers and obligations". (Government of Canada 2002) As well, community participation and volunteerism in ICM can also provide valuable monitoring and long term data collection benefits that enhance decision making that otherwise would not have the depth and dedicated manpower a community NGO can offer. (Vandermeulen and Cobb 2004)

As well, the effort to bring community members to the same table can often serve as the starting point for combining management perspectives on various coastal uses. These efforts to unite the community under a single vision or mission statement can become the basis for future integration (Kearney, et al. 2007). Bringing this type of community focus can help address one of the criticisms of ICM. State centred ICM has been accused of opening access to outside groups that may harm the socio-economic and environmental balance of a region. This increase happens when stakeholders are not the only actors to benefit from large scale "streamlined" management projects where access to resources may not be restricted. However, when community development, capacity, and sustainability form part of the ICM goal, as they do in community based ICM, then appropriate access rights can be defended by community members themselves (K. Nichols 1999). Clearly, a community driven version of ICM is oriented towards solving management problems with solutions that promote community and ecosystem sustainability. Community based ICM is an important way to make sure these vital community goals are not lost in the process.

In return ICM can give to community action through the addition of structure. The ICM process of using the values and goals of multiple stakeholders to formulate one management plan can be essential to community efforts. The ICM process can serve as a template for community organizing. The benefit of ICM structure to support community organization and the role of the community in bringing those stakeholders together for a common purpose is a unique relationship where the whole may be more than the some of its parts allowing Community based ICOM to scale up and grow to encompass wider and more substantial powers and responsibilities (Chua, Bonga and Bermas-Atrigenio 2006).

ICM serves as a structure and purpose community organizations can build upon. Instead of ICM taking the form of LOMAs that eventually work to address community problems, ICM can start at a grassroots level in multiple communities that eventually come together to address larger regional concerns in a LOMA-like structure (Kearney, et al. 2007).

3.0: Study Rationale and Methodology

The preceding sections advocated a process where communities bring their stakeholders together in order to manage multiple issues more effectively. However, these same communities have an opportunity to expand their resources in a second way, by networking with other communities and sharing information on their management issues, problems and successes. The first step is to develop a clear picture of what other groups exist and whether they share similar challenges. Never has such an ideal been more realizable than in today's information age; where emergency messages can be issued to individual citizens through text messaging (BBC News 2003), surely community meeting minutes, specific issues and crucial problems can be communicated effectively.

3.1 Why study community based integrated management in the Maritimes?

Although this study is meant to serve as an overview of current community based ICM it will serve as more than a directory of regional actors. Lessons and successes from ICM initiatives are not well documented, therefore learning from community groups

attempting to manage multiple coastal issues can be difficult (Olsen, Tobey and Kerr 1997). This paper had to rely on online sources for much of the Maritime-specific data collected. As ICM attempts to establish itself as a viable management strategy, and communities work towards establishing a place for themselves within that strategy, there have been increased calls for academic attention to the process.

> ICM attributes are increasingly well defined, but there remain many learning challenges in order to achieve a better understanding about what operational strategies and practices produce the greatest sustained benefits to people and to coastal ecosystems. To improve performance and overall impact, ICM professionals and the donor community need practical information on the benefits of specific alternative approaches and techniques of ICM. What approaches and techniques are most effective in various situations and contexts? With a larger database of evidence across many projects it will be possible to draw firm conclusions and to test the limits of ICM approaches (Tobey and Volk 2002).

Additionally, marine management and community management have benefited from natural science data to assist in decision making. The abundance of natural science data highlights the frequent lack of social science research that is necessary to support decisions made at the community level (Wiber, Berkes and Charles 2004). Wiber et al. (2004), referring to community based fisheries management, note that the lack of social science research "is unfortunate because as nation states devolve responsibilities to fishers, the human side of fisheries management will only increase in importance." Although these calls to academic action may entail a greater effort than was possible in the formulation of this report, it is clearly a step in the right direction.

As well, this study forms part of what is known as adaptive learning, a process deemed essential for using ICM to improve the quality of coastal habitation. Adaptive

learning is using knowledge of what happened before for the purpose of "upgrading the management regime" in order to continually enhance ICM efforts (Chua, Bonga and Bermas-Atrigenio 2006). Adaptive learning enhances these efforts by building what is known as adaptive capacity, which is the measure of how well a management regime can react to situations as they may arise (Armitage 2005). One of the nine initiatives recommended to strengthen and develop community participation in ICM by Kearney et al. (2007) is "(9) monitoring and assessment of local-level initiatives". This paper offers insight into the progress of community-based ICM and will also assist with another one of the nine recommendations: "(8) building community capacity" (Kearney, et al. 2007). Examining what's being done provincially and regionally on the local level is an essential contribution this paper will make to adaptive learning.

A report of this type can also support learning by helping groups form a network within which they can continue to progress and learn together. Chua et al. (2006) describe "improving communication among stakeholders" as one of the requirements for effective coastal governance. Communication tools have the ability to inform stakeholders, the general public, policy makers, and other community groups about management decisions and associated successes and challenges. The effect is a better informed public, improved networking, and increased stakeholder "by-in" (Chua, Bonga and Bermas-Atrigenio 2006). This need to combine efforts adds to the relevancy of this study as a communication tool.

3.2: Methodology of Study

Before formulating this study is was first important to define 'community' in order to determine which organizations would be included in discussion. The definition of community was adapted from Agrawal and Gibson's 1999 'three factors of community' that are essential to advocating their role in management decision making. The factors are: community as a small spatial unit, as a homogeneous social structure, and as shared norms (Agrawal and Gibson 1999). The demands of categorizing all groups into one definition could have work against this study, therefore a group or organization was classified as a community group if it had at least one of these three factors.

The first step in researching this project involved creating a full list of all community based management organizations and integrated management organizations. This meant recognizing that not all organizations self-label themselves as 'community-based integrated management units'. In order to save time and avoid excluding any groups that fall outside the traditional terminology, a broad definition of community based activism was adopted in order to populate the list. Using two other databases (Gulf of Maine Council on the Marine Environment 2005, Provincial Oceans Network 2005) that link sections of many websites, and reviewing the bibliographies of papers, an initial list was generated. Although this list was originally quite long, it had to be filtered for groups that met the criteria of the study, as outlined previously. Groups that fit the definition of community integrated coastal management were compiled into a master list (appendix A). Groups which did not immediately fit were placed on a secondary list in

case additional research revealed that they did in fact meet the criteria, at which time they were transferred to the master list.

Next, visited the websites of the organizations on the master list were visited. While exploring their websites a search was conducted for additional information about the group, as well as for case studies, newsletters, meeting minutes, and other documentation. In addition, personal contact via email and attendance at several local meetings and conferences furthered research into community groups. As the researcher did not have time to physically interview and investigate this comprehensive list of organizations throughout the region, it was necessary to rely upon online sources and journals. These sources were often difficult to find due to the lack of academic attention, especially to Maritime initiatives, as described in the preceding section. However, there is precedence for reliance on secondary literature for discussion of this topic. For instance, Pomeroy et al. (2004) collected similar secondary sources for an evaluation of the conditions for successful co-management in the wider Caribbean region.

4.0: Integrated community based co-management in the Maritimes

The subsections below divide the Maritimes into its three provinces, each with a corresponding table of community based ICM organizations. Although the subsections are labeled activities they should also serve to show successes and accomplishments. Many of the groups listed are not ideal practitioners of ICM, however they are listed regardless of their adherence to the lofty goals of ICM because they are community based groups attempting to plan for multiple uses and issues by bringing stakeholders together.

There are many more groups and organizations in all three provinces that appear to be moving towards either community based management or integrated management, but have yet to fully reach that standard.

This section also includes the Atlantic Coastal Action Program (ACAP) member sites. ACAP was established by Environment Canada in 1991, as one of Canada's first ICM initiatives. Organizational priorities are driven by community members, who seek their own vision of sustainability. Environment Canada serves as facilitator, but leaves most management activities and responsibilities to the communities. Although these groups have some dependency on government they are generally accepted as examples of decentralized ICM (McCleave, Xiongzhi and Huasheng 2006).

4.1: Activities in New Brunswick

Most of the community groups in New Brunswick managing with multiple coastal uses in mind are doing so in response to environmental threats. For instance the Musquash MPA and Miramichi River Environmental Assessment Committee (MREAC) both exist in response to multiple coastal uses that are conflicting with the ecological health of their given locations. Integrated management in New Brunswick also takes the form of watershed management, and government initiated programs, such as ACAP and the Southwest New Brunswick Marine Resource Planning Initiative.

Two of the best examples of community based integrated management are the Musquash Estuary MPA and the Caraquet Bay group, both of which are focused on mobilizing their communities. The Caraquet Bay group recognizes the important role

community members play in mitigating environmental degradation caused by agriculture, forestry, peat extraction and unsustainable fishery practices. Community members have developed partnerships with all users and including social, economic and environmental groups in the region (Parternariat pour la gestion intégrée du bassin versant de la baie de Caraquet Inc 1999). The Musquash Estuary MPA was established with the help of the Musquash Advisory Committee (MAC). This committee was formed to take community and stakeholder issues into consideration for the MPA management plan. The MAC had a large role in creating the management plan and promoting the MPA to a wider audience. Issues and stakeholders had to be identified by the MAC in order to facilitate an integrated plan for future management of the Musquash MPA (Ng'ang'a 2006). In this way, community participation proved essential in providing necessary input and direction to managing multiple uses in a sensitive marine area.

The Bay of Fundy is an important ecological and economical region of New Brunswick. In order to manage it sustainably with input from multiple stakeholders, the Southwest New Brunswick Marine Resource Planning Committee/Initiative was created by provincial and federal government officials. Although this initiative was not community originated, the community has since played a large role in every aspect of the planning process. Their vision statement demonstrates the Committee's dedication to the principles of community based ICM:

> The planning process should consider the ecosystem as a whole. It should be action oriented and financial gain should not be the driving force. Participants must develop a common, balanced vision which respects a healthy ecosystem. This will result in healthy, vibrant coastal communities (Southwestern Bay of Fundy Marine Resources Planning Process Committee 2005).

Community stakeholders have been involved in Phase I of the planning process, and community members in general were sent a 4-question survey regarding their connections to and uses of the Bay of Fundy as well as their concerns for the Bay. Survey results and public responses were prepared in the final report intended to assist with Phase II of the planning initiative (Southwest New Brunswick Marine Resources Planning 2006).

In addition, New Brunswick has three ACAP groups. Although these groups are government initiated and funded, much of what they do can count as community based since many of the projects they support are community driven. The MREAC is an ACAP member, whose comprehensive environmental management plan (CEMP) focuses on multiple industrial pollution threats facing the Miramichi River watershed, and have instituted 'river watch' and 'swim watch' programs that involve local residents in environmental monitoring (McCleave, Xiongzhi and Huasheng 2006). Although the ACAP sites share primary interests, they are all responsive to different community visions. For instance, the Eastern Charlotte Waterway CEMP focuses on co-management of aquaculture, which has been linked to eutrophication of the L'Etang Estuary (McCleave, Xiongzhi and Huasheng 2006). Meanwhile, ACAP St. Croix has been addressing multiple concerns facing their coastal areas through community involvement and stakeholder education. However, the "showcase" for their work is the 350 acre Ganong Nature and Marine Park. The park serves as a centre for education, a model of sustainable practices, and as a foundation for community partnerships (MacKay 2004).

New Brunswick community based integrated management also pays heavy attention to watershed management. The very nature of managing an entire watershed involves bringing area residents and stakeholders together to understand how their actions

affect the water table and the coasts and rivers it connects to. New Brunswick has an interesting example of such a community group with the Tubusintac Watershed Association. Although many of this group's important projects aimed at protecting their watershed are also undertaken by other watershed groups, the Tubusintac Watershed Association has compiled a Traditional Ecological Knowledge Atlas. Hundreds of users and residents were surveyed in order to compile this extensive picture of the Tubusintac ecosystem. This TEK atlas is not only a way to include the community at large in one project; it will also preserve their collective knowledge in a GIS format for use in future decision making (Tubusintac Watershed Association 2007).

The above examples are only a selection of key community based ICM initiatives currently operating within New Brunswick. Table 1 contains additional groups in order to illustrate the broader picture of ICM in the province.

Table 1: Community based integrated management organizations within New Brunswick.

Organization	**Area**	**Integration**	**Community Engagement**	**Year Established**
Caraquet Bay	Northern N.B.	All resource users	Ongoing participation	1993
Eastern Charlotte Waterway Incorporated (ACAP)	St. George	Resource centre supports community projects. Coastal zone and integrated watershed management.	Local volunteers in area collect and monitor water quality on lakes in the area	1992
Falls Brook Centre N.B.	Knowlesville, Carleton County	"Working towards a society that respects ecosystems, honours diverse cultures and provides an economy in balance with communities and nature."[1]	Community education and demonstration centre.	Early 1990s
Continued on following page				

[1] Falls Brook Centre 2007

Grand Manan FIshermens's Association	Grand Manan	Provide advice to government on fishery management, harbor management, and other services	Membership based	1981
Miramichi River Environmental Assessment Committee MREAC(ACAP)	Miramichi	Focused on Miramichi watershed and coast	Constructive consultation and cooperation of government and all stakeholders and municipalities.	1992
Musquash Advisory Committee	Bay of Fundy – Musquash MPA	Collection of biological, cultural and anthropomorphic data; attempted to have estuary established as MPA	Community and stakeholder consultations carried out	2002; MPA approved in 2007
Saint John Atlantic Coastal Program	Saint John	Environmental management	Funded by government, partner groups choose objectives	1992
South Western New Brunswick Marine Resources Planning Initiative	Bay of Fundy	Multi-stakeholder group; community and government involvement	Aims to enhance Bay of Fundy management	2004
Tubusintac Watershed Association N.B.	Tubusintac	All uses that affect a healthy watershed	Private sector and stakeholders	1998
Tantramar Watershed Committee	Tantramar (near Moncton)	Multiple use and protection structure	Full stakeholder endorsement	

4.2: Activities in Nova Scotia

As in New Brunswick, many community groups dealing with multiple coastal management issues in Nova Scotia also came into being in response to specific environmental challenges. One major issue in Nova Scotia is coastal development, and

many of the examples of community action originate from areas that are seeing the most development (Charles 2005), mainly Nova Scotia's south shore, Annapolis Valley and Cape Breton regions. This issue is best demonstrated by the St. Margaret's Bay Stewardship Association and Mahone Islands Conservation Association (MICA), who both work towards preventing development of sensitive and low lying coastal areas (St. Margaret's Bay Stewardship Association 2005). As well, several Nova Scotia groups, such as Stop the Quarry, Mabou Harbour and Annapolis Watershed Resource groups, originated with one coastal issue on their "radar" and came to find that an integrated perspective was necessary to help manage their specific problem. In addition, Nova Scotia has several ACAP projects, similar in scope to those described in the New Brunswick section.

The St. Margaret's Bay Stewardship Association is concerned with many issues involving one of the more populated and popular coastal regions of Nova Scotia. This group is an excellent example of community support for coastal concerns, as they boast a large membership base. They are involved in numerous projects and are also involved in all aspects of community development. According to their vision statement:

> [they] seek a democratic method of documenting and honouring common community values in the St. Margaret's Bay area as well as achieving effective stewardship of that which we all hold dear, including our waters and woodlands, our unique history and heritage, the rights of our residents and communities, and the effective management of change with respect to sustainability, vitality, prosperity and self-reliance of the region. (St. Margaret's Bay Stewardship Association 2005)

This organization is primarily concerned with ensuring that the St. Margaret's Bay region does not experience unsustainable overdevelopment and use. Their vision statement also

demonstrates their commitment to ensuring a large community voice in all future development of their area.

The Mabou Harbour Coastal Management Planning Committee is a recent example of ICM at the community level. Concerns voiced upon the reopening of Mabou Harbour to aquaculture led to the community recognizing planning as an important way to give residents a say in the future of Mabou Harbour and development of the surrounding waterfront. Although this group is in the early phases, they have attempted to plan for multiple users of the harbour and watershed. Community members provided much of the planning expertise while DFO was invited to advise on policies relevant under the Oceans Act (Weiss Reid 2004). The committee has secured government funding to hire student researchers to accumulate data necessary for decision making, and also participates in the community aquatic monitoring program (CAMP) (Mabou Harber Watershed Steering Committee 2007).

The Stop the Quarry group, also known as the Partnership for the Sustainable Development of Digby Neck and Islands Society, is an interesting case of integrated management. Although this group did not convene with the purpose of creating an integrated plan their work has still given a integrated focus to the area. Threatened with a proposed mega-quarry, this group had to put together a solid defense consisting of why their area should be left quarry free. STQ brought together lobstermen, ecologists, geologists, whale watching tour operators, local townspeople and others who attested to possible user conflicts with the proposed quarry (Mahtab). Many of these community members and stakeholders spoke at the hearings conducted by the federal government.

The Annapolis Watershed Resource Committee is an example of one set of stakeholders engaging in integrated management to mitigate the effects of multiple coastal issues and uses. Community fishers make up most of the voting membership of the committee which works to protect the coast as an important community resource. Community members have found a livelihood at sea since humans have inhabited the area, and now the livelihoods of clam harvesters is threatened specifically due to harvest site closures. However, the committee engages in issues such as sewage treatment, agricultural land wash, dump leeching, siltation from hydroelectric development and various levels of government in an attempt to manage and sustain their resources (Wiber and Bull 2006).

The Minas Basin Working group is an interesting example of integrated community management. The MBWG is part of a larger initiative call BOFFEP, and aims to promote sustainable management of the Minas Basin area. However, the area is home to several smaller civil society groups, each focused on smaller areas or single use objectives. The MBWG has been bringing these community groups together the way that most integrated schemes would bring individual stakeholders to the same table. Together these groups have helped the MBWG identify community interests and perhaps more importantly, areas where community capacity can be further developed to support integrated efforts (McCuaig 2004).

The Bras d'Or Lakes in Cape Breton present a unique and complex ecosystem, as they are a semi-enclosed sea surrounded by land. There are many First Nations with constitutional rights to the area's resources who have spearheaded integrated initiatives (Weiss Reid 2004). Many community based management initiatives have been

undertaken in the region in the past, with such initiatives dating back to the mid-1970s (Weiss Reid 2004). This region has many concerned stakeholders, such as First Nations and various community and government organizations, and much of the local economy depends on the Lakes, making this a logical location for the development of a community based integrated management plan (Pitu'paq Partnership Society 2003).

Nova Scotia also has several ACAP sites which have worked with community members and stakeholders to develop functional management plans. One prime example is the Clean Annapolis River Project (CARP). The Annapolis region had multiple sustainability issues, such as: waterways degraded by siltation from forestry, agriculture, and suburban development, non-point source pollution and inadequate sewage treatment. Faced with declining quality of the resource base that sustained the region economically, CARP was established as a method of handling sustainability issues outside of the traditional institutional framework (Elsworth and Hawboldt 1998). Like many of the ACAP sites, CARP has overseen many successful projects that have upgraded the quality of human and ecosystem life. A case study compiled by Ellsworth and Hawboldt notes:

> There is now a high level of community awareness of local environmental conditions. A widely endorsed comprehensive environmental management plan for the watershed has been prepared to guide enhancement activities in the watershed. (Elsworth and Hawboldt 1998)

Their report also noted that government-community partnerships are a highly effective method of resource management, citing that for every "$1 invested by ACAP in CARP, another $15 of real and in-kind resources have been contributed by the other partners." (Elsworth and Hawboldt 1998)

The groups described in above form a cross-section of many of the community based ICM projects taking place in Nova Scotia. For a broader perspective of ICM projects in Nova Scotia, refer to Table 2.

Table 2: Community based integrated management organizations within Nova Scotia.

Organization	Area	Integration	Community Engagement	Year Established
ACAP Cape Breton	Cape Breton; mainly Sydney area	Comprehensive ecosystem management plan	Outreach projects, educational initiatives	1992
Annapolis Watershed Resource Committee	Annapolis Valley; Minas Basin	Concerned with ecological health of soft-shell clam resource; initiated water quality testing	Multi-stakeholder	2006
Bay of Fundy Marine Resource Centre	Annapolis Basin	Concerned with all aspects of the Bay of Fundy's marine economies and ecosystems	Community-based; works closely with other institutions	1999
Bear River First Nations	Annapolis Valley	Oversee processes for habitat, stream and river restoration, food and sustainable livelihood projects[2]	Conduct series of community workshops to enhance community capacity	
Bluenose Coastal Action Foundation (ACAP)	South Shore Area – Indian Point to Lahave River	Focused on coastal protection.	"in collaboration with and in support of a healthy prosperous community"[3]	1992
Bras d'Or Lakes Collaborative Environmental Planning Initiative	Cape Breton	Concerned with conservation and restoration of Lakes and watershed area	Representatives from all levels of government, First Nations, local community groups and all stakeholders	2004

[2] Coastal CURA 2007
[3] Bluenose Coastal Action Foundation 2007

Bras d'Or Lakes Stewardship Society	Cape Breton (Bras d'Or Lakes)	Endorse stewardship, conservation, restoration and sustainable use of Bras d'Or Lakes.	Group of concerned individuals.	
Clean Annapolis River Project (ACAP)	Annapolis Valley	Coastal zone management and watershed management issues	Community environmental management	1992
Digby Neck Community Development Association Partnerships for the Sustainable Development of Digby Neck and Islands Society Stop the Quarry Group	Digby Neck	Protecting multiple uses by opposing mega-quarry	Concerned citizens and community support	2003
Friends of Cornwallis Rivers Society	Minas Basin, from Wolfville to Kentville	Sustainable watershed practices. Bi-weekly water testing.	Local volunteers	1992
Fundy Fixed Gear Council	Bay of Fundy	Concerned with sustainable fishing, fish stocks, habitats and fishing patterns	Has been featured as a grassroots community-based fishery management authority in several documentaries.[4]	1996
Kingsburg Coastal Conservancy	South Shore, Kingsburg Beach	User conflicts resulting from rapid development	Community members	1995
Mabou Harbour Coastal Management Planning Committee	Western Cape Breton	Concerned with current and future harbour uses	Community members	2002
Mahone Islands Conservation Association (MICA)	South Shore	Protecting uninhabited islands throughout region.	Multi-stakeholder and community participation	2002

[4] Fundy Fixed Gear Council 2007

Nova Scotia Sustainable Community Initiative	Currently two areas: Annapolis Valley and Cape Breton	Collaborative approach which integrates social, cultural, economic and environmental policies and programs.[5]	Communities working with all levels of government	1999
Pitu'paq Partnership Society/Committee	Cape Breton (Bras d'Or Lakes)	Protecting multi-use environment through sewage prevention.	5 Bras d'Or Lakes First Nation Communities. 5 Bras d'Or Lakes municipalities.	2003
St. Margaret's Bay Stewardship Association	St. Margaret's Bay	Uses of the Bay and its watershed	Community democratic method of honoring community values.	
Woodens River Watershed Environmental Organization	Chebucto Peninsula (Halifax)	Watershed management.	Community members	1995

4.3: Activities in Prince Edward Island

Community based ICM on Prince Edward Island consists of several small community groups and two ACAP sites – Bedeque Bay Environmental Management Association (BBEMA) and the Southeast Environmental Association (SEA), as illustrated in Table 3. Both ACAP groups have well-developed, comprehensive management plans (CEMPs). The Bedeque Bay site identifies soil erosion, water quality, natural habitat and public awareness as the four most important issues facing their watershed. The SEA has similar issues, yet also recognizes agriculture and waste management in their CEMP (McCleave, Xiongzhi and Huasheng 2006). The BBEMA also illustrates the need for community based approach as the majority of land on PEI is privately owned a

[5] Environment Canada 2006

cooperative community approach was the only way to include those stakeholders who may be required to make the majority of changes. BBEMA has partly achieved this through an educational agri-environmental demonstration site (Penak 2004).

An example of community action towards integrated management is the Basin Head Lagoon Ecosystem Committee. This committee brought together community interests from agriculture, fishery, tourism and recreational sectors to develop a proposal for nominating this site as an Area of Interest (AOI) through the Marine Protected Area program at DFO (Boyd and Smith 2000). The MPA proposal was given considerable weight by the inclusion of several First Nations communities. The Abegweit and Lennox Island First Nations, the Mi'kmaq Confederacy of Prince Edward Island, and the Prince Edward Island Native Council endorsed the proposal and added historical tenure to the important list of reasons for establishment of an MPA (Ng'ang'a 2006). The committee also identified several key goals of the community in regards to the project. These goals involved conservation, protection of unique Irish moss and its ecosystem support, public awareness, education and research. After Basin Head was declared an MPA the committee and government planned to identify actions and responsibilities required of each partner for the sustainable long term viability of this project (Fisheries and Oceans Canada 2005b). Basin Head is also an example of the role of support institutions – in 2007 the Nature Conservancy of Canada acquired the last piece of privately owned land along the Basin Head dune coastline, completing and protecting the entire area (The Guardian Editorial Staff 2007).

Table 3: Community based integrated management organizations in Prince Edward Island.

Organization	Area	Integration	Community Engagement	Year Established
Basin Head Lagoon Ecosystem Conservation Committee	Basin Head MPA	Agriculture, fishery, tourism, municipal, federal, and provincial government.	Community members make up committee	1999
Bedeque Bay Environmental Management Association (ACAP)	Western PEI	Manage uses to address soil erosion, water quality, natural habitats while promoting economic growth.	Stakeholders and public awareness program	1992
Bedeque Bay Sustainable Community Development Project	Western PEI	Development plan for watershed area	Input from representatives of local social, cultural, business, environmental and community interest groups.[6]	2005
Hunter-Clyde River Watershed Group	Eastern PEI	Conservation and sustainable watershed management	Community members	2002
Southeast Environmental Association (ACAP)	South Eastern PEI (Montague)	Maximize environmental , economic and social potential of communities	Individuals and groups	1992

4.4: Support Institutions

There are many organizations within the three Maritime Provinces that are not spatially confined to one community, but provide support for community based management initiatives. Many of these support groups also promote integrated

[6] Bedeque Bay Sustainable Community Development Project 2006

management as a viable management scheme. For instance, the Ecology Action Centre, in 2005, published *Navigating the Maze: A Citizen's Guide to Coastal Action in Nova Scotia*. This guide recognizes that Nova Scotia, "Canada's Ocean Playground", is lagging behind in the area of integrated coastal planning, and that communities have a vested interest in its development (McKeane and Gregory, Navigating the Maze: A Citizen's Guide to Coastal Action in Nova Scotia 2005). *Navigating the Maze* provides a jurisdictional breakdown of coastal management in order to provide insight for ordinary citizens who want to become involved in community action.

Additionally, the Coastal Communities Network publishes a well-circulated newsletter in which they attempt to bring attention to many issues facing Nova Scotia communities. For instance, a recent project on harbour management saw the Coastal Communities Network bring community harbour managers together in three areas in Nova Scotia: the Kings County area, Shelburne area and Inverness/Judique area. Each area had a workshop where volunteers managing harbour infrastructures in local small communities came together to share experiences. Volunteers found sharing new ideas helped develop partnerships that assisted groups improved problem solving skills and share methods for accessing funds. (MacInnes, de Sousa and Munro 2006). This example demonstrates that the Coastal Communities Network is a valuable support institution whose activities directly support community capacity building, for the goal of community based integrated management.

Also worth mentioning in this section is the role of development bodies such as Nova Scotia's Regional Development Authorities (RDAs). There are 13 RDAs in Nova Scotia and many of them manage or forward plan for multiple resources uses. As the

coasts are an integral part of the Province of Nova Scotia, they often form part of the management strategy of RDAs. For instance, the Guysborough County RDA is involved in many of the fishery issues in its area of operation (Guysborough County Regional Development Authority 2005). RDAs have also used public participation as a valuable source of direction. For instance: "In 1998-99 the WVDA [Western Valley Development Agency] held a series of 23 community meetings in fire hall, legions and community centers throughout the region. Over 530 people attended these meetings, which helped to build a community action plan." (Peddle, Katrina 2005)

Maritime support institutions engage in projects too numerous to describe in this report. For a list of some of these important organizations, please refer to table 4.

Table 4: Support institutions within the Maritimes Provinces.

Organization	Community Support
New Brunswick	
Conservation Council of N.B., Inc.	Promote environmental protection.
Nova Scotia	
Bay of Fundy Ecosystem Partnership	Working on forming a network or 'virtual institute' linking all groups concerned with protecting the Bay of Fundy.
Guysborough County Regional Development Authority	Promote meaningful community participation, consultation and collaboration[7]
NS Coastal Coalition	Concerned stakeholders
Native Council of Nova Scotia	Their goal is to operate and administer a strong and effective Aboriginal Peoples Representative Organization that serves, advocates and represents our community[8].
Coastal Communities Network of N.S.	Mission is to provide a forum to encourage dialogue, share information, and create strategies and actions that promote the survival and development of Nova Scotia's coastal and rural communities.[9]

[7] Guysborough County Regional Development Authority 2007
[8] Native Council of Nova Scotia 2007
[9] Coastal Communities Network 2007

Community Counts	Run by provincial government, it allows comparisons of community resources among regional, provincial, and national levels to present a more complete picture of Nova Scotian communities.[10]
Ecology Action Centre	Supports regional and community level management initiatives through marine and coastal branches.
Regional	
Coastal CURA	Supports community-partner research goals and encourages community based ICM.
Sierra Club of Canada	Champion of environmental causes
Southern Gulf of St. Lawrence Coalition on Sustainability	Promote awareness and cooperation on sustainability issues affecting St. Lawrence region of the Maritimes.
Atlantic Coastal Zone Information Steering Committee	Provide important information for coastal management decision making in the Maritimes. Important projects include providing geospatial information.
Salt Water Network	Network of community groups throughout the Gulf of Maine.
Unama'ki Institute of Natural Resources	Works with government and 5 Mi'kmaq communities in Cape Breton for sustainable management of natural resources.

5.0: Challenges

There are a variety of challenges that face most community based ICM groups in the Maritimes. One of the biggest challenges facing all groups is longevity. Many of these groups have to meet the challenge of finding consistent, year to year funding, and volunteer support. Often, groups such as these are formed to face one particular challenge, and must transition to stay relevant and continue their existence. The ACAP program has been meeting this challenge for over a decade, which has been noted as something rare for a government facilitated program (McNeil, Rousseau and Hildebrand 2006).

[10] Province of Nova Scotia 2007

Another challenge faced by these groups is power sharing with government. Although through ACAP Environment Canada learned that the risk involved in giving up some aspects of control can be a worthwhile way to achieve local results (C. McNeil 2004), still a lack of "local voice" in coastal resource management decisions is often cited as a major challenge that may be endemic of our current governance structure. Wiber and Bull note that a major problem facing the efforts of the Annapolis Watershed Resource Committee to protect community clam harvesting resources is "a regulatory environment that does not allow for significant local voice in coastal resource management decisions" and "the lack of transparent governance that together have enabled large-scale privatization of coastal resources." (Wiber and Bull 2006) They describe how these two factors have allowed one resource user to manipulate government aquaculture and health regulations in order to essentially privatize what were formerly large areas of common resource. If community ICM is to effectively prevent such "tragedy of the commons" scenarios, then local voices must be part of the government regulation mandate.

Another challenge mentioned throughout the region is a lack of academic material that can facilitate greater decision making capacity. Even larger programs such as ACAP would benefit from reports evaluating the results of their projects (McNeil, Rousseau and Hildebrand 2006). In addition, geospatial data is also required for accurate analysis of coastal issues. If community level decisions are to be made then communities require access to up to date and accurate coastal information, often collected with their tax dollars.

An additional challenge that is faced by most organizations in the Maritimes is the phenomenon of 'volunteer burnout'. Most community organizations depend on the

manpower provided by dedicated volunteers. Long hours and slow results can be detrimental to a volunteer base or volunteer leaders known as 'community champions'. Recognizing and supporting these individuals is important to the sustainability of community based ICM initiatives.

5.1: Challenges in New Brunswick

One of the challenges faced by the Caraquet Bay integrated management group is meeting the government requirement for groups to provide their own funding. The area has high levels of unemployment, and efforts to mobilize financial resources have been difficult. However, resources have been mobilized in the past for health and education issues, and the community is taking on the current challenge of generating a similar level of interest in the environment for the restoration of Caraquet Bay and its watershed (Chouinard and Vanderlinden 2000).

A challenge to all Maritimes communities is the challenge to find relevant geospatial information to support their planning efforts. For instance, Environment Canada's report on the effects of climate change used sophisticated technology to provide detailed maps of the coast and highlight vulnerable areas. However, the application of this technology is currently expensive and uncommon. As well, an Ocean Mapping Group at the University of New Brunswick was able to apply multiple technologies to define habitat boundaries in the Musquash Estuary MPA. This project was able to prove that proposed legal boundaries were insufficient, which resulted in an additional buffer

zone (Nichols, et al. 2004). Although similar technology to assist in community decision making exists, it is not widely available for deployment to all community groups.

5.2: Challenges in Nova Scotia

Many of the active community organizations in Nova Scotia are based in regions with challenging environmental issues that may have been the basis of their formation. A general example of this is many of the ACAP sites in the Maritimes, which exist in heavily industrialized areas. For instance, the Pictou Harbour Environmental Protection Project (PHEPP) was originally formed due to public outcry over environmental degradation caused by a local pulp and paper operation. The challenge to community action here is that instead of forming a typical resistance to industry movement, PHEPP decided to work within the community based integrated management approach, which required "working with the local industry to solve pollution problems, rather than rally against them" (McNeil, Rousseau and Hildebrand 2006). However, PHEPP has met with some success in dealing with the local industry, as the problematic pulp and paper operation now has a state-of-the-art waste water treatment system (McNeil, Rousseau and Hildebrand 2006).

As mentioned in the rational section of this paper, community groups need to connect with one another. A challenge listed by a Minas Basin Working group report noted that: "most groups are unaware of activities of other groups" (McCuaig 2004). When community groups are ambiguous to each other's efforts, not only do they not

benefit from shared resources, but they also waste resources on organizational overlap and redundancies.

5.3: Challenges in Prince Edward Island

One of the challenges in Prince Edward Island is the lack of statistical data for the Island's small population. Community managers have been using statistical data from Newfoundland and Nova Scotia as theoretical models for decision making in PEI. This lack of data was a topic of discussion at the Southern Gulf of Saint Lawrence Collation on Sustainablity's conference on Sustainable Communities (Southern Gulf of St. Lawrence Coalition on Sustainability 2007).

Another major challenge to Prince Edward Island is adequate response time to environmental change. The Island faces numerous environmental threats, such as coastal erosion and subsequent deposition, land based pollution, and over development of coastal regions. Community groups in PEI have a lot to deal with and less time to do so, as the Island is more sensitive to these environmental threats, and changes occur more rapidly (Southern Gulf of St. Lawrence Coalition on Sustainability 2007).

6.0: Recommendations

Although the groups outlined in the previous section have met with varying degrees of success and challenges, there are still strategies employed by other practitioners of ICM that can benefit the Maritime experience.

One obvious recommendation to address the concern of public awareness and involvement is to have set and consistent meeting times that are well publicized. Community action is best supported when meetings and start times are best organized for informed participants to attend (McCuaig 2004). By increased attendance and awareness, the needs and of community are better understood, and supported by all members of the community. As well, progress and success can be better celebrated and used to gain forward momentum.

Additionally the problem of communities finding the financing to do coastal management may be a staggering impediment. Communities require "seed money" to establish ICM frameworks. Although many funds are eventually solicited from the government, there is no established form of contribution comparable to the federal government funding available to coastal planners in the American state of Maine (Weiss Reid 2004). The Canadian government touts ACAP as a model for community management (Hildebrand, McNeil and Rousseau 2006); perhaps the government framework for financially supporting ACAP could serve as a model for standard contributions. As funding is always a concern for community groups it should be noted that an important part of community capacity building is developing proposal writing skills. Improving the ability of groups to obtain funding was reported in workshop discussions as a way in which the Minas Basin working group could increase their effectiveness (McCuaig 2004).

The role of mid-level actors should be highlighted and examined as an important part of community based integrated management. These mid-level actors are often NGOs

with different motivations, yet with the similar aim of facilitating community participation within the resource governing system;

> they work with the people in a community to set up the social infrastructure necessary for co-management. The NGO is a partner and change agent, providing information and independent advice, ideas and expertise, education and training, and guidance for joint problem solving and decision making, thus enhancing the people's ability to manage their own lives and resources (Berkes, Mahon, et al. 2001).

Also, governments need a "paradigm shift" in order to support community management decision making the way support institutions do. Governments can be encouraged to engage in power sharing and responsible agreements that can beneficial to both communities and government. Communities get a say in their futures and governments can become important "problem solvers", conflict settlers, and data collectors, and sponsors of specific projects that would normally lack human and financial resources (Kearney, et al. 2007). Meanwhile, as communities wait for government to incorporate the necessary local voices into management strategies, there must be significant capacity established by communities to deal with the current status quo. Wiber and Bull note that communities are learning how to deal with government and powerful interests by establishing "learning circles to pull in the expertise they need to understand complex problems", examining "powerful actors" in the stakeholder process (Wiber and Bull 2006).

Where groups like RDAs already manage or plan for multiple issues, perhaps their role could be expanded to formally consider integrated coastal management as a necessary part of their development strategies. Most Maritime counties and identifiable regions are interdependent with the coastal zone; therefore any planning that omits coastal

issues is by definition incomplete. These groups can also incorporate ICM goals of improved quality of human and ecosystem life. As well, RDAs may already have experience with the process and framework that ICM uses to bring stakeholders together.

However, it must also be recognized that not every community may be suitable for co-management; it may take years to reverse long-standing dependencies on centralized government decision making. As well, economic, social, and political incentives for co-management may not be present (Berkes et al, 2001). Successful ICM initiatives require the recognition of a community's internal differences and processes, as well as their relationships with external actors and institutions (Agrawal and Gibson 1999). Part of the recognition process is bringing the community together to establish a joint vision statement. Community members need to decide who they were, who they are, and who they want to be in order to progress as a communal management unit (Maser 2007). It has also been noted by CHUA et al. that ICM can often take some time to show noticeable success. Chua et al. refer to a case study of an ICM project in Xiamen municipality in China where the project achieved great success after 12 years (Chua, Bonga and Bermas-Atrigenio 2006). It may take even longer than 12 years to note any change in environmental indices and changes in coastal demographics may also hide results from appearing in only short term analysis (Chua, Bonga and Bermas-Atrigenio 2006). In other words, the changes and benefits of community based ICOM may not be immediate in all cases. However, when achieved, empowerment, participation, and community capacity are benefits that will pay off in the long run.

7.0 Conclusion

Ultimately, the path is wide open for communities to have a greater role in decision making and management planning that affect their futures. The three Maritime Provinces have seen many community based ICM successes. New Brunswick has used community participation and knowledge to combat environmental threats and settle user conflicts. This province has also used community action to focus public interest and increase general awareness of issues resulting in increased public protection of sensitive areas. Meanwhile, Nova Scotia has used community based initiatives to give communities a voice in complex industrial and rapidly developing areas. Nova Scotian initiatives also benefit from multiple support institutions and increased public awareness of specific issues. Prince Edward Island has benefited from the ICM framework that has helped organize community efforts and bring stakeholders and government together to protect sensitive areas and highlight the role of sustainability.

Although all three provinces face similar challenges, such as lack of funding, volunteer burnout and government devolution of power, they are beginning to build their ICM capacities and learn from the successes and failures of others. There is an identifiable need for ICM in the Maritimes, and there is the will from community and stakeholders to participate in ICM; the only question is when they will combine to form a new era of coastal management. As community involvement continues to grow throughout the Maritime Provinces, so too will the effectiveness of ICM. Community groups have the opportunity to learn and grow as times progresses, there will be successes

and there will be failures but it is how they learn from these together that will dictate the future of our coastal communities.

Appendix A

List of Integrated Community Management Organizations

New Brunswick

Bay of Caraquet Partenariat - http://www.cipanb.ca/baiedecaraquet/index.php?

Eastern Charlotte Waterway Incorporated (ACAP) –http:// www.ecwinc.org

Miramichi River Environmental Assessement Committee (ACAP) - http://www.mreac.org

Musquash Estuary MPA - http://www.musquashmpa.ca/

Saint John Atlantic Coastal Program - http://www.acapsj.com

St. Croix Estuary Project - http://www.scep.org/

Tubusintac Watershed Association - http://www.inmgroup.net/tabusintac/watershed/

Tantramar Watershed Committee - www.tantramarwatershed.org

Nova Scotia

ACAP Cape Breton - http://www.acapcb.ns.ca

Annapolis Watershed Resource Committee -

Bear River First Nations - http://www.bearriverculturalcenter.com/aboutbearriverfirstnation.aspx

Bluenose Coastal Action Foundation (ACAP) - http://www.coastalaction.org

Bras d'Or Lakes Collaborative Environmental Planning Initiative - http://www.brasdorcepi.ca/

Clean Annapolis River Project (ACAP) - http://www.annapolisriver.ca

Partnerships for the Sustainable Development of Digby Neck and Islands Society/Stop the Quarry Group

- http://www.savedigbyneck.org/

Friends of Cornwallis Rivers Society - http://www.annapolisriver.ca/monitoringprograms.htm

Fundy Fixed Gear Council - http://www.ffgc.ca/index.php?page=11

Kingsburg Coastal Conservancy – website temporarily down

Mabou Harbour Coastal Management Planning Committee - http://mabouwatershed.com/

Mahone Islands Conservation Association (MICA) - http://www.mahoneislands.ns.ca/

Pitu'paq Partnership Society/Committee - http://pitupaq.ca/

St. Margaret's Bay Stewardship Association - http://www.heartofthebay.ca/

Woodens River Watershed Environmental Organization - http://www.wrweo.ca/

Prince Edward Island

Basin Head Lagoon Ecosystem Conservation Committee - http://www.edu.pe.ca/easternkings/fishing/basinhead.htm

Bedeque Bay Environmental Management Association (ACAP) - http://www.bbema.ca/

Bedeque Bay Sustainable Community Development Project - http://www.bbema.ca/community/index.html

Southeast Environmental Association (ACAP) - http://www.seapei.ca/

Support Institutions

Atlantic Coastal Zone Information Steering Committee - http://aczisc.dal.ca/

Bay of Fundy Ecosystem Partnership - http://www.bofep.org/

Bay of Fundy Marine Resource Centre - http://www.bfmrc.ns.ca/

Coastal Communities Network of N.S. - http://www.coastalcommunities.ns.ca/

Coastal CURA – http://www.coastalcura.ca

Community Counts - http://www.gov.ns.ca/finance/communitycounts/

Conservation Council of N.B., Inc. - http://conservationcouncil.ca/

Ecology Action Centre - http://www.ecologyaction.ca/

Guysborough County Regional Development Authority - http://www.gcrda.ns.ca/index.php

Native Council of Nova Scotia - http://www.ncns.ca/

NS Coastal Coalition - http://ccns.chebucto.org/

Rural Communities Impacting Policy (RCIP) - http://www.ruralnovascotia.ca/coastalzone.asp

Salt Water Network - http://www.saltwaternetwork.org/

Sierra Club of Canada Atlantic Chapter - http://www.sierraclub.ca/atlantic/

Southern Gulf of St. Lawrence Coalition on Sustainability - http://www.coalition-sgsl.ca/

Unama'ki Institute of Natural Resources - http://www.uinr.ca/index.html

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